

Particulars and Universals: An Introduction to Alfārābī's Logical Lexicon

One of the major requirements for an understanding of Alfārābī's logical writings, or rather for an understanding of Arabic logic in general, is familiarity with the terminology used in Arabic logical texts. The major portion of the logical terminology was introduced by the translators of Aristotle's *Organon* into Arabic. The literal nature of these translations, however, makes it very difficult even for the specialized reader to comprehend the technical meaning of these terms or the logical theories with which they are associated.

Alfārābī's primary aim in a number of his logical works is to break this vicious circle by attending to the principle that in order to understand the philosophical and logical meaning of terms, one must explore their use in logical contexts. Meaning and use of terms in logical contexts is thus a major theme in Alfārābī's writings, particularly in *Alfāz* and *Ḥurūf*. Indeed, the former can be described as Alfārābī's metalogical work par excellence.

Alfārābī flatly declares in *Alfāz* (p. 43: 10–11) that he is concerned with references [*dalālāt*] and meanings [*ma'ānī*] of terms only from a logical point of view. This is perhaps an example of what Abū Sa'īd al-Sīrāfi referred to in his already-outlined debate with Abū Bishr Mattā as the logicians' penchant for "building a language within a language."¹ In fact, however, this and other such statements by Alfārābī indicate not an intention to invent a new Arabic language completely divorced from the old but simply to develop a specialized "logical lexicon" of the meaning of Arabic words as used in logic. His logical lexicon is not a disregard of the everyday meanings of Arabic words, but an *extension* of their meanings for use in the field of logic, just as each art and science has its own terminology.

Alfārābī's logical lexicon is not a lexicon in the traditional sense of a dictionary based on the individual treatment of terms. Rather it is composed in such a manner that the logical meaning of each term

emerges from its use in a logical system or context. This systematic treatment of Arabic terms used in logic—a methodology that might be termed “logical meaning in use”—is far more comprehensive and illuminating than the conventional lexical definition of such terms would have been and will be the primary focus of this and subsequent chapters.

In a sense, the first five chapters of the current study represent a summary of Alfārābī’s logical lexicon. Chapter 1 deals with most of the basic logical terms and concepts used in Arabic, illustrating Alfārābī’s approach to the analysis and systematization of these terms, and therefore is an appropriate introduction to “Alfārābī’s Logical Lexicon.”

Chapter 1 will be divided into 5 sections. Section 1 will involve a discussion of the terms *particular* and *universal*, what they signify, and the relationships (linguistic, ontological, and epistemological) between them in Alfārābī’s writings. This discussion of particulars and universals is an important basis for future discussion of the logical theories of definition and predication, the former to be dealt with primarily in chapter 2 and the latter, throughout the present study.

Special attention is paid in section 1 of this chapter to the Aristotelian concept of “primary substances” (individual material things or “particulars”) and how the various “predicates” (or “attributes”) relate to them. The treatment of the primary substances and their relationships to the universals occupies a significant portion of both Aristotle’s and Alfārābī’s writings. In this chapter, I focus principally on Alfārābī’s views, with occasional references to Aristotle. (For a more detailed discussion of the Aristotelian view see appendix I.)

In sections 2 through 5 of this chapter, the five singular universals (or “predicables”) are introduced (with “genus” and “species” discussed together because of strong interrelationships between them). Discussion of two additional (compound) predicables — “definition” [*ḥadd*] and “description” [*rasm*]—is reserved for chapter 2.

In merging the Porphyrian list of five predicables (genus, species,² essential difference, property, and accident) with the Aristotelian (genus, essential difference, property, accident, and definition), Alfārābī paves the way for other Arab logicians to join him in accepting as standard a system of six predicables.³ No Arab logician denies that Porphyry’s “species” [*nawʿ*] is a predicable, along with “genus” [*jins*], “difference” [*faṣl*], “property” [*khāṣṣah*], and “accident” [*ʿaraḍ*], just as they interpreted Porphyry to mean. Yet neither Alfārābī nor the other Arab logicians is willing to relinquish “definition” [*ḥadd*]—Aristotle’s candidate for the fifth predicable. Following Alfārābī’s lead, all the Arab lo-

gicians try to marry the two approaches, thus practically adopting a system of six universals [*kulliyāt*, pl. of *kullī*] or “general terms” [*ma‘ānī ‘āmmah*], as they are also called.

Porphyry’s influence will also be apparent in Alfārābī’s analysis of the relationships between the universals, which follows lines similar to those employed by Porphyry in his *Isagoge*. Alfārābī’s analysis in this area (à la Porphyry) is based on what is today referred to as “class relations” between predicables.

Particulars and Universals in Alfārābī’s Writings

In two of Alfārābī’s logical works (“*Kitāb isāghūjī ay al-madkhal*” 119;⁴ *Alfāz*, 58–59), a “universal” [*kullī*]⁵ is defined as such that two or more things resemble it (lit., become similar through or by means of it [*yatashabbah bih*]).⁶ In other words, it is a thing that can be predicated [*yuḥmal*] of more than one “subject” [*mawḍū‘*]. A “particular” (or “individual”) [*shakhṣ*] is a thing that cannot be predicated of more than one thing (*Madkhal*, 119).

