Islamic Logic?

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Abstract A current ideology has it that different cultural traditions have privileged sources of insight and ways of knowing. Prizing one tradition over another would reek of cultural imperialism. In this vein we have those pushing for a unique status for Islamic philosophy: it should have its rightful place alongside Western philosophy—and no doubt alongside Chinese philosophy, Indian philosophy, African philosophy…. I begin by examining what could be meant by 'Islamic philosophy'. I argue that embracing a multiculturalism that makes the philosophic enterprise relative to particular cultural traditions ignores a quite important part of the Islamic philosophical tradition itself: the quest for a transcultural, universal objectivity. The major Islamic philosophers embraced this ideal: al-Fārābī and Ibn Sīnā (Avicenna), for instance. They held that some cultures are better than others at attaining philosophical wisdom, and some languages better than others at expressing it. They advocated selecting critically features from the different cultures for constructing a general theory. I illustrate their method by considering their treatment of paronymy and the copula. I end by advocating a return to this Islamic tradition.

Professor Rahman has formulated the program for this book thus:

> The thinking underlying our proposal is the following. It is a common place today to say that philosophical thinking not merely articulates questions within a framework but also sometimes seeks alternative frameworks in order to dissolve or reframe the familiar questions. That is, one of the interesting procedures of research is to ask: How could our familiar questions look differently if we attempt to articulate them within a framework that is not familiar to us? It is in context that Non-European traditions acquire their interest: they can be reasonably expected to contain idioms and frameworks not familiar to us so that making available those frameworks for consideration today would invigorate our intellectual debate by making new intellectual instruments available. Obviously the Arabic text tradition is one such resource where alternatives to the current idioms of thinking can be sought. More particularly, we are thinking of the fact that both the Arabic and European text traditions took off from a reception of the text corpus of ancient philosophy, yet the historical circumstances within which the reception took place are different. This makes our focus all the more interesting: Since the problems are stimulated by the same corpus of texts inherited from the ancient Greeks, they may appear at first sight to be identical. But it is reasonable

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> to assume that differing historical circumstances of reception resulted in different articulations. So we want to focus on bringing out not the similarities but the differences, that is, to show how the idioms and frameworks in the Arabic text-tradition, though they appear similar at first sight, differ in fact from those idioms and frameworks that are familiar to us today from our acquaintance with the European philosophical tradition.

Oddly and ironically, I can indeed find that Islamic philosophy of the classical period does indeed provide "one such resource where alternatives to the current idioms of thinking can be sought." For the *falāsifa*—and indeed even the great mystics like Ibn ʿArabī later—stressed a common human experience, an objective human nature and truths, across cultures. To be sure, they were aware of linguistic and cultural diversity. They took some pains to analyze the differences. Yet their goal, as for the Greek philosophers living in polyglot, sophisticated and sophistical imperial Athens, was to find the objectivity in the diversity. Perhaps a quixotic task, yet they claimed to succeed. So then, to reclaim the perspectives of the diversity of cultures, past and present, we may need to reacquaint ourselves with the very objectivity dismissed today in certain circles (at least in talk).

I do not mean to criticize our editor by quoting him. Rather, I am examining his views as a significant cultural artifact, representative of a certain ideology in our culture. For I find our current intellectual stance curious. We are to approach cultures other than our own with the intention of finding what is distinctive, valuable and non-western about them. In doing so we seek to "embrace diversity" (to coin a phrase). From our viewpoint we know, seemingly a priori, that we have something to find and how to look for it.

Now what I find paradoxical, although not necessarily inconsistent,[1] concerns this very approach. For is it not just one more instance of imposing a western ideology upon a non-western culture? Instead of looking immediately for what we Westerners find, or should find, significant and distinctive about, say, Islamic culture, would it not be more responsible and respectful of that very culture to see what the people in that culture have to say about this issue? Indeed we should resist the temptation to legislate and say 'what they *should* say' about that issue.

I cannot of course carry out this whole project here. I confine my inquiries to looking at a few instances of how some major Islamic philosophers, al-Fārābī, Avicenna (Ibn Sīnā), and Averroes (Ibn Rushd), deal with cross-cultural comparisons and objective truth. Now these philosophers may not represent the majority views of their own culture(s). (Someone—a Muslim from Malaysia—once remarked to me that philosophers have more in common with each other than with people in their own cultures.) Moreover, the standards that they propose in logic, for instance, concern how people should reason, not how people in fact do reason. Likewise, in epistemology they propose standards that few people actually ever follow. As the First Teacher (as Aristotle was commonly known in some classic Islamic circles[2]) said:

> Perhaps, as difficulties are of two kinds, the cause of the present difficulty is not in the facts but in us. For as the eyes of bats are to the blaze of day, so is the reason in our soul to the things which are by nature most evident of all.[3]

But then philosophy has generally been, whether by fiat or in practice, an elitist activity, in which few, even the philosophers, measure up to their task. We should

not then expect the views of the philosophers always to reflect the majority views of their culture.

In any event, my case of the Golden Age of Islam concerns a cosmopolitan society with such diversity that I would be hard pressed to find much cultural consensus on particular details. Peoples from many traditions mixed freely in a fairly tolerant milieu.[4] At the least the philosophers were a group often strange by the standards of their culture.

Traditionally logic has been thought to deal with the structure of human thought—if not actual human thought, at any rate, the ideal human thought. For surely, as philosophers from Parmenides and Socrates delighted in pointing out, many if not most people reason fallaciously. The goddess herself held Parmenides back from the way of mortals on which they know nothing.[5] Plato has Socrates go so far as to compare most people with children and the philosopher with a doctor trying to give them a nutritious diet, in competition with a pastry-cook.[6] The children will prefer the pastry, and will offer many strident reasons for their preference. Of course, such "reasoning" frequently contradicts itself as well as conflicting with what facts we know about nutrition and health.

Now a champion of the children, of the people, may well object: you are using an adult logic assuming an ideology from the health sciences. We prefer our reasoning. In the interests of diversity, you should admit our children's logic as an equal of your own logic. Moreover, as more of us use it and like its conclusions than like and use yours, surely ours should become the ruling standard for human thinking—as in fact human history and the actual lives of actual people attest. (Indeed we can see glimmers of such an ideology in current American educational practices, like fuzzy math.)

The befuddled philosophers, fresh down from the clouds of reason and science, might reply: you have just committed another fallacy, the *ad populum*. Yet, as the very standards of logic have come into question, does not their very reply by their own standards commit the fallacy of begging the question?

At any rate, such are the questions that we have to face if we ask: can "Islamic philosophy" provide a unique, valuable perspective? Islamic philosophy itself challenges this question. For the perspective some Islamic philosophers provide is that the perspective of reason is privileged, objective, and relatively independent of particular cultural circumstances. We have then a perspective rejecting the equal validity of other perspectives. As Rahman says, and as we shall see Islamic logicians agreeing, different cultures will articulate the principles of this perspective differently. Nevertheless, whereas current post-modern ideology insists on diversity for all perspectives whether those perspectives like it or not, in classical Islamic philosophy we have objectivity being asserted for all perspectives within the context of a single perspective.

I shall deal here with logic, which was and still is held to provide the basic standards for reasoning, be it human or otherwise. I shall be taking 'logic' in a broad sense, which was traditional in Islamic and other cultures.

In a logical spirit, first I shall analyze the expression "Islamic philosophy". I shall then proceed to examine how some classical Islamic philosophers themselves dealt with questions of multicultural perspectives. In doing so, I shall use as test

cases their doctrines of derivative words and the copula. I shall be going into some technical detail, in order to give some indication of the depth and sophistication of their views. It is perhaps a sad reflection of the current state of Islamic studies today that we tend to shy away from such details, as I shall have occasion to remark again below. For surely any distinctive worth of Islamic philosophy, like Islamic mathematics and science, lies in the details. Likewise, an atomic theory proclaiming that atoms compose everything has little merit without explaining how so, in great detail.

1 "Islamic" is Said in Many Ways

Rahman speaks of the "Arabic text-tradition" and asks us to seek what is distinctive in it. Taken literally, the "Arabic text-tradition" concerns anything written in Arabic, including translations of texts from western and other non-Arabic traditions. Still, in its usual connotation, the "Arabic text-tradition" signifies texts distinctive of Arabic, sc., Islamic culture(s).

We have a bevy of related issues here, including: to what extent does translation into a new language change the content of a text or doctrine, here principally a philosophical one? To what extent does the content of the text or doctrine change, relative to the culture associated with and embodied in that language? Do then Arabic translations of Greek philosophy count as "Islamic philosophy"? Do the works of Maimonides written in Arabic, like *The Guide for the Perplexed*, count as Islamic philosophy? Does a paraphrase of Aristotle's works?

Today such questions routinely appear in a post-modern context. Claims of objectivity and a privileged viewpoint are dismissed as cultural and even political imperialism. We can see the same issues arising in current histories of philosophy from different cultural traditions. A recent history of Islamic philosophy has some polemical discussions about just what is "Islamic philosophy" [1162–9] as opposed to "philosophy" [i; 2–4; 21–2; 40–1; 497–8; 598–9; 796–7] or to "Muslim philosophy" [37 n. 1; 1084] or to "Arab philosophy" [11; 17] or to "theosophy" [35; 638].[7] Nasr in particular seems to have a defensive bias against types of "modern philosophy" "which has reduced philosophy to logic and linguistics".[8] Indeed, this bias may obscure the technical sophistication of Islamic philosophers. For this history mostly neglects the technical details of Islamic philosophers, who excelled at logic and linguistics.[9] Indeed, such neglect may be due to most current scholarship on Islamic philosophy being done by Orientalists and not by philosophers proper.[10] As Gutas says, the view of Islamic philosophy as focusing on the spiritual and the religious and ignoring the logical and scientific has to do largely with what texts Westerners have chosen to translate and focus upon.[11] As a result, the focus has been on the cultural and religious contexts more than on the technical work—including that in logic and linguistics—of Islamic thinkers. To be sure, many chapters of this *History* make claims about "new" logical theory being advanced.[12] Yet, in most cases (unlike, say, the *Cambridge History of Later Medieval*

Philosophy), too little detail is given to assess the originality or the logical acumen of these new theories.

