Arabic Sciences and Philosophy, 34 (2024): 233-274 doi:10.1017/S0957423924000043

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AL-FĀRĀBĪ'S EIGHTH FALLACY *EXTRA DICTIONEM* AND AVERROES' CRITICISM

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Abstract. This paper aims to introduce and discuss al-Fārābī's (d. 950–1 CE) fallacy from transfer and substitution in his little-studied "On Deceptive Topoi" (*Kitāb al-amkina al-muġalliṭa*) and the criticism leveled at him by Averroes (d. 1198 CE) for violating Aristotle's claim of the exhaustiveness of his list of fallacies. The first and larger half of this paper introduces al-Fārābī's treatise and its innovations upon Aristotle's *Sophistici elenchi*. The second half focuses on Averroes' criticism in his so-called middle commentary (*talḫīṣ*) on Aristotle's SE and discusses the validity of his arguments against al-Fārābī. As the final analysis will show, Averroes' criticism does not sufficiently take into account the independence of al-Fārābī's treatise from Aristotle's SE, its disregard for the study of dialectical deception and counter-deception, and its particular focus on the demonstrative sciences. In light of al-Fārābī's innovation his "On Deceptive Topoi" turns out to be a work of great originality drawing on a broad range of source texts.

Résumé. Cet article vise à présenter et à discuter le sophisme de transfert et de substitution d'al-Fārābī (d. 950-1 CE) dans son peu étudié «Sur les *topoi* trompeurs» (*Kitāb al-amkina al-muġalliṭa*), ainsi que la critique d'Averroès (d. 1198 CE), selon laquelle al-Fārābī aurait violé l'affirmation d'Aristote sur l'exhaustivité de sa liste de sophismes. La première moitié de cet article présente le traité d'al-Fārābī et ses innovations par rapport aux *Sophistici elenchi* d'Aristote. La deuxième partie se concentre sur la critique d'Averroès dans son soi-disant commentaire intermédiaire (*talḫīṣ*) sur les SE d'Aristote et discute la validité de ses arguments contre al-Fārābī. Comme notre analyse finale le montrera, la critique d'Averroès ne tient pas suffisamment compte de l'indépendance du traité d'al-Fārābī par rapport au SE d'Aristote, de sa négligence à l'égard de l'étude de la tromperie et de la contre tromperie dialectique, et de son accent particulier sur les sciences démonstratives. À la lumière de l'innovation d'al-Fārābī, son «Sur les *topoi* trompeurs» s'avère être un ouvrage d'une grande originalité qui s'appuie sur un large éventail de textes sources.

https://doi.org/10.1017/S0957423924000043 Published online by Cambridge University Press

1. INTRODUCTION

In the eighth chapter of his *Sophistical Refutations* (henceforth SE), Aristotle famously claims that he has presented an exhaustive list of fallacies to which no addition can be made. As he states, "we should know on how many grounds fallacies come about, for they could not depend on more; they will all depend on those mentioned."[1] The grounds on which fallacies depend are altogether thirteen, six depending on the usage of language (commonly known by the Latin denomination *in dictione*) and seven which are independent of the usage of language (known as *extra dictionem*). Although it is generally accepted that Aristotle "offers the first theoretical account of fallacies"[2] in the history of Western philosophy, it has always puzzled scholars and interpreters of his thought that he gives no theoretical justification for this claim, neither in his SE, nor in any other extant treatise.[3] It comes thus as no surprise that later thinkers working on fallacies have added extensively to Aristotle's initial list.

In this paper, I aim at reconstructing a particular chapter of this debate. This chapter concerns al-Fārābī's attempt to introduce a class of fallacies that did not previously exist in Aristotle's SE and Averroes' subsequent criticism of this attempt in his so-called middle commentary on the SE (*Talḫīṣ al-Safsaṭa*, henceforth *Talḫīṣ*). As Averroes' himself explains, it was al-Fārābī's attempt to introduce an eighth kind of fallacy *extra dictionem*, operating through various forms of transfer and substitution, that prompted his elaborate defence of the completeness of Aristotle's classification of fallacies.

As was first pointed out by Moritz Steinschneider, Averroes' criti-

[1] Aristotle, *Sophistici elenchi*, ed. W. D. Ross (Oxford, 1958), ch. 8, 170 a 9–11. English translation from Pieter Sjoerd Hasper, "Aristotle's *Sophistical Refutations*. A Translation," *Logical Analysis and History of Philosophy*, 15 (2013), p. 23–24.

[2] Pieter Sjoerd Hasper, "The Ingredients of Aristotle's Theory of Fallacy," *Argumentation*, 27 (2013), p. 31.

[3] For a discussion of Aristotle's completeness claim, see, for instance, P. S. Hasper, "The Ingredients of Aristotle's Theory of Fallacy," p. 32: "… there is in these chapters hardly any indication as to on the basis of what considerations and criteria Aristotle arrived at this list." On the classification of fallacies, more generally, see also Ermelinda Valentina Di Lascio, "The Theoretical Rationale behind Aristotle's Classification of the Linguistic Fallacies in the *Sophistical Refutations*," *Logical Analysis and History of Philosophy*, 15 (2023), p. 55–89 and Carrie Swanson, "Aristotle on Ignorance of the Definition of Refutation," *Apeiron*, 50 (2017), p. 153–196. On late antique and medieval accounts of the completeness claim, see also the classic work Charles Leonard Hamblin, *Fallacies* (London, 1970), p. 89–134.

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cism of al-Fārābī in his *Talḫīṣ* would also apply to his so-called "epitome" or "short commentary" on the SE (henceforth *Taǧrīd*), in which he explicitly adopts al-Fārābī's list of eight (rather than Aristotle's seven) types of fallacies that depend on meaning.[4] Although more than 150 years have passed since the publication of Steinschneider's pioneering bio-bibliography of al-Fārābī's philosophical writings, scholarship has not yet undertaken to properly reconstruct the reasons for Averroes' disagreement with al-Fārābī, nor for apparently changing his mind on this matter. This paper aims to address this issue by first determining the goal and structure of al-Fārābī's "On Deceptive Topoi" (*Kitāb al-amkina al-muġalliṭa*), which is the treatise Averroes attacks in his *Talḫīṣ*. To understand the defense of Aristotle's claim that the list of fallacies he has mentioned in the SE is exhaustive and to evaluate and assess his arguments critically, one ought first to understand al-Fārābī's reasons for expanding the inherited list of fallacies, which will form the first, and largest, part of this study.

The way in which Averroes approaches al-Fārābī's innovation upon the study of fallacies will also contribute to a better understanding of how Averroes' relation to his predecessor evolved between the composition of his *Taǧrīd* and his later *Talḫīṣ*. Was Averroes aware of the differences between Aristotle's and al-Fārābī's account of fallacies when writing his epitome of logic? Did he, at the early stage of his reception of Aristotle's logic, labor under the belief that al-Fārābī's series of treatises on the material gathered in the *Organon* provide a faithful representation of Aristotle's thought? What caused his critical stance towards al-Fārābī present in his *Talḫīṣ*? And, finally, did he reject al-Fārābī's teaching straightforwardly or did he aim at reconciling the teaching of the two philosophers? The present paper will certainly not provide definite answers to all these questions, but will offer important insights that shed new light on them.

2. ON THE TITLE OF AL-FĀRĀBĪ'S TREATISE ON FALLACIES AND ITS POSITION WITHIN HIS COMPENDIA ON LOGIC

Research on Arabic logic has not yet produced a publication exclusively dedicated to al-Fārābī's treatise on fallacies.[5] In order to under-

[4] Moritz Steinschneider, *Al-Fārābī (Alpharabius): Des arabischen Philosophen Leben und Schriften* (Saint Petersburg, 1869), p. 57–58, where the author also lists references to al-Fārābī's *Al-amkina al-muġalliṭa* in Averroes' *Talḫīṣ* and *Taǧrīd*.

[5] Previous studies that draw on material from al-Fārābī's "On Deceptive Topoi" in-

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stand the changes and modifications that provoked Averroes' criticism, some preliminary remarks are therefore in place about its title, subject matter, and position in the series of treatises in which it is embedded.

Already the title of al-Fārābī's treatise causes hermeneutical difficulties, for it is neither a translation nor an adaptation of one of the titles under which Aristotle's SE circulated in the Arabic tradition, which are *Fī l-tabṣīr bi-muġālaṭat al-sūfisṭāʾiyya* (anonymous translation[6]), *Fī tabkīt al-sūfisṭāʾiyyīn* (Yaḥyā b. ʿAdī), and *Al-sūfisṭīqī ay al-tanāẓur bi-l-ḥikma* (Ibn Zurʿa).[7] At the same time, al-Fārābī's account of the mean-

clude Fritz W. Zimmermann, "Al-Fārābī und die philosophische Kritik an Galen von Alexander zu Averroes," in A. Dietrich (ed.), *Akten des VII. Kongresses für Arabistik und Islamwissenschaft. Göttingen, 15. bis 22. August 1974* (Göttingen, 1976), p. 411, n. 53, who points out the Galenic background of one of al-Fārābī's examples for fallacies "from consequence" (*mina l-lāḥiq li-l-šayʾ*), including a German translation of *Al-amkina al-muġalliṭa*, ed. R. al-ʿAǧam in *Al-manṭiq ʿinda l-Fārābī*, vol. 2 (Beirut, 1986), p. 144, lines 4–11 (Zimmermann's translation is based on the MS Bratislava, Univ. Library 231 TE 41, see J. Blaškovičs [et al.] [ed.], *Arabische, türkische und persische Handschriften der Universitätsbibliothek in Bratislava* [Bratislava, 1962], p. 186). A more extensive French translation of fallacies "from consequence," which also covers the passage translated by Zimmermann, is provided in Maroun Aouad, "La doctrine rhétorique d'Ibn Riḍwān et la *Didascalia in Rhetoricam Aristotelis ex Glosa Alpharabii*," *Arabic Sciences and Philosophy*, 7 (1997), p. 232–236. Marwan Rashed has drawn on material gathered in this treatise in Marwan Rashed, "On the Authorship of the Treatise *On The Harmonization of the Opinions of the Two Sages* Attributed to al-Fārābī," *Arabic Sciences and Philosophy*, 19 (2009), p. 74, where he discusses al-Fārābī's account of the eternity of the world under the aspect of a possible interpolation of the text (possibly by Ibrāhīm b. ʿAdī al-Kātib, a relative of the better known Yaḥyā b. ʿAdī). On this point, see also Marwan Rashed, "Al-Fārābī's lost treatise *On Changing Beings* and the possibility of a demonstration of the eternity of the world," *Arabic Sciences and Philosophy*, 18 (2008), p. 33–35. For a critical assessment of Rashed's thesis, see Damien Janos, *Method, Structure, and Development in al-Fārābī's Cosmology* (Leiden, 2012), p. 317–320. A discussion of al-Fārābī's fallacies "from transfer" (*mina l-nuqla*) is found in Guillaume de Vaulx d'Arcy, "La *naqla*, étude du concept de transfert dans l'œuvre d'al-Fārābī," *Arabic Sciences and Philosophy*, 20 (2010), esp. p. 133–134, where he discusses the relation between forms of transfers and metaphors in the context of fallacies that arise from linguistic expressions and p. 142–146, where he mentions the different types of transfer that arise from meaning, with a particular emphasis on those that arise from images in the soul. For an interpretation of logical phenomena connected to fallacies from "qualification" (*al-maqṣūrāt ʿalā šayʾin*), see Nora Kalbarczyk, *Sprachphilosophie in der islamischen Rechtstheorie: Zur avicennischen Klassifikation der Bezeichnung bei Faḫr ad-dīn ar-Rāzī (gest. 1210)* (Leiden, 2018), p. 89–96.

[6] Ibn al-Nadīm and MS Paris, BnF, ar. 2346 attribute this translation to Ibn Nāʿima al-Ḥimṣī (fl. 835 CE). For a critical assessment of this claim, see Gerhard Endress and Pieter Sjoerd Hasper, "The Arabic Tradition of Aristotle's *Sophistici elenchi*," *Studia graeco-arabica*, 10 (2020), p. 66–67, where it is pointed out that typical terminology of Ibn Nāʿima is "totally absent" from this translation.

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ing and etymology of the Greek loanword *sūfisṭāʾī* in his "Introductory letter to logic" (*Al-tawṭiʾa aw al-risāla allatī saddara bihā* [*al-Fārābī kitābahu*] *fī l-manṭiq*), "Book of utterances employed in logic" (*Kitāb al-alfāẓ al-mustaᶜmala fī l-manṭiq*), and "Enumeration of the sciences" (*Iḥṣāʾ al-ᶜulūm*) indicates that the title of this treatise was not of minor interest for him. As he states in these treatises, the expression "sophist" does not mean anything else than "one who feigns wisdom," for which he provides a crooked etymology of the Greek, dividing the word into سوفيا and اسطس, which are, so al-Fārābī, the Greek equivalents of "wisdom" (*ḥikma* = سوفيا) and "feigning" (*tamwīh*, *mumawwiha* = اسطس).[8] In his

[7] All these titles aim to render the Greek περὶ τῶν σοφιστικῶν ἐλέγχων. For the anonymous translation ascribed to Ibn Nāᶜima al-Ḥimsī, see MS Paris, BnF, ar. 2346, fol. 327v, line 31 (= *Al-naṣṣ al-kāmil li-manṭiq Aristū*, ed. F. Jabr, vol. 2 [Beirut, 1999], p. 910, line 2). For the title in Yaḥyā's translation, see fol. 327v, line 5 (= ed. Jabr, p. 905, line 11). For Ibn Zurᶜa's title, see fol. 327v, line 17 (= ed. Jabr, p. 908, line 11). MS Paris, BnF, ar. 2346 adds yet another beginning from a fourth translation of unknown origin, which has the title *mubākatat al-sūfisṭāʾiyyin*, see fol. 328r, line 12 (= ed. Jabr, p. 911, line 9). The manuscript's scribe refers to the work as *sūfisṭīqā*. For the Arabic title of this work in the bio-bibliographical tradition dependent on Ptolemy al-Ġarīb, see the analysis in M. Rashed, *Ptolémée "al-Gharīb," Épître à Gallus sur la vie, le testament et les écrits d'Aristote* (Paris, 2021), p. cclxxxix-ccxciii. As Rashed argues, the original title of this text circulating in Arabic may have been *Fī l-sūfisṭāʾīn* ("On the Sophists"), which is the title preserved in al-Qifṭī. According to Rashed, this was corrected to *Fī l-sūfisṭāʾiyya* ("On Sophistics") in Ibn Abī Uṣaybiᶜa. Rashed argues that this title must have been derived from the Greek περὶ τῶν ἐριστικῶν, which was understood as referring to persons (οἱ ἐριστικοί) instead of arguments (τὰ ἐριστικά), as originally intended. This change from "eristics" to "sophists," so Rashed, may have occurred in a Syriac intermediary.

