Aspects of Avicenna

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Contents

Avicenna on Abstraction

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The theory of abstraction is one of the most puzzling parts of Avicenna's philosophy. What Avicenna says in many passages about the human intellect's capacity to derive universal knowledge from sense-data seems to plainly contradict passages in the same works about the emanation of knowledge from the active intellect, a separately existing substance. When he maintains that "considering the particulars [stored in imagination] disposes the soul for something abstracted to flow upon it from the active intellect",[1] he appears to combine two incompatible concepts in one doctrine: either the intelligible forms emanate from above or they are abstracted from the data collected by the senses, but not both.

The standard reaction to this problem among modern interpreters is to believe Avicenna on emanation and to mistrust him on abstraction: abstraction is "only a *façon de parler*"[2] for emanation of intelligibles, it is "not to be taken literally":[3] "intelligible thoughts ... flow directly from the active intellect and are not abstracted at all";[4] Avicenna "was unable to explain intellectual abstraction in knowledge"; the activity of the human intellect "can only dispose the mind to be receptive of new concepts".[5] This certainly is not only a well-established line of interpretation, but also a powerful one: it measures Avicenna's theory against a systematic concept of abstraction, as we know it from intellectual history, and finds that it falls short of the criteria and hence cannot be properly called a theory

of abstraction.

Nevertheless, I think this interpretation cannot stand as it is. One of its unpleasant consequences is that Avicenna would not have achieved what he thought to have achieved, namely the development of a theory of abstraction. With good philosophers such as Avicenna, who knows his Graeco-Arabic sources, this is a dangerous hermeneutical standpoint. In addition, one wonders whether Avicenna also falls short of speaking properly about emanation: the active intellect makes the forms flow upon the human intellect, but it does so by serving as a mediator in the process of intellectual perception, as a kind of immaterial light which helps the soul to see;[6] hence, concluded Anne-Marie Goichon some sixty years ago, "en rigueur de termes" the intelligibles are neither abstracted by the soul nor given to it by the active intellect.[7]

If one wants to avoid this negative double conclusion, it seems advisable, first, to focus again on Avicenna's own usage of terms from the semantic field "abstraction" — as some previous interpreters did before they decided that Avicenna should not be taken literally. Admittedly, this presupposes some intuition about what we are looking for — i.e., some notion of "abstraction" — but this notion may be taken broadly as referring to every transformation of sense-data into intelligibles. Secondly, it appears sensible to attempt a developmental explanation of Avicenna's theory: an explanation that does not consider his philosophy a system but follows the formation of the theory from the writings of his youth to that of his age. This approach is possible because, since Dimitri Gutas' study of Avicenna's oeuvre and its subsequent discussion by Michael Marmura and Jean Michot, there exists a basic scholarly consensus about the relative chronology of Avicenna's philosophical works (with the exception of *al-Ishārāt wa al-tanbīhāt*, *Ḥāl al-nafs* and the autobiography).[8] Ideally, a developmental interpretation would start with the sources which Avicenna had at his disposal, but that would transgress the boundaries both of this article and of my competence, given that the history of the concept of abstraction has not yet been written. The important article "Abstraktion" in the *Historisches Wörterbuch der Philosophie* of 1971 remains the best survey available, being particularly strong on the Western Middle Ages, but less so on Arabic philosophy.[9] Still, one of Avicenna's predecessors on the topic shall briefly be discussed because

his theory is sometimes compared to that of Avicenna: Abū Naṣr al-Fārābī (d. 339 AH/950 AD).[10]

II

Al-Fārābī's standpoint may be illustrated by reference to two works of his, the "Principles of the Views of the Citizens of the Best State" *(Mabādiʾ ārāʾ ahl al-madīna al-fāḍila)*, a major and influential treatise of comprehensive philosophical character written towards the end of his life, and his earlier, short tract "On the intellect" (*Fī al-ʿaql*). The *Mabādiʾ* do not contain much more than one sentence on the subject of abstraction, which on the one hand is not surprising since the book touches upon many philosophical areas without going into detail, but which on the other hand shows us that abstraction is not a topic important enough to be given a section of its own in this late work (as is the case with, for instance, the various members of the body). Al-Fārābī assumes, just as Avicenna after him, that the active intellect is a separately existing substance, the tenth and last of the incorporeal intelligences of the universe. Using the Peripatetic comparison of this intellect to the sun, he explains that, due to the influence of the active intellect, potentially intelligible things become actually intelligible. And he proceeds:

> When, then, that thing which corresponds to light in the case of sight arises in the rational faculty from the Active Intellect, intelligibles [arise] at the same time in the rational faculty from the sensibles which are preserved in the faculty of representation *(al-quwwa al-mutakhayyila)*.[11]