This understanding of Islamic philosophy makes "Islamic philosophy" have a different use than 'Greek philosophy' or even 'medieval philosophy'. Moreover, it makes it resemble instead the thought of Peter Damian and Bernard of Clairvaux, or of later scholastics in the West, or of the theologically inclined like Calvin and Luther, or perhaps of neo-scholastics like Poinsot and Maritain. It would also tend to exclude those like al-Fārābī, and al-Rāzī, who see little use for their own religious traditions in their philosophical work.[13] Likewise it makes far more use of Avicenna's treatises on prophecy than of his voluminous output on logic and natural science.[14] The authors of this history tend to focus much more on those like Ibn ʿArabī, Suhrawardī, and Mulla Ṣadrā, who indeed are much more congenial to current Islamic "philosophical" practices. In this way, Hossein Ziai complains of the standard western view of Islamic philosophy, that it stagnated or devolved into theosophy after Ibn Rushd.[15] Yet he too admits that it is a future task to determine whether Suhrawardī's thought is "philosophically sound" as opposed to being polemical and devoted to justifying the existence of "extraordinary phenomena" in the "imaginal" world, like "reviving the dead" and "personal revelations".[16]

This relative neglect of the technical work written in Arabic may thus reflect our biases more than the state of Islamic philosophy. It also tends to make Islamic philosophy rather uninteresting to philosophers today, apart from being one more multicultural phenomenon. Moreover it has a basis as a reaction to the older Orientalist view, that those in Semitic cultures had no philosophical ability.[17] Thus Renan says that the Arabs, like all the Semitic peoples, had no idea of logic as they were enthralled by poetry and prophecy.[18] So we get the view that the Muslims contributed nothing new to Greek philosophy but were merely its caretakers.[19] The current view does not contest this assessment of the logic and philosophy, so much as to insist on the superiority of Islamic philosophy in the poetical, mystical, and religious areas of Islam.

Such problems do not pertain to "Islamic philosophy" alone. We can see the same issues arise for other areas. I use here the historically ironic example of "Jewish philosophy". In *The Cambridge Companion to Medieval Jewish Philosophy* Oliver Leaman starts off by worrying just what can be meant by "Jewish philosophy": is it any philosophy done by Jews?[20] Philosophy using materials from Jewish culture? Philosophical comments on Jewish culture? I share the worry.

After all, would we want to speak of "Jewish physics"? To be sure, Hitler did so, but most of us do not find such talk palatable or useful. Rather, some people do physics, and physics consists of the theories they come up with. Some of these people happen to have a Jewish heritage. As many Jews have been or are prominent modern physicists, we hardly need to emphasize or even to remark upon the fact that Jews do physics by speaking of "Jewish physics". Again basing a physics on Jewish culture seems off-target. To develop a physics based on the *Talmud* and to present it as "Jewish physics" seems ludicrous.

Why, then, is it not any less ludicrous to speak of "Jewish philosophy"? As Leaman remarks, this talk does not work well, and generally is not applied to, certain areas of philosophy, like logic or (I hope) epistemology. The areas to which it

is applied, and with which this *Companion* predominantly deals, are those like religion, ethics, and political theory.

But why then is this material not philosophy but theology? The definition given by David Shatz of 'Jewish philosophy', as "an interpretation in philosophical terms of beliefs, concepts and texts bequeathed to medieval Jews by the *Bible* and by rabbinical literature", certainly makes it seem so.[21] Likewise Menachem Lorberbaum says, "Jewish philosophy must begin by attending to Jewish existence, to the meaning of Judaism confronting history."[22]

This view makes Jewish or Islamic philosophy have religion as its main focus.[23] Sabra calls this the marginality thesis: the technical, marginal work being done in Islamic philosophy was done by "…a small group of scientists who had little to do with the spiritual life of the majority of Muslims."[24] Yet, as Sabra goes on to note, most of the philosophical works were preserved in the religious schools [*madrasa*], and every mosque had a resident astronomer-mathematician.[25] As George Sarton has remarked, Islamic science lasted longer than Greek, medieval, or modern science has (600 years).

I find Lenn Goodman's discussion in the *Routledge Encyclopedia of Philosophy* better than these. Goodman distinguishes "Jewish philosophy" from "the philosophy of Judaism", the latter amounting to a Jewish theology and theodicy. He says: "Jewish philosophy is philosophical inquiry informed by the texts, traditions and experiences of the Jewish people…What distinguishes it as Jewish is the confidence of its practitioners that the literary catena of Jewish tradition contains insights and articulates values of lasting philosophical import."[26] In these terms, a lot of the discussions in this *Companion* consist in the philosophy of Judaism, and not Jewish philosophy.

So too we may then define "Islamic philosophy" as "a philosophical inquiry informed by the texts, traditions and experiences of Muslims". In this way Islamic philosophers need not be devout Muslims. Likewise they need not write in Arabic: some like al-Ṭūsī and Avicenna wrote in Persian. Still they will be reacting to and thinking in the motifs of the prevailing culture. Thus the Arabic language will have importance in Islamic philosophy due to its social and religious significance in the society.

But all this would mean that those from Islamic or Jewish backgrounds find some materials useful there for developing and defending their own philosophical positions. Such materials may inspire them. Yet their sources do not *ipso facto* justify their claims.

Gutas suggests that we use "Arabic philosophy" instead of "Islamic philosophy" because Arabic was the language of Islamic civilization and some philosophers writing were not Muslims. Indeed, up to the tenth century (A.D.) logicians writing in Arabic were mostly Christian. Moreover Arabic was deliberately made into a philosophical language.[27] Still, as noted above, those like Maimonides writing in Arabic are not considered part of the Arabic text-tradition, and others like al-Ṭūsī are, even when they do not write in Arabic. My conception of Islamic philosophy does give Arabic a prominent place while not making its use a necessary condition.

Nevertheless my classical conception of "Islamic philosophy" does not have a place for discussions grounded on the revealed truth of the Qur'ān. Perhaps we

can find a place for such Islamic or Jewish discussions, mostly as data to be explained, in anthropology, political science, history of religion, or philosophy of culture. But where is the philosophy as traditionally conceived: a pure pursuit of truth, going wherever the *logos* takes us? Where in this do we need an appeal to the culturally contingent practices of a particular culture? I doubt that "Jewish existence" needs a special existential quantifier or calls for a "Jewish logic".

I do not mean to be too facetious here. Yet the issue has become serious. Even the head of the British commission on racism has asked recently: is the current version of "multiculturalism" a new, politically correct racism? Such talk of "Jewish philosophy" becomes a case in point. (We might think too of Spinoza's remark in his *Letters* that Jews encourage anti-Semitism via their dietary laws and by celebrating themselves as the chosen people.)

Likewise for "Islamic philosophy": al-Rāzī and even al-Fārābī viewed Islam as superstitious claptrap, at best fit for popular use and propaganda. In what sense are they "Islamic philosophers"? What impels us to say so? I suspect that more our present perspective than the material being studied might motivate the classification of works even of those of Arab ancestry and Islamic culture into "Islamic" and "non-Islamic" philosophy etc. Cultural pride can motivate people to insist that their philosophers are as good as other philosopher. (At times I wonder whether the current development of "Islamic philosophy" has developed mostly from the tendency of Muslim donors and certain foundations to fund positions and programs of "Islamic" philosophy etc.)

To make my point with less controversy, consider the history of mathematics (or medicine or astronomy!). Here we can say, confidently, that Islamic mathematicians did much original work in trigonometry and algebra: a real advance on Greek and Roman science. We do not need to speak of "Islamic mathematics". Rather there is mathematics, and it turns out that many Muslim authors, mostly writing in Arabic, have contributed significantly to the field—much more so than many other cultures, it turns out. (Ancient Greek arithmetic is terrible!) I think that the same could be maintained for Islamic philosophy.

Thus, although it is fashionable today to speak of "Islamic philosophy", "African-American philosophy", "Lesbian philosophy" etc., let me ask: is such talk racist? Is it a way to demote philosophy to mere ideology—to admit implicitly that certain traditions are second-rate?

For on Paul Grice's theory of conversational implicature, the overemphasis on "Islamic" suggests this.[28] Apart from contexts where we wish to specify that we wish to study the history or the culture of Islam, what is the point of insisting that certain philosophy is "Islamic", "Arabic" etc.? We do not need to speak of Islamic algebra: after all, as algebra is an Islamic invention, there is not need to insist upon the importance of Muslims in algebra. Likewise, we do not need to insist upon "African-American jazz musicians", although we might for "Afghani jazz musicians". To continue to speak of Islamic philosophy is to acknowledge that there are strong reasons to think that it has not, or does not, measure up to the standards of the field, and that we must defend its legitimacy. Yet if we turn to the technical details of the philosophers themselves, we find that we have nothing to defend. As we shall see briefly, the content speaks for itself.