[8] See *Al-tawṭiʾa aw al-risāla allatī saddara bihā* [*al-Fārābī kitābahu fī*] *al-manṭiq*, ed. R. al-ᶜAjam, in *Al-manṭiq ᶜinda l-Fārābī*, vol. 1 (Beirut, 1985), p. 57, lines 8–9; *Kitāb al-alfāẓ al-mustaᶜmala fī l-manṭiq*, ed. M. Mahdī (Beirut, 1968), p. 105, lines 10–12; *Kitāb iḥṣāʾ al-ᶜulūm*, ed. ᶜA. Bū Milḥam (Beirut, 1996), p. 40, lines 1–2. This etymology may have been ultimately derived from the Arabic translation of *Metaphysics*, book IV, ch. 2, 1004 b 18–19, where Aristotle's statement that ἡ γὰρ σοφιστικὴ φαινομένη μόνον σοφία ἐστί is rendered as *ᶜilm al-sufisṭānī huwa ḥikma bi-l-tamwīh faqaṭ*. See Averroes, *Tafsīr mā baᶜd at-tabīᶜāt*, ed. M. Bouyges, vol. 1 (Beirut, 1938), p. 325, line 8. This could have been understood as an explanation of the word itself rather than a description or definition. Steinschneider's speculation that al-Fārābī's etymology might be derived from "ἀστεῖος, ἀστυκός, oder gar *astutus*" (55) seems rather unlikely. Al-Fārābī's etymology also found its way into Ibn al-Nadīm's *Fihrist* as an explanation of *sūfisṭīqā*. According to the bibliographer, "its meaning is feigning wisdom (*maᶜnāhu l-ḥikma al-mumawwiha*)," see Ibn al-Nadīm, *Kitāb al-fihrist*, ed. G. Flügel (Leipzig, 1871), p. 249, line 26. After Ibn al-Nadīm, it appears in numerous works. Sophistry's definition as φαινομένη σοφία is also found at SE, ch. 11, 171 b 28–29 and 171 b 34, but none of the three extant Arabic translations has the exact wording used by al-Fārābī. In "Paul the Persian on the classification

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"Book of Utterances," al-Fārābī elaborates on this as follows:

> Many do not know the meaning of this word and think that *sūfisṭāʾī* is the agnomen (*laqab*) of a man who found a certain school and that it is attributed to one who belongs to this school. Others believe that this by-name (*nisba*) is only attached to one who rejects the possibility of knowledge. But none of these two assumptions is true; rather the meaning of *sūfisṭāʾī* is what we have said, and the reason for their mistake is their ignorance of what this expression means in Greek.[9]

Apparently al-Fārābī was keen to pour cold water on the (after all,

of the parts of Aristotle's philosophy: a milestone between Alexandria and Baġdād," *Der Islam*, 60 (1983), p. 250–252, Dimitri Gutas argued that al-Fārābī inherited this etymology from one of Paul the Persian's (6th century) lost works, originally composed in Pehlevi, which – so Gutas – forms the basis for al-Fārābī's "Enumeration of the Sciences" and Miskawayh's "The Order of Happiness" (*Tartīb al-saᶜāda*). In the latter work, we find the following written: "This wisdom is, according to the Greek language, derived from سوف, i.e., wisdom, and اسطيس, i.e., 'taking on the guise' (*al-talbīs*) and 'feigning' (*al-mumawwiha*). It's meaning is 'feigning wisdom' (*al-ḥikma al-mumawwiha*) … It is not as the Muslim theologians (reading with Gutas, p. 251, *mutakallimū l-islām*) believe, that there was in antiquity a man called *sūfisṭā*, who rejected the true nature of existing things." (*Kitāb al-saᶜāda li-Ibn Miskawayh fī falsafat al-aḫlāq*, ed. ᶜAlī al-Ṭūbğī (Cairo: 1335 AH / 1917 CE), p. 65, lines 2–8, trans. partly based on Gutas, "Paul the Persian," p. 251). The text of the *Tartīb al-saᶜāda* that is edited by Abū l-Qāsim Imāmī (Tehran, 1379 AH), p. 122, lines 4–7, does not preserve the quoted passage in its entirety. For a criticism of Gutas' view, see Deborah L. Black, *Aristotle's* Rhetoric *and* Poetics *in Medieval Arabic Philosophy* (Leiden, 1990), p. 44–45. Following Black's line of reasoning, I tend to believe that Miskawayh's account is an enlarged version of al-Fārābī's. This does not mean that al-Fārābī did not inherit this etymology from a previous text that is now lost. However, given that the text mentions "Muslim theologians" the entire passage cannot be based on Paul the Persian, who lived in the 6th century. On Paul the Persian, see also M. Perkams, "The Syro-Persian Reinvention of Aristotelianism: Paul the Persian's Treatise on the Scope of Aristotle's Works between Sergius of Rēšᶜaynā, Alexandria, and Baghdad," *Studia graeco-arabica*, 9 (2019), 129–145, who argues for the "authorship of Paul the Persian for most of the treatise on the works of Aristotle transmitted under his name" (p. 144). On the view among *mutakallimūn* that sophists were a skeptical school, see below, n. 10.

[9] Al-Fārābī, *Kitāb al-alfāẓ*, p. 105, lines 14–18. Based on the remark "what we have said (*mā qulnāhu*)" and the missing reference to the etymology of سوفيا and اسطس, I take the *Risāla* to precede the *Kitāb al-alfāẓ*. On the meaning of "sophistical," see also al-Fārābī, *Al-amkina al-muġalliṭa*, p. 134, lines 15–16, where one of al-Fārābī's examples for metaphors is that Plato "calls that which is inexistent 'the sophist' (*yusammā ġayr al-mawǧūd al-sūfisṭāʾī*)." This seems to be a reference to Plato's dialogue *The Sophist*, where the question of non-existence is discussed in close relation to the definition of "sophist." Al-Fārābī could have been inspired by Ammonius, who, in *In Aristotelis Analyticorum priorum librum I commentarium*, ed. M. Wallies (Berlin, 1899), p. 3, lines 23–25, states that ὁ δὲ σοφιστικὸς περὶ τὰ μὴ ὄντα, ὡς καὶ ὁ θεῖος Πλάτων λέγει ἐν τῷ Σοφιστῇ ὅτι περὶ τὸ μὴ ὂν ἔχει.

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not totally wrong) idea that "sophists" constitute a philosophical school and hold certain doctrines like skepticism towards the possibility of acquiring knowledge.[10] For him, the word *sūfisṭāʾī* implies primarily deception of others (be it voluntary or involuntary), as it designates one who feigns having wisdom. This is important, for the term "sophist" or "sophistical" does not appear in the title of al-Fārābī's treatise, nor is it a relevant conceptual tool in its main text. I shall come back to this fact when assessing Averroes' critical remarks towards al-Fārābī's approach to fallacies.

For starters, the extant manuscripts preserve a longer and a shorter version of the treatise's beginning. The incipit of the former is "the [deceptive] *topoi* in which the investigator errs in everything whose knowledge he seeks."[11] In contrast, that of the shorter goes "the *topoi* in which the investigator errs regarding each problem."[12] Both versions of the title contain the noun *amkina*, which is one of the two attested plurals of *makān*, the locative noun of the root *k-w-n* ("to be"), and may be rendered as "the place where something is." This noun is qualified in the incipit of one of the known manuscripts by the adjective *muġalliṭa*, whose basic meaning is that of "causing an error" or "leading to an error," rendered above as "deceptive."[13] While the addition of *muġalliṭa* is only preserved

[10] The view that sophists are a skeptical school of Greek philosophy is a widespread idea among Islamic authors. An early example of this view is al-Muṭahhar b. Ṭāhir al-Maqdisī's *Kitāb al-badʾ wa-l-taʾrīḫ* (wrongly attributed to Abū Zayd Aḥmad b. Sahl al-Balḫī), ed. C. Huart (Paris, 1899), p. 48, lines 4ff., and ʿAbd al-Qāhir al-Baġdādī's *ʿIyār al-naẓar fī ʿilm al-ǧadal*, ed. A. M. ʿArrūbī (Kuwait, 2020), p. 157, lines 4–5. See also al-Šahrastānī, *Kitāb al-milal wa-nihal*, ed. M. S. Kīlānī, vol. 2 (Cairo, 1961), p. 4, line 16.

[11] *Al-amkina [al-muġalliṭa] allatī fīhā yaġlaṭu l-nāẓir fī kull mā yaltamisu taʿarrufahu*. In this group, containing three manuscripts, the addition *al-muġalliṭa*, which I have placed in brackets, is found only in MS Bratislava, Univ. Library 231 T 41. Based on the manuscripts that I have checked, this is also the title found in the treatise's Hebrew translation.

[12] *Al-amkina allatī fīhā yaġlaṭu l-nāẓir fī kull masʾala*. In this group, the addition *al-muġalliṭa* is not found in the manuscripts known to me.

[13] I chose the vocalisation *muġalliṭa* (active participle of *ġallaṭa*, *yuġalliṭu*) over *muġliṭa* (active participle of *aġlaṭa*, *yuġliṭu*), which has been embraced by Fritz Zimmermann and has become the orthodoxy since then. Although both readings are plausible and defendable, it seems that al-Fārābī frequently uses the verbal noun *taġlīṭ*, while I am not aware of cases, in which he uses the verbal noun *iġlāṭ*. A passage that particularly suggests the reading of *muġalliṭa* is "Book of Letters" (*Kitāb al-ḥurūf*), ed. M. Mahdī (Beirut, 1969), p. 71, line 13. *Muġalliṭa* is also the vocalization chosen by Fouad ben Ahmed in his edition of Ibn Ṭumlūs' treatise of the same title, see Ibn Ṭumlūs, *Compendium on Logic (Al-muḫtaṣar fī al-manṭiq)*, ed. Fouad ben Ahmed (Leiden, 2020), p. 203 (Arabic pagination).

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in one of the manuscripts as part of the incipit, it is found in both versions as part of the description of the second and third chapters, which reads "chapter on the enumeration of the deceptive *topoi* on account of expressions"[14] and "chapter on the enumeration of the deceptive *topoi* on account of meanings."[15]

What is most difficult here is how to understand and render the noun *amkina*. Although this is not the place for an exhaustive analysis of this term, I do want to suggest that it should be understood as an equivalent of *mawāḍiᶜ*, which is the standard term to translate τόποι in Aristotle's *Organon*. One may arrive at this conclusion from the way in which al-Fārābī introduces the *Topics* in his "Book of Utterances." As he explains,

> the book concerning this part [i.e., dialectic] is called *Ṭūbīqā*, whose meaning is *al-mawāḍiᶜ* [i.e., *topoi*]. [By this,] he means the *amkina* through which, regarding each problem, one finds the path towards extracting arguments (*intizāᶜ al-ḥuǧağ*) regarding their establishment or demolition.[16]

As this passage indicates, al-Fārābī uses the expression *amkina* to explain what Aristotle means by the title Τοπικά (rendered into Arabic as *mawāḍiᶜ*). It, therefore, appears plausible that he uses both terms equivocally in the passage quoted above. This finding is further supported by the fact that the description "that through which, regarding each problem, one finds the path towards extracting arguments, etc." also matches the way *topoi* are used in Aristotle's *Topics*. Moreover, it also suits how this expression is used in the opening lines of "On Deceptive Topoi", where al-Fārābī declares that, in the treatise that preceded (on this more below), he intended to explain "which *amkina* we [have to] begin with for arriving at the problems [which are at stake] through syllogisms."[17] A couple of sentences later, he then states that he made clear "from how many *mawḍiᶜ* one is able to establish or demolish something,"[18] by which he seems to refer to the same procedure. Both passages, therefore, suggest that al-Fārābī uses the term *amkina* in a broader yet equivalent way to the more commonly used *mawāḍiᶜ*.[19] Needless to say, *amkina* is also a more literal translation of the Greek

[14] *Al-faṣl fī iḥṣāʾ al-amkina al-muġalliṭa mina l-alfāẓ*.

[15] *Al-faṣl fī iḥṣāʾ al-amkina al-muġalliṭa mina l-maᶜānī*.

[16] Al-Fārābī, *Kitāb al-alfāẓ*, p. 105, lines 6–8.

[17] Al-Fārābī, *Al-amkina al-muġalliṭa*, p. 131, lines 11–12.

[18] Al-Fārābī, *Al-amkina al-muġalliṭa*, p. 132, line 1.

[19] Also the Hebrew translator(s) understood *amkina* as equivalent to *mawāḍiᶜ*. In the passage quoted above from *Al-amkina al-muġalliṭa*, they render both *mawāḍīᶜ* and *amkina* as *meqomot* ("places").

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τόποι, which, in contrast to *mawāḍiᶜ*, conveys its primarily spatial connotation.

Regarding the treatise's position and function within al-Fārābī's logic and its relation to his other treatises, it has already been noted by Joep Lameer that the incipits of the series of compendia on logic that came down from al-Fārābī's pen indicate that "some of them certainly belong together."[20] To provide further evidence for this claim, I suggest looking at the preface of "On Deceptive Topoi", which has already been quoted in part above. It runs as follows:

> [i] We have spoken about the syllogism, what it is and how it comes about, how many types there are, what makes each of these types productive of a conclusion and how this is so. [ii] We made clear how one must find a syllogism for each problem (*maṭlūb*) we seek to resolve, how we discover it, and which procedures to follow in obtaining all we wish to know. [In other words,] from which places (*amkina*) we [should] start from on our quest towards resolving a problem with syllogisms, how one should do this, what kind of means does one have at one's disposal, and how many are these, and how many *topoi* (*mawḍiᶜ*) can be used in establishing or demolishing something. [iii] [All this having been discussed,] let us speak now about the *topoi* (*amkina*) through which the reasoning individual (*al-nāẓir*) falls into error, that is, about those things that have a habit of leading the mind astray from what is correct whenever it seeks to understand something of it.[21]

If one allocates a treatise for each point of investigation mentioned here, one arrives at the order of [i] "Book of Syllogism" (*Kitāb al-qiyās*), [ii] "Book of Analysis" (*Kitāb al-taḥlīl*), and, finally, [iii] the present "On Deceptive Topoi" (*Al-amkina al-muġalliṭa*). This order is also confirmed by the opening lines of al-Fārābī's "Book of Demonstration" (*Kitāb al-burhān*), where he states:

> [ii] Since we provided a general overview of the things that help us resolve any problem we wish, [iii] as well as those things that deceive the mind of one who reflects (*ḏihn al-mutaᵓammil*) when it wants to find out about something and leads it astray, let us now sum up the various elements by which knowledge in its multiple forms (*aṣnāf al-maᶜārif*) comes about.[22]

[20] Joep Lameer, "The *Organon* of Aristotle in the Medieval Oriental and Occidental Traditions," *Journal of the American Oriental Society*, 116 (1996), p. 97 (review article of Ch. Burnett [ed.], *Glosses and Commentaries on Aristotelian Logical Texts* [London, 1993], in which D. Gutas, "Aspects of Literary Form and Genre in Arabic Logical Works," p. 48 calls this series "al-Fārābī's complete abridgement of the entire *Organon*" and speculates that "[a]lthough the work has been transmitted in twelve parts, it may originally have had fewer than that, if indeed it was ever envisaged as a whole").

[21] Al-Fārābī, *Al-amkina al-muġalliṭa*, p. 131, line 9–p. 132, line 3.