One may note that al-Fārābī does not describe the rational faculty as an active participant in this process, and that the terminology used to describe the transformation of sense-data into intelligibles is restricted to intransitive verbs: intelligibles arise from *(ḥaṣala ʿan)* the sensibles, the intelligibles in potentiality become *(ṣāra)* intelligibles in actuality. Terms such as 'discovering/deriving' *(istanbaṭa)*, 'abstracting' *(jarrada)*, 'divesting' *(afraza)*, or 'extracting' *(intazaʿa)*, that Avicenna half a century later would use with respect to the intellect, do not appear in this context in *al-*

Mabādiʾ. The phrase *al-instinbāṭ* is used when al-Fārābī comes to speak about rational actions following upon the appearance of the intelligibles: then "a desire to find out things" arises.[12]

If one cannot say that there is anything close to a coherent theory of abstraction in this treatise, the case is different with the earlier *Fī al-ʿaql*. One must bear in mind, however, that this work does not necessarily present al-Fārābī's own philosophy but rather different usages of the term "intellect" among ordinary people, theologians and Aristotle. It is in the section on Aristotle's *De anima* that al-Fārābī mentions the abstracting activity of the human intellect: one of the definitions of the potential intellect, al-Fārābī says, is that its essence is disposed or able "to extract *(intazaʿa)* the quiddities of all objects and their forms from their matter".[13] He comes back to this when speaking about the second of Aristotle's intellects, as al-Fārābī understands them, the intellect in actuality:

> When we say that something is known for the first time, we mean that the forms which are in matter are extracted *(intazaʿa)* from their matter and that they receive an existence different from their previous existence. If there are things that are forms to which does not belong any matter, then this essence [i.e., the intellect] does not need to extract *(intazaʿa)* them from matter at all but finds them as something abstract *(muntazaʿ)*.[14]

In this passage, Al-Fārābī takes up a doctrine stemming from Aristotle about the difference between those objects of thought that are in matter and those that are not.[15] Apart from this, we can see that al-Fārābī takes a view on the issue of the intellect's activity of "extracting": the form of something is separated from its matter and in virtue of this enters a new mode of existence. Alternative positions would be, for instance, that the forms in matter are imitated in the intellect (as Avicenna once mentions) rather than put into a new mode of existence, or that intelligibles arise from sense-data, as al-Fārābī says himself in the *Mabādiʾ*, or that the active intellect is involved in the process, as again in the *Mabādiʾ*. It is true that al-Fārābī has an elaborate passage on the separate active intellect in *Fī al-ʿaql*, but as to its role in the process of abstraction he maintains no more than that the active intellect makes potential intelligibles become actual intelligibles.[16] He never in this treatise explicitly con-

nects the abstracting activity of the human intellect with the influence of the separate active intellect. Hence, one cannot say that according to *Fī al-ʿaql* the light of the active intellect "enables the human intellect to abstract".[17] Alfarabi also keeps silent about the transformation of sense-data, presumably because sense-perception falls outside the scope of this treatise on the intellect. In sum, al-Fārābī's remarks about abstraction remain sketchy and are in danger of being overinterpreted.

III

Compared with his Arabic predecessor, Avicenna appears a champion of abstraction theory. This is already apparent in a very early treatise, with which he began his career as a writer, the *Maqāla fī al-nafs ʿalā sunnat al-ikhtiṣār* or *Compendium on the Soul* (dating probably 386/996–387/997).[18] The work certainly does not present Avicenna's mature thoughts on the topic of abstraction, but it contains *in nuce* several pieces of doctrine that are later developed into fully-fledged theories, such as the cooperation between the intellect and the internal senses (and the limits of this cooperation); the distinction between common and special, accidental and essential forms; the involvement of a separate universal intellect in the intellective process; the thesis that all perception, sensual as well as intellectual, is the abstraction of forms from matter; the comparison of the different modes of abstraction in the senses and in the intellect. And in general we encounter a notable interest in the transformation of sense-data into intelligibles:

> The faculty which grasps such concepts *(i.e. intelligibles that are not self-evident)* acquires intelligible forms from sense-perception by force of an inborn disposition, so that forms, which are in the form-bearing faculty *(scil. common sense)*[19] and the memorizing faculty, are made present to [the rational soul] with the assistance of the imaginative and estimative [faculties]. Then, looking at [the forms], it finds that they sometimes share forms and sometimes do not, and it finds that some of the forms among them are essential and some are accidental. An example of the

sharing of forms is that the forms[20] 'man'[21] and 'donkey' — in someone forming concepts[22] — share life, but differ with respect to reason and non-reason; an example for essential [forms] is 'life' in both of them, an example for accidental [forms] is 'blackness' and 'whiteness'.