2 Linguistic Determinism

> The dependence of western ontology on the peculiarities of the Indo-European verb 'to be' is evident to anyone who observes from the vantage point of languages outside the Indo-European family.[29]

The Sapir-Whorf hypothesis lurks behind many later views on the relation of language to its culture, including the philosophy done there.[30] On it a language embodies a culture. Different cultures have no objective common ground, nor can a neutral observer find such ground in order to make objective comparisons and translations. We can add to this some descendants of the Sapir-Whorf hypothesis: Wittgenstein's conception of different ways of life being different *language* games, each with its internal standards, and Quine's doctrine of the indeterminacy of translation: no exact translation between languages, or indeed between idiolects in the same language, is possible, given that under-determination of stimulus meanings—even assuming that different human beings could have the same stimulus meanings at the same time, given their different vantage points and their different physiologies and past experience—and the wide variety of different, mutually incompatible sets of analytic hypotheses to supplement those meanings.[31] Small wonder then that those doing comparative philosophy will say:

> If Whorf is right...[if] the philosopher is trapped in his native language, then every cognitive insight he provides can do nothing else but redescribe the fundamental structures of his linguistic outfit.[32]

On this view philosophy amounts to an articulation of the values of the culture, whether these be grammatical or political. Knowledge amounts to what we can experience from our particular viewpoints without ever being able to go beyond their limits. At best the philosopher can articulate, analyse, and make consistent the general principles presupposed by her perspective. Aristotle, "the master of all who know", did no better. For instance, in coming up with his list of the categories, Aristotle unconsciously took as his criterion the existence of the corresponding expressions in Greek, the distinctions in the language, without noticing what he was doing.[33]

Like many others, Jean-Paul Reding flirts with such a linguistic determinism, although he ultimately shies away from it. Thus Reding accepts to a great extent the Whorf thesis of linguistic relativism. Still he continues to hold that "philosophy is not entrapped in language" and we may find common cognitive insights in different traditions.[34] Still he is a "soft" linguistic determinist: e.g., he suggests that atomic theory tends to arise only in languages that are alphabetic.[35] Reding goes on to say that the comparison of Chinese and Greek philosophy is our only chance to see to what extent philosophy is independent of language, and test the Whorf hypothesis. For the other sorts of philosophy that we have come from Indo-European languages.[36]

Reding sees fundamental profound differences between ancient Greek and Chinese, ones that have to influence the logical theory. Unlike Greek, Chinese has no 'is' to serve as a separate copula and no inflections, and indicates time

and frequency differently.[37] Moreover, what Graham takes to be the main difference, Chinese distinguishes sharply between nominal and verbal sentences.[38] Reding sees as the main linguistic difference between classical Chinese and Greek that in Chinese temporal markers are expressed at the start of a sentence and temporal frequency markers come at the end, and, secondarily, that Greek has a distinctive word for the copula.[39] The difficulty in comparing this claim to Greek is that Greek has no fixed word order. Graham's point about the big difference in structure in Chinese between the verbal and the nominal sentence seems more àpropos than the common point about Greek having a distinctive word for the copula.

All this may be so. The irony of Reding's position is that much the same grammatical points can be made about Arabic, which Islamic philosophers adapted, quite self-consciously, to express the truths of the Greek tradition that they inherited and expanded. The striking point is that Arabic differs from Greek in much the same ways as Reding says that Chinese does: a difference between the nominal and the verbal sentence, and not having a copula.

Moreover, Islamic philosophers like al-Fārābī and Avicenna explicitly note the differences between Greek and Arabic, and discuss which language gives a better description of what is real. They then make up some structures in Arabic to side with the Greek, while discarding some of the Greek structures in favor of what they judge to be the more perspicacious ways of signifying things in Arabic. We shall see the former happening with the copula, and the latter with paronymous expressions.

All this does not look like the activities of simple-minded insects trapped in their linguistic web. On the contrary, it looks just as sophisticated as what we can do today in comparing different traditions, and judging whether these or those philosophers are trapped in the illusions of their language games.

Now Reding follows A. C. Graham in taking Arabic philosophy to "descend from" the Greek.[40] The claim is that Islamic philosophers received the Greek materials, translated more or less accurately, and then tried to defend and articulate their doctrines without much original thought.[41] This view dovetails with the view that Islamic philosophy has intrinsic flaws, from having no direct knowledge of Greek and from having received neo-Platonist works as those of Aristotle. We have the picture of Ortega y Gassett: al-Fārābī or Avicenna or Averroes becomes a Quixote, trapped in a dream of commenting upon the *Poetics* of tragedy without knowing any plays.[42]

All this many have found convincing. But, I submit, it convinces you the less you knows of the technical details of Islamic philosophy. Moreover it ignores the independence of thought of those like Avicenna. For instance, after explaining Aristotle's claim of the priority of the first figure in demonstration, he ends by saying that he does not agree with it and that it should not be accepted.[43] In short, I reject Reding's taking Islamic philosophy as a mere slavish fiefdom of the Greek. But to show the originality and sophistication of Islamic philosophy I must get down to some details.

3 Paronymous Terms

Aristotle discusses paronymy in his *Categories*.

> Whatever differ by inflection are called paronyms: They have their appellation in virtue of the name, as the grammatical [man] from grammar and the brave [man] from bravery.[44]

As paronyms have appellation, they are called by names, and are real objects, not expressions.[45] The basic object is signified by an abstract name, like 'grammar' and 'whiteness'; the derivative object by a concrete one, like 'white' and 'grammatical'. Aristotle uses the masculine singular definite article here (e.g., ὁ γραμματικός) to indicate that the derivative term signifies a man. Thus paronyms are two objects referred to by two grammatically related terms.[46] In terms of Aristotle's theory of categories, the abstract, base term usually refers to an item in a non-substantial category, while the concrete, derivative term refers to a substance having that item. For example, 'white' names the substance having whiteness, while 'whiteness' names the quality. 'The dog is white' is true, while 'the dog is whiteness' is false. In contrast, the (essential) predication of a species of a genus in any category requires that non-derivative terms be used. Thus Aristotle says that 'whiteness is a color' is true, while 'whiteness is colored' is false.[47]

This doctrine conflicts with Greek as with Arabic grammar. Abstract terms are not basic grammatically and are usually derived from more concrete terms. Rather, Aristotle is making a logical point, about which expressions signify directly and primarily existing objects and which do not. Other expressions are "inflections" of these primary ones. Ordinary language confuses: it takes as primary "what is primary and evident to us" and not what is so in itself.[48] Aristotle is well aware of departing from common usage, e.g., in distinguishing between the abstract term designating the quality, like 'whiteness', and the term derived paronymously from it, 'white':

> Those stated above are the qualities, while the *qualia* are those said paronymously in virtue of these or in some other such way from these. In most cases, even nearly in all, they are said paronymously, like 'white [man]' from 'whiteness', and 'grammatical [man]' from 'grammar', and 'just [man]' from 'justice', and likewise for the other cases. In some cases on account of there not being available names for the qualities it is not possible for them to be said from them paronymously. For example the runner or boxer…Other times, even when the name is available, the *quale* said in virtue of it is not said paronymously. For example, the good man is so called from virtue…[49]

Qualities belonging to the category are usually signified by abstract terms; their associated *qualia*, derived paronymously from them, are predicated of a subject, in the category of substance. Instances of the two exceptions in the category of quality are 'boxer', in the sense that someone is said to have a talent for boxing, by nature and not by training, and 'good' respectively. Aristotle is noting that there is no name in the ordinary Greek language presently for boxing-ability, and that 'good' is the *quale* for the quality 'virtue'. So here ordinary language is inadequate or its grammar misleads.[50] In developing his own position Aristotle develops a technical vocabulary that departs from common usage.[51] In this sense, at least,

Aristotle's thought is developmental: starting from ordinary language, he is creating his technical language.

Note that in discussing paronymy Aristotle often has to invert this grammatical order: e.g., although logically the paronym whiteness is basic and the paronym the white derivative, grammatically the paronymous term, 'whiteness', is not basic but derives from 'white'. Once again for the philosopher ordinary language misleads: what is primary and evident in it is least primary and evident in itself.

Islamic philosophers continued Aristotle's project. Even just in translating Greek texts into Arabic, often via Syriac, Arabic had to be adapted to the reception of Greek locutions and technical terms.[52] For the languages differ greatly. The translators had to invent new terms and even new syntactic structures. By the time we come to al-Fārābī the terminology had stabilized.[53]

Also by this time there was already an indigenous tradition of Arabic grammar.[54] The grammarians sometimes clashed with the philosophers about who had the best methods for analyzing and interpreting texts, particularly religious texts. For instance there was a famous debate in 932 between Mattā and Sīrafī. Sīrafī the grammarian won "due to the incongruities of creating a language within a language," as Sabra puts it.[55] Yet perhaps philosophy won out in the long run. After all, science also progresses by creating artificial linguistic structures and notations.