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These two introductory remarks allow us to suppose that al-Fārābī treated the "Book of Syllogism," "Book of Analysis," "On Deceptive Topoi," and "Book of Demonstration" as a sequence of treatises. For the purpose of the present paper, it shall be emphasized that al-Fārābī places his treatise on fallacies *before* the one that deals with scientific demonstration and, more importantly, that he distinguishes it from treatises dealing with the five syllogistic arts of demonstration, dialectic, rhetoric, sophistry, and poetics. I take this effectively to mean that al-Fārābī did not regard his treatise on fallacies as being about any specific syllogistic art, that is, as being co-extensive with the *art* of sophistry, which he describes as follows in his "Book of Debate" (*Kitāb al-ǧadal*):

> Sophistry (*al-sūfisṭāʾiyya*[23]) is an art by which man acquires the ability (*al-qudra*) to construct a true syllogism from premises that are apparently generally accepted, or an apparent syllogism from truly generally accepted [premises] or from [premises] that are apparently generally accepted, an argument that is apparently a syllogism by which one seeks (*yaltamisu bihi*) a refutation of everything the respondent seeks to preserve and to preserve everything that the questioner seeks to refute.[24]

Comparing this description to the opening lines of his "On Deceptive Topoi", it should be evident now that al-Fārābī describes two different projects. In the latter, he speaks of the ways in which "the reasoning individual (*al-nāẓir*)"[25] may be deceived. Likewise, in the "Book of Demonstration," he refers to the "mind of one who reflects (*ḏihn al-mutaʾammil*),"[26] while in the above-quoted depiction of the art of sophistry, he embeds sophistical arguments in the dialectical context of refuting one's interlocutor and of one's "ability to construct"[27] sophistical arguments. This does not mean that al-Fārābī entirely excludes dialectical settings and sophistical deception and counter-deception

[22] Al-Fārābī, *Kitāb al-burhān*, ed. M. Faḫrī in *Al-manṭiq ʿinda l-Fārābī*, vol. 4 (Beirut, 1987), p. 19, lines 4–6.

[23] Instead of *al-sūfisṭāʾiyya*, as printed in the edition of al-ʿAǧam, Mallet prints *al-sūfisṭāniyya*, which is found in many manuscripts but is most likely a later misreading of the former.

[24] Al-Fārābī, *Kitāb al-ǧadal*, ed. D. Mallet, in *La dialectique dans la philosophie d'Abū Naṣr al-Fārābī* (unpublished Ph.D. thesis), vol. 2 (Bordeaux, 1992), p. 45, lines 10–14; idem, *Kitāb al-ǧadal*, ed. R. al-ʿAǧam, in *Al-manṭiq ʿinda l-Fārābī*, vol. 3 (Beirut, 1986), p. 27, lines 5–8 (trans. DiPasquale, modified).

[25] Al-Fārābī, *Al-amkina al-muġalliṭa*, p. 132, line 2 (quoted above).

[26] Al-Fārābī, *Kitāb al-burhān*, p. 19, line 5 (quoted above).

[27] Al-Fārābī, *Kitāb al-ǧadal*, ed. Mallet, p. 45, line 10; ed. al-ʿAǧam, p. 27, line 5 (quoted above).

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from his treatise. He even explicitly acknowledges the dialectical origins of the study of fallacies and mentions the case in which someone is deceived by someone else "who converses with him."[28] However, as al-Fārābī adds, the treatise's goal is that of "guarding against these [things] when investigating (*ʿinda l-naẓar*), either with oneself or with one another."[29] Al-Fārābī's twofold treatment of Aristotle's SE is also corroborated by his other writings that mention this treatise.[30]

In summary, both the title and the position of "On Deceptive Topoi" in the series of al-Fārābī's logical works carry the signature of his specific approach to the study of fallacies. Therefore, the treatise cannot and should not be understood as a commentary on Aristotle's SE, no matter how freely one may interpret what counts as a commentary. These preliminaries to al-Fārābī's treatise will be relevant later on, both in terms of understanding what al-Fārābī is doing when he extends Aristotle's list of fallacies and in terms of understanding Averroes' criticism of his approach and his attempt to compare and contrast al-Fārābī's project to that found in Aristotle's SE.

3. AL-FĀRĀBĪ'S EIGHTH FALLACY *EXTRA DICTIONEM*

The preliminary remarks on the treatise's title and position also help us better grasp al-Fārābī's overall project when dealing with fallacies

[28] Al-Fārābī, *Al-amkina al-muġalliṭa*, p. 132, line 5.

[29] Al-Fārābī, *Al-amkina al-muġalliṭa*, p. 132, lines 9–10. The treatise's end is also relevant here, where al-Fārābī refers both to discourse and reflection. As he says at *Al-amkina al-muġalliṭa*, 164, lines 11–13: "When we know the syllogism and master that which is different between things, no error will occur to us when we reflect and no fallacy when we discourse." The study of fallacies being useful for one's own investigation is also acknowledged by Aristotle – for instance, in SE, ch. 16, 175 a 10–12.

[30] See, for instance, the treatment of Aristotle's SE in his "Philosophy of Aristotle" (*Falsafat Arisṭūṭālīs*), where al-Fārābī distinguishes between the "art that leads to error (*al-ṣināʿa al-muġāliṭa*)," by which an interlocutor may exercise an investigator by presenting sophistical difficulties. This art is properly called "sophistry" (*al-sūfisṭāʾiyya*), so al-Fārābī. Importantly, here, deception is used with a certain intention, which is "to prevent the investigator from using the arguments of the 'gymnastic' art [i.e., dialectic.]" Al-Fārābī, *Falsafat Arisṭūṭālīs*, ed. M. Mahdī (Beirut, 1961), p. 80, lines 15–17 (trans. Mahdī, slightly modified). In contrast, the art of repelling the sophists and refuting them in the eyes of the onlookers and people of power is an art that al-Fārābī situates between dialectic and sophistry. See also the descriptions of the art of sophistry that are found in his *Al-tawṭiʾa aw al-risāla allatī saddara bihā* [*al-Fārābī kitābahu fī*] *al-manṭiq*, p. 57, lines 4–9, *Iḥṣāʾ al-ʿulūm*, p. 39, line 8–p. 41, line 5, and *Kitāb al-alfāẓ*, p. 105, line 8–p. 106, line 3.

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and help us evaluate his reasons for introducing a new type of fallacy.

Al-Fārābī follows Aristotle's model in dividing fallacies into those that depend "on expression" (*mina l-alfāẓ*) and those that depend "on meaning" (*mina l-maʿānī*).[31] In what follows, I shall only focus on the fallacies from meaning, to which al-Fārābī adds the fallacy that depends on transfer and substitution. Although all types of fallacies that are mentioned in SE are also found in al-Fārābī's treatise, he treats them in an order that is different from that in SE, as the tab. 1 shows.[32]

Aside from the order in which the fallacies are listed, which differs from Aristotle's, the logical analysis and choice of examples also show great independence from the Aristotelian source text – such independence, in fact, that when comparing the two texts, one frequently wonders whether the two authors are talking about the same type of fallacy. Moreover, some of al-Fārābī's examples have counterparts in Plato's dialogues, while some are specific to the Islamic context, and yet others are taken from other works of Aristotle's. It is difficult to discern which sources al-Fārābī may have consulted, as the available commentaries in Arabic have not survived.[33]

As mentioned above, I will restrict the analysis to the final class of fallacy that is listed in "On Deceptive Topoi", which provoked Averroes' criticism in his *Talḫīṣ*. Al-Fārābī introduces it as follows:

> Among them is the transfer (*al-nuqla*) to that which may replace something else. Either an expression, a likeness, a universal, a particular, something inseparable from it, be it prior or posterior, a conjunction, opposites, its image in the soul, or its perceptible example takes its place.[34]

In the continuation of this introductory note, al-Fārābī provides a set of examples for each case he mentions, which I shall introduce briefly.

[31] Aristotle distinguished between fallacies παρὰ τὴν λέξιν and ἔξω τῆς λέξεως. Al-Fārābī's terminology may be influenced by the Greek (and perhaps Syriac) commentary tradition which frequently refers to Aristotle's distinction as παρὰ τὴν λέξιν and παρὰ τὴν διάνοιαν. On this, see Sten Ebbesen, *Commentators and Commentaries on Aristotle's* Sophistici elenchi*: A Study of Post-Aristotelian Ancient and Medieval Writings on Fallacies*, vol. 1 (Leiden, 1981), p. 127–131.

[32] The order in SE, in the first column of the table, is also the order observed in Averroes' *Talḫīṣ*.

[33] See the account in Francis E. Peters, *Aristoteles Arabus: The oriental translations and commentaries on the Aristotelian Corpus* (Leiden, 1968), p. 23–26. Commentaries are mentioned by Quwayrī (fl. ca. 900 CE), al-Kindī (d. ca. 873 CE), and Yaḥyā b. ʿAdī (d. 973 CE). Ibn Suwār's colophon in MS Paris, BnF, ar. 2346 (= ed. Jabr, p. 1198, lines 1–2) also mentions a commentary by Alexander. It is characterized as rare and incomplete, however.

[34] Al-Fārābī, *Al-amkina al-muġalliṭa*, p. 160, lines 10–12.

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Tab. 1

Aristotle's list of non-linguistic fallacies (*extra dictionem*)	al-Fārābī's list of fallacies "from meaning" (*mina l-maʿnā*)
1. From accident [166 b 28–36]	1. From accident (*bi-l-ʿaraḍ*) [p. 139, line 1–p. 142, line 13]
2. *Secundum quid* [166 b 37–167 a 20]	2. From consequence (*al-lāḥiq li-l-šayʾ*) [p. 142, line 14–p. 144, line 18]
3. *Ignoratio elenchi* [167 a 21–35]	3. *Secundum quid* (*al-maqṣūrāt ʿalā šayʾin*) [p. 144, line 19–p. 147, line 17]
4. *Petitio principii* [167 a 36–39]	4. Many questions (*an tuʾḫaḍa l-masʾala al-manẓūr fīhā wa-hiya fī l-ḥaqīqa muqaddimāt kaṯīra ʿalā annahā masʾala wāḥida*) [p. 147, line 18–p. 149, line 2]
5. From consequence [167 b 1–20]	5. *Ignoratio elenchi* (*an lā tuʾḫaḍa l-muqaddimāt mutaqābilatan ʿalā l-ḥaqīqa*) [p. 149, lines 3–21]
6. *Causa ut non causa* [167 b 21–38]	6. *Petitio principii* (*al-muṣādara ʿalā l-maṭlūb al-awwal*) [p. 150, line 1–p. 156, line 5]
7. Many questions [167 b 38–168 a 16]	7. *Causa ut non causa* (*an yuʾḫaḍa mā laysa bi-sabab li-luzūm al-natīğa ʿalā annahu sabab lahu*) [p. 156, line 6–p. 160, line 9]
	8. Transfer and substitution (*al-nuqla ilā mā yumkinu an yubaddala makāna l-šayʾ*) [p. 160, line 10–p. 163, line 5]

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As for the transfer based on an expression, he claims that "one may believe in the multiplicity of deities (*kaṯrat al-ilāha*) due to the multiplicity of names for God almighty (*li-kaṯrat asmāʾ Allāh taʿālā*),"[35] or that "someone may think that the human is audible, since the expression that signifies it [i.e., 'human'] is audible."[36] In both cases, this fallacy occurs when one takes qualities of linguistic expressions and transfers it to that which they signify: because many names signify God, there must also be many gods; and because the word "human" is audible, also the flesh-and-bone human being must be audible.

In the case of fallacies that transfer properties based on likeness, al-Fārābī refers to "Anaxagoras' refutation of someone who says that void exists on account of inflated wineskins."[37] In this case, it is possible to get some insight into the source of al-Fārābī's example, which he (in all likelihood) derives from Aristotle's *Physics*, where the Stagirite explains that Anaxagoras and others, when they "show that air is something by blowing skins up tight, to show how strong air is, and shutting it up in clepsydrae,"[38] do not refute the existence of void, but only what people "erroneously say" about it.[39] What matters to al-Fārābī's fallacy from transfer is that, despite a certain resemblance, one must not use any reference to air for establishing or refuting the existence of void.[40]

The following four cases of mistaken transfer are also easily understood. In the case of transfer from universal to particular (and *vice versa*), al-Fārābī's example is that one may err by universally claiming

[35] Al-Fārābī, *Al-amkina al-muġalliṭa*, p. 160, line 14.

[36] Al-Fārābī, *Al-amkina al-muġalliṭa*, p. 160, lines 14–15.

[37] Al-Fārābī, *Al-amkina al-muġalliṭa*, p. 160, line 16.

[38] Aristotle, *Physica*, ed. W. Ross (Oxford, 1966), book IV, ch. 6, 213 a 25–27. Also, at 213 a 24, Aristotle says that these people "go wrong (ἁμαρτάνοντες)." For the Arabic translation of the passage, see Arisṭūṭālīs, *Al-ṭabīʿa*, ed. ʿA. Badawī, vol. 1 (Cairo, 1964), p. 339, lines 5–10.

[39] As Jonathan Barnes, *The Presocratic Philosophers* (London, 2002), p. 313 understands this passage, Aristotle's reference to "inflating wineskins" must be understood as an argument against those people who claim that void exists on the ground that air is "empty." By inflating wineskins, one can easily show that, contrary to that assumption, air is corporeal. Therefore, Barnes concludes that "Anaxagoras' observations are pertinent: they do not show that there is no void, nor were they meant to; but they do refute a simple-minded argument for the existence of empty space."

[40] See also the brief account in de Vaulx d'Arcy, "La *naqla*," p. 145. One should also bear in mind that al-Fārābī wrote a treatise on void, in which he aimed at refuting some of the experiments with vessels and air from which some scholars (such as certain Muʿtazilite theologians) derived the existence of void. See al-Fārābī, *Risāla fī l-ḫalāʾ*, ed. N. Lugal and A. Sayılı (Ankara, 1950-1951), p. 2–16 (edition of the Arabic).

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that something which holds for animals also holds for humans and *vice versa*.[41] This type of fallacy is also mentioned in al-Fārābī's treatise "Against John the Grammarian" (*Al-radd ʿalā Yaḥyā l-naḥwī*), in which he criticizes Philoponus' attempt to refute Aristotle's argument for the eternity of the world. As al-Fārābī states, Philoponus criticizes Aristotle for deriving his argument from the fact that *some part* of the world is eternal, which is a fallacy, "because the transfer from the particular to the universal … is one of the *topoi* of sophistry."[42] In the case of transfers to something inseparable, the mistake may happen with what is prior, like in the following case:

> If human exists, also animal exists. Thus, animal may replace human. Animal is a genus. Therefore, also human is a genus.[43]

This is wrong because one cannot transfer whatever applies to the logically prior (here "animal") to what is logically posterior (here "human"). This problem is also discussed in Ammonius' commentary on the *Isagoge*, where he explains that "genus" is not predicated of animal qua animal but only "relationally" and thus does not apply to what falls under "animal."[44] As for fallacies from what is inseparable and posterior, al-Fārābī provides the example that "the existence of the sun implies daylight."[45] As for opposites, one commits the mistake of thinking that "white and black do not allow for an intermediate, because odd and even do not allow for an intermediate,"[46] which is based on a distinction that prominently features in Aristotle's *Categories* and *De interpreta-*

[41] Al-Fārābī, *Al-amkina al-muġalliṭa*, p. 160, lines 17–18.