When it[23] has found them being forms in this way, each of these essential, accidental, common, or special forms becomes a single, intellectual, universal form by itself. Hence it discovers by force of this natural disposition intellectual kinds, species, differences, properties and accidents. It then composes these single concepts by way of first particular and later syllogistic composition; from there it concludes derivations from conclusions. All this [the rational soul is able to do] with the service of the animal faculties and the assistance of the universal intellect, as we will explain below, and with the mediation of necessary, intellectual axioms[24] that naturally exist in it.

Even though this faculty receives help from the faculty of sense-perception in DERIVING *(istinbāṭ)* intellectual, single forms from sense-perceived forms, it does not need such assistance in forming these concepts in themselves and in composing syllogisms out of them, neither when granting assent to, nor when conceiving the two propositions, as we will explain below. Whenever the necessary corollaries have been DERIVED *(istanbaṭa)* from sense-perception through the afore-mentioned natural disposition, it dispenses with the assistance of the faculties of sense-perception; instead it has enough power by itself for every action dealt with by it.

Just as the faculties of sense-perception perceive only through imitation of[25] the object of sense-perception, likewise the intellectual faculties perceive only through imitation of the object of intellection. This imitation[26] is the ABSTRACTION *(tajrīd)* of the form from matter and the union with [the form]. The sensible form, however, does not come about when the faculty of sensation wishes to move or act, but when the essence of the object of sensation reaches the faculty either by accident or through the mediation of the moving faculty; the ABSTRACTION *(tajarrud)* of

> the form [occurs] to the faculty because of the assistance of the media which make the forms reach the faculty. The case is different with the intellectual faculty, because its essence performs the ABSTRACTION[27] of forms from matter by itself whenever it wishes, and then it unites with [the form]. For this reason one says that the faculty of sense-perception has a somehow passive role in conceiving [forms], whereas the intellectual faculty is active,[28] or rather one says that the faculty of sense-perception cannot dispense with the organs and does not reach actualization through itself, while it would be wrong to apply this statement to the intellectual faculty.[29]

The first thing to note about this passage is that its terminology of abstraction can hardly be read as a *façon de parler* for emanation of intelligibles. Avicenna uses much transitive vocabulary: the rational faculty acquires *(istafāda)*, finds *(wajada)*, derives *(istanbaṭa)* and abstracts *(jarrada)* intelligible forms; they do not "arise" in it, as al-Fārābī put it in *al-Mabādi'*. In addition, Avicenna plainly states that in contrast to sense-perception, the rational faculty is an active faculty which can perform *(fa'ala)* the abstraction of a form at will. The power to form concepts is innate.

Nevertheless, Avicenna also mentions that the intellect needs the help of the senses, of the universal intellect and of naturally inborn axioms (the latter are needed for syllogistic forms of reasoning).[30] Later in the *Compendium on the Soul*, he elaborates upon the axioms and also adds a sentence on the separate intellect's role in intellection, when invoking the traditional analogy of light: Light is similar to this intellect in that it enables the faculty of sight to perceive without, however, providing it with the perceived forms:

> This substance *(i.e. the universal intellect)*, in turn, supplies by the sole force of its essence the power of perception *(idrāk)* unto the rational soul, and makes the perceived form arise *(ḥaṣṣala)* in it[31] as well, as we have said above.[32]

The cross-references in this passage and in the previous quotation ("as we will explain below") make it plausible that these remarks about

perceived forms refer to the same forms that were before said to be abstracted. Here, then, is the core of the problem which troubled so many interpreters of Avicenna, the collaboration of two very different powers in the process of abstraction, the human intellect and the separate universal intellect. But even if the rather casual sentence on the supplying activity of the separate intellect is taken very seriously — it reminds one of al-Fārābī and is certainly much less original than the long passage on the human intellect — it does not allow us to make the separate intellect the main protagonist in the process of intellection. For the relation between the human and the universal intellect is clearly described as an act of "assistance" *(aʿāna)*: "All this [the conceptualizing faculty is able to do] with the service of the animal faculties and the assistance of the universal intellect". Without doubt, in this early version of Avicenna's theory of abstraction, it is the powerful abstracting force of the human intellect which is the focus of the theory. The senses are indispensable, for they provide the necessary sense-data. The universal intellect is indispensable as well; its function is hardly described at all but seems to consist in somehow providing the necessary intellectual surrounding for the activity of the rational soul, in a manner similar to light with respect to the human ability to see. Hence both the senses and the universal intellect are necessary accompanying conditions rather than powers active in the process.