This translation and assimilation of the Greek corpus did not amount to slavish, second-rate imitation. One way in which Islamic logicians differ from the Greeks commenting on Aristotle's logical works concerns their approach to the Aristotelian material and above all the style in which they do so. We need only compare the commentary of al-Fārābī on *On Interpretation* with the one by Ammonius. With al-Fārābī we have a much clearer style, and a strong hint that the author has systematic views, sometimes differing from Aristotle's, that he will be developing quite clearly—without mixing them up with Aristotle's or other commentators. In contrast, with Ammonius and other Greek commentators (perhaps not Porphyry)—and likewise with the Latin Boethius—we get the sense that they are dutifully collecting and recording what texts they have and what thoughts they might have without much regard to overall consistency or theory. In contrast, Islamic philosophers sought progress. As al-Rāzī says about the philosopher:

> Readily mastering what his predecessors knew and grasping the lessons they afford, he readily surpasses them. For inquiry, thought and originality make progress an improvement inevitable.[56]

Moreover, Islamic philosophers espoused the theory of Greek philosophers like Aristotle, who held that all human beings have a common mental language of thought, while having differing spoken languages signifying those thoughts.[57] Those like al-Fārābī accordingly saw quite different roles for logic and grammar:

> Grammar shares with it to some extent and differs from it also, because grammar gives rules only for the expressions which are peculiar to a particular nation and to the people who use the language) whereas logic gives rules for the expressions which are common to all languages.[58]

In this it is hard to see the philosophers' uncritically reflecting the structure of their language games. Indeed al-Fārābī makes claims that may well be embraced by a cognitive scientist today:

> That is to say, the thoughts all men understand when expressed in their different languages *are the same for* them. The sense-objects which those thoughts are thoughts of are *also* common *to all*. For whatever individual thing an Indian may have a sensation of — if the same thing is observed by an Arab, he will have the same perception of it as the Indian.[59]

Unlike their Greek predecessors, Islamic philosophers regularly discussed the different ways in which different languages would express the same claims. Since they held to objective standards of thoughts mirroring the realities of the world, they could look at the conventions of different natural languages and judge them as being more or less adequate and perspicacious:

> …since the inventors of different languages had endeavored to capture the same logical structures in different ways some could be expected to have been more successful than others from case to case; and that where the grammatical conventions of a given language failed to arrange for the display of the logical structure of thought with optimum perspicuity it was the logician's task to amend them.[60]

If their indigenous language(s) did the job, they used them. But, if they did not measure up, they felt free to use the conventions of another language or to make up new structures to express the truths. Al-Fārābī does just this when he discusses the names of the categories: they have conventional names in various languages and the technical ones reserved for the elite philosophers. He also admits an intermediate level of names, where the paronymous term, derived from the true name of the item in the categories, is used instead. As Aristotle had noted in his account of paronymy in the category of quality, al-Fārābī says that we might use 'noble' instead of 'nobility', even though 'nobility' names the quality whereas 'noble' names only the nobility presented in an unnamed subject.[61]

Looking at how Aristotle's paronyms are signified in Greek, Greek grammarians had already discussed these derivative terms, which they called "paronymous". In explaining how to generate the derivative forms, they had to make many classes and exceptions. (Here suffixes are added onto the roots or verb stems.[62]) Priscian divides the grammatically derivative terms into the inchoative, meditative, figurative, desiderative, diminutive etc. Dionysius Thrax speaks of prototypes and derivatives of nouns. The Islamic philosophers and grammarians inherited these distinctions.[63]

The Greek commentators on Aristotle also classified expressions signifying Aristotle's paronyms.[64] Like some grammarians, they took the infinitives as indeclinable names and as the basic forms from which other expressions were derived or "inflected".[65] Here the philosophy has influenced the grammar: the former determines which terms are basic from which of the two paronymous things is basic while the latter then shows how to make names up for the paronymous things in some language.

Grammatically, Arabic forms derivative terms much more systematically and regularly than Greek does: from trilateral or quadrilateral consonantal roots.[66] Classical Arabic grammarians derived names not from these roots themselves but

from the maṣdar, the verbal noun.[67] The maṣdar is not as basic morphologically as the trilateral and quadrilateral roots of Arabic but comes quite close. Indeed, perhaps these grammarians took the maṣdar as basic because their grammatical theory was following the later Greek theory, which was in turn following logical or philosophical theory more than ordinary language.[68] That is, perhaps they used the maṣdar as the equivalent of the verbal infinitive in the later Greek grammatical theory, itself influenced by logic and philosophy.[69]

Be that as it may, still the fact remains that Arabic forms its concrete nouns and adjectives from a verbal root, the maṣdar or the trilateral stem. Thus those like al-Fārābī saw Arabic to have a much better fit than Greek in the case of expressing the doctrine of paronymy: the maṣdar is basic not only grammatically but also logically. Moreover, because of the regularity of derivations in Arabic, the grammar has a much better match with the logic than in Greek. In contrast, often in Greek terms derivative in meaning have no morphological connection, as in Aristotle's example of 'good' and 'virtue'. From the logical point of view, Greek takes what is ontologically basic, e.g., names of qualities, to be grammatically derivative and making the ontologically derivative grammatically basic, as in the regular formation of the abstract nouns. In contrast, Arabic has its grammar matching the logic.

However, al-Fārābī modifies this grammatical account of paronymy, perhaps so as to bring it in line with Greek philosophical terminology. As R. M. Frank puts it,

> Against the pure formalism of the grammarians…al-Fārābī recognises a more basic, conceptual derivation according to which he conceives the maṣdar or root term as the abstract underlying the concrete and composite specific.[70]

For instance he takes *insānīya* [*humanitas*; 'humanity'] as the root for *insān* [*homo*, 'man'], and even derives the personal pronoun *huwa* (he) from *huwīya*.[71] This aligns his terminology with the late Greek custom of forming abstract nouns by adding a suffix, like ἰσότης (equality) from ἴσον (equal).[72] Yet unlike the grammarian he takes the abstract noun as basic as it signifies the basic thing. In either way, Arabic can express the relationship between the paronyms more clearly than the Greek.

Following al-Fārābī, Avicenna says that a derived name has an indefinite or undetermined subject.[73] Comparing Farsi and Arabic, he says that different languages take different structures as primary but this does not concern the logician although it can make translation difficult.[74] So he says that the maṣdar is derivative logically regardless of how it is thought to function grammatically.[75] For it never signifies a substance but only an accident in a substance. Logically, the simple name is the concrete noun signifying the thing having that accident. Here, if the maṣdar is taken as basic, "the Arabic language is a hindrance…"[76]

Thus those like al-Fārābī were aware of the differences between Arabic and other languages like Greek and Farsi in a sophisticated way. In this doctrine of paronymy we have an instance of Islamic philosophers distinguishing the objective truth of philosophy and the ideal technical language of logic from the conventions of a particular culture and the grammar of its language.

Zimmermann claims that al-Fārābī confuses here two conceptions of "paronymy": the Aristotelian logical and the Arabic grammatical.[77] He complains that all this is ungrammatical and confuses different traditions. Zimmermann goes on to question al-Fārābī's expertise. Perhaps not even being a native Arabic speaker, al-Fārābī probably did not know the other languages that he mentions: Greek, Persian, Syriac, Soghdian.[78] He may have been relying on informants who did not know much either.

Yet this is not the point here. Rather look at al-Fārābī's method. Perhaps he does make many mistakes in what he claims for the various languages and in the doctrines with which he ends up. Still the method itself looks sophisticated. Given how al-Fārābī et al. understood their task, I see no simple-minded confusion here. If it is one, then so too those like Frege and Russell equally have erred in trying to construct an ideal language.

So al-Fārābī may have made many mistakes in his grammatical and philological claims. He may have been using second-hand reports from informants who were not expert grammarians or linguists by our standards. He may have endorsed a technical way of speaking that deviated from ordinary Arabic for no good purpose. Yet all this misses my point here. Rather, al-Fārābī has a sophisticated method. To be sure, its actual results may need improvement. But this makes no fundamental criticism of what al-Fārābī is doing.

To make this point clear, consider the history of a relatively recent period in science. Most of the theories and even some of the experimental claims made in twentieth-century physics, geology etc. have been discredited. Still, that work continues to be treated as "scientific", as being in the same world-view and even in the same research tradition as the current work.[79] Thus, in physics we have cases like the "discovery" of N-rays and perhaps of cold fusion accepted and championed by reputable scientists using reputable methods, and later rejected. Likewise, the theory of continental drift was standard geological theory in the early twentieth century, and then discredited—but then reestablished later on. All these changes came about using roughly the same experimental methods and theoretical assumptions. The point is that this discredited work still amounts to science, albeit to discredited or false science.

Likewise, I submit, in evaluating al-Fārābī's theory of knowledge and method, we should focus more on his method than on the actual results that he presents. After all, we have the advantage of having a later perspective, presumably a more adequate one. At the same time, on inductive and historical grounds, we should suspect that some of our claims, even ones about Arabic, Greek and Persian grammar, themselves will come to be discounted, modified, or rejected in the future. We ourselves do not now seem to be in a tradition of a different type.

In sum, Islamic philosophers inherited Greek doctrines about paronymous terms. They distinguished the grammatical from the logical level. They sought an objectivity across the cultures. Aware of differences in the languages, they used whatever grammatical structures best represented the logical structure of terms signifying objective realities. In this case, they judged Arabic superior to Greek, although they rejected the maṣdar of the Arabic grammarians in favor of the

simple noun signifying substance. With the copula, they judged Greek superior and sought to modify Arabic accordingly.

4 The Copula

> It is somewhat improper to speak of a Chinese copula…in Greek, the juxtaposition of two nominal elements to form a sentence leaves the impression that this sentence is somehow incomplete and in need of a verb…the verb 'to be'. In Chinese, however, there are two basic types of sentences: the verbal sentence, negated by *bu* and the nominal sentence negated by *fei*. Nominal sentences, however, are not felt as incomplete sentences in Chinese. Although classical Chinese does not have a 'positive' copula, nominal sentences are nonetheless marked by the final particle *ye*.[80]

Once again, *contra* Reding, Chinese has no distinctive structures here. Like Chinese, Arabic does not have an explicit word for the copula, the 'is' of predication, and has both nominal and verbal sentences. Arabic may have, instead of a final particle, an initial particle like *inna*, and also will tend today to insert a pronoun like *huwa* in a nominal sentence when the subject and predicate have definite forms. [81] However the insertion of *huwa* seems to have been introduced into Arabic late, largely on account of the philosophers developing structures to express Greek thought.[82]

In Aristotle's logic and indeed in his metaphysics of being, 'is' as a separate element plays a large part.[83] In seeking to render Aristotelian philosophy into Arabic, the translators had to fix on some word corresponding to 'is', and for the nominal sentence settled on *mawjūd* with the predicate complement being expressed in an accusative of respect, so as to get the form, 'S (is) existent (as) a P'.[84] All this was not elegant or even colloquial Arabic. Yet, given the philosophical goal of expressing truths in whichever linguistic conventions displayed them accurately, this was hardly an issue.