[42] Al-Fārābī, *Al-radd ʿalā Yaḥyā l-naḥwī*, in M. Mahdī, "The Arabic Text of Alfarabi's Against John the Grammarian," in Sami A. Hanna (ed.), *Medieval and Middle Eastern Studies in Honor of Aziz Suryal Atiya* (Leiden, 1972), p. 276, lines 10–11 (my translation; see also the translation in M. Mahdī, "Alfarabi against John Philoponus," *Journal of Near Eastern Studies*, 26 (1967), p. 233–260).

[43] Al-Fārābī, *Al-amkina al-muġalliṭa*, p. 160, line 18–p. 161, line 1.

[44] Ammonius, *In Porphyrii Isagogen sive quinque voces*, ed. A. Busse (Berlin, 1891), p. 117, line 24–p. 118, line 3. See also the solution of this problem in one of Porphyry's extant fragments on the *Sophistical Refutations* in A. Smith, *Porphyrii philosophi fragmenta* [Leipzig, 1993], p. 119–120 (117F). The problem under discussion is also raised in commentaries on the *Categories*. See also the discussion in J. Dillon, *Dexippus: On Aristotle Categories* (London, 1990), p. 55, n. 88.

[45] Al-Fārābī, *Al-amkina al-muġalliṭa*, p. 161, line 1. Due to its shortness, it is not entirely clear how to understand the fallacy in this example. Al-Fārābī's reference might have to do with the problem that (day)light is the actuality of the sun and propagates from it without the passing of time, which is a topic discussed in the commentary tradition. Thus, although the sun is the cause of daylight, it is not prior to it in time.

[46] Al-Fārābī, *Al-amkina al-muġalliṭa*, p. 161, lines 1–2.

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tione.[47] The mistake here lies in confusing what is contradictory with what is contrary. Finally, regarding conjunction, al-Fārābī refers to one who states that "time destroyed him." As he explains, "what destroyed him is not time; time was rather in conjunction with it (*al-zamān huwa l-muqārin lahu*)."[48] In this case one is deceived by confusing something with what occurs together with it.

These forms of illegitimate transfer are quickly dealt with and do not occupy much space in al-Fārābī's analysis. By contrast, he pays special attention to the final two cases of fallacious transfer that he mentioned initially, which are "the images of things in the soul" (*ḫayālāt al-ašyāʾ fī l-nafs*) and their "perceptible examples" (*miṯālātuhu l-maḥsūsa*).[49] In both cases, errors arise because, for al-Fārābī, the process of conceptualization (*taṣawwur*) may require some sort of representation, either mentally (as in the process of imagination) or extramentally (as in the process of visualization). Regarding the first case, al-Fārābī states that "many things can often be conceptualized (*yataṣawwaru*) only through an image (*ṣūra*) of something else" since, for us, it is "impossible or difficult to conceptualize [something] in its proper form (*bi-ṣūratihi l-ḫāṣṣa*)."[50]

[47] See, for instance, Aristoteles, *Categoriae*, ed. L. Minio-Paluello (Oxford, 1966), book I, ch. 10, 11 b 38–12 a 25 and Aristotle, *De interpretatione*, ed. L. Minio-Paluello (Oxford, 1966), ch. 7, 17 b 26–37.

[48] Al-Fārābī, *Al-amkina al-muġalliṭa*, 161, lines 3–4. I am reading *al-zamān ahlakahu fa-l-muhlīk laysa huwa l-zamān* instead of *ahlakahu fa-l-muhlik laysa huwa l-zamān* as it is printed in al-ʿAǧam's edition. This reading is attested in a series of manuscripts (see n. 3 in al-ʿAǧam's edition) and is also the underlying reading of Averroes' *Taǧrīd* (MS Munich, ar. 964, fol 71v, line 24–fol. 72r, line 1; MS Paris, héb. 1008, fol. 78v, lines 8–9). Al-Fārābī's example might be based on the Qurʾanic mention of "atheism" (*dahriyya*) at Qurʾān 45:24: "They say, 'There is only our life in this world: we die, we live, nothing but time destroys us (*wa-mā yuhlikunā illā l-dahr*).' They have no knowledge of this; they only follow guesswork." (trans. Abdel Haleem). The traditional interpretation of this passage, which is corroborated by a series of *ḥadīṯ*, is that God, not time, is the (ultimate) cause of both generation and destruction. Also in other instances, al-Fārābī refers to the Qurʾān in this work.

[49] See also the interpretation of this passage in de Vaulx d'Arcy, "La *naqla*," p. 146.

[50] Al-Fārābī, *Al-amkina al-muġalliṭa*, p. 161, lines 4–6. On this point, see Aristotle's well-known remark in *De anima*, ed. W. D. Ross (Oxford, 1956), book III, ch. 3, 431 a 14–17: "To the thinking soul images serve as if they were contents of perception (and when it asserts or denies them to be good or bad it avoids or pursues them). That is why the soul never thinks without an image." (trans. Smith). Al-Fārābī does not explicitly say that conceptualization (*taṣawwur*) necessarily requires visual representation, but such a view may be derived from his "Selected Aphorisms," *Al-fuṣūl al-muntazaʿa*, ed. F. Naǧǧār (Beirut, 1971), p. 87, lines 2–4. On substituting something by its images, see the third method of teaching in his *Kitāb al-alfāẓ*, p. 90,

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In this context, al-Fārābī mentions a series of (what he considers to be) wrong philosophical theories and reduces them to this type of fallacy. The difficulty of imagining what was "before the world" or "what lies outside the world" has, for instance, led Democritus and his teacher Leucippus to think that time is unlimited and eternal and that outside the world lies infinite void, which, al-Fārābī says, also led them to believe that "outside this world there are infinite worlds."[51] For the same reason, Empedocles and others thought that "visual rays are not bodies," while others thought that "darkness and shadows are magnitudes and bodies."[52] In all this, al-Fārābī concludes, "the principle of error (*mabdaʾ li-l-ġalaṭ*)" is that, due to the limitations of one's conceptual capacity, one imagines things in a way that differs from how they are "in reality (*fī l-ḥaqīqa*)."[53] This type of fallacy thus touches upon a topic of great importance to al-Fārābī: the impact of imagination on concept formation. While, in several of his treatises, al-Fārābī stresses the importance of images for acquiring and conveying knowledge, here he illustrates the downside of how images may affect one's conceptualization of intelligibles.

Al-Fārābī's final category for fallacious forms of transfer and substitution, too, touches upon a branch of knowledge that was of great import to him: geometry. As I believe that its reconstruction and use of sources offer important insights into the aims of his treatise, I will provide a more detailed analysis of al-Fārābī's single extensive example of this type of fallacy and its possible source text(s). In the list of possible fallacious transfers quoted above, al-Fārābī introduced this final category as substituting something by its perceptible examples (*amṭilatuhu l-maḥsūsa*).[54] Later on, he further states that "as for its perceptible examples, the fallacy mainly occurs in case use is made of a teaching method called 'placing before the eyes' (*al-naṣb bi-ḥiḏāʾ al-ʿayn*)."[55] In his "Book of Utterances," al-Fārābī explains in more detail what exactly he means by this particular method of teaching:

> "Placing before the eyes" (*naṣb al-ʿayn*) is among the things used in teaching (*al-taʿlīm*). It means to place something under vision to the extent possible. This is among the methods of teaching used by the practition-

line 3–p. 92, line 6.

[51] Al-Fārābī, *Al-amkina al-muġalliṭa*, p. 161, lines 10–11.

[52] Al-Fārābī, *Al-amkina al-muġalliṭa*, p. 161, lines 15–16.

[53] Al-Fārābī, *Al-amkina al-muġalliṭa*, p. 161, lines 14–15.

[54] See above, *Al-amkina al-muġalliṭa*, p. 160, line 12. At p. 161, line 17, al-Fārābī uses the expression *miṭālātuhu l-maḥsūsa*.

[55] Al-Fārābī, *Al-amkina al-muġalliṭa*, p. 161, lines 17–18.

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> ers of the mathematical arts (*aṣḥāb al-taʿālīm*). [This method consists of] placing either what is perceived by sight or what is perceived on account of something's resemblance to it before the eye. The method that makes use of letters (*al-ḥurūf*) is a part of "placing before the eyes." Illustration (*al-taṣwīr*), using shapes (*al-aškāl*) and the arrangement (*al-tartīb*) of things that are perceived by vision are [also] parts of "placing before the eyes."[56]

In other words, what al-Fārābī has in mind are diagrams and models that use letters, lines, and shapes to depict theorems, proofs, and visualize observations.[57] The example he uses in his "On Deceptive Topoi" stems from geometry. However, drawing diagrams is not geometry itself, which, for him, is an art that deals with intelligible objects and, for this reason, must be distinguished from their sensible counterparts.[58] As the quoted passage clarifies, all these things are used as teaching methods. Just as images in general, geometrical diagrams also have two sides, one that can facilitate one's conceptualization and one that can lead to error and deception.

The example al-Fārābī provides in his "On Deceptive Topoi" for visualizations that lead to error relates to *Elements*, book I, prop. 20. This proposition proves that, in all given cases, "the sum of a triangle's two sides is longer than the triangle's third side."[59] However, in order to (supposedly) show that the sum of a triangle's two sides is *shorter* than its third side, al-Fārābī gives instructions for constructing a diagram that appears to suggest such a conclusion. As I will argue, al-Fārābī's diagram was used to prove a different proposition of the *Elements*, namely *El.*, book III, prop. 12, introduced by Heron of Alexandria (d. after 62 CE) and intended to prove that "if two circles touch one another externally, then the straight line joining their centers passes through the point of contact."[60] Al-Fārābī's instruction reads as follows (see fig. 1, below):

[56] Al-Fārābī, *Kitāb al-alfāz*, p. 94, lines 7–12.

[57] F. W. Zimmermann, *Al-Farabi's Commentary and Short Treatise on Aristotle's De interpretatione* (London, 1981), p. 9, n. 1 renders *wadʿ al-šayʾ bi-ḥiḏāʾ al-ʿayn* as "diagrams."

[58] On al-Fārābī's concept of geometry, see Gad Freudenthal, "Al-Fārābī on the Foundations of Geometry," in M. Asztalos, J. E. Murdoch, and I. Niiniluoto (eds.), *Knowledge and the Sciences in Medieval Philosophy: Proceedings of the Eighth International Congress of Medieval Philosophy (S.I.E.P.M.)*, vol. 1 (Helsinki, 1987), p. 52–61, esp. p. 53–55.

[59] Euclid, *Elementa*, ed. J. L. Heiberg, E. S. Stamatis (Leipzig, 1969), book I, prop. 12.

[60] Euclid, *Elementa*, book III, prop. 12. See the translation and discussion in Thomas L. Heath (ed.), *The Thirteen Books of Euclid's Elements* (Cambridge, 1908), p. 28. Heath explains in his notes that this proof was introduced by Heron of Alexandria. He also surmises that "Theon [of Alexandria (4th c. CE)] or some other editor added Heron's

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> [1] Let the two arcs be AB and CD and let them be tangent in point E. The center of each of the two circles of these two arcs shall be the points F and G. The two centers shall form the line $FHGI$. From point E to centers F and G, we get the two lines EF and EG. [2] Now, I say that in the triangle EFG the sum of the sides EF and EG is shorter than FG, which is its third side. [3] The proof for this is that the line FE is equal to the line GE because they are *radii* of identical circles, and the line FH is equal to the line FE because they are both *radii*. [In turn,] GI is equal to the line GE, because they are both *radii*. Now, the sum of FE and EG equals the sum of FH and GI, while when we add to FH and GI the line HI, we get that the line FG is, in total, longer than the sum of GE and EF. Thus, it is made clear that the sum of the triangle's two sides is shorter than the third side, and this is what we wanted to demonstrate.[61]

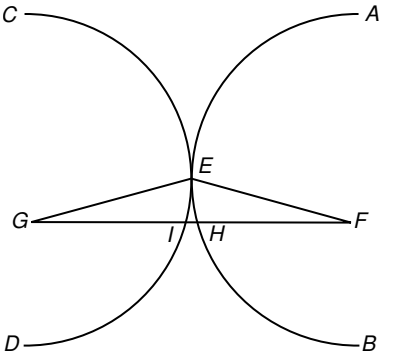
Al-Fārābī's example of a fallacious geometrical proof can be divided into three steps. The first step [= 1] effectively instructs the reader to draw a diagram that looks like *Elements*, book III, prop. 12.[62] Then [= 2], based on this diagram (see fig. 1 below), al-Fārābī announces his intention to prove the contrary of *Elements*, book I, prop. 20, i.e., that one side of the triangle is longer than the sum of its two remaining sides. Lastly [= 3], the proof draws on the correct idea that, in a given circle, all *radii* have the same length. Supposing that FH, EF, EG, and IG are all *radii* of their respective circles, one is led to falsely conclude that the sum of EG and EF is shorter than GF, as the latter includes the additional distance of IH. This reasoning is, in fact, part of the *ad absurdum* proof of *El.* III 12 and (presupposing *Elements*, book I, prop. 20) proves

proof in his edition and made Prop. 12 out of it." In the Arabic tradition, the proof is found under III 11 in al-Nayrīzī's commentary on the *Elements*, extant in MS Leiden, Universiteitsbibliotheek, Or. 399.1 and MS Qom, Āyatullāh Marʿašī Nağafī 6525. For a short description of the two Arabic manuscripts, see A. Lo Bello (ed.), *Gerard of Cremona's Translation of the Commentary of Al-Nayrizi on Book I of Euclid's Elements of Geometry* (Leiden, 2003), p. xv and xxviii. For a printed edition of the Arabic (based on the Leiden MS), see R. O. Besthorn and J. L. Heiberg (eds.), *Codex Leidensis 399,1: Euclidis elementa ex interpretatione al-Hadschdschadschii cum commentariis Al-Nairizii* (Copenhagen, 1893–1932), part II, fasc. 2, p. 46–48. Cremona's Latin translation (in which the proof is also found under book III, prop. 11) is edited in M. J. E. Tummers, *The Latin translation of Anaritius' commentary on Euclid's Elements of Geometry*, books I-IV (Nijmegen, 1994), p. 49. For an English translation, see A. Lo Bello, *The Commentary of al-Nayrizi on Books II-IV of Euclid's Elements of Geometry* (Leiden, 2009), p. 95–96. See also the discussion in F. Acerbi, "Euclid's *Pseudaria*," *Archive for the History of Exact Sciences*, 62 (2008), p. 533 and the list of Arabic manuscripts containing the diagram at p. 545–546.

[61] Al-Fārābī, *Al-amkina al-muġalliṭa*, p. 161, line 20–p. 163, line 1.

[62] See, for instance, the diagram in Heath (ed.), *The Thirteen Books of Euclid's Elements*, p. 28.

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Note: See also the diagram in al-Fārābī, *Al-amkina al-muġalliṭa*, p. 162, which is a faithful depiction of the diagram in the margin of MS Bratislava, Univ. Library 231 TE 41, fol. 135r (which is the only drawn diagram known to me from the MS corpus of *Al-amkina al-muġalliṭa*). The letters chosen are mine, not al-Fārābī's. The order of the instruction is from right to left.