IV

In later writings of Avicenna — in the mature works of his middle period[33] — one can observe that one part of abstraction theory receives a formulation that Avicenna obviously considered perfect: it appears in four different works in almost identical wording: *Ḥāl al-nafs al-insāniyya* ("The State of the Human Soul", also called *al-Maʿād*, "The Destination"), the *De anima* part of *al-Shifāʾ* (dating probably 412/1022-414/1024),[34] *al-Najāt* ("The Salvation"), and the *Mashriqiyyūn* ("The Easterners").[35] This piece of Avicennian philosophy treats four different degrees of abstraction in sense-perception, imagination, estimation and intellect.

Two other doctrines familiar from the *Compendium on the Soul* are developed identically in these four treatises: the theory that the animal faculties assist the rational soul in various ways and especially in abstraction, and, connected with it, the theory that a soul with much acquired knowledge can dispense with the assistance of the senses.

Significantly, the case is different with the doctrine of the separate active intellect and its participation in the abstraction process: the treatises *Ḥāl al-nafs al-insāniyya* and *al-Najāt* do not go much beyond the *Compendium on the Soul* but similarly state that a power is issued from above and that imaginable forms become intelligible forms. Avicenna obviously felt the need to reformulate and develop the doctrine, for both in *De anima* and in the *Mashriqiyyūn* he gives a long and famous explanation of the active intellect's mediating role in intellection.

It is characteristic of Avicenna's working method that these three groups of doctrines (degrees of abstraction — assistance by the senses — function of the active intellect) that once were treated together in a single passage of the early *Compendium*, have now become fully-fledged theories of their own which are only loosely connected with each other. The increasing theorization of Avicenna's philosophy is accompanied by fragmentation. In *Ḥāl al-nafs*, for example, the three theories are treated in chapters three, six and twelve, in *De anima* they appear in chapters II,2, V,3 and V,5.

What then is the effect of this development on the content of Avicenna's theory of abstraction as present in the works of the middle period? The passage on the four degrees of abstraction, to start with the first group of doctrines, is too long to be given in full; the reader may be referred to the translation by Fazlur Rahman.[36] For the present purposes, suffice it to quote the beginning (on abstraction in general) and the end (on intellectual abstraction) only:

> It seems that all perception is but the grasping of the form of the perceived object in some manner. If, then, it is a perception of some material object, it consists in an apprehension of its form by ABSTRACTING *(tajrīd)* it from matter in some way. But the kinds of ABSTRACTION are different and their degrees various. This is because, owing to matter, the material form is subject to

certain states and conditions which do not belong to [the form] by itself insofar as it is this form. So sometimes the ABSTRACTION *(naz‘)* from matter is effected with all or some of these attachments, and sometimes it is complete in that the concept[37] is ABSTRACTED *(jarrada)* from matter and from the accidents it possesses on account of the matter.[38]

[...]

(There follows the example of the abstraction of the concept "human being" and the description of the increasingly higher degree of abstraction among sense-perception, imagination and estimation.)

The faculty in which the fixed forms are either the forms of objects which are not at all material and do not occur in matter by accident,[39] [or the forms of objects which in themselves are not material but happen to be so by accident],[40] or the forms of material objects though purified in all respects from material attachments — such a faculty obviously perceives the forms by grasping them as ABSTRACTED *(mujarrad)* from matter in all respects. This is evident in the case of objects which are in themselves FREE *(mutajarrad)* from matter. As to those objects which are present in matter, either because their existence is material or because they are by accident material, this faculty completely[41] ABSTRACTS *(intaza‘a)* them both from matter and from their material attachments and grasps them in the way of ABSTRACTION; hence in the case of 'man' which is predicated of many, this faculty takes[42] the unitary nature of the many, DIVESTS *(afraza)* it of all material quantity, quality, place, and position. If[43] [the faculty] did not ABSTRACT *(jarrada)* it from all these, it could not be truly predicated of all.[44]

It is obvious that important parts of the doctrine have changed since the *Compendium on the Soul*. First, in the early *Compendium*, the main difference between sense-perception and intellection is described in terms of passivity and activity: the senses are not able to grasp a form at will, as is the intellect. In the later formulation of the doctrine, the difference lies in the faculties' widely diverging powers to divest forms of their

material attachments. Second, there is no explicit link to the theory of the separate active intellect in the passage from the middle period. Third, no mention is made of "imitation" or "assimilation" *(tashabbuh)*, as was the case in the *Compendium*. Fourth, Avicenna now connects the fully abstracted status of a form with its predicability of many. Fifth, the terminology of "form" and "matter", though present in the *Compendium* ("This imitation is the abstraction of the form from matter"), had not yet served to develop a theory about the ontological status of concepts, which is a major concern of Avicenna's in his works of the middle period. What Avicenna means when he speaks of abstraction from matter, is once illustrated with an example: the rational soul divests the concept of man of "all material quantity, quality, place and position". Hence, the soul distinguishes between what is accidental to the form and what belongs to the form "insofar as it is this form" — which shows us that the discussion of concepts here is a development of the distinction between the essential and the accidental made in the *Compendium*.