Accordingly, al-Fārābī discusses how the Arabic language has a structure different from other [mostly Indo-European] languages.[85] It has no distinctive word serving as an "expression of existence" or copula. For in the (nominal) Arabic proposition, a definite noun serving as subject is followed by an indefinite name (the predicate complement), as in "the man just". Al-Fārābī says that this holds both for the Arabic people and for the Arabic grammarians.[86] He goes on to say that in Arabic (nominal) denials would then be expressed as "the man not just" and "Zayd not walking". He points out that in the other languages such statements would be the metathetic affirmation, 'man is not-just' and 'Zayd is not-walking', as Aristotle says in *On Interpretation*.[87] Al-Fārābī notes how different languages—Arabic, Persian, Syriac, Greek, and Soghdian—have *copulae* in different grammatical types of statements, mostly the nominal and verbal ones.[88] He goes on also to discuss the verbal proposition having a verb with a pronominal subject affixed to it.[89]

Al-Fārābī again is distinguishing the technical language from ordinary language.[90] His technical word for the copula, *mawjūd*, he says, has been transferred from common usage of the people where it means 'found'.[91] Unlike Greek, Arabic

does not have a special word for the copula and so does not reveal clearly the logical structure of statements:

> And there was not in Arabic ever since its imposition was explicated an expression substituting for the *hast* in Farsi and for the *estin* in Greek not for what are comparable in the rest of the languages. And these are needed necessarily in the theoretical sciences and in the logical art. So, since philosophy has been transferred to the Arabs, and the philosophers who discourse in Arabic and make their interpretations from the senses [concepts] that are in philosophy and in logic with the language of the Arabs and do not find, in the language of the Arabs ever since what was propounded [in it] was explicated, an expression by which they translated the places in which the *estin* used in Greek and the *hasta* in Farsi, they make a substitute for those expressions in the places where the rest of the peoples use them.[92]

The point here is that al-Fārābī is first distinguishing what it true from what is stated easily in Arabic. The idea is that in this case the grammar of Arabic is less transparent than the ideal, mental language, and that Persian or Greek comes closer to that ideal. Likewise, he says, the common people speak (in Arabic) of the 'non-existent' inaccurately and figurative, saying it is 'wind' and 'dust'.[93] Moreover, he says, ordinary Arabic confuses the existent in potency with the existent in act.[94]

Al-Fārābī goes on to discuss the use of '*huwa*' in constructing sentences in Arabic. He extends the grammatical use of the maṣdar to signify what is logically although not necessarily grammatically the base form from which paronymous inflections are made. So too, in discussing paronymy, he takes 'humanity' and 'manhood' as maṣdar for 'man'. Here al-Fārābī departs from the maṣdar of the Arabic grammarians and, like the Greek grammarians before him, attaches an abstractive suffix ('*iyya*') to the concrete noun. When he makes up names for items in the categories, their essences and paronyms, he is clear that he is extending the notion of the maṣdar analogously. So too then here. For he goes so far in rejecting the natural forms of Arabic for the copula as to make '*huwīya*' the maṣdar for *huwa*.[95]

Even more than al-Fārābī, Avicenna insists upon *mawjūd* making an assertion of existence.[96] He agrees with al-Fārābī that Greek is better than Arabic in displaying the logical structure of the tripartite proposition (of form 'S is P').[97] He goes on to discuss Farsi and three different ways of expressing the copula in Arabic.[98]

Again we can find problems with the details of such accounts of the copula: lack of expertise in the languages cited, confusing logical and grammatical doctrine etc.[99] Yet I am focusing on the method. Here once again we find the Islamic philosophers looking for objective truth across cultures—and finding it more in Greek and Farsi than in the Arabic favored by Allah for the Qur'ān.

The absence of a separate syntactic structure for the copula has prompted some Orientalists to consider Arabic a primitive language. For instance, L. Massignon, takes Arabic to be a primitive language with a native grammar admitting exceptions as opposed to the artificial conventions of Greek logic.[100] Arabic got its abstract nouns from the influence of the Greek grammarians. Madkour says that philosophical reflection demands a copula, which only the most civilized languages have, after a great effort of abstraction.[101] Most Orientalists today reject

such claims of linguistic inferiority almost *a priori* on the grounds of multiculturalism, to avoid charges of cultural imperialism. It is odd to see the Islamic philosophers themselves being less slavish to an ideology and more open to possibilities.

5 Islamic Ways of Knowing

In these two cases, of paronymy and the copula, we see some of the great Islamic philosophers discussing differences between languages and cultures. In this diversity they sought to find objective truth, and then to express it in the clearest language possible: sometimes Arabic, sometimes not.

It is hard to locate in all this a distinctively "Islamic" way of knowing. Indeed to insist upon their being one smacks of foisting upon the Islamic philosophers one more foreign ideology. For their way of knowing does not give *a priori* primacy to their own culture(s). Just look at al-Fārābī's own attitude towards Islam and its popular culture:

> Some people have come and eliminated possibility from things, not by arguing from primordial knowledge, but simply by legislation and indoctrination...When we know something because it is engrained in us, no attention can be paid to the opinion of people who disagree because they think that the Law decrees otherwise. The process of investigation in logic, and in philosophy altogether, builds on, and proceeds from, knowledge engrained in us, or what follows from such knowledge. Premises decreed for following from something decreed, or views which have become commonly accepted in a community as following from the opinion of a man whose word carries authority among its member, are not employed in this process.[102]

Likewise in his account of the ideal state, al-Fārābī reserves the philosophical truth for the rulers, and leaves religion as popularized philosophy and propaganda for the masses. Still al-Fārābī does not reject his culture entirely. He goes on to talk about a view of possibility more congenial to a fatalistic religion than would be allowed strictly in philosophy.[103] He still insists on having objective truth prevail: the philosopher can have a view detrimental to people and rejected by all religions.[104] Yet he seeks to reconcile the objective truth of philosophy with the conventions of his culture: "We must therefore find a solution to these dilemmas that does not entail anything objectionable on account of reality, common sense [*endoxa*], or religion."[105]

Now current Islamic affairs resembles Islamic history a lot. Even in Baghdad at the height of the Flowering of Islam, there were successive waves of liberal and repressive regimes. One ruler would encourage the development of philosophical learning, invite scholars, build observatories and so forth, while his successor would halt these movements and purge some people.[106] These changes might occur under a single ruler, often due to his need to please various constituencies. The same happened in Muslim Spain: Averroes himself was encouraged in his philosophical pursuits, then censured and exiled, and later recalled according to the sect of Islamic prevailing in the politics of the Almohadic court of Abū Yūsuf.[107]

Again in the Mid-East, then as now, it was hard to avoid a multicultural perspective. A city like Baghdad would contain people from many cultures and of many religions—especially on account of the famous Muslim tolerance—at least they did not usually seek to exterminate or even to convert by force those differing from themselves—unlike the Christians of the time. Thus the last of the Greek commentators moved from a Byzantine, Christian court to a Muslim one, and continued their studies in the tradition of Greek philosophy for over a century.[108]

Islamic philosophers during this Golden Age could not avoid being aware of there being many traditions, cultures, and competing claims of insight into the truth and the good. We have seen some examples of their confronting and adjudicating this multiculturalism. They found success in seeking to extract what each tradition offered, where not all traditions had an equal amount to offer on each subject. They would ignore the Greeks in history and arithmetic, but instead developed algebra, while studying them in geometry, astronomy and philosophy. They extracted universal truths and objective structures from their multicultural studies. They sought to mold their language so as to match up with reality, and not blindly follow the structures of Arabic grammar. Such are the lessons we can learn today from Islamic philosophers.

> In the last resort the point of his [al-Fārābī's] comparative remarks is to underline the need, in the face of the diversity of human language, for a transgrammatical approach to meaning.[109]

Notes

1. Sc, the original Greek sense of 'paradox', 'something contrary to common opinion, strange, marvelous, unexpected'.
2. Dimitri Gutas*, Avicenna and the Aristotelian Tradition* (Leiden, 1988), p. 206 n. 19
3. *Metaphysics* 993b9–11.
4. Cf. *Grundrisse der Arabischen Philologie*, Vol. III, ed. W. Fischer (Wiesbaden, 1993).
5. Fr. 6,2–5.
6. *Gorgias* 521e–522a.
7. Page numbers in the *History of Islamic Philosophy*, ed. S. Nasr & O. Leaman (London, 1996). So too Edward W. Said, *Orientalism* (New York, 1978), pp. 2–3; 203, on the older concept of 'Orientalism'.
8. *History of Islamic Philosophy*, p. 13; cf. 23—& 192.
9. Cf. the treatments of logic in general in this *History of Islamic Philosophy*, ed. S. Nasr & O. Leaman, pp. 802–19, with the technical work of the great logician Ibn Sīnā, pp. 234–6. Again, later logicians like Al-Qazwīnī and Al-Shirwānī are paid little attention, pp. 1038–9; still cf. p. 441.
10. Cf. pp. 1143–8.
11. Dimitri Gutas, "The Study of Arabic Philosophy in the Twentieth Century", British Journal of Middle Eastern Studies, Vol. 29.1 (2002), p. 13.
12. Cf. *History of Islamic Philosophy*, pp. 441; 488–9; 553; 589.
13. *History of Islamic Philosophy*, pp. 202–3.
14. Dimitri Gutas, "The Study of Arabic Philosophy in the Twentieth Century", p. 16, makes the same point about two other recent histories: Majid Fakhry, *A History of Islamic Philosophy*, Second Edition (New York, 1984); *History of Islamic Philosophy*, ed. S. Nasr & O. Leaman, 2 vols. (London: Routledge, 1996).