Fig. 1: Al-Fārābī's fallacious diagram.

that "the straight line joining the centers of two externally adjacent circles passes through their point of contact."

Al-Fārābī's fallacious diagram raises several questions. Firstly, and most obviously, the question of which mistake occurs, leading to the fallacious geometrical proof (in the terminology of the Latin Scholastics, the *causa defectus*). In what follows the above-quoted passage, al-Fārābī answers the question:

> The reason for the error (*waǧh al-ġalaṭ*) in this case [i.e., the fallacious diagram mentioned above] is that the centers of the two circles whose arcs[63] intersect have not been placed as they should have been (*fī ġayr al-amkina allatī kāna sabīluha an tūḍaᶜa*). [In this fashion,] a straight line is drawn from one circle to the other in a different way from how it should be drawn (*ᶜalā ġayr ṭarīq iḫrāǧihi*). This is because the straight line that connects the two tangent circles' centers must pass through (*innama yaǧūzu ᶜalā*) their point of contact.[64]

According to al-Fārābī's analysis, the mistake is based on the fact that the centers of the two circles are wrongly chosen. If they were indeed the centers, the line connecting the two adjacent circles would go through their point of contact. This is, in fact, exactly what *El*. III 12

[63] Here I am reading with Danešpažuh, *Al-manṭiqiyyāt li-l-Fārābī*, vol. 1 (Qom, 1988–1990), p. 227, line 9, *al-qusiyy*. The word printed in Faḫrī's edition appears to be a misreading (or a typo) and is not found in the manuscripts.

[64] Al-Fārābī, *Al-amkina al-muġalliṭa*, p. 163, lines 1–5.

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aims to prove.[65] By mistaking the points used to draw the triangle's base for the circles' centers and combining it with definition 15 of the first book of Euclid's *Elements* (i.e., that all *radii* of a circle are equal to one another), one arrives at the (false) conclusion that the triangle's base is longer than the sum of its other two sides. However, what is more difficult to answer is where the deception lies (in the terminology of the Latin Scholastics, the *causa apparentiae*) and why al-Fārābī lists this fallacious geometrical proof under the category of fallacies from transfer and substitution.

There may be several ways to reconstruct al-Fārābī's reasoning behind this fallacy, but the most plausible appears to be the following: al-Fārābī tells us that this type of fallacy arises from the practice of "placing before the eyes," that is, from producing a diagram and by substituting the intelligible geometrical concepts with their drawn counterparts. This might prompt the conclusion that falsely assuming points that are not the circle's centers as their actual centers leads to the misconception of the entire proof. In Heron's proof, it is precisely the knowledge of *Elements*, book I, prop. 20 that prevents this false conclusion. In al-Fārābī's version of it, it is one's ignorance of *Elements*, book I, prop. 20 that leads the geometer to prove a falsehood, namely that one side of a triangle may be longer than the sum of the two others. Aside from this, it is noteworthy (and may not be a coincidence) that al-Fārābī combines two different Euclidean propositions – book I, prop. 20, and book III, prop. 12 – while arguing from the diagrammatical depiction of the latter for the content of the former. In light of this, one might also interpret al-Fārābī's fallacy as an illegitimate transfer between the diagrams of different propositions. Before bringing the discussion back to Averroes' criticism of al-Fārābī, I shall further investigate the source of al-Fārābī's geometrical fallacy. As will be seen, understanding the example's origin might help us to get a better grasp of al-Fārābī's overall project in "On Deceptive Topoi".

[65] Note that Heron's proof in *Elements*, book III, prop. 12 involves an *ad absurdum* argument, which runs under the assumption that the centers are wrongly chosen: "I say that the straight line joined from F to G will pass through the point of contact at A. For suppose it does not, but, if possible, let it pass as $FCDG$ […]." (*Elements*, book III, prop. 12, p. 111, lines 9–12, trans. Heath). A is the point of contact between the two adjacent circles, F and G are their respective centers, while CD is the additional distance on the triangle's base.

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4. FALLACIOUS DIAGRAMS IN ARISTOTLE AND THE COMMENTARY TRADITION

Taking into consideration the texts available to us, it seems that "On Deceptive Topoi" is an original composition of al-Fārābī, by which I mean that he did not design it according to a single *Vorlage* but rather combined and adjusted materials from various sources in a way that significantly differs from Aristotle's text and extant commentaries on it. This does not mean that he did not use source texts to develop his arguments and choose his examples. In particular, the geometrical fallacy that al-Fārābī chooses to include in his treatise raises the question of which sources he consulted. In what follows, I shall discuss the texts from Aristotle's *Topics* (and SE) that might have led to al-Fārābī's reasoning. As I will argue, al-Fārābī's choice is ultimately inspired by Aristotle's account of "one who draws fallacious diagrams" in *Topics*, book I, ch. 1, 101 a 5–17, together with Alexander's commentary on this passage. Given the connection of this example to Aristotle's concept of peirastic dialectic in Alexander and later commentators, al-Fārābī's source text is not merely a matter of exegetical detail. It provides important insight into his reasons for including this type of fallacy in his "On Deceptive Topoi". I shall start with Aristotle's exposition in *Topics*, book I, ch. 1, which follows his discussion of various kinds of syllogistic discourses and reads as follows:

> Next, apart from all the deductions that have been mentioned, there are fallacies based on what is appropriate to specific sciences, as we find in the case of geometry and its kindred sciences. For this type does seem to be different from the deductions mentioned, for the person who draws fallacious diagrams (ὁ ψευδογραφῶν) does not deduce from true and primary things, nor from acceptable ones either … Instead, he makes his deduction from premisses that are appropriate to the science but not true: for he produces the fallacy (τὸν παραλογισμὸν ποιεῖται) by describing semicircles incorrectly or by drawing certain lines in ways in which they shouldn't be drawn.[66]

In the quoted passage, Aristotle introduces fallacies peculiar to particular sciences, here geometry, in contrast to those that are dialectical and, therefore, indiscriminately applicable to several or all areas of knowledge. According to Aristotle's analysis, such fallacies differ from proper sophistical arguments as they do not draw on something accepted or seemingly accepted but rather on something that is

[66] Aristotle, *Topics*, book I, ch. 1, 101 a 5–17 (trans. Smith, modified). For further accounts of geometrical fallacies in Aristotle, see *Topics*, book VIII, ch. 1, 157 a 1–3, and the longer passage SE, ch. 11, 171 b 12–172 b 8, which is discussed in more detail below.

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simply false. What forges the link to the concrete example found in al-Fārābī's treatise is Alexander of Aphrodisias' commentary on this passage, which picks up Aristotle's statement about someone drawing semicircles and lines incorrectly and provides an illustration for such a case regarding the above-mentioned proof of *Elements*, book I, prop. 20. Alexander introduces his illustration as follows:

> There is a false construction (ψευδογράφημα) in geometry, which results from describing semicircles incorrectly and drawing lines not as they should be drawn, one which shows that two sides of a triangle are equal to the third, and one that shows that they are actually less than the third; yet it is a demonstrated thesis in geometry that in any triangle two sides are greater than the third in any permutation.[67]

In light of al-Fārābī's example, the relevant passage is Alexander's second fallacious diagram, which aims to demonstrate that in any triangle, the sum of two sides is less than the third (instead of being greater). Alexander describes the fallacious geometrical proof as follows (see below, fig. 2):

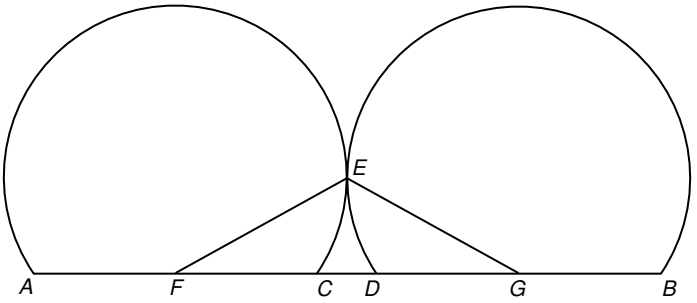
> Again, those who offer a false construction (οἱ… ψευδογραφοῦντες) that one [side of a triangle] is greater than two prove it (δεικνύουσι) by describing the semicircles and joining the lines as follows: Taking a straight line AB, they take two points CD on it, which are near each other, and they describe semicircles around the lines of AC and DB, intersecting with each other or touching each other at point E. From this point E at which the two semicircles touch each other they draw lines joining it to the centers, F and G, of the two semicircles. This yields the triangle EFG. Now the lines EF and FC, since both of them have their point of departure in the center of the same semicircle [i.e., since they are *radii*], are equal to each other; and the lines GE and GD too are equal, for these too have their point of departure in the center G of the semicircle BED. Then the sum of the two sides of the triangles, EF and EG, is equal to the sum of FC and DG, which is less than the base of the triangle, FG. It follows that the sum of the two sides of the triangle, FE and EG, is less than the third side, FG.[68]

Comparing this diagram from Alexander's commentary on the *Topics* with the one described in al-Fārābī's "On Deceptive Topoi", one sees that both draw on the same type of error, which is that the points F and G are not the centers of the two semicircles, for the two circles can only

[67] Alexander of Aphrodisias, *In Aristotelis Topicorum libros octo commentaria*, ed. M. Wallies (Berlin, 1891), p. 23, lines 25–30 (trans. van Ophuijsen, slightly modified).

[68] Alexander of Aphrodisias, *In Aristotelis Topicorum libros octo commentaria*, p. 24, line 19–p. 25, line 5 (trans. van Ophuijsen, modified. See also the translation in Acerbi, "Euclid's *Pseudaria*," p. 526).

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Note: See also fig. 2 in Acerbi, "Euclid's *Pseudaria*," p. 526. The letters chosen are mine, not Alexander's.

Fig. 2: Alexander's fallacious diagram

be tangent on the line of their *radii*, as is proven in *Elements*, book III, prop. 12. As Alexander puts it,

> Here again, the fallacious diagram (τὸ ψευδογράφημα) arises from the description of the semicircles – for semicircles circumscribed in this way cannot intersect or indeed touch each other at all – and from joining the lines, for the lines *EF* [and] *EG* have been drawn, incorrectly, as though from the intersection of the semicircles, and these lines produced the triangle.[69]

As a comparison with Alexander shows, al-Fārābī did not simply copy what he might have found in Alexander's commentary. In wording and order, his instructions are much closer to *Elements*, book III, prop. 12 than Alexander's text. Moreover, al-Fārābī's instructions retain the language of a geometrical proof, while Alexander reports from an outsider's perspective how others do or might draw such a diagram, and it seems that the order of the single steps contributes to the overall deception.

As Fabio Acerbi argues, Alexander's two examples of fallacious diagrams originate in Euclid's lost treatise entitled *Pseudaria* (although Alexander may not have been aware of this and may have taken the example from another source).[70] Consequently, Euclid's work on fallacious diagrams may ultimately have also influenced how al-Fārābī treated this topic in his "On Deceptive Topoi". From his short account, it is hard to tell where exactly al-Fārābī took his example from. It might have been Euclid's *Pseudaria* (which the bio-bibliographical sources do not men-

[69] Alexander of Aphrodisias, *In Aristotelis Topicorum libros octo commentaria*, p. 25, lines 5–9 (trans. van Ophuijsen, modified. See also the translation in Acerbi, "Euclid's *Pseudaria*," p. 526–527).

[70] See Acerbi, "Euclid's *Pseudaria*," p. 527–529.

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tion as having been translated into Arabic), commentaries on Euclid's *Elements*, or yet another source. If he took his inspiration from Alexander's commentary on the *Topics*, which seems the most likely option, he decided to change the diagram's exposition and, in contrast to Alexander (see below), subsumed it under a specific type of fallacy instead of treating it merely as a scientific mistake peculiar to geometry.

Nevertheless, al-Fārābī's seemingly original idea of treating this fallacious diagram as a case of an illegitimate transfer based on the visualization of certain facts could well be inspired by Alexander's text. This is because Alexander states that, in the case of fallacious diagrams, "one does not produce the deception (τὴν παραγωγήν) by something said, but by something drawn (καταγραφήν) not as it should be."[71] This statement is in line with al-Fārābī's claim that there is a class of fallacies based on the visual representation of intelligible content – for instance, setting a point as a center that does not qualify as such in terms of its definition.

In fact, reviewing al-Fārābī's predecessors does not only provide valuable insight into his source texts. It also reveals what al-Fārābī might have been after when collating his examples. As pointed out by Acerbi, a significant context in which Euclid's *Pseudaria* are mentioned in the ancient commentary tradition is that of peirastic dialectic.[72] I shall, therefore, briefly shed light on the context of peirastic dialectic in Alexander's commentary on the *Topics,* and two later works that might have influenced al-Fārābī's approach to this example, be it directly or indirectly: Proclus' commentary on Euclid's *Elements* and Ammonius' commentary on the *Prior Analytics*.[73] As I shall propose, peirastic dialectic may have provided the conceptual context, though with some necessary qualifications, for al-Fārābī to reorganize the material of Aristotle's SE into a work specifically useful for scientific inquiry rather than dialectical and sophistical debate.

In his works on the *Organon*, Alexander generally embraces the basic division of syllogisms into demonstrative, dialectical, peirastic, and sophistic.[74] At the same time, in his commentary on the *Topics*, Alexander acknowledges a problem placing "fallacies based on what is appropriate to specific sciences" in one of the four groups. At first, Alexander em-

[71] Alexander of Aphrodisias, *In Aristotelis Topicorum libros octo commentaria*, p. 23, lines 15–16.

[72] See Acerbi, "Euclid's *Pseudaria*," p. 512–518.

[73] The latter two works also also discussed in Acerbi, "Euclid's *Pseudaria*," p. 512–514.

[74] See, for instance, Alexander of Aphrodisias, *In Aristotelis Analyticorum priorum librum I commentarium*, ed. M. Wallies (Berlin, 1883), p. 1, lines 3–5.

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phasizes the difference between this type of fallacy and the four types of syllogisms mentioned above. As he states,

> this [i.e., fallacies based on what is specific to specific sciences] is a different species of fallacies, not used either by the dialectician or by the sophist, but by practitioners of the sciences for the sake of testing those occupied with these, and training them towards a better perception (πρὸς τὸ διορατικωτέρους αὐτοὺς γίνεσθαι) of the truths in these sciences.[75]

Later on, after introducing the fallacy, Alexander characterizes this type of reasoning as a type of fallacy contrary to science rather than dialectic.

> So just as the dialectical syllogism has for its counterpart the sophistical syllogism based on what looks like things approved, in the same way, it seems the demonstrative syllogism, based on principles appropriate to the point at issue, has as a counterpart this fallacious inference leading our arguments through false statements to another false statement.[76]

Hence, Alexander understands this type of reasoning as properly belonging to the realm of what is true rather than what is approved. In contrast, peirastic arguments, as they are defined in SE, are "based on what the respondent believes and what someone, who claims to have knowledge, ought to know."[77] What seems to bother Alexander with this definition is its first part, i.e., that they are based on what the respondent believes, as Alexander just explained that they are not part of a dialogical exchange and, thus, in the realm of what is approved by anyone but simply false. Alexander eventually solves this problem by arguing that such arguments "would be called peirastic syllogism from the purpose of the questioner, but false construction (ψευδογράφημα) and fallacy (παραλογισμός) from what has actually come about."[78] Alexander's worries seem to be restricted to the dialectical context of peirastic arguments and its absence in Aristotle's example of someone drawing a wrong geometrical proof. These worries seem, nonetheless, justified and shed light on al-Fārābī's treatment of this example, as, in order to count as a fallacy rather than a mere mistake, there must be a reason why someone may be deluded by it, regardless of whether it is intentional or unintentional. As will be seen in what follows, both Proclus and his

[75] Alexander of Aphrodisias, *In Aristotelis Topicorum libros octo commentaria*, p. 23, lines 5–8 (trans. van Ophuijsen, slightly modified).