Avicenna calls these accidents "material" because they occur to the form only in virtue of its presence in matter in an externally existent object. But what exactly is the nature of this form, which is the object of abstraction? It is with respect to this topic that Avicenna adds an important feature to his abstraction theory (in a sentence not yet quoted in the above doctrine of the four degrees of abstraction):

> To give an example: the form or essence *(māhiyya)* of man is a nature in which all the individuals of the species share equally, while in its definition it is a single unit: although it is merely by accident that it happens to exist *(wujida)* in this or that individual and is thus multiplied.[45]

Multiplicity is only accidental to the form. This theory clearly touches upon the metaphysical topic of the nature of intelligible forms and the distinction between essence and existence,[46] which Avicenna spins out in greater detail in the *Metaphysics* and the *Logic* part of *al-Shifā'*, written also in the middle period.[47] There is one passage in the *Metaphysics* which directly tackles the issue of abstraction in the context of the theory of forms; here he explains that both universality and particularity are accidents to the intelligible form. This passage is a good illustration of what

Avicenna says in other works on abstraction, but it is an illustration only; Avicenna himself does not treat both theories — of abstraction and of forms — together, probably because he considered them to belong to different disciplines, psychology and metaphysics:

> The single form in the intellect is related to a multiplicity, in this respect being universal, while being a single concept in the intellect; there is no variation in its relation to whatever animal you perceive. That is, the form of every animal is made present in imagination with some disposition, then the intellect EXTRACTS *(intazaʿa)* an ABSTRACTION *(mujarrad)* of its concept from the accidents, [and] this form itself comes about in the intellect. This form is what derives from the ABSTRACTION *(tajrīd)* of animality from some individual [form in] imagination, which is grasped from an object outside (or something similar to an object outside), although it is not found itself outside but is created by imagination. This form, though universal with respect to the individuals, is particular with respect to the particular soul, being one of the forms in the intellect.[48]

Avicenna here says more clearly than in his psychological works that neither multiplicity nor particularity belong to the form as such. Embedded in this theory is a lucid description of the process of abstraction: the intellect works on data presented to it by the senses and stored in imagination; these data themselves are not imported from outside but are creations of the senses. The form that is in the intellect is a single concept only with respect to the intellect; it is universal with respect to the objects outside, and in itself it is neither universal nor particular, since — and here the distinction between essence and existence is involved again — it is independent of its existence outside and inside the intellect: as Avicenna says in his psychological works, it is the "unitary nature of the many" or "a nature in which all the individuals of the species share equally".

One may with some justification call this — the doctrine of the four degrees of abstraction plus the related discussion of intelligible forms in the *Metaphysics* — Avicenna's classical formulation of the process of abstraction: classical in the sense that he himself repeats it in several

works and in that it was influential historically.[49] With respect to intellectual abstraction, the human rational faculty appears as fully capable of performing the act of abstraction by itself: a comparatively broad range of transitive vocabulary is employed to describe its abstracting and divesting activity *(intazaʿa, jarrada, afraza)*.

One does not hear anything, however, about a collaboration with other entities involved in abstraction, neither with respect to the senses nor with respect to the separate active intellect. This collaboration is the topic of the two other groups of doctrines that Avicenna developed in the works of the middle period. The passage on the role of the senses appears identically in the four works mentioned above. Despite its brevity, one can easily spot that its roots lie in the early *Compendium*:

> The animal faculties assist the rational soul in various ways,[50] one of them being that sense-perception brings to it particulars, from which four things result in [the rational soul]: One of them is that the mind[51] EXTRACTS *(intazaʿa)* single universals from the particulars, by ABSTRACTING *(tajrīd)* their concepts from matter and the appendages of matter and its accidents, by considering what is common in it[53] and what different, and what in its existence is essential and what accidental. From this the principles of conceptualization *(taṣawwur)* come about [in] the soul: and this with the help of its employing imagination and estimation.[53]

The passage contains much that is already familiar: the use of the terminology of "form" and "matter" (but not the language of "essence" and "existence"); the explanation of the process of abstraction as the distinction between the common and the special, the essential and the accidental; the abstraction of forms as the starting-point for further intellectual activities such as the combination of concepts, and, most importantly, the usage of the term "assist" *(aʿāna)* for the role played by the senses. In this text as well as in the *Compendium*, it is the human intellect which is the active force in the process of abstraction, while the senses' main function is auxiliary: to present particulars, i.e. sense-data, to the intellect. The intellect is even said to "employ" or "govern" *(istaʿmala)* the internal senses in this operation. One sees that Avicenna has not changed the basic features of his theory since the *Compendium* with regard to the intellect's

relation to the senses. Instead, he has added new material. After the above quoted passage Avicenna adds two pieces of doctrine: the first maintains that the intellect returns to the senses only when forced to acquire an intelligible form not yet known to it — which is Avicenna's important distinction between the first acquisition of forms and their later reacquisition; for the latter, it suffices to reconnect to the active intellect[54]; the second is the example of the riding animal *(dābba)* which ceases to be useful when the place of destination is reached, just as there is no need for the senses when one has attained the intelligibles needed for further reasoning.[55]