15. *History of Islamic Philosophy*, pp. 442; 466–7. Likewise Edward W. Said, *Orientalism* (New York, 1978), p. 305, complains about focusing only upon the centuries of greatness of the Golden Age. Cf. also his *Culture and Imperialism* (New York, 1993).
16. *History of Islamic Philosophy*, pp. 439–40; 448. Given the present state of research, I would have to agree with I. Sabra, "The Appropriation and Subsequent Naturalization of Greek Science in Medieval Islam: A Preliminary Statement", *History of Science*, Vol. 25 (1987), p. 238, that there are four main periods of Islamic science and philosophy: reception; flowering; naturalization; decline.
17. M. Mahdi, "Orientalism and the Study of Islamic Philosophy," *Journal of Islamic Studies*, Vol. 1 (1990), pp. 79–93; Dimitri Gutas, "The Study of Arabic Philosophy in the Twentieth Century", p. 11.
18. Ernest Renan, *Averroès et l'Averroïsme*, *Oeuvres complètes*, Vol. 3 (Paris, 1949), p. 85. So too A. Merz, *Historia artis grammaticae apud Syros* (Leipzig, 1889), pp. 137–53; Léon Gauthier, *Introduction à l'étude de la philosophie musulmane* (Paris, 1923).
19. A. Elamrani-Jamal, *Logique aristotélicienne et grammaire arabe* (Paris: J. Vrin, 1983), pp. 10–11, notes (and protests against) this view that there is no Islamic logic but only a slavish repetition of the Greek corpus by a few Muslims. So says, e.g., R. J. De Boer, *The History of Philosophy in Islam*, trans. E. R. Jones (London, Luzac, 1903); repr. New York, Dover, 1967), p. 23. Ironically, around the same time Carl Prantl, *Geschichte der Logik in Abendlande* (Leipzig, 1855), Vol. 2, pp. 263ff., claimed, also erroneously, that Latin medieval logic got all its apparent originality from the Greek just by copying Arabic materials.
20. *The Cambridge Companion to Medieval Jewish Philosophy* (Cambridge, 2003), ed. D. Frank & O. Leaman, "Introduction."
21. *The Cambridge Companion to Medieval Jewish Philosophy*, p. 16.
22. *The Cambridge Companion to Medieval Jewish Philosophy*, p. 179.
23. Dimitri Gutas, "The Study of Arabic Philosophy in the Twentieth Century", p. 12, notes that Islamic philosophy is often presented just as a fight with religion over truth. So Renan's *Averroès et l'Averroïsme*; so too Alain de Libera and Maurice-Ruben Hayoun, *Averroès et l'Averroïsme* (Paris, 1991), who also, pp. 3–8 give a list of such sources; so too Oliver Leaman, *An Introduction to Medieval Islamic Philosophy* (Cambridge, 1985) .
24. I. Sabra, "The Appropriation and Subsequent Naturalization of Greek Science in Medieval Islam: A Preliminary Statement", *History of Science*, Vol. 25 (1987), p. 228.
25. I. Sabra, "The Appropriation and Subsequent Naturalization of Greek Science in Medieval Islam, p. 232.
26. *Routledge Encyclopedia of Philosophy* (London, 1998), s.v. 'Jewish philosophy'. Goodman develops this view in more detail in *In Defense of Truth* (Amherst, 2001).
27. Dimitri Gutas, "The Study of Arabic Philosophy in the Twentieth Century", pp. 17–8; n. 11.
28. H. P. Grice, "Logic and Conversation" in *Syntax and Semantics*, Vol. 3, ed. P. Cole & J. Morgan (New York, 1975).
29. A. C. Graham, *Relating Categories to Question Forms in Pre-Han Chinese Thought: Studies in Chinese Philosophy and Philosophical Literature* (Singapore, 1986; reprint of [1960, *The Verb Be and its Synonyms, Philosophical and Grammatical Studies*, Part VI (Dordrecht, 1967)], p. 406; cf. F. Jullien, *Du 'temps': éléments d'une philosophie de vivre* (Paris, 2001), pp. 29–31.
30. E.g., see Edward Sapir, "The Status of Linguistics as a Science" in *Selected Writings of Edward Sapir* (Berkeley, 1956), p. 162; Benjamin Whorf, *Language, Thought, and Reality* (Cambridge, Mass., 1956).
31. Ludwig Wittgenstein, *Philosophical Investigations* (New York, 1953); W. V. O. Quine, *Word and Object* (Cambridge, Mass., 1960).
32. Jean-Paul Reding, *Comparative Essays in Early Greek and Chinese Rational Thinking* (Aldershot, 2004), p. 12.

33. E Benveniste,"Catégoires de pensée et catégoires de langue," in *Problèmes de linguistique générale* (Paris, 1966), Vol. I, p. 70.
34. Jean-Paul Reding, *Comparative Essays on Early Greek and Chinese Rational Thinking*, pp. 10–3.
35. Jean-Paul Reding, *Comparative Essays on Early Greek and Chinese Rational Thinking*, p. 94.
36. Jean-Paul Reding, *Comparative Essays on Early Greek and Chinese Rational Thinking*, p.9; n. 17.
37. Jean-Paul Reding, *Comparative Essays on Early Greek and Chinese Rational Thinking*, pp. 80–1.
38. A. C. Graham, "Relating Categories to Question Forms in Pre-Han Chinese Thought," p. 373.
39. Jean-Paul Reding, *Comparative Essays on Early Greek and Chinese Rational Thinking*, pp. 80–1; 190.
40. *Disputers of the Tao* (La Salle, 1989), p. 389.
41. Even the relatively sympathetic F. W. Zimmermann, trans. & comm., *Al-Fārābī's Commentary[= in de Int.] and Short Treatise [= Short Treatise] on Aristotle's De Interpretatione* (London, 1981), p. xxiii, says that al-Fārābī et al. "dutifully wrote a commentary on the *Rhetoric*" and even the Poetics, because they were following Alexander's "highly eccentric inclusion" of them into the logical *Organon*. Still he says about his commentaries also that "[t]hey reorganize, and select from, Aristotle's subject-matters with considerable freedom; and they draw on the whole range of known philosophical tradition."
42. Cf. J. Ortega y Gasset, *Meditaciones del Quijote* (Madrid, 1914), trans. E. Rugg and D. Marín, *Meditations on Quixote* (New York, 1961). Avicenna and Averroes both comment upon Aristotle's *Poetics* without having read or seen a Greek play.
43. *Al-Burhān* 180,9–11.
44. *Categories* 1a12–5.
45. In this way, paronymy, like homonymy and synonymy, is a relation between objects. Cf. J. L. Ackrill, *Aristotle's Categories and De Interpretatione*, pp. 72–3.
46. 'Inflection' here is meant to be taken in a general sense. Cf. Anonymous, *in De Int*. 2, 10–3,5.
47. *Topics* 109a39–b12.
48. Cf. *Metaphysics* 1029b8–12.
49. *Categories*10a27–b7; cf. 6b11–4.
50. Al-Fārābī, *Kitāb al-Ḥurūf* 81,22–82, makes this point too: "And there may be connected in the Greek a curious thing, namely that there may be some name significative of a category and a species abstracted from its subject where the subject is not named by it insofar as there is taken for it that species by a name derived from the name of that species, but rather by a name derived from the name of another species, like 'excellence' in the Greek. So what is qualified by it does not have said 'excellent' said of it like what is said in Arabic. Rather there is said 'diligent' [spoudaios?] or 'desirous'."
51. See Allan Bäck, *Aristotle's Theory of Predication* (Leiden, 2000), p. 144.
52. Richard Walzer; *Greek into Arabic* (New York, 1962); Shukri Abed, "Language" in the *History of Islamic Philosophy*, ed. Nasr & Leaman.
53. Zimmermann, *Al-Fārābī's Commentary and Short Treatise,* p. xlix.
54. How original Arabic grammar was is also a matter of dispute. Earlier Orientalists like A. Merz, *Historia artis grammaticae apud Syros* (Leipzig, 1889), pp. 137–53, held that Arabic grammar came from the Persians, and the latter from Greek logic, as opposed to Greek grammar. A. Elamrani-Jamal, *Logique aristotélicienne et grammaire arabe* (Paris: J. Vrin, 1983), pp. 21–4, opposes this, but does admit sources from Greek grammarians like Dionysius of Thrace. For a major example of the debate about such influence, see the discussion below about the maṣdar.
55. A. I. Sabra, "Avicenna on the Subject Matter of Logic", *Journal of Philosophy* (1980), p. 747. See his n. 4 for further references.