[76] Alexander of Aphrodisias, *In Aristotelis Topicorum libros octo commentaria*, p. 25, lines 9–12 (trans. van Ophuijsen).

[77] Aristotle, SE, ch. 2, 165 b 4–6.

[78] Alexander of Aphrodisias, *In Aristotelis topicorum libros octo commentaria*, p. 25, lines 27–29 (trans. van Ophuijsen, modified).

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student Ammonius were less reluctant to treat scientific mistakes in the context of peirastic dialectic, notably with a Neoplatonist touch. In Proclus' summary of Euclid's mathematical works, part of his commentary on the *Elements*, we find the following account of the treatise called *Pseudaria*:

> Since there are many matters that seem to be dependent on truth and follow from scientific principles but really lead astray from the principles and deceive the more superficial students, [Euclid] has given us methods for a clear-sighted detection of these things as well by which we shall be able to train beginners in this domain of research in the discovery of fallacies (πρὸς τὴν εὕρεσιν τῶν παραλογισμῶν), while remaining free of errors. He thus gave the title of *Pseudaria* to this collection, through which he gives us this preparatory equipment, by enumerating in an orderly fashion their several ways. For each case, he exercises our intelligence with theorems of all sorts, setting the truth side by side with falsehood, adapting the refutation of the error to its function as a test (τῇ πείρᾳ). This book is thus "cathartic" and "gymnastic," whereas the *Elements* are the impeccable and complete guide to the scientific inquiry itself of the things in geometry.[79]

How Proclus describes the aims of Euclid's *Pseudaria* is strikingly similar to how al-Fārābī outlines the project of his "On Deceptive Topoi", as discussed in section 2 of this paper. Firstly, fallacies are embedded in the context of proof discovery (εὕρεσις), as is also the case with "On Deceptive Topoi", which al-Fārābī introduces as a counterpart to his "Book of Analysis" that deals with *topoi*-based proof discovery.[80] Secondly, and more importantly, according to Proclus' account, Euclid's goal in composing his *Pseudaria* is not that of providing knowledge of how to deceive others but to provide training for scientific investigation that prepares an investigator from the point of view of avoiding fallacies in their respective investigations. This passage also reveals Proclus' Neoplatonist leanings, as "peirastic" was a term Platonists often reserved for those of Plato's dialogues that aim to train the youth in scientific reasoning (such

[79] Proclus, *In primum Euclidis Elementorum librum commentarius*, ed. G. Friedlein (Leipzig, 1873), p. 70, lines 1–18 (my translation combines elements from the translations in G. R. Morrow, *Proclus, A Commentary on the First Book of Euclid's Elements* (Princeton, 1970), p. 58 and Acerbi, "Euclid's *Pseudaria*," p. 512).

[80] In the opening lines of his *Kitāb al-taḥlīl*, ed. R. al-ʿAǧam in *Al-manṭiq ʿinda l-Fārābī*, vol. 2 (Beirut, 1986), p. 95, lines 3–5 al-Fārābī claims that "we must now say how one finds the [appropriate] syllogisms for each given problem, in whatever discipline it may be; [we must say] from where one acquires the premises of every syllogism that is sought with a view to a problem and where one starts from to get them." For this translation (slightly modified) and an interpretation, see Ahmad Hasnawi, "Topic and Analysis: The Arabic Tradition," in R. W. Sharples (ed.), *Whose Aristotle? Whose Aristotelianism?* (Aldershot, 2001), p. 30–32.

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as *Euthyphro*, *Meno*, *Ion*, and *Charmides*).[81] The clearest connection between peirastic syllogisms and Euclid's *Pseudaria* is, in fact, found in Ammonius' commentary on the *Prior Analytics*, in which he introduces the peirastic syllogism as follows:

> There is another species among the syllogisms, which is called "peirastic." Aristotle himself does not use it, but Plato also uses this [type of argument]. They say that the peirastic is subsumed under the sophistical [syllogism], for it only differs in intention (τῇ… προαιρέσει) from it. For the sophistical has the worst purpose, while the peirastic has the best. The one who tests the interlocutor by making use of it does so not to deceive, like the sophist, but to teach how not to be deceived. He turns to it for trial (πεῖραν), whether one may be deceived or not, to teach how not to be deceived, just as Euclid teaches us through the *Pseudaria* not to be deceived in the theorems.[82]

Al-Fārābī may have been acquainted with Ammonius' commentary on the *Prior Analytics*, and perhaps even Proclus' commentary on the *Elements*, although the bio-bibliographical literature seems not to mention an Arabic translation.[83] At least, he seems to sing from the same hymnbook in stressing the scientist's need for training in paralogisms. This comparison reinforces the independence of al-Fārābī's approach to the study of fallacies, as it shows that the reason for adding geometrical fallacies to his "On Deceptive Topoi" may have been that his series of logical writings is in particular directed towards the study of scientific proof (which is the method used in the art of geometry), rather than being a missing or overlooked part of an art that teaches deception and counter-deception in the context of dialectical encounters with sophists.[84] Aristo-

[81] See Albinus, "Introduction to the Platonic dialogues" (*Introductio in Platonem*), ed. C. F. Hermann, in *Platonis Dialogi secundum Thrasylli tetralogias dispositi*, vol. 6 (Leipzig, 1873), p. 148, lines 35–36.

[82] Ammonius, *In Aristotelis Analyticorum priorum librum I commentarium*, p. 2, lines 18–27 (my translation; see also the translation in Acerbi, "Euclid's *Pseudaria*," p. 515). Euclid's *Pseudaria* are also mentioned in a later passage by Ammonius, p. 11, lines 28–33.

[83] See the entry on Euclid, in Ibn al-Nadīm, *Kitāb al-fihrist*, p. 265–266 (for B. Dodge's English translation, see *The Fihrist: A 10th Century AD Survey of Islamic Culture*, trans. Dodge [New York, 1970], p. 634–636).

[84] Acerbi, "Euclid's *Pseudaria*," p. 512 notes: "Be it a coincidence or not, most of these fallacious proofs are connected with *Elements* I 20 (proving that any two sides of a triangle are greater than the third)." As for why this fallacious diagram was chosen as an example, one may add that Proclus, in his commentary on that proposition, states that "the Epicureans are wont to ridicule this theorem" (Proclus, *In primum Euclidis*, p. 322, lines 4–5, trans. Morrow from *Proclus' Commentary on the First Book of Euclid's Elements* [Princeton, 1970], p. 251). They did this by saying that

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tle's SE 11 already reflects this approach to fallacies, stating that "fallacious diagrams are not eristic (τὰ γὰρ ψευδογραφήματα οὐκ ἐριστικά),"[85] neither when drawing on false assumptions nor leading to false conclusions. Instead, "[these] fallacies are those that fall under a [particular] art."[86] As examples of such fallacious diagrams, Aristotle refers to Hippocrates of Chios (5th c. BC) and Antiphon the Sophist's (5th / 4th c. BC) attempts at squaring the circle. In contrast to these two geometers, whose proofs are false but within the boundary of geometry, Bryson of Heraclea's (5th / 4th c. BC) is eristic, as it draws on explanations external to geometry. These authors are also mentioned in al-Fārābī's "Book of Demonstration" as examples of mistakes that lie within or outside the range of a particular art or science. While, according to al-Fārābī, Bryson's attempt at squaring the circle is merely dialectical and does not match the criteria of geometrical demonstration, Antiphon errs with respect to the very principles of geometry, and Hippocrates with respect to its corollaries.[87] Also the proposition discussed in *El.* I 20 reappears in al-Fārābī's "Book of Demonstration," where it serves as an example of someone who provides a proof with a correct conclusion, which, however, draws on premises suitable to a different science.[88]

To bring the discussion back to the purpose of al-Fārābī's "On Deceptive Topoi", the question arises of whether we are justified in understanding it as a work of peirastic dialectic, in the sense proposed in the late ancient commentary tradition. In his "Book of Demonstration," al-Fārābī defines the peirastic syllogism as follows:

> Testing (*al-imtiḥān*) is the discourse through which someone's deception

"it is evident even to an ass (ὄνῳ) and needs no proof" (ibid., p. 322, line 5, trans. Morrow). As Proclus reports, according to the Epicurean, who "lumps these things together" the theorem is evident even for an ass, because "when straw is placed on one extremity of the sides [… the ass] will make his way along the one side and not by way of the two others." (ibid., p. 322, lines 10–14, trans. Morrow). Such a harsh dismissal of Euclid's theorem must have provoked his later admirers, as it did provoke Proclus. This may have motivated them to show that, indeed, one can err, and, based on a fallacious diagram, be led to believe that a triangle's two sides are shorter than its third side.

[85] Aristotle, SE, ch. 11, 171 b 12–13.

[86] Aristotle, SE, ch. 11, 171 b 13–14.

[87] Al-Fārābī, *Kitāb al-burhān*, p. 91–92.

[88] Al-Fārābī, *Kitāb al-burhān*, p. 91, where al-Fārābī presents a proof that involves the concept of "time," which is "not essential in geometry and it is clear that it is transferred from natural science to geometry." The same example is also included in his *Al-amkina al-muġalliṭa*, at p. 157, lines 11–15. There, it serves as an example of the fallacy that postulates something as a cause that is not a cause (*causa ut non causa*).

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(*muġālaṭat al-insān*) is intended regarding things essential to an art (*bi-l-ašyāʾ al-ḏātiyya fī l-ṣināʿa*). The intention of testing is to find out about the extent of someone's competence in the science in which they opine to have reached perfection.[89]

Al-Fārābī describes in this passage a method specifically coined for scientific endeavors. What he describes here as "testing" aligns well with how Proclus and Ammonius understood the scope of Euclid's *Pseudaria*. Fallacious diagrams are used to deceive beginner students and expose their ignorance of the matter. But overall, al-Fārābī does more than that in his "On Deceptive Topoi". He includes errors that arise from falsely drawn diagrams under a specific type of fallacy, namely those belonging to transfer and substitution. Al-Fārābī seems thus more interested in why one may be deluded by something in the first place (*causa apparentiae*). As I argued, he sees this cause in visually misrepresenting geometrical facts and mixing up similar features of distinct geometrical proofs. Thus, al-Fārābī's focus in his "On Deceptive Topoi" can be labeled as peirastic only in the sense that his work is suitable for a teacher testing a student's (or someone investigating one's own) command of logic and awareness of its various pitfalls, as al-Fārābī also expresses it in the treatise's conclusion.[90] While this form of peirastic is not properly scientific insofar as it only deals with mistakes particular to one or several specific sciences, it is not dialectical either in the sense that it proceeds from what is generally accepted by all or the commoners or in that it proceeds from what is held by the interlocutor alone. Instead, it aims to classify mistakes according to fallacy types that may give rise to them. The treatise is thus best characterized as a handbook for understanding and explaining mistakes in scientific inquiries without the need to refute them as part of a single science.

To sum up, the examples al-Fārābī introduces under the category of transfer and substitution are taken from a wide range of source texts, including non-Aristotelian treatises, as suggested by his example of fallacies that occur in geometry. It has also been shown that al-Fārābī pursues a goal that is different from Aristotle's. His account of fallacies does not aim at eristic discourse and voluntary deception but rather at pointing out instances where the investigating mind may fail and fall into error. It, therefore, comes as no surprise that almost all the examples that he provides of this fallacy – and this is in line with the rest of his treatise – deal with misconceptions in scientific theories, be it in natu-

[89] Al-Fārābī, *Kitāb al-burhān*, p. 94, lines 16–18.
[90] See al-Fārābī, *Al-amkina al-muġalliṭa*, p. 164, lines 11–13.

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ral philosophy (Anaxagoras, Empedocles), metaphysics (Democritus), or geometry (Euclid's *Pseudaria*).

However, to direct the discussion to Averroes' looming criticism, understanding the proper goal of al-Fārābī's treatise does not yet answer what he thought about the completeness of the fallacies listed in Aristotle's SE. Unfortunately, only little can be said on this point. On the one hand, al-Fārābī claims in his "Canons of Poetry" (*Qawānīn ṣināᶜat al-šuᶜarāᵓ*) that Aristotle "did not complete his discourse on the art of sophistry (*ṣināᶜat al-muġālaṭa*)"[91] for the reason that he did not find any previous study of the topic.[92] It is not clear how much weight one should give to this remark, for it simply serves as the basis for an *a fortiori* argument by means of which al-Fārābī wants to establish that neither has the art of poetry been completed by Aristotle (if Aristotle did not complete the study of fallacies, as he explicitly says, even less did he complete the study of poetry, which follows in the *curriculum* of the *Organon*). What al-Fārābī must be tacitly assuming here is that the theory of poetry was even less studied before Aristotle's time than fallacies. Nonetheless, with this *caveat* in mind, one may join al-Fārābī in asking how seriously Aristotle's completeness claim should be taken if the Philosopher pre-emptively begs the reader's pardon in the event that he has forgotten something that is crucial for understanding the topic he is dealing with.

Even if one supposes that al-Fārābī believed that Aristotle's analysis is lacking, did he also think that he had only missed the one type of fallacy he added? In other words, did al-Fārābī believe that *his* list of fallacies is complete? He does not seem to provide any evaluation or assessment of the completeness claim, nor any argumentative foundation for extending his list of fallacies. His passing comment that "these are all the *topoi* (*fa-hāḏihi ǧamīᶜ al-mawāḍiᶜ*) regarding which someone may err about anything"[93] seems to be restricted to the final category of transfer and substitution, although al-Fārābī does not express himself clearly. If he indeed thought that Aristotle's list of fallacies is lacking, while his is complete, the attempt to tacitly obviate this question did not save him from Averroes' criticism.

[91] Al-Fārābī, *Qawānīn ṣināᶜat al-šuᶜarāᵓ*, ed. A. J. Arberry, in *Rivista degli studi orientali*, 17 (1937/1939), p. 267, line 5.

[92] This refers to the final chapter of SE, where Aristotle asks forgiveness for τοῖς παραλελειμμένοις τῆς μεθόδου.

[93] Al-Fārābī, *Al-amkina al-muġalliṭa*, p. 163, line 1.