If this group of doctrines does not undergo a revision in Avicenna's major writings, the opposite is true of the third topic, which concerns the role of the active intellect in the process of abstraction. One recalls that the *Compendium* contained very brief statements (reminiscent of al-Fārābī) about the universal intellect having an assisting function in the process: the active intellect supplies the power of perception and makes the forms arise in the human intellect. In two of Avicenna's later works, *Ḥāl al-nafs* and *al-Najāt*, the doctrine reappears without much alteration; it follows upon the standard Peripatetic analogy with light issuing from the sun:

> Likewise, there emanates from the active intellect a power and proceeds to the imaginable things that are potentially intelligible, in order to make them intelligible in actuality and to make the intellect in potentiality an intellect in actuality.[56]

What is missing, though, is the terminology of "assistance" which Avicenna had retained when explaining the function of the senses. This may simply be the effect of the increasing fragmentation of Avicenna's philosophy, that is, of the development of separate sets of doctrines (on abstraction and on the active intellect) loosely connected with each other, but when one turns to two other works of the middle period, the *De anima* of *al-Shifāʾ* and the *Mashriqiyyūn*, one finds that Avicenna, significantly, has substituted "mediation" for "assistance". These latter works, in fact, present a fully-fledged theory of the roles of the soul and the separate active intellect in abstraction, a theory of which there is not yet any sign in *Ḥāl al-nafs* (and *al-Najāt*, which has the same text); this may indicate

that *Ḥāl al-nafs* was composed earlier than *De anima*.[57] Avicenna obviously felt the need to revise what he had said earlier on the topic, and, even more, to give a proper theoretical foundation to a key doctrine of Peripatetic philosophy: the role of the active intellect in intellection. He tackles this problem at great length in chapters V,5 and V,6 of *De anima*, which present Avicenna's most important treatment of the issue in his entire work, given that he never returns to it with the same detailed attention and systematic approach (as will appear below).

On the basis of the evidence from earlier Avicennian writings laid out above, it can be demonstrated that the first part of chapter V,5 is not simply about the active intellect but about its involvement in abstraction (in contrast, the section on intuition in chapter V,6 does not employ abstraction terminology).[58] The passage in V,5 not only contains — in sequence — the analogy of light (pp. 234-5) and the theory about the transformation of sense-data into intelligibles (p. 235), but also the doctrine that the human intellect separates the essential from the accidental (p. 236), and the theory that the concept "man" is a single concept with respect to the human intellect and a universal concept with respect to the objects outside (pp. 236-7). Without doubt, these are by now familiar ingredients of Avicenna's theory of abstraction. The last doctrine even contains an explicit reference to the *Metaphysics* passage translated above, which touches upon abstraction in the context of the theory of forms. A developmental interpretation of Avicenna's oeuvre, therefore, should make us very sceptical that this passage in *De anima* V,5 can be called in as principal witness for the "façon de parler" thesis: one can, of course, still claim that the vocabulary of abstraction in this passage should not be taken literally, but it seems impossible to claim that this is how Avicenna wanted to be understood, since the same vocabulary appears in the same doctrinal contexts in earlier or contemporary works of his which clearly deal with abstraction (and some of which do not mention the active intellect at all).

Let us turn to the crucial part of chapter V,5, the passage on the transformation of sense-data into intelligibles (p. 235); it contains the well-known sentence cited at the opening of the present article, in which Avicenna appears to combine incompatible notions of abstraction and emanation:

(1) When the intellectual faculty considers the particulars which are [stored] in imagination and the light of the above-mentioned active intellect shines upon them in us, then the [particulars] are transformed *(istaḥāla)* into something ABSTRACTED *(mujarrada)* from matter and from the [material] attachments and get imprinted in the rational soul, (2) but not in the sense that the particulars themselves are transferred from imagination to our intellect, nor in the sense that the concept buried in [material] attachments — which in itself and with regard to its essence is ABSTRACT *(mujarrad)* — produces a copy of itself, but in the sense that looking at the particulars disposes the soul for something ABSTRACTED *(al-mujarrad)* to flow upon it from the active intellect. (3) For thoughts and considerations *(al-afkār wa al-ta'ammulāt)* are movements which dispose the soul for the reception of the emanation, just as the middle terms in a more certain way dispose [it] for the reception of the conclusion (although the two happen in different ways, as you will understand later). (4) When some relation towards this form occurs to the rational soul through the mediation of illumination *(bi-tawassuṭi ishrāq)* by the active intellect, then from [the form] something comes about in the soul, [something] of [the form's] kind in some way and not of its kind in another way — just as when light falls upon coloured things, it produces in vision an effect which is not of its nature[59] in all aspects. The imaginable things, which are intelligible in potentiality, become intelligible in actuality, though not themselves, but that which is COLLECTED *(iltaqaṭa)* from them. Or rather:[60] just as the effect, which is transmitted through the medium of light from the sense-perceptible forms is not identical with these forms but something different, related to them, [something] which is generated through the mediation of light in the corresponding receiver, likewise when the rational soul looks at these imaginable forms and [when] the light of the active intellect makes contact with them in some way, [the rational soul] is disposed to have appear in it, due to the light of the active intellect, uncontaminated ABSTRACTIONS *(mujarradāt)* from these forms.[61]

Compared with the brief remarks in Avicenna's previous works, or with what we know from al-Fārābī, or with the passage in Aristotle's *De anima* III,4-5 which is at the origin of the problem, this is an impressively systematic theory of the active intellect's role in abstraction. The basic assumption of all three authors is that the active intellect renders potentially intelligible thoughts actually intelligible; in addition, they somehow connect this with the difference between intelligibles in matter and intelligibles freed of matter. Al-Fārābī added that it is the sensibles stored in an internal faculty from which arise the intelligibles through the influence of the active intellect. Avicenna does not leave it with this: section one in the above quotation gives a more precise description of the process by saying that the particulars stored in the faculty of imagination are "transformed" *(istaḥāla)* into something "abstracted" from matter and hence are imprinted in the intellect. Avicenna also mentions two conditions for this process: the human intellect needs to consider the particulars and the light of the active intellect needs to shine upon them. Note that he does not speak of "assistance": both intellects seem equally important for a successful transformation.

This is comparatively precise, but it is not yet Avicenna's main contribution to the discussion, which follows in section two. Here he distinguishes between three different possibilities for such a transformation: either the particular imaginable form travels from imagination to the intellect, or a copy is produced of its immaterial core, or an abstraction of it comes from the active intellect, for which the soul is disposed through its consideration of the particulars. Avicenna chooses the third and last possibility and justifies it in the long section four (after a brief explanation of what is meant with disposition). The abstracted form which arrives in the human intellect is partly of the kind of the imaginable form and partly not: it is not the imaginable form itself which becomes intelligible, but something taken or collected *(iltaqaṭa)* from it. Avicenna compares this process to vision: the effect produced in the receiver and transmitted through the medium of light is "different" from the sense-perceptible form of the object, but "related" to it. There cannot be much doubt that Avicenna here tries to pin down the exact meaning of intellectual abstraction — the Latin *abstractio*/"drawing from" is a very apt translation in this case — and to distinguish it from other possible forms of the

transformation of sense-data: no simple transportation of them to the intellect, and no imitation *(mithl)* either — remember the term "imitation" *(tashabbuh)* in the *Compendium* — but a kind of derivation.

What are the respective roles of the human and the active intellect in this process? Note the terminology employed to describe the active intellect: its light "shines upon" the particulars in imagination; something abstracted "flows from" it *(fāḍa)* upon the soul; the forms occur to the soul "through the mediation of" its illumination; its light "makes contact with" the imaginable forms; abstractions of these forms appear in the soul "due to the light of the active intellect". The human intellect, in turn, "considers" the particulars stored in imagination; "looking at" *(ṭāla'a)* the particulars disposes the soul for an abstraction; thoughts and considerations are "movements" which dispose the soul for the reception of the emanation; the form "occurs to" or "comes about in" *(ḥadatha)* the rational soul; it "looks at" the imaginable forms and hence is "disposed" *(ista'adda)* to have "appear in it" abstractions from these forms.

A number of points need to be underlined: first, in contrast to the senses, which remain powers with an auxiliary function only, the active intellect is granted a more important role than in earlier writings of Avicenna: its traditional role was to give the power of intellectual perception to the rational soul and to make the intelligible forms arise in it — which is a Peripatetic version of Aristotle's idea that thinking needs to be triggered, needs to be turned from potentiality to actuality; its function now, much more specifically, is to make abstractions appear in the human intellect which are derived from the particulars stored in the soul's imagination. Second, the rational soul still is the main protagonist, even though there is a notable increase in passive vocabulary ("occurs to", "comes about in", "appears in" or "flows upon"). While the active intellect assumes the function of an indispensable intellectual surrounding and mediator, the human intellect is the power in action: it considers the particular forms stored in imagination and produces "thoughts and considerations", which eventually lead to the acquisition of a new intelligible form. Third, although Avicenna speaks of emanation and illumination, the vocabulary of light does not serve a theory of illumination in the strict sense: the light of the active intellect does not make contact with the human intellect only and not even primarily; rather, it shines upon the

particulars stored in imagination and thus creates a connection between imagination and human intellect. Hence, the analogy of light is employed for the specific purpose to explain the role of the active intellect in the process of abstraction. When Avicenna maintains in section two that an abstraction emanates from the active intellect upon the soul, then this is an abbreviation — describing the entire process from one end of the process only, namely the human intellect — for the sentence in section four which maintains that abstractions from the imaginable forms appear in the soul due to the light of the active intellect.

In the traditional reading of the translated passage, the human intellect's attention towards the imaginable forms *only* disposes *(aʿadda)* the soul for receiving an emanation of intelligibles from above. This emphasizes the limitation of the soul's power of abstraction,[62] which, however, is not Avicenna's point. There is no "only" in the text.[63] As shown above, the core of the argument runs: no transportation of the imaginable form, no copying, but an abstraction mediated by the active intellect. The disposition of the soul is part of the theory, but it is not the gist of it, and there is no indication that Avicenna conceives of the soul's power of abstraction as something limited. One of the impossible consequences of the traditional line of interpretation is that — on account of the analogy used by Avicenna — the soul also would not *see* in the proper sense of the word, because turning towards the object only disposes the eye to have visible forms appear in it due to the light of the sun; which is clearly not what Avicenna means.

It is not correct to say that for Avicenna "human intelligible thought comes directly from the active intellect", or that "intelligible thoughts ... flow directly from the active intellect and are not abstracted at all".[64] Apart from the fact that this interpretation rests on a misunderstanding of the term *fikr* ("reasoning") as referring to one of the internal senses only,[65] it is countered by Avicenna's explicit statement in section three: "thoughts" (*al-afkār*) are movements of the human intellect produced before the reception of abstract forms. When Avicenna speaks about abstraction and emanation, he means the acquisition of an intelligible "form" (*ṣuwar*) such as "man", not of thought in general. Moreover, as shown above, Avicenna unambiguously states that intelligible forms ultimately derive from the particulars in imagination and still resemble them:

they are partly of their kind and partly not. It is true that one often finds in Avicenna's works the expression that the intelligibles flow from the active intellect, especially in the context of the reacquisition of a form which had been intellected before; but when the phrase is used with respect to the first acquisition of a form, it should not be misunderstood as excluding abstraction. On the contrary: to have given a clear definition of abstraction, to have described the function of the active intellect in it and to have distinguished abstraction from other modes of transforming sense-data, counts among Avicenna's major contributions to the history of epistemology.

V

For the present purposes, the late period of Avicenna's oeuvre shall be defined as comprehending works which postdate the psychological section of *De anima* and which present a theory of abstraction not identical with the version of the middle period. The *Najāt* and the *Mashriqiyyūn*, though clearly written after *De anima*, advance the same theory and thus belong to the middle period, considered from a doctrinal point of view. This is different with three later works which do not simply copy the doctrine: the *Dāneshnāme* (written in Iṣfahān between 414/1023 and 428/1037),[66] *al-Ishārāt wa al-tanbīhāt* ("Pointers and Reminders") and *al-Mubāḥathāt* ("Discussions").

These treatises are of very different character: the *Dāneshnāme* is a summary of philosophy written in Persian for the ruler ʿAlā ad-Dawla; the *Ishārāt* is traditionally considered Avicenna's last *magnum opus*, peculiar for its style of giving hints and pointers rather than fully-fledged arguments; the *Mubāḥathāt* are a loosely organized series of answers to miscellaneous questions concerning Avicenna's philosophy. It is characteristic of these treatises that they treat abstraction less systematically and less comprehensively than the works of the middle period. The relevant passages are shorter and state a doctrine rather than argue for it. What makes them interesting for the present investigation, is that they show us what Avicenna considered worth selecting or altering, be it for the readership of a ruler or of an intellectual élite.

We meet two familiar groups of doctrines in the *Dāneshnāme*, on the degrees of abstraction and on the participation of the active intellect in abstraction. The topic of the senses' assistance seems to be dropped; what is left, is the passage on the senses becoming a hindrance to the intellect, including the example of the riding animal.[67] With respect to the degrees of abstraction, Avicenna takes over the basic features of what was called above the classical formulation of the doctrine: the faculties' varying powers of abstraction, the omission of any reference to the active intellect, the language of "form" and "matter", the interest in the ontological status of concepts. He has reduced, however