56. *Al-Munāẓarāt*, in *Abi Mohammadi filii Zachariae Roghensis opera philosophica gragmentaque quae supersunt* (Cairo, 1939**)** 301; trans. Lenn Goodman in the *History of Islamic Philosophy*, ed. Nasr & Leaman, p. 202.
57. *On Interpretation* 16a2–11.
58. *Al-Fārābī's Introductory Risalah on Logic* ed. D. M. Dunlop, *Islamic Quarterly*, Vol. 4 (1957), (4), 228,8–10 [trans, p. 233]. Cf. *Al-Fārābī's Paraphrase of the Categories of Aristotle* ed. & trans. D. M. Dunlop, *Islamic Quarterly*, Vol. IV.4 (1958), 172,28–173,8 [trans. p. 187 §9]: "What we have mentioned exists in all languages, and it is possible to find the like of it in the existing Arabic language. For the experts in Arabic call the short syllables 'movent' letters, and the long syllables and what resembles them they call *asbāb* or 'cords'. What can be combined in their language of both kinds of syllables they call *autād* (pegs). Then they combine some of these with others and make of them measures greater than these, by which they measure their metrical expressions and discourses, e.g., *fa'ūlun*, *mafā'īlun*, *mustaf'ilun*. If this is so, then every expression can be measured by a long or short syllable or a combination of both. Syllables are the smallest of the parts by which expressions can be measured, and the combination of them is greater than they are. These things in the expressions are like the cubits among the lengths." See W. Wright, *A Grammar of the Arabic Language*, II §358.
59. Al-Fārābī, *Al-'Ibāra*, ed. Kutsch & Morrow (Beirut, 1960); trans. & comm. *Al-Fārābī's Commentary[= in De Int.] and Short Treatise [= Short Treatise] on Aristotle's De Interpretatione* (London, 1981), 27,25–28,2; trans. 12–3; cf. 27,5–26; 27,8–10.
60. Zimmermann, *Al-Fārābī's Commentary and Short Treatise,* p. xliv.
61. *Kitāb al-Ḥurūf* §§19–20, 71,2–15.
62. Cf. Herbert Smyth, rev. G. Messing, *Greek Grammar* (Cambridge, Mass., 1920), §§822ff.
63. *Institutiones* VIII.14; Dionysius Thrax, *Ars Grammatica, Grammatici Graeci*, Part I., Vol. 1, ed. G. Uhlig (Leipzig, 1883), 25,3–5. Zimmermann, *Al-Fārābī's Commentary and Short Treatise on Aristotle's De Interpretatione*, p. xxxi n. 2, claims that the *Ars Grammatica* was known to Al-Fārābī via Syriac translation.
64. Simplicius, in *Cat.* 38,1–6.
65. Ammonius, in *De Int.* 50,15ff.; Stephanus, in *De Int.* 13,15–8. M. Chase, trans. & comm., *Simplicius on Aristotle's Categories 1–4* (Ithaca, 2003) n. 283, describes infinitives as indeclinable nouns/names
66. Wolfdietrich Fischer, *A Grammar of Classical Arabic*, Third Ed., trans. J. Rodgers (New Haven, 2002) p. 35.
67. Elsaid Badawi, M. C. Carter,& Adrian Gully, *Modern Written Arabic* (London, 2004) 1.11.1
68. Perhaps not Aristotelian: taking the infinitive as the basic form might appeal to a neo-Platonist.
69. Cf. Wright, *A Grammar of the Arabic Language*, Vol. I §195: "…most Arab grammarians derive the compound idea of the finite verb from the simple idea of this substantive. We may compare with it the Greek infinitive used as a substantive." Likewise C. H. M. Versteegh, *Greek Elements in Arabic Linguistic Thinking* (Leiden, 1977), p. viii, and I. Madkour, *L'Organon d'Aristote dans le monde arabe*, second édition (Paris, 1969), pp. 16-9, argue that Arabic grammar had much Greek influence, Aristotelian and Stoic. However, A. Elamrani-Jamal, *Logique aristotélicienne et grammaire arabe* (Paris: J. Vrin, 1983), pp. 13; 72, claims that there is no direct Greek influence on Arabic grammar: cf. the nominal phrase and the maṣdar.
70. R. M. Frank, Review of *Alfarabi's Book of Letters (Kitāb al-Ḥurūf)*, ed., Intro, & comm. M Mahdi (Beirut, 1969) in *Journal of the American Oriental Society*, Vol. 92.2 (1972), p. 394. See *Kitāb al-Ḥurūf* 112ff; §§33; 28; 35.
71. *Kitāb al-Ḥurūf* §83.
72. Earlier Greek tended to use substantives, like τὸ ἴσον, for the abstract nouns. Cf Plato, *Phaedo* 74c8; Aristotle, *Metaphysics* 1029b32.

73. Avicenna, *Al-ʿIbāra*, ed. M. al-Khudayri (Cairo, 1970; Part One, Volume Three of *Al-Shifāʾ*), 18.7.
74. *Al-ʿIbāra* 19,16–21,6. He gives some details at *al-Maqūlāt*, ed. G. Anawati, A. El-Ehwani, M. El-Khodeiri, & S. Zayed (Cairo, 1959) (Part One, Volume Two of *al-Shifāʾ*) 16, 12–17,14.
75. *Al-ʿIbāra* 26,3–27,4.
76. *Al-ʿIbāra* 27,5.
77. Zimmermann, *Al-Fārābī's Commentary and Short Treatise*, pp. xxix; xxxvii.
78. Zimmermann, *Al-Fārābī's Commentary and Short Treatise*, p. xlvii. R. Walzer, "L'éveil de la philosophie islamique," *Revue des Etudes Islamiques*, Vol. 38.1–2 (1970), p. 41; *Greek into Arabic*, p. 130 n.4, says that al-Fārābī did not know Greek, even though he was traditionally credited with knowing the languages that he mentions. Still Avicenna followed al-Fārābī's method and makes many of the same points. Perhaps he too erred on his Greek, but less likely on his native Persian.
79. I am taking the distinction of "world-views" and "research traditions" from Larry Laudan, *Progress and its Problems* (Berkeley, 1977).
80. Jean-Paul Reding, "'To Be' in Greece and China," in *Comparative Essays on Early Greek and Chinese Rational Thinking* (Aldershott, 2004), p. 190.
81. Wright, *A Grammar of the Arabic Language*, Vol. II §§124–5. Cf. *AI-Fārābī's Introductory Sections on Logic,* ed. & trans. D M Dunlop, *Islamic Quarterly*, Vol. 2 (1955), 272,17–273, trans. p. 280, on the need to insert '*huwa*' in Arabic nominal sentences.
82. A. Elamrani-Jamal, *Logique aristotélicienne et grammaire arabe*, pp. 132–4.
83. See Bäck, *Aristotle's Theory of Predication.*
84. Less frequently with the verbal sentence using *kāna*. Cf. *AI-Fārābī's Introductory Sections on Logic* ed. & trans. D M Dunlop, Islamic Quarterly, Vol. 2 (1955), 272,2–6, trans. p. 280: "These and what stands in their place are called existential vocables since they are used to signify the existence of a thing in relation to another and to connect the predicate with the subject of predication, as when we say Zaid exists (*yūjadu*) going away, when he is (*kāna*) going away. These existential vocables are employed as connectives when the predicate and the subject of predication are both names we wish to signify the three tenses as when we say Zaid was (*kāna*) eloquent, Zaid will be eloquent, Zaid is eloquence."
85. Al-Fārābī, in *De Int.*102,16–23. *Kitāb al-Ḥurūf* §§80–1 110,9–21; *Iḥsāʾ al-ʿUlūm*, ed. Amin (1968) 61,9–13.
86. See Zimmermann, *Al-Fārābī's Commentary and Short Treatise*, p. cxix, for a discussion of what Al-Fārābī knew of Arabic grammarians.
87. In *De Int.*102,24–103,2; 44,21–3. At 46,9–20 he takes "Zaydun mawjūdun ʿādilan" as a proper sentence—which it is not in normal Arabic; cf. Zimmermann, p. xliv–v; likewise for the negative forms proposed by al-Fārābī—p. 98 n. 2.
    Cf. Aristotle, *On Interpretation* 10; *Prior Analytics* 51b33–4; 52a24–6.
88. *Kitāb al-Ḥurūf* §82 111,5–21; in *De Int.* 46,13–20.
89. In *De Int.* 46,13–20; 103,2–20 *Kitāb al-Ḥurūf* §82 111,5–21.
90. Thus *Kitāb al-Ḥurūf* §81 115,13–4 distinguishes the use in the theoretical sciences from the common use.
91. *Kitāb al-Ḥurūf* §84 113,15–9.
92. *Kitāb al-Ḥurūf* §83 112,1–8.
93. *Kitāb al-Ḥurūf* §96 122,11–21.
94. *Kitāb al-Ḥurūf* §94 120,8–121,6.
95. *Kitāb al-Ḥurūf* §83 112,15–113,5.
96. *Al-ʿIbāra*, ed. M. Al-Khudayri (Cairo, 1970), 34,7–9.
97. *Al-ʿIbāra* 37,12ff.
98. *Al-ʿIbāra* 39,14–40,4; 77,3–9.

99. Zimmermann, *Al-Fārābī's Commentary and Short Treatise*, pp. xliv–v; cxxxi–cxxxiii, remarks on the grammatical artificiality of '*mawjūd*' as copula, and observes that al-Fārābī has not followed customary Arabic usage here in forming the negative statement in Arabic.
100. L. Massignon, "Reflexions sur la structure primitive de l'analyse grammaticale en arabe", *Arabica*, Vol. **1.1** (1954), pp. 3–16.
101. I. Madkour, *L'Organon d'Aristote dans le monde arabe*, seconde édition (Paris, 1969), p. 162.
102. In *De Int.* 83,16–24; trans. p. 77.
103. I.e., strictly we can know only that an event is necessary given a contingent act of free will. Cf. in *De Int.* 100,2–13; 100,24–5, trans. pp. 95–6.
104. In *De Int.* 98,18–9, trams p. 93.
105. In *De Int.* 98,20–1.
106. Gerhard Endress, "Die Wissenschaftliche Literatur" in *Grundrisse der Arabischen Philologie*, ed. H. Gätje (Wiesbaden, 1987), Vol. 2, pp. 423–31.
107. Oliver Leaman, *Averroes and his Philosophy* (Oxford, 1988), pp. 2–6.
108. Gerhard Endress, "Die Wissenschaftliche Literatur", p. 430; cf. Dimitri Gutas, *Greek Thought and Arabic Culture* (London, 1998), pp. 14–27.
109. Zimmermann, *Al-Fārābī's Commentary and Short Treatise*, p. xlviii.