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5. FROM *TAĞRĪD* TO *TALḪĪṢ*: AVERROES' DELAYED DEFENSE OF ARISTOTLE'S COMPLETENESS CLAIM

As I already pointed out at the beginning of this paper, it was first noticed by Moritz Steinschneider that Averroes' criticism of al-Fārābī may equally be directed against his own account of fallacies in his epitome (to which I refer as *Tağrīd*), which is part of a series of treatises customarily called "Essentials in Logic" (*Kitāb al-ḍarūrī fī l-manṭiq*), composed before 1157.[94] In this short treatise, which in the still unedited two extant Judeo-Arabic manuscripts is called "Book of Sophistry" (*Kitāb al-sūfisṭa*), Averroes follows the structure of al-Fārābī's "On Deceptive Topoi" in almost all instances.[95] Following this approach, he also states that "the fallacies which depend on meaning are eight."[96] In other words, Averroes also includes al-Fārābī's fallacy from transfer and substitution.[97] Although he mentions all instances of transfer found in his predecessor's treatise, he gives more room to cases of personal interest and less to those he may have considered obvious or irrelevant. It is thus hardly surprising that Averroes gives more room to the difficulty of understanding the state before creation, whether infinite void or infinite body, as it relates to questions also discussed in Islamic theology. He even takes it as an occasion to introduce what he considers the solution to the problem, which is to introduce prime matter (*al-mādda al-ūlā*) into the picture and suggests that the materialistic conception of the

[94] Steinschneider, *Al-Fārābī (Alpharabius)*, p. 57. On the scope of this work, see the analysis in Ahmad Hasnawi, "La structure du *corpus* logique dans l'*Abrégé de Logique* d'Averroès," in Carmela Baffioni (ed.), *Averroes and the Aristotelian Heritage* (Naples, 2004), p. 51–63.

[95] The two manuscripts that preserve this treatise are the MS Munich, BSB, ar. 964, fol. 63r-72r and MS Paris, BnF, héb. 1008, fol. 68v-78v. The latter also transmits Yaʿqob b. Maḫir Ibn Tibbon's Hebrew translation on facing pages. The manuscripts are described in Charles Butterworth, *Averroes' Three Short Commentaries on Aristotle's "Topics," "Rhetoric," and "Poetics"* (Albany, 1977), p. 14–17. For the Latin, see *Averrois Cordubensis epitome in libros logicae Aristotelis*, in *Aristotelis Stagiritae omnia quae extant opera, Averrois Cordubensis in ea opera omnes qui ad nos pervenere commentarii*, vol. 1 (Venice, 1552), fol. 355v-358v. The *terminus ante quem* for the work's composition is its mention in Averroes' *Tağrīd* on natural philosophy, which was completed in 552 AH / 1157 CE.

[96] MS Munich, BSB, ar. 964, fol. 65r, lines 13–14; MS Paris, BnF, héb. 1008, fol. 71v, lines 1–2.

[97] His treatment of the fallacy of transfer and substitution is found in MS Munich, BSB, arab. 964, fol. 71v, line 10–fol. 72r, line 17 and MS Paris, BnF, héb. 1008, fol. 78v, line 8–fol. 78v, line 18.

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kalām-theologians may simply be caused by the difficulty mentioned by al-Fārābī. For al-Fārābī's extensive elaboration on geometrical fallacies, on the other hand, Averroes shows little interest and notes that such a fallacy "occurs in the geometrical section of the mathematical arts (*wa-ḏālika fī l-handasa mina l-taᶜālīm*)."[98] Averroes' *Taǧrīd* would be of only little interest did it not testify that he had radically changed his view on the number of fallacies that depend on meaning by the time he composed his *Talḫīṣ*, most likely after 1168, that is, more than ten years after the composition of his *Taǧrīd*.[99]

In his *Talḫīṣ*, Averroes first mentions the fallacy from substitution (*ibdāl*) when discussing the completeness of Aristotle's six fallacies from expressions (*mina l-alfāẓ*). As he states:

> It is therefore self-evident that there is no seventh division for an expression here which signifies in several ways one [single] meaning from the aspect of what deceives essentially *(min ǧihat mā huwa muġalliṭ bi-ḏātihi)*; [but] not from the aspect of what deceives accidentally (*bi-l-ᶜaraḍ*), like the deception (*al-taġlīṭ*) which occurs through substitution, I mean substituting an expression for another expression. It is therefore evident that the deceptive *topoi* (*al-mawāḍiᶜ al-muġalliṭa*) from expression are these six.[100]

It is not entirely clear whether we are already facing criticism of al-Fārābī's approach here. Averroes himself does not mention any definitive number of fallacy types from expression in his *Taǧrīd*, but rather follows al-Fārābī's basic division between equivocation and alteration. Al-Fārābī does not discuss substitution in the context of fallacies from expression but only in the context of fallacies from meaning. In contrast to al-Fārābī, Averroes does, however, distinguish between substitution from expression (*lafẓ*) and substitution from meaning (*maᶜnā*) when introducing the eighth fallacy-type in his *Taǧrīd*.[101] Although one must admit that al-Fārābī had already listed substitution from expres-

[98] MS Munich, BSB, ar. 964, fol. 72r, line 17 and MS Paris, BnF, héb. 1008, fol. 78v, lines 17–18. Averroes' claim that this type of fallacy is restricted to geometry might have prompted Ibn Ṭumlūs' reference to an astronomical example in his epitome/paraphrase of *Al-amkina al-muġalliṭa*. See Ibn Ṭumlūs, *Compendium on Logic*, ed. F. ben Ahmed, p. 219, line 18–p. 220, line 2 (Arabic pagination). The context for Ibn Ṭumlūs' fallacy might be what is mentioned in Aristotle, *Problemata*, ed. I. Bekker (Berlin, 1960), 911 b 35ff, but more research is needed here.

[99] This is the date given for the composition of the second part (dealing with books II-VII) of his *Talḫīṣ* on the *Topics*. See Averroes, *Middle Commentary on Aristotle's Topics*, ed. Ch. E. Butterworth and A. ᶜA. Harīdī (Cairo, 1979), p. 198, lines 2–4.

[100] Averroes, *Talḫīṣ al-Safsaṭa*, ed. M. S. Sālim (Cairo, 1973), p. 26, lines 3–6.

[101] MS Munich, BSB, ar. 964, fol. 71v, line 11. For the Latin, see *Averrois Cordubensis epitome in libros logicae Aristotelis*, fol. 357v.

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sions, he did not contrast them to the other nine types of transfer in the way Averroes does. Whether or not Averroes' criticism is directed at al-Fārābī's work or his own previous understanding of it, he already introduces a conceptual distinction that he will use in the entire discussion of this topic, namely that of essential and accidental deception.

But let us first take a step back. Regarding his overall discussion of the completeness claim in SE 8, Averroes acknowledges the lack of argumentation on Aristotle's side. As he states, this is an issue that "needs further reflection,"[102] and one needs "to complete it," for "there is room for investigation and examination."[103] Nonetheless, Averroes does not tackle the completeness claim as a problem in itself but in opposition to al-Fārābī's innovation, as he says:

> We find (*wa-naḥnu naǧidu*) that Abū Naṣr [al-Fārābī] has added in his book an eighth *topos* among these *topoi*, which is the *topos* of substitution and transfer (*mawḍiʿ al-ibdāl wa-l-nuqla*). I mean [by this] that, for replacing something, one takes what is similar to it, its consequence, or what is in conjunction to it [etc.]. But did Aristotle ignore this *topos* or did he not? And if he ignored it, did he also ignore other *topoi* besides this one? Or where does the issue stand in this?[104]

In his criticism of al-Fārābī, Averroes does not disclose the fact that he himself followed al-Fārābī's innovation in his *Taǧrīd*. It is, therefore, difficult to deduce from his wording whether or not he wants to express that he only discovered this discrepancy now when writing his *Talḫīṣ*. As already mentioned above, Averroes' main strategy for defending Aristotle lies in distinguishing between what he calls "essential" and "accidental" deception. Following this strategy, he admits that even Aristotle has introduced many more types of fallacies throughout his works than what is found in his SE. For instance, as Averroes reminds his readers, Aristotle introduces the difference between contrariety and contradiction in his *De interpretatione*.[105] Bearing in mind the analysis in section 3 of this paper, it becomes clear why Averroes may have wanted to point to this particular example: because al-Fārābī lists the illegitimate transfer from contrariety to contradiction as a type of fallacy that depends on transfer and substitution. In conclusion, Averroes sums his point up by

[102] Averroes, *Talḫīṣ al-Safsaṭa*, p. 65, lines 17–18.

[103] Averroes, *Talḫīṣ al-Safsaṭa*, p. 65, lines 18–19.

[104] Averroes, *Talḫīṣ al-Safsaṭa*, p. 65, line 19–p. 66, line 3.

[105] Averroes, *Talḫīṣ al-Safsaṭa*, p. 66, lines 6–9. See Aristotle, *De interpretatione*, ch. 6–7. In this context, Aristotle also mentions "the troublesome objections of sophists (τὰς σοφιστικὰς ἐνοχλήσεις)" (17 a 36–37, trans. Ackrill). In what follows, Averroes also mentions the *Prior Analytics* (*Kitāb al-qiyās*).

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saying that Aristotle "did not think that the deceptive *topoi* related to this art (*al-mawāḍiᶜ al-muġalliṭa al-mansūba ilā hāḍihi l-ṣināᶜa*) are all the *topoi* from which error occurs for us, as it happens."[106]

Granted that fallacies may occur on more grounds than Aristotle's list in the SE suggests, how can one know what should be part of a treatise specifically dedicated to fallacies and what not? Averroes approaches this problem by providing two conditions for being considered in a treatise on fallacies: One is, as already mentioned, that something has to deceive essentially rather than only accidentally. The other is that something has to deceive all or most of the time while not already being part of another syllogistic art.[107] Both criteria fundamentally touch upon what Aristotle conceives to be the subject matter of his treatise. Averroes is not perfectly clear on this point, but he does once state that Aristotle does not need to include things that deceive only rarely since "he intended this art to be an art that produces deception (*ṣināᶜa fāᶜila li-l-taġlīṭ*)."[108] If indeed the topic of how to produce (and to guard against) voluntary deception is the goal of Aristotle's treatise, what is included in the art must be evaluated by whether or not it contributes to reaching this goal. Consequently, what is fallacious but so obvious that one is immediately aware of it is as much excluded from this art as that which does not deceive essentially but only accidentally, that is, a *topos* that may equally be the source of valid arguments but also can lead to error. Averroes eventually applies his theoretical account to al-Fārābī's fallacies from transfer and substitution:

> From our previous argument in this book you may have acquired certain understanding (*wuqūfan yaqīnan*) that there are no fallacies here except for those which we have listed. [By this,] I mean that which has to be listed as a part of this science. And [you may have understood] that the *topos* which Abū Naṣr [al-Fārābī] thinks to have corrected, namely the *topos* of substitution (*mawḍiᶜ al-ibdāl*), is something that is not hidden to Aristotle.[109]

In this final section of his argument, Averroes offers two explanations of how Aristotle did account for this type of fallacy. Firstly, such things "do not deceive essentially (*bi-l-ḏāt*) and for the most part, for the *topos* of substitution, as Aristotle has taught us, is essentially rhetorical or poetical."[110] Secondly, "if one really feels one must mention them in the parts of this science," so Averroes says, then one shall include them

[106] Averroes, *Talḫīṣ al-Safsaṭa*, p. 67, lines 1–2.
[107] Averroes, *Talḫīṣ al-Safsaṭa*, p. 67, lines 7–8.
[108] Averroes, *Talḫīṣ al-Safsaṭa*, p. 67, line 13.
[109] Averroes, *Talḫīṣ al-Safsaṭa*, p. 179, lines 6–9.
[110] Averroes, *Talḫīṣ al-Safsaṭa*, p. 179, lines 11–12. Note the fact that even al-Fārābī

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"among the fallacies from accident (*bi-l-ᶜaraḍ*)."[111] Averroes' first point is especially crucial, as it leads to the core of what a study of fallacies must include from his point of view. But to which extent is it a valid criticism of al-Fārābī's approach?

Al-Fārābī had already stated that he did not intend to cover all causes of error, only those which "may become syllogisms or parts of syllogisms."[112] One's attachment or aversion towards a certain opinion may also lead to error. However, these types of errors are not based on syllogistic reasoning but evoked by emotions, and causing belief through arousing certain emotions is, according to al-Fārābī, not part of this investigation but rather part of the arts of rhetoric and poetics. Averroes' distinction between "essential" and "accidental" introduces a criterion that was apparently not mentioned by al-Fārābī. Averroes would surely admit that fallacies that depend on transfer may give rise to syllogisms. Still, they are not essentially deceptive insofar as there are many cases in which one may legitimately transfer certain features from one object of thought to another, as al-Fārābī would certainly agree. Likewise, Averroes has good reasons for claiming that Aristotle did treat the topic of transfer both in his *Rhetoric* (where he elaborates on the topic of metaphors in Book III) and in the *Poetics*, where he says that in the case of metaphors, "the transference (ἐπιφορά) happens either from genus to species, or from species to genus or species to species, or on the grounds of analogy."[113] In both cases, using different forms to transfer meanings and properties is not fallacious at all but can even enhance one's understanding.

Averroes' point must be, therefore, understood to mean that transfer and substitution are, strictly speaking, not a type of fallacy but rather a technique that may or may not lead to error. Aristotle's types of fallacies, by contrast, have no other possible outcome than error. There is no use of "begging the question" that would not effectively lead to a mistake (excluding the possibility that one may accidentally establish a true conclusion). Likewise, to mention another type of fallacy, there is no valid way of treating something like a cause that is not a cause. From this point of view, all these fallacies are essentially fallacies, while

uses the term *nuqla* to describe the method of *istidlāl bi-l-šāhid ᶜalā l-ġāᵓib*. On this, see J. Lameer, *Al-Fārābī & Aristotelian Syllogistics: Greek Theory & Islamic Practice* (Brill, 1994), p. 206–207.

[111] Averroes, *Talḫīṣ al-Safsaṭa*, p. 180, line 1.

[112] Al-Fārābī, *Al-amkina al-muġalliṭa*, p. 132, lines 14–15.

[113] Aristoteles, *De arte poetica*, ed. R. Kassel (Oxford, 1968), ch. 21, 1457 b 6–9 (trans. Bywater, modified).

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al-Fārābī's deceptive *topos* of transfer and substitution is rightly considered to be only accidentally fallacious (that is, only when wrongly applied). However, as the analysis in section 3 of this paper has shown, al-Fārābī intends to show how some legitimate didactic tools (such as spotting a similarity between two concepts or drawing diagrams) may become fallacious when wrongly used. From this point of view, considering Aristotle's rationale, Averroes' criticism seems appropriate. What it does not consider, however, is that it treats Aristotle's and al-Fārābī's treatises as dealing with the same subject matter. In the conclusion, I will therefore end by posing the question of what we can know about the way Averroes read al-Fārābī's treatise when writing his *Talḫīṣ*.

6. CONCLUSION: AVERROES' INTERPRETATIVE FALLACY IN RECONCILING ARISTOTLE AND AL-FĀRĀBĪ

Steinschneider's puzzlement about Averroes' tacit change of views on the number of fallacies from meaning may be explained by the fact that he was not yet aware that Averroes' primary reference in his *Taǧrīd* is, in fact, al-Fārābī and not Aristotle, as has been pointed out, for instance, by Dimitri Gutas.[114] But this alone does not yet explain why Averroes has changed his mind on this topic in the first place. Particularly telling and relevant for evaluating Averroes' intellectual development is a passage from his lemma-commentary on the *Posterior Analytics*, where he describes a shift in his evaluation of al-Fārābī's philosophy.