In *Alfāz* Alfārābī explains this last point in the following manner: certain notions [*ma‘ānī mafhūmah*], such as the names of individual people or things (e.g., ‘Zayd,’ ‘Amr,’ ‘this horse,’ ‘this wall’), cannot be predicated of anything at all,⁷ while other individual things, such as ‘this white spot’ [*hādhā ‘l-bayāḍ*] or ‘that coming man’ [*dhālik al-muqbil*], can only be predicated of one thing [*tuḥmal ‘alā shay‘in-mā waḥdah lā ghayr*]. (*Alfāz*, 59).⁸ Thus, according to Alfārābī, *particular things* may be categorized according to whether 1) they are predicated of one thing only or 2) they are not predicated of anything at all. This distinction is of great philosophical import, as we shall see in Alfārābī’s commentary on Aristotle’s *Categories*.

Near the beginning of this commentary (known as “*Kitāb qāṭagh-ūriyās ay al-maḡūlāt*” [“Al-Fārābī’s paraphrase of *The Categories* of Aristotle”]),⁹ Alfārābī presents this very same distinction in more abstract form:

Individuals [*ashkāṣ*, pl. of *shakhṣ*] are of two kinds. One kind belongs to a subject [*lah mawḍū‘*]¹⁰ and defines [*yu‘arrif*] what is outside the essence¹¹ of that subject, but does not define the essence of any subject whatsoever. These are the individual accidents [*shakhṣ al-‘arad*].¹² The other kind [belongs to no subject and] defines neither the essence nor anything outside it whatsoever. These are the individual substances [*shakhṣ al-jawhar*]. (*Maḡūlāt*, 169)

In order to reach a more complete understanding of this significant classification, one should view it in the context of the broader fourfold classification of 'what there is,'¹³ which Alfārābī (following the second chapter of Aristotle's *Categories*) offers in this work (**Maqūlāt**, 169). Following is a brief summary of the Aristotelian classification, Alfārābī's view of which will be described in greater depth below.

1. things that are 'said of' but are not 'in';
2. things that are 'said of' and 'in';
3. things that are 'in' but not 'said of'; and
4. things that are neither 'in' nor 'said of.'

Alfārābī's classification, like that of Aristotle, relies on two expressions — 'said of a subject' [*al-maqūl 'alā mawḍū'*] and 'said in a subject' [*al-maqūl fī mawḍū'*] — the definition of which Alfārābī attributes to Aristotle: "Aristotle refers to the universal predicate [*al-maḥmūl al-kullī*] that defines the essence of the subject as 'what is said of its subject,' and to that which defines an aspect of the subject that is external to its essence as 'what is said to be in a subject' "¹⁴ (**Maqūlāt**, 169).

On the basis of the above-mentioned notions 'said of' and 'said in,' Alfārābī describes the fourfold Aristotelian classification of things (**Maqūlāt**, 169):¹⁵

(1) Things that are said of a subject but are never in a subject.¹⁶ These are the "universal substances" [*kullī 'l-jawhar*],¹⁷ or as Alfārābī refers to them elsewhere in **Maqūlāt**, "secondary substances" [*jawāhir thawānī*] (**Maqūlāt**, 170).¹⁸

(2) Things that are both said of a subject and in a subject. These are the "universal accidents" [*kullī 'l-ʿarad*] (**Maqūlāt**, 169).¹⁹ As far as Alfārābī is concerned, the universal accidents play no role whatsoever in defining the essences of substances [*mā hiyyāt al-jawāhir*]. If anything, he says, it is due to the latter that the former are comprehended and conceptualized [*an taṣīr ma'qūlah*] (**Maqūlāt**, 171). In fact, all predicates [*maḥmūlāt*] of the primary substance, other than the universal substance, have no independent existence, since they "need the [primary] substance in order to exist."

(3) Things that are in a subject but never said of a subject. These are the "individual accidents" [*shakḥ al-ʿarad*] (**Maqūlāt**, 169).²⁰ Alfārābī supplements this statement in **Hurūf** (p. 103: 4–5, par. 70) by adding that these things are never called substances, neither relatively nor absolutely [*lā bi-'l-iḍāfah wa-lā bi-'l-itlāq*].

(4) Things that are neither in a subject nor said of a subject. These are the “individual substances” [*shakhṣ al-jawhar*] (**Maqūlāt**, 169)²¹ or as Alfārābī also calls them — following the Arabic translator of Aristotle’s *Categories*— the “primary substances” [*jawāhir uwal*].²²

Thus, for both Aristotle and Alfārābī, categories 1 and 2 (universal substances and universal accidents) encompass “universals,” whereas categories 3 and 4 (individual accidents and individual substances) encompass “individuals” (introduced at the beginning of this section as 1) predicated of one thing only or 2) not predicated of anything at all).

Substances (whether individual or universal) are, therefore, never in a subject, whereas nonsubstances (accidents) are always in a subject, i.e., in a primary substance. Thus the notion ‘in a subject’ helps to distinguish things that have no independent existence from things that exist in their own right. This is, in other words, the distinction between substances and the attributes they possess.

Yet substances themselves are of two kinds, individuals and universals. Attributes, too, are either individuals or universals. Thus the notion ‘said of a subject’ is used in reference to the relationship between universals and individuals.

In one passage of his **Madkhal** (p. 119), Alfārābī describes one aspect of the universal/individual interactions on the *linguistic* level. By “interactions” I mean the five different possible groupings of these terms in a sentence, possibilities which Alfārābī presents as follows:

1. *The subject and the predicate of a proposition [qadiyyah] are both universals,*²³ such as in the proposition, ‘man is an animal.’ This is the kind of proposition used in science [*‘ulūm*], in dialectics [*jadāl*], in sophistical arts [*ṣinā‘ah sūfiṣṭā’iyyah*], and in many other arts.
2. *The subject and the predicate are both individuals,* for example, ‘Zayd is this standing person.’ This type of proposition, however, is seldom used in any discipline.
3. *The subject is an individual and the predicate is a universal,* such as in the statement, ‘Zayd is a man.’ This type of proposition is much used in rhetoric, in poetry, and in the practical arts.
4. *The subject is a universal and the predicate is an individual.* In this case there are two possibilities considered by Alfārābī.
 - a) *The predicate of the proposition is a single individual,* such as in the statement, ‘Man is Zayd.’ This type of proposition is used in analogy [*tamthīl*].

- b) *The predicate of the proposition is composed of several individuals, such as in the statement, 'Man is Zayd and 'Amr and Khālid.'* This type of proposition is used in induction [*istiqrā'*].

Alfārābī in this passage²⁴ is considering neither the quality (affirmative or negative) nor the quantity ('some,' 'every,' 'all') of these propositions. He is offering a classification of indefinite propositions. His aim is not to come up with logical conclusions. Rather, he is seeking here methodological results, such as a classification of the sciences and the methods used in these sciences.

Although the passage is brief and lacks the necessary details from which to draw any far-reaching conclusions about Alfārābī's attitude toward classification of the sciences and their methodologies, there are still certain important observations to be made. Firstly, there is no precedent in Aristotle for this classification.

Secondly, the passage is evidence that for Alfārābī a proposition must have at least one term that stands for a universal in order to be of any significance for this methodological classification. When he considers the proposition whose subject and predicate are both individuals (or stand for individuals), he says that it is seldom used, implying that it has no application in any branch of science. This is the second category in the above classification (which I will call Type II, to indicate that this is a sentence in which both the subject and the predicate are Individuals).

Thirdly, note that the two major branches of knowledge (in the Aristotelian system)—i.e., theoretical and practical philosophy—are categorized by Alfārābī according to the type of propositions used in them:

(1) If the subject and predicate are both universals (the first category, which I will call Type UU), then we are in the domain of natural science, dialectics, sophistical arts, or other arts (Alfārābī does not specify), in short, the domain of Aristotle's "theoretical philosophy."

(2) However, if only the predicate is a universal (the third category above, Type IU), then we are in the domain of poetry, rhetoric, or the practical arts [*ṣanā'ī' 'amaliyyah*], i.e., Aristotle's "practical philosophy."

The fourth category of Alfārābī's classification (Type UI) refers to propositions used in methods of research or proof: analogy and induction.²⁵

As far as I know, this approach to classification is unique in the history of logic.²⁶

We will proceed now to an examination of the individual/universal relationship from another point of view, important for our discussion of the *theory of definition* (in chapter 2). The position of "primary substances" and "secondary substances" in Alfārābī's system and their relationships to one another leads us to explore *ontological* and *epistemological* aspects of Alfārābī's **Maqūlāt**.

Alfārābī defends the primacy of the individual substances over all else, including the universals which are said of them. The former need no subject for their being; they are self-sufficient from an ontological point of view for they are 'neither in a subject nor [said] of a subject'²⁷ (**Maqūlāt**, 170). Alfārābī clearly emphasizes that this primacy is from the ontological point of view, or what he calls "by nature."²⁸ In the short paragraph in which he analyzes this topic, Alfārābī mentions the word *wujūd* [existence] and its derivatives several times. He explicitly states that primary substances "are more entitled to be substances since they are ontologically prior to their universals"²⁸ (**Maqūlāt**, 170, par. 4). This explains, Alfārābī argues, why the individual substances are called "primary substances" (*ibid.*).

In the case of secondary substances, it is clear that for Alfārābī ontological priority is the only sense in which primary substances have primacy: "universals come into existence due to their individuals, and the individuals are intellectually apprehended through their universals" (**Maqūlāt**, 171).

Although he mentions universals without any qualification, it is evident that Alfārābī in this passage is not talking about all kinds of universals. According to him, there is only one category of universals that fits this description: the secondary substances, i.e., the universal substances. Only these predicates [*maḥmūlāt*] can define or make the essence of their subjects known and thus he calls them "their universals" [*kullīyyātuhā*], with "their" referring to the individual things (**Maqūlāt**, 170).³⁰

The nonsubstantial universals, on the other hand, need [*muftaqirah* or *taḥtāj*]³¹ the individual things in two respects: 1) they cannot exist without the primary substances and 2) they cannot be grasped (or perceived) without them (**Maqūlāt**, 171). In this case, therefore, there are two kinds of primacy of primary substances over nonsubstantial universals: ontological and epistemological.

We have seen above that according to Alfārābī no other thing would exist if the primary substances did not exist. And by "no other thing" I mean everything other than the individual objects, not even the

secondary substances. This I have described as an ontological priority of the primary substances over everything else. In other words, for Al-fārābī everything is dependent upon the existence of primary substances. None of the things that one can imagine may exist without the existence of the primary substances (i. e., the individual objects); the existence of everything else depends on the existence of the primary substances, and hence they have the strongest claim to independent reality, which makes them "prime applicants for the title 'substance,' " to use the words of a modern commentator on Aristotle.³² In other words, we cannot think of any qualities without thinking of a subject to which they are attached, whereas the existence of the primary substance does not depend on any specific quality for its existence.

However, a legitimate question can be raised against Al-fārābī in this regard:³³ how can we think or present or imagine any individual without certain qualities? I can think of a specific table not being red, but I cannot think of it without having *any* color. It is true that the same table will continue to exist without a specific quality in any possible (imaginable) world where it has an existence, but again, it must be red or black or some other color; it must be round or square or some other shape. It cannot be without any qualities; it is not independent of them, it cannot exist without them.

If so, then how can we determine what is prior to what: the so-called primary substance or its qualities? Moreover, one can challenge the very conception of being a "substance" without certain qualities. But first let us try to resolve the former problem: the problem of priority.

Given the above argument, it is clear that when we talk about ontological priority of the primary substance over its attributes, we cannot mean temporal priority since it can be seriously doubted whether the primary substance would be able to exist before that which characterizes it. The idea behind this priority is perhaps what might be called "durability."³⁴ When Aristotle or Al-fārābī speak of "knowing the essence" of a thing (i. e., defining a thing), they assume the existence of a thing that undergoes various changes while it is one and the same thing (the principle of identity). Aristotle, for instance, calls this the most distinctive characteristic of substance:

It seems most distinctive of [primary] substance that what is numerically one and the same is able to receive contraries. In no other case could one bring forward anything, numerically one, which is able to receive contraries. A [primary] substance, however, numerically one and the same, is able to receive contraries. For ex-

ample, an individual man—one and the same—becomes pale at one time and dark at another, and hot and cold, and bad and good. Nothing like this is to be seen in any other case.³⁵

It is reasonable to assume that Aristotle does not mean to say that the individual men existed before colors did. It is true that the specific 'white' that characterizes a specific individual man would not have existed without the existence of that man. But from this to conclude that individual men exist before the qualities (e.g., colors) that characterize them is not accurate, since 'whiteness' will continue to exist even if this specific 'man' disappears.

Aristotle (and Alfārābī with him) seems to be assuming that permanent or stable structures of entities do exist and that not everything is in a state of constant flux (à la Heraclitus). A table or an individual man will continue to exist regardless of external changes they may undergo. The specific quality (or qualities) is not essential for the existence of the individual table qua table. Perhaps it is essential for a table's existence as that table with that certain quality, but not for a table as such. A certain color of this table persists only by virtue of the existence of the table and due to the fact that it is predicated of it.³⁶ Colors and other qualities change while the table is the same table that I bought from a certain place at a certain time.

In that sense, individual things are more permanent than their specific qualities; they are more durable than their specific colors and other "external" (or accidental) qualities they may have. Priority, therefore, is the ability to endure while undergoing "external" changes. This is what Alfārābī means when he says in *Hurūf* (p. 97, par. 61): "Whatever is an accident of a thing subsists in that thing the least [*'alā 'l-aqall*]. Whatever is essential and not accidental, however, is either permanent or present in most cases [*akthar al-awqāt*]."

But then we must face the second and more serious question: What is that thing which endures while undergoing changes? What is 'the table?' or more generally, what are the primary substances? If they are not a bundle of qualities, what are they and how can they be defined?³⁷

Clearly one of the central questions in philosophy is, What is the "nature" or "essence" of things? In order to determine a thing's essence, we must "define" it. And "definition," according to the Aristotelians (including Alfārābī), involves identifying the thing by means of "universals." According to the Aristotelians, the most precise knowl-

edge of a thing is attained through identification of its "genus" and its "specific difference." The formula combining these two universals is known as "essential definition" [*ḥadd*]. Lower degrees of knowledge of a thing (such as "description") may be obtained by means of the universals "property" and "universal accident." Thus, before proceeding to our discussion of "essence," a topic that will preoccupy us in chapters 2 through 5 (beginning with "definition" and "description" in chapter 2), we must first examine the *building blocks* of "essence," i.e., the "universals."

Having introduced the meaning of *kullī* [a universal] as that which is predicated of more than one thing, Alfārābī analyzes and examines this notion more closely in the third paragraph of his **Madkhal**. He does so by analyzing the linguistic terms that signify it in a categorical judgment.

According to him, "universals" (or "general terms" [*maʿānī ʿām-mah*]) are of two kinds: 1) those signified by singular expressions [*alfāz mufradah*] and 2) those signified by composite expressions and whose composition is restrictive and conditional [*tarkīb taqyīd wa-ishtirāf*] rather than declarative [*tarkīb ikhbārī*], such as when we say 'the white man' and 'the rational animal' (as opposed to 'the man is white' and 'the animal is rational'). In the latter example, 'animal' is restricted by 'rational,' and similarly 'man' is restricted by 'white' (**Madkhal**, 119).

Alfārābī also claims that "it is evident that composite general terms can be divided [*tanqasim*] into the singular [general terms]." Therefore, there is no need to talk about the former since we can understand them through analyzing the latter. The remainder of this chapter will be devoted to a discussion of category 1 above (the singular universals, including "genus," "species," "essential difference," "property," and "accident"). Discussion of category 2 above (the compound universals, including "definition" and "description") will be reserved for chapter 2.

Alfārābī's next step after differentiating between the two types of universals (singular and compound) is to concentrate on analyzing the general terms that "many of the ancients had considered to be five in number"³⁸ (**Madkhal**, 119). He then presents these general terms in the following order:³⁹ *jins* [genus], *nawʿ* [species], *faṣl* [difference], *khāṣṣah* [property], and *ʿaraḍ* [accident]. Each of these general terms (or predicates, as they are often called),⁴⁰ the relationships between them, and the relationship of each of them to the individual things are thoroughly discussed by Alfārābī in his various logical writings. His analysis of these topics will be the subject matter of the remainder of this chapter. The first of these terms to be discussed are "genus" and "species."

“Genus” and “Species” in Alfārābī

“Genus” and “species” are defined by Alfārābī as the two universals one employs in answering the question What is this individual?: “In general, ‘genus’ is the more general of two universals that may be employed in reply to the question: ‘what is this individual?’ and ‘species’ is the more specific of the two” (Madkhal, 120). A more complete explanation of these general terms appears in another work:

If several universals signified by singular expressions participate in the predication [*al-ḥaml*] of [certain] individuals, and if each of these universals is appropriate in answering the question ‘what are they (i.e., these individuals)?’ then, the most specific of these universals is called “species” and the rest, which are more general, are called “genera.” An example of this: [since] ‘Zayd,’ ‘Amr’ and ‘Khālid’ have ‘man,’ ‘animal,’ ‘nourished’ and ‘body’ as their common predicates, and [since] each of the latter is signified by a singular expression, and [since] each is employed in answering the question ‘what is each of these individuals?’ — which is to say, when it is asked: ‘what is Zayd?’ and ‘what is “Amr?” — and the most specific of these universals is ‘man’ whereas the rest are more general, then ‘man’ is called “the species” of those individuals and the rest — which is to say, ‘animal,’ ‘nourished,’ and ‘body’ — are called “genera.” (Alfāz, 66)

The expressions “more general” and “more specific” are often used by Alfārābī when he discusses problems related to universals. These expressions have a logical meaning he discusses in *Alfāz*. The following general discussion of the terms *general* and *specific* will distract us momentarily from our discussion of *genus* and *species* in Alfārābī, yet the two sets of terms are clearly related, and an understanding of the terms *general* and *specific* is obviously vital for an understanding of the terms *genus* and *species*, to which we will return shortly.

The expressions “more general” and “more specific” usually surface when Alfārābī compares the different universals with one another. In *Alfāz* (p. 60 ff.), for example, this issue is raised when Alfārābī enumerates the different possible relationships between any two given universals. Any two universals, he says, stand in one of the following relationships to one another:

1. *Two predicates (universals) are both predicated of the very same individuals but whereas the scope⁴¹ of one of them is confined [yaqtaṣir]*

only to those individuals under consideration, the scope of the other universal (which Alfārābī calls “the other partner” or [*mushārikah*]) extends beyond these individuals, i. e., it is predicated of more individuals. His examples in this case (as indeed in most of his logical writings) are taken from the biological world: ‘animal’ and ‘man.’ Both, he says, are predicated of individual human beings, but while the latter is predicated *only* of these individuals, the former is *also* predicated of individual ‘horses’ and ‘donkeys’ and indeed of all other animals. Thus ‘animal’ exceeds [*yafḍul*] ‘man’ in predication.⁴²

2. *Two universals have certain elements in common as their subject of predication but each of them is also predicated of other individuals not within the scope of the other universal.* An example of this was mistakenly given by Alfārābī to illustrate Case 1 above (see preceding footnote), namely ‘white’ and ‘man.’ These predicates overlap but they do not coincide.
3. *Two universals are predicated of the very same individuals and only of those.* This relationship exists, for example, between the universals ‘man’ and ‘capable of laughter’ [*daḥḥāk*] (Alfāz, 61), or between ‘animal’ and ‘sensitive.’ For ‘man’ is predicated of everything whereof ‘laughter’ is predicated and vice versa. And similarly where the pair ‘animal’ and ‘sensitive’ is concerned. Universals in this category are called “equal in predication” [*mutasāwiyah fī ’l-ḥaml*] or [*mutasāwīqah fī ’l-ḥaml*] (Alfāz, 61).
4. *Two universals have no common elements within the scope of their predication.* An example of this is the two universals ‘man’ and ‘horse.’ These two universals cannot be predicated of the same individual. Nor “can they be predicated of each other” (Alfāz, 62).

This last passage in Alfārābī, which mentions universals being (or not being) predicated of one another, is a new phase in Alfārābī’s analysis and an important step from a logical point of view.

In the previous discussion, we presented Alfārābī’s perception of the possible relationships between universals. These relationships, however, were explored indirectly by examining their relationships to a certain number of individuals of which they are or are not predicated. Now with the introduction of the notion that “one universal can or cannot be predicated of another” we arrive at a new situation, in which the previous intuitive concepts will be refined and systematized. Alfārābī is

thereby moving from an intuitive explanation of the logical relationships between universals to a more profound and sophisticated discussion.

One universal, Alfārābī explains (*Alfāz*, 62, par. 16), is predicated of another either without qualification [*ḥaml muṭlaq*] or in a qualified way [*ḥaml ghayr muṭlaq*]. A predication without qualification is defined by him as a statement such that "if the expression 'all'⁴³ is attached to the subject [of the proposition] the judgment will be true [*ṣadaqa 'l-ḥaml*], such as when we say, 'all men are animals' " (*Alfāz*, 62).

A qualified predication, on the other hand, is that which becomes false [*kadhaba 'l-ḥaml*] when the expression 'all' is attached to its subject, such as when we say 'all animals are human beings.' But if one attaches the expression 'some' [*mā*] to this subject, Alfārābī explains, the judgment⁴⁴ may be true, since it is true to say 'some animals are human beings.'

This distinction between qualified and nonqualified judgments is parallel to the classification of general judgments into particular (both affirmative and negative) and universal judgments (both affirmative and negative). The distinction is important in explaining the relationships between the different universals in a more systematic and less intuitive way. Thus we find that Alfārābī's next step is the formulation of the following rule:

If universals are predicated of the very same individuals and one of them is more general than the other,⁴⁵ then it follows⁴⁶ that that which is more general is predicated without qualification of that which is more specific, whereas the latter is predicated of the former in a qualified way. (*Alfāz*, 62)

Now in light of this new definition one can revise the four possible ways of joining universals into judgments, as indeed Alfārābī does (*Alfāz*, 63). But before examining this and before examining what I will call the "generalization" of the above definition, I would like to introduce the relatively modern logical notions of "extension of a term" and "class relations."

In my view, Alfārābī was thinking along these lines when he presented his views on the relationships between universals (or general terms). The extension of the general term *animal*, for example, is the class of all objects that can be truly called "animals." The extension of this term is broader than that of the general term *man*, which is subordinated to the former in that sense; in other words, the term *animal* is applicable to every object of which 'man' is truly said, but it is also ap-

plicable to other objects (horses, etc.). The class of objects, one can say, to which the term *animal* is applicable contains the class of objects to which the term *man* is applicable, and the latter is contained in the former. There are, however, further general terms subordinated to the general term *animal*, such as *horse*, *donkey*, indeed general terms that refer to or stand for any species of animal.

Using this terminology we can sum up Alfārābī's view on the relationships between general terms, which he describes in terms of qualified and nonqualified predication, in a simpler and perhaps more accurate way. For convenience, the term *class* will be used for the phrase "the class of all objects to which the general term is applicable." Thus the "class of animal" will mean "the class of all objects to which the general term *animal* is applicable." A "member" of that class will mean "one of those objects to which the term is applicable." Now we can formulate Alfārābī's views in the following manner:

If the objects of a certain Class 'A' are themselves classes (i.e., subclasses of Class 'A'), then the following holds: The Class 'A' is predicated of each of these classes in an unqualified way, whereas each of them is predicated of the Class 'A' in a qualified way. Using symbols:

If 'Z' is a subclass of 'W' then
 $(x) [x \in Z \rightarrow x \in W]$.
 But $\sim (x) [x \in W \rightarrow x \in Z]$ or its equivalent form
 $(\exists y) [y \in W \cdot y \notin Z]$.

This kind of relationship exists between a "species" and each of the "genera" predicated of the same individuals. But it also exists, according to Alfārābī's scheme (and here we move to the generalization step), between the various "genera" that are ranked under each other: "In general everything that can be a subject to a more general thing that is predicated of it in reply to the question, 'what is that thing?'"⁴⁷ is said to be ranked under that thing" (Alfāz, 67, par. 22).

The "genera" predicated of a "species" are ranked, according to Alfārābī, in the following manner: one of these "genera" is the most specific and it is called the "proximate genus" [*al-jins al-qarīb*]. No other "genus" predicated of this given "species" can be more specific than this "genus." On the other hand, we have the "genus" that is the most general, "the supreme genus" [*al-jins al-ālī* or *al-jins al-ba'id*]. And between these two extremes we have those genera "that are more general than the proximate genus but more specific than the supreme genus" (Alfāz, 67, par. 22); these are called the "intermediate genera" [*mutawassitāt*].

Alfārābī explicitly mentions that this category of “intermediate genera” always has more than one “genus.”⁴⁸ Although Alfārābī gives the impression that his scheme is confined to the biological sensible world, it is clear that he means it to be a general and valid description of every given situation. One starts with certain individuals (and according to Alfārābī one always starts with familiar sensible individuals, abstracting universals from them)⁴⁹ and one can always construct this kind of scheme, even when talking about abstract entities such as numbers.

As to the question of whether or not there is one or more “supreme genera” and one or more “proximate species,” Alfārābī seems noncommittal with reference to “supreme genera.” He can only “assume” that there is more than one: “As for the ‘supreme genus,’ it is not clear yet whether it is one or more than one, and if it is more than one, it is not clear yet how many there are. Let us assume [*nunzil*] that it is more than one” (Alfāz, 68–69). With reference to “proximate genus,” on the other hand, Alfārābī arrives at a definite answer: namely, there is more than one. The external world provides us with things “that are different in kind” (Alfāz, 70). Thus, from observation we *know* there is more than one “proximate genus.”

The above description of “genus” and “species” in Alfārābī is important for an understanding of his theory of definition, a topic central to chapter 2. The second component of the formal Aristotelian “definition” is yet another universal, the “essential difference,” to be treated in the following section. The reader will note Alfārābī’s frequent use of “question particles” (e.g., *mā* [what?], *kayfa* [how?]) in his analysis of “essential difference.” In fact, these question particles represent an integral component of Alfārābī’s *theory of definition* and will be discussed more systematically in chapters 2 through 5.

Essential Difference [*Faṣl Dhātī*]

In **Madkhal** (pp. 121–122), Alfārābī explains that if the subject of inquiry (whether a species or an individual) is introduced as an answer to the ‘what?’ [*mā*] question by some remote genus that does not clearly introduce and define it, then one must proceed to ask further questions until the subject of inquiry becomes distinguished from other entities that are also the subject of predication of the same universals.

According to Alfārābī, one reaches this stage only when the *faṣl dhātī* or *al-faṣl* [essential difference]⁵⁰ of the subject under consideration is provided. *Al-faṣl*, Alfārābī says, distinguishes the subject of inquiry from its partners in an essential way [*fī jawharih*]. However, it is the combination of *al-faṣl* and *al-jins al-qarīb* [the proximate genus] of the species or individual under consideration that provides the appropriate answer

to the question, What is it? For example, when one asks, “What is a palm tree?” the answer “It is a tree” is not an adequate answer to this question (since there are many other things of which the term *tree* is also predicated, or in other words, the genus *tree* applies to other things than the specific tree being considered). We must therefore ask, Alfārābī’s argument continues, “What kind of tree is it?” If the answer to this question is, “It is a tree that bears dates,” then the “essential difference,” and consequently the *definition* of the subject of inquiry, is provided.

In **Alfāz** (pp. 71–72), Alfārābī defines *al-faṣl al-dhātī* in the following manner (which I will paraphrase rather than translate):

Al-faṣl al-dhātī is a universal such that it participates with other universals that are predicated in the answer to the question What is it? (i.e., species and genus) in being predicated of certain entities and such that it fulfills the following two conditions:

- (1) It is appropriately employed in answering the ‘how?’ [*kayfa*] question when this question is asked in relation to the essence of the universal with which it participates in the predication under consideration.
- (2) It is predicated without qualification [*ḥaml mutlaq*] of those universals with which it participates in this predication.

Thus, Alfārābī says, if a species is predicated of certain entities and universal ‘A’ that fulfills the above two conditions participates with this species in predication of these entities,⁵¹ then ‘A’ is an essential difference [*faṣl dhātī*] of this species. Similarly, if a universal ‘B’ fulfilling conditions 1 and 2 above joins a genus in being predicated of entities (a species, in this case), then the universal ‘B’ is an “essential difference” of this genus.

This description is valid in the case of all the intermediate genera and also in the case of the supreme genus, Alfārābī concludes (**Alfāz**, 72). *Al-faṣl al-dhātī* of ‘X’ constitutes the second part of the definition of ‘X,’ the first part being its proximate genus (**Madkhal**, 122, par. 9),⁵² and as such it is called *faṣl dhātī muqawwim* [essential constitutive difference] (**Alfāz**, 73, and **Madkhal**, 122).⁵³ However, the same *faṣl dhātī*, while it constitutes and specifies the essence of ‘X,’ also acts as a dividing factor for the genus of ‘X’ and as such is called *faṣl dhātī qāsim*, i.e., it is an essential difference (for ‘X’) and at the same time divides the genus of that ‘X.’ In his **Madkhal** (p. 122) Alfārābī explains this phenomenon:

The genus is followed by [*yurdaf*] its various differences in one of the two following manners:

- 1) It is restricted by contrary [*mutadāddah*] and in general by opposite [*mutaqābilah*] differences, to which the disjunction particle [*ḥarf al-infiṣāl*] is added, such as when we say, "the garment is [made] either of wool or of linen or of cotton"; and "the body is either nourished or it is not." This is the division of a genus by differences.
- 2) The genus can be followed [directly] by each of the differences without opposition and without the disjunction particle, such as when we say, "a garment of wool and a garment of linen and a garment of cotton," or "nourished body" and "non-nourished body." The latter kind of composition [*irdāf*; lit., follow-up] is the one by which one answers the 'which?' [*ayy*] question, and this is how the definition of the species under that genus came about.

Thus, Alfārābī explains (**Madkhal**, 123, par. 10), dividing a given genus by pointing out its various differences is itself the act of defining the various species under that genus, or as he puts it:

The division of a genus by means of the differences leads to [*tantahī ilā*] the species ranked under it [i.e., under that genus], because if you remove the disjunction particle [from the statement of division] you will get the definition of the [various] species [under that genus].

We have seen that according to Alfārābī each genus has several species ranked under it, and each of these is predicated in a qualified way of that genus (which is another way of stating what, in *class calculus terminology*, is called "inclusion" of the species in its genus). Now, according to Alfārābī, this relationship exists between the essential difference of a species and the genus of that species, namely that the essential difference of a species 'Y' is predicated of the genus of 'Y' in a qualified way (and the genus of 'Y' is predicated of the essential difference of 'Y' in an unqualified way, i.e., it includes it).⁵⁴ Now, Alfārābī mentions two other principles he has already discussed (**Alfāz**, 73):

- 1) Whatever can be appropriately applied in answering the question *kayfa* [how?] can also be appropriately applied in answering the question 'what sort of thing is it?' (the *ayy* question).

- 2) The essential difference is predicated (of its species or of its genus) in answering the *kayfa* question.

From these two principles Alfārābī implies that the specific differences of a species or of a genus can be appropriately applied in answering the question, What sort of thing is that species or that genus? In other words, each essential difference can be taken to distinguish between that of which it is specific and other things that share the same genus.

This is the reason, it is pointed out, that the “difference” is described as “that which is predicated of a universal in answer to the question *ayy^u shay^m huwa?*” and that it is the thing “by which one can distinguish things that are under the same genus,” or that it is the thing “through which things that are not different in genus differ” (Alfāz, 74).

However, one must observe, Alfārābī says, that the essential difference distinguishes a thing from other things through their essence rather than through their external states [*fī dhātih lā fī aḥwālih*]. Hence the definition of *faṣḥ dhātī* as that which is predicated of a universal in answer to the *ayy* question should, in Alfārābī’s opinion, be amended to read as follows: “an essential difference is the universal that is predicated of another universal in answering the question ‘*ayy^u shay^m huwa fī dhātih?*’ [as opposed to *fī aḥwālih*]” (Alfāz, 74).

Finally, there are two more points discussed by Alfārābī in relation to the universal under consideration. The first of these is the extension of the *faṣḥ dhātī* in relation to the (relative) species it modifies. From what we have explained so far, it is clear that according to Alfārābī, the “unqualified predication” is transitive. By this I mean the following: if ‘X’ is a genus of ‘Y’ (i.e., ‘X’ is predicated without qualification of ‘Y’) and ‘Y’ is a genus of ‘Z,’ then ‘X’ is a genus of ‘Z’ and hence is predicated of it without qualification.

Alfārābī now also tries (Alfāz, 73, par. 29) to apply this to the essential difference saying, “Similarly, when two genera are ranked one under the other, then the essential difference of the higher genus is predicated of the lower genus in an unqualified way.”

This conclusion can be easily understood if we remember that, by definition, an essential difference of a genus ‘A’ is a universal the extension of which must be at least as broad as that of ‘A’ itself. This is in effect what Alfārābī says in his Alfāz: “There are certain ‘specific differences’ that have the same extension [*musāwī fī ḥaml*] as that of the universal they constitute, and there are some whose extension is

broadier [*a'amm*, lit. "more general"] than that of the universal they constitute" (Alfāz, 74).

Unfortunately, Alfārābī provides no example to support this striking conclusion. In it he declares that a species (i.e., a relative species) is not necessarily convertible with its specific (i.e., essential) difference, since the latter can be broader, i.e., can appropriately be applied in answering the *ayy* question (as a follow-up for the *mā* question and after the genus has been provided) not just for its genus but also for other things as well. But does this not contradict the very meaning of being a "specific difference" of a species, or is not the essential difference of a certain 'X' supposed to differentiate 'X' from the rest of the things?

Had Alfārābī answered these questions, he would have said that the answer is a qualified "yes." For we must remember that for him the phrase "the rest of the things" means "the rest of the things that participate with 'X' in the same genus." The essential difference does not apply to (i.e., cannot be properly predicated of) other species that are partners in the same immediate genus (i.e., the genus being divided by these specific differences), but it can be properly employed in predicating things that are different in genus.

Alfārābī would, I believe, have given the following illustration: We can think of 'rational' as the "essential difference" separating 'man' from the rest of the things for which the predicate 'animal' is the common genus. 'Rational' will not be properly predicated of any other species (i.e., the subclass) of the genus 'animal.' Yet the predicate 'rational' can be properly predicated of other things that are not participants in the genus 'animal.' For example, 'rational' can be properly employed in predicating the species 'angel' or 'God.'⁵⁵ These two species are separated from the former not by a "specific difference," but rather by a genus, since they are incorporeal, whereas 'man' is under the genus 'corporeal.' In this case, the predicate 'rational' is of broader extension than that of which it is an essential difference (i.e., the species 'man'). This is probably the kind of example Alfārābī had in mind when he concluded that "Therefore, the essential difference that is broader [than its species or genus] is predicated not only of things that are numerically different, but also of things that are different in species" (Alfāz, 75).

We must remember, however, that the term *species* [*naw'*] is used here (and in many other passages in Alfārābī's writings) not simply as the "proximate species" [*al-naw' al-qarīb*] but rather as the "relative species"; namely, one of the intermediate genera that are considered by Alfārābī as a species in relationship to what is ranked above it, and a genus in relationship to what is ranked below it.

The second point I would like to discuss is Alfārābī's division of *faṣl dhātī* into two kinds (Alfāz, 73, par. 28):

- 1) *essential differences that cannot be properly predicated of each other in any way* [*fuṣūl mutaḳābilah* or "opposite differences"], and
- 2) *essential differences that can be predicated of each other* (whether in a qualified or non-qualified way). Alfārābī calls this latter type of essential difference *fuṣūl ḡhayr mutaḳābilah* [differences that are not opposite], but he provides no examples. However, it is reasonable to assume he is talking about two differences of two genera, provided these are predicated of one another. An example of this would be 'capable of moving itself' and 'capable of barking.'

Two "opposite differences," on the other hand, must be partners of the same genus. Opposite differences can be indicated either by two different symbols that have nothing to do with one another (such as 'rational' and 'capable of barking') or one can be indicated by a certain name whereas its opposite is indicated by that very name combined with the negation particle ('rational' and 'not rational'). Following, then, is a summary of the major characteristics of *faṣl dhātī* as outlined by Alfārābī:

1. *Faṣl dhātī is the second element in the formula that expresses the essence of a thing, the first element being the proximate genus of that thing.*
2. *The ayy question is presented as an inquiry about the difference of a thing and that can happen only after the genus of that thing has been provided (in answer to the mā question).*
3. *The faṣl dhātī modifies or constitutes [yuḳawwim] the essence of the genus (or species) of which it is a faṣl dhātī, i. e., it shows its essential difference from the rest of the things that participate in the same genus.*
4. *Each faṣl dhātī divides the genus ranked immediately above the genus (or species) it modifies. For example, 'rational' divides the genus 'animal' into 'rational animals' and 'non-rational animals' (and this class of 'non-rational animals' is divided by the different essential attributes of each of the species that participates in the genus 'animal,' i. e., that are subclasses of the class 'animal').*
5. *Al-faṣl al-dhātī (or al-faṣl al-muḳawwim, as Alfārābī sometimes calls it) is convertible with the species (or the relative species, to be*