References

Abed, S.: 1996, "Language" in *History of Islamic Philosophy*, ed. Nasr & Leaman, Routledge, pp. 898–925.

Ackrill, J. L.: 1963, *Aristotle's Categories and De Interpretatione*, Oxford, Clarendon Press.

Al-Fārābī: 1960, *Al-'Ibāra*, ed. Kutsch & Morrow, Beirut.

Al-Fārābī: 1960, *Sharḥ al-Fārābī li-kitāb Arisṭūtālīs fī l-'ibāra*, W. Kutsch and S. Marrow (eds.), Beirut. Engl. transl. see Zimmermann.

Al-Fārābī: 1968, *Iḥṣā' al-'ulūm*, ed. Amin, Beirut.

Al-Fārābī: 1957, "Introductory Risalah on Logic", ed. D. M. Dunlop, *Islamic Quarterly*, Vol. 4.

Al-Fārābī: 1969, *Kitāb al-Ḥurūf*, ed. M. Mahdi, Beirut.

Al-Fārābī: 1958, "Paraphrase of the *Categories* of Aristotle", ed. & trans. D. M. Dunlop, *Islamic Quarterly*, Vol. IV.4.

Al-Fārābī: 1955, "Al-Fārābī's Introductory Sections on Logic", ed. & trans. D M Dunlop, *Islamic Quarterly*, Vol. 2.

Al-Rāzī: 1939, *Al-Munāẓarāt*, in *Abi Mohammadi filii Zachariae Roghensis opera philosophica gragmentaque quae* supersunt, Cairo.

Ammonius: 1897, *In Aristotelis De Interpretatione Commentarius*, ed. A. Busse, Commentaria in Aristotelem Graeca, Vol. 4.5, Berlin.

Avicenna: 1959, *Al-Maqūlāt* (Part One, Volume Two of *Al-Shifā'*), ed. G. Anawati, A. El-Ehwani, M. El-Khodeiri, & S. Zayed, Cairo.

Avicenna: 1970, *Al-'Ibāra* (Part One, Volume Three of *Al-Shifā'*), ed. M. Al-Khudayri, Cairo.

Bäck, A.: 2000, *Aristotle's Theory of Predication*, Leiden, Brill.

Badawi, E., M.C. Carter and A. Gully: 2004, *Modern Written Arabic: A Comprehensive Grammar*, London, Routledge.

Benveniste, E: 1966, "Catégoires de pensée et catégoires de langue" in *Problèmes de linguistique générale*, Paris, Gallimard, Vol. 1, pp. 63–74.

De Boer, R. J.: 1903, *The History of Philosophy in Islam*, trans. E. R. Jones, London, Luzac; repr. 1967, New York, Dover.

Dionysius T.: 1883, *Ars Grammatica, Grammatici Graeci*, Part I., Vol. 1, ed. G. Uhlig, Leipzig.

Elamrani-Jamal, A.: 1983, *Logique aristotélicienne et grammaire arabe*, Paris, J. Vrin.

Endress, G.: 1987, "Die Wissenschaftliche Literatur" in H. Gätje (ed.), *Grundrisse der Arabischen Philologie*, Wiesbaden, Vol. 2, pp. 423–431.

Fischer, W.: 2002, *A Grammar of Classical Arabic*, Third Edition, trans. J. Rodgers, New Haven, Yale University Press.
Fischer, W. (ed.): 1993, *Grundrisse der Arabischen Philologie*, Vol. III, Wiesbaden.
Frank, D. and O. Leaman: 2003, *The Cambridge Companion to Medieval Jewish Philosophy*, Cambridge, Cambridge University Press.
Gauthier, L.: 1923, *Introduction à l'étude de la philosophie musulmane: l'esprit sémitique et l'esprit aryen, la philosphie greque et la religion de l'islam*, Paris, E. Leroux.
Goodman, L.: 1998, "Jewish Philosophy", Routledge Encyclopedia of Philosophy, London.
Graham, A. C.: 1986, *Relating Categories to Question Forms in Pre-Han Chinese Thought: Studies in Chinese Philosophy and Philosophical Literature*, Singapore; reprint of [1960, The Verb *Be* and its Synonyms, Philosophical and Grammatical Studies, Part VI, (Dordrecht 1967)].
Graham, A. C.: 1989, *Disputers of the Tao: Philosophical Argument in Ancient China*, La Salle, Open Court.
Grice, H. P.: 1975, "Logic and Conversation" in P. Cole & J. Morgan (eds), *Syntax and Semantics*, Vol. 3: *Speech Acts*, Academic Press, New York, pp. 41–58.
Gutas, D.: 1988, *Avicenna and the Aristotelian Tradition*, Leiden, Brill.
Gutas, D.: 1988, *Greek Thought, Arabic Culture: The Graeco-Arabic Translation Movement in Bagdad and Early 'Abbāsid Society* (*2nd-4th/8th-10thcenturies*), Oxon/New York, Routledge.
Gutas, D.: 2002, "The Study of Arabic Philosophy in the Twentieth Century", *British Journal of Middle eastern Studies*, Vol. 29.1, 5–25.
Jullien, F.: 2001, *Du 'temps': elements d'une philosophie de vivre*, Paris, Grasset.
Laudan, L.: 1977, *Progress and its Problems*, Berkeley, University of California Press.
Leaman, O.: 1985, *An Introduction to Medieval Islamic Philosophy*, Cambridge, Cambridge University Press.
Leaman, O.: 1988, *Averroes and his Philosophy*, Oxford, Clarendon Press.
Libera de, A. and Hayoun, M-R.: 1991, *Averroès et l'Averroïsme*, Paris, Que sait-je? Presses Universitaires de France.
Madkour, I.: 1969 *L'Organon d'Aristote dans le monde arabe*, seconde édition, Paris, Vrin.
Mahdi, M.: 1990, "Orientalism and the Study of Islamic Philosophy", *Journal of Islamic Studies*, Vol. 1, 73–98.
Merz, A.: 1889, *Historia artis grammaticae apud Syros*, Leipzig, pp. 137–153.
Nasr, S. and O. Leaman (eds.): 1996, *History of Islamic Philosophy*, London, Routledge.
Ortega y G.: 1914, *J., Meditaciones del Quijote*, Madrid, trans. E. Rugg and D. Marín, 1961, *Meditations on Quixote*, New York.
Priscian: 1855, "Institutionum grammaticarum libri XVIII" in M. Hertz (ed.), *Grammatici Latini*, Volumes 2 and 3, ed. Heinrich Keil, Leipzig, Teubner; repr. 1981, Hildesheim and New York, Georg Olms.
Quine, W. V. O.: 1960, *Word and Object*, Cambridge Mass., MIT Press.
Reding, J-P.: 2004, *Comparative Essays in Early Greek and Chinese Rational Thinking*, Aldershot, Ashgate Publishing.
Renan, E.: 1949, *Averroès et l'Averroïsme*, Oeuvres complètes, Tome III, Paris.
Sabra, A. I.: 1987, "The Appropriation and Subsequent Naturalization of Greek Science in Medieval Islam: A Preliminary Statement", *History of Science*, Vol. 25, pp. 223–243.
Sabra, A. I.: 1980, "Avicenna on the Subject Matter of Logic", *Journal of Philosophy* 77, p. 746–764.
Said, E.: 1993, *Culture and Imperialism*, New York, Alfred A. Knopf.
Said, E.: 1978, *Orientalism*, New York, Pantheon Books.
Sapir, E.: 1956,"The Status of Linguistics as a Science" in *Selected Writings of Edward Sapir in Language, Culture and Personality*, Berkeley, University of California Press.
Simplicius: 1907, *In Aristotelis* Categorias *Commentarium*, ed. C. Kalbfleisch, Commentaria in Aristotelis Graeca, Vol. 8, Berlin.
Smyth, H.: 1956, *Greek Grammar*, revised by G. Messing, Cambridge Mass., Harvard University Press.

Stephanos: 1885, *In Librum Aristotelis* De Interpretatione *Commentarium*, ed. M. Hayduck, Commentaria in Aristotelem Graeca, Vol. 18.3, Berlin.
Versteegh, C. H. M.: 1977, *Greek Elements in Arabic Linguistic Thinking*, Leiden, Brill.
Walzer, R.: 1962, *Greek into Arabic: Essays on Islamic Philosophy*, New York, Harvard University Press.
Walzer, R.:.1970, "L'éveil de la philosophie islamique", *Revue des Etudes Islamiques*, Vol. 38.1–2.
Whorf, B.: 1956, *Language, Thought, and Reality*, Cambridge Mass., MIT Press.
Wittgenstein, L.: 1953, *Philosophical Investigations*, New York, Macmillan.
Wright, W.: 1964, *A Grammar of the Arabic Language*, Cambridge, Cambridge University Press.
Zimmermann, F.W.: 1981, *Al-Farabi's Commentary and Short Treatise on Aristotle's "De interpretatione"*, translated with an Introduction and Notes, London, The British Academy Classical and Medieval Logic Texts 3.