> As for my part, I thought for a long time that the right thing to do is to reconcile the two teachings [i.e., Aristotle's and al-Fārābī's] (*al-ṣawāb huwa l-ǧamᶜ bayna l-taᶜlīmayn*). Then, however, when the goal of demonstration – inasmuch as it is demonstration – became clear [to me], I scrutinized it, and it became clear to me that what is right and true is what Aristotle does, and what al-Fārābī does is false.[115]

[114] Gutas, "Aspects of Literary Form," p. 55: "An abstract (*taǧrīd*) of all logic, specifically of Fārābī's abridgement of the *Organon*, *not* the texts of Aristotle. True to his Andalusian heritage, Averroes was following … in the footsteps of Ibn-Bāǧǧa."

[115] Averroes, *Šarḥ Kitāb al-burhān*, ed. ᶜA. Badawī (Kuwait, 1984), p. 246, lines 13–15. See also the account in Steinschneider, *Al-Fārābī (Alpharabius)*, p. 47. This seems also to be reflected in a work written by Averroes that is attested in the bio-bibliographical literature and which bears the title *Maqāla fī l-taᶜrīf bi-ǧihat naẓar Abī Naṣr [al-Fārābī] fī kutubihi al-mawḍūᶜa fī ṣināᶜat al-manṭiq allatī bi-aydī l-nās wa-ǧihat naẓar Arisṭūṭālīs fīhā wa-miqdār mā fī kitāb kitāb min aǧzāᵓ al-ṣināᶜa al-mawǧūda fī kutub Arisṭūṭālīs wa-miqdār ma zāda li-ḫtilāf al-naẓar yaᶜnī naẓarayhimā*. See Ibn Abī Uṣaybiᶜa, *ᶜUyūn al-anbāᵓ fī ṭabaqāt al-aṭibbāᵓ* ("The Best Ac-

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Although in the quoted passage Averroes elaborates only on a certain aspect of how to reconstruct Aristotle's theory of demonstration correctly, one may still pose the question of whether it is permissible to transfer his disenchantment with al-Fārābī regarding demonstrations to his views on fallacies. Averroes describes here two different approaches to the points of disagreement between the First and the Second Teacher. As he says, he first tried to reconcile their teachings, while, later on, he preferred to reject al-Fārābī's teaching as wrong in favor of Aristotle's. Which of the two attitudes comes into play in his *Talḫīṣ* of the SE? Does he try to reconcile the two thinkers who had the greatest impact on his thought? Or does he reject al-Fārābī straight away?

The analysis I have presented speaks more in favor of the first option. However, the price of reconciling the two teachings, and the crux of Averroes' overall account, is that he fails to acknowledge that the respective accounts of fallacies in Aristotle's SE and al-Fārābī's "On Deceptive Topoi" are embedded in fundamentally different conceptual frameworks. As I argued in section 2 of this paper, contrary to Aristotle, al-Fārābī does not aim to provide an account of the *art* of sophistical argumentation, including voluntary deception and counter-deception. Rather, he aims to give an account of fallacies that guides correct reasoning in *all* syllogistic arts, especially demonstrations. For him, the study of fallacies is part of the overall study of logic, in opposition to the study of logical arts. This approach of his is already prevalent in his definition of logic from his "Introductory Letter to Logic," where he states that logic is

> an art that includes things that lead the rational faculty towards right thinking (*al-ṣawāb*), regarding everything where it is possible that one falls into error, and the knowledge of all that through which one can be on one's guard against error (*wa-taᶜarruf kull mā yataḥarrazu bihi mina l-ġalaṭ*) in everything the intellect may derive.[116]

The quoted definition depicts logic as the study through which one is led to correct thinking rather than theoretical and practical knowledge.[117] This understanding of logic only makes sense if it also accounts

counts of the Classes of Physicians"), in E. Savage-Smith, S. Swain, G. J. van Gelder (ed.), *A Literary History of Medicine* (Leiden, 2020), ch. 13, biography 66, § 6, no. 33.

[116] Al-Fārābī, *Al-tawṭiʾa aw al-risāla saddara bihā [al-Fārābī kitābahu] al-manṭiq*, p. 55, lines 7–9 (trans. Dunlop, modified).

[117] This definition of logic can therefore be regarded as a development of the late ancient Alexandrian approach, which considers logic as the tool for establishing what is true and false, partly embraced by authors of the Baghdad school. On the problems of this definition, see Peter Adamson, "The Last Philosophers of Late Antiquity in the

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for different types of fallacies and the grounds on which different forms of error may occur. Hence, al-Fārābī does not introduce logic as a tool to understand what is correct and what is false (for which one does not necessarily need a study of fallacies), but rather one to be used for achieving correct and avoiding fallacious reasoning. The study of fallacies, as it is found in his "On Deceptive Topoi", therefore, becomes an essential part of his overall conception of what the study of logic must entail independently of the arts that *use* logic in order to seek certain goals like teaching, victory, persuasion, deception, etc. That Averroes may not have understood or appreciated al-Fārābī's approach to fallacies is also apparent from the fact that, in his *Taġrīd*, he changes the position of this treatise, putting it after the study of demonstration rather than before it, as al-Fārābī did.

Consequently, much of Averroes' criticism simply collapses when considering the specific goal of al-Fārābī's treatise. In several instances, Averroes appeals to the necessity of distinguishing the methods of the different syllogistic arts, a topic to which also al-Fārābī attributes great importance in numerous treatises. Averroes is even desperate enough to remind al-Fārābī of the Alexandrian commentators' account of the epistemic value of propositions in the various syllogistic arts. Part of his reason for doing so may be that al-Fārābī also embraced this approach in some of his introductory texts on logic. As Averroes says:

> For this reason, the ancient commentators say that the propositions that are either always or most of the time wrong are those specific to this art, just as what is true in most of the cases is specific to dialectic, what is always true specific to demonstration, and what is equally true and false specific to rhetoric.[118]

However, Averroes fails to notice that al-Fārābī, in his "On Deceptive Topoi", not once refers to an "art of sophistry" or describes parts of such an art, comparable to what he does in his compendia on other syllogistic disciplines like his "Book of Debate," "Book of Rhetoric," or "Book of Demonstration." Given that, as I argued in section 2 of this paper, he aims to provide training in fallacious thinking that applies to all the syllogistic arts – to a certain extent akin to peirastic dialectic as understood by Proclus and Ammonius – he must include fallacies that may occur in all of them, be it demonstration, dialectic, or rhetoric.

Arabic Tradition," in R. Goule, U. Rudolph, Ch. Riedweg, and P. Derron (eds.), *Entre Orient et Occident: La philosophie et la science gréco-romaines dans le monde arabe* (Genève, 2010), p. 1–43, esp. p. 13–18.

[118] Averroes, *Talḫīṣ al-Safsaṭa*, p. 68, lines 1–4.

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Likewise, judging al-Fārābī by the standards he sets for himself, he may include types of errors that are not essentially deceptive and that do not always lead to error, as long as they empirically lead to error and scientific misconceptions. On the other hand, it must be granted to Averroes that including accidental sources of deception threatens the architecture of the entire study of fallacies, for there may be numerous sources on the basis of which one could be led into error. Al-Fārābī's many references to the philosophical tradition indicate that he did not aim to go that far. One must rather assume that he proceeded inductively, testing whether he might find mistakes recognized as such in the history of philosophy that cannot be reduced to one of the fallacy types mentioned by Aristotle. What seems more important for al-Fārābī than Averroes' essentiality criterion is thus the ability to cover all fallacies and sources of delusion that are known to have occurred in the preceding philosophical tradition.

Averroes does not indicate that he is aware of the different aims pursued by the two philosophers. Is it because he thought that al-Fārābī's series of logical treatises presents a valid and faithful depiction of the First Teacher's thoughts on this matter? Or is it plausible to assume that Averroes was so misinformed about the nature of al-Fārābī's work? One possibility is that he was not misinformed about al-Fārābī but rather about Aristotle's goals. It is believed that his series of *Talāḫīṣ* was initiated only after he had already written his series of *Taǧrīdāt* by the request of the caliph Abū Yaᶜqūb in the late 1150s or early 1160s, as al-Marrākušī's (b. 1185 CE) anecdote relates it.[119] Whether or not this anecdote is trustworthy, it is well possible that, at the initial state of his writing, Averroes was more familiar with al-Fārābī's than Aristotle's works. What can be stated with certainty is that, at the time Averroes composed his *Talḫīṣ* on the SE, he did not regard al-Fārābī's treatise as a commentary on Aristotle's, as he unequivocally states in its closing section:

> I did not find any commentary by one of the exegetes, neither a literal commentary (*šarḥ*) nor a commentary(-paraphrase) (*talḫīṣ*) interpret-

[119] Al-Marrākušī, *Kitāb al-muᶜǧib fī talḫīṣ aḫbār al-maġrib*, ed. M. S. al-ᶜIryān and M. al-ᶜArabī al-ᶜĀlamī (Cairo, 1949), p. 242, line 8–p. 243, line 16. On the date of their meeting, see Urvoy, *Averroès: Les ambitions d'un intellectuel musulman* (Paris, 1998), p. 90. For a critical approach to al-Marrākušī's anecdote, see Sarah Stroumsa, *Andalus and Sefarad: On Philosophy and Its History in Islamic Spain* (Princeton and Oxford, 2019), p. 135–141. As Stroumsa argues, even if the depicted meeting had taken place in a similar manner, it does not mean that Averroes had not already embarked on writing his series of so-called "middle commentaries" earlier than that.

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ing the meaning, except something found in Avicenna's *Book of Healing* (*Kitāb al-šifāʾ*).[120]

This account seems to imply that Averroes was aware that al-Fārābī pursued his own project rather than attempting to explain the words or thoughts of Aristotle. At least, he does not consider the project to fall under one of the two types of exegetical works he refers to. The fact that the primary reference of his *Taǧrīdāt* is al-Fārābī and not Aristotle is also clear from his epitome of the *Physics*, where he refers his readers to "the book of Abū Naṣr (*kitāb Abī Naṣr*)"[121] for the study of logic. Averroes' implicit claim that al-Fārābī's "On Deceptive Topoi" does not explain Aristotle's text finds more support in the fact that the only references to al-Fārābī, aside from the criticism referred to above, are taken from his account of the *Sophistici elenchi* in "The Philosophy of Aristotle."[122] As

[120] Averroes, *Talḫīṣ al-Safsaṭa*, p. 177, lines 4–6 (trans. from Endress and Hasper, "The Arabic Tradition of Aristotle's *Sophistici elenchi*," p. 75 (modified)). The bio-bibliographical tradition mentions a "commentary" (*šarḥ*) on Aristotle's "book of fallacies" (*kitāb al-muġālaṭa*). See, for instance, Ibn Abī Uṣaybiʿa, *ʿUyūn al-anbāʾ*, ch. 15, biography 1, § 5, no. 5. If al-Fārābī ever wrote such a commentary, Averroes clearly didn't have access to it.

[121] Averroes, *Al-ǧawāmiʿ fī l-falsafa: Kitāb al-samāʿ al-ṭabīʿī*, ed. J. Puig (Madrid, 1983), p. 8, line 9. Translation from Gutas, "Aspects of Literary Form," p. 55, n. 139 (slightly modified).

[122] In the first instance, at *Talḫīṣ al-Safsaṭa*, p. 111, line 9, Averroes reports al-Fārābī's view that the art of answering to sophistry and fallacies should be considered as an art that lies "in between dialectic and sophistry (*mutawassiṭa bayna l-ǧadaliyya wa-l-sūfisṭāʾiyya*)." This seems to reflect the following account in al-Fārābī's "The Philosophy of Aristotle:" "As for the art [Aristotle] gave him to meet each of the things put before him by the interlocutor, he formulated it as an art intermediate between the training art and the art of sophistry (*ṣināʿa mutawassiṭa bayna ṣināʿat al-riyāḍiyya wa-ṣināʿat al-sūfisṭāʾiyya*)" (p. 80, line 19, trans. Mahdī, modified). In a second instance, at *Talḫīṣ al-Safsaṭa*, p. 166, lines 1–3, Averroes reports al-Fārābī's suggestion to relate "repeating the same thing several times (τὸ αὐτὸ πολλάκις εἰπεῖν)" at SE, ch. 31, 181 b 25 to the occurrence of "inarticulate speech (*ʿiyy*)." Also this is taken from "The Philosophy of Aristotle," where al-Fārābī states that the fourth aim of the art of sophistry is "reduction to inarticulate speech and discourse (*ilzām al-ʿiyy fī l-qawl wa-l-muḫāṭaba*)." (p. 81, lines 9–10, trans. Mahdī, modified. Al-Fārābī explains this concept in greater detail on the following pages). M. Grignaschi, "Les traductions latines des ouvrages de la logique arabe et l'abrégé d'Alfarabi," *Archives d'histoire doctrinale et litteraire du Moyen Âge*, 47 (1972), p. 87 points to a quotation of al-Fārābī in Albert the Great's *Liber elenchorum*, which, so Grignaschi, could stem from a lost literal commentary on that work (see also the account in Mauro Zonta, "Al-Fārābī's Commentaries on Aristotelian Logic: New Discoveries," in U. Vermeulen and D. De Smet [eds.], *Philosophy and Arts in the Islamic World: Proceedings of the Eighteenth Congress of the Union Européenne des Arabisants et des Islamisants* [Leuven, 1998], p. 223). Although it seems true that

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it seems, Averroes found this account more helpful than what he read in "On Deceptive Topoi."

This is not the place to delve deeper into Averroes' relation to al-Fārābī, which would require comparing and contrasting more than these two treatises. Regardless of how he perceived his predecessor's writings, it suffices to say that Averroes' attacks on al-Fārābī seem unjustified, for he does not account for the context in which al-Fārābī deals with this matter. On the other hand, it may be more correct to say that Averroes' account is less a criticism of al-Fārābī than it is a defense of Aristotle, for the analysis has shown that Averroes does not *per se* reject the existence or importance of fallacies that may occur from illegitimate forms of transfer and substitution. He rather only rejects al-Fārābī's attempt to add these cases under an entirely new heading, by which Aristotle's completeness claim is made obsolete. Ironically, by transferring the scope of Aristotle's treatise to that of al-Fārābī's, Averroes seems to have committed precisely the error whose introduction to the study of fallacies he had rejected.

Acknowledgements. I would like to express my gratitude to Peter Adamson, Joep Lameer, Mohammad Saleh Zarepour, Paul Hullmeine, and the two anonymous reviewers for their many insightful comments, which greatly helped improve the quality of the paper. Moreover, I would like to thank Bligh Somma and Zack Candy for proofreading the article at different stages of its production. All remaining mistakes are solely my responsibility.

the paragraph referred to by Albert as al-Fārābī's is not (yet) identifiable in one of al-Fārābī's works on the matter, one might point to the fact that its content stands in stark contrast to his views in *Al-amkina al-muġalliṭa*. The reason for this is that, in the section referred to by Albert, he aims at giving a justification for the completeness of Aristotle's seven fallacies that lie outside expression by dividing them into material and formal mistakes, subdividing the formal ones into those that violate the order of propositions, order of terms, or the conclusion. The passage in Albert is found in *Beati Alberti Magni opera*, ed. P. Jammy, vol. 1 (1651), 861 a 15–39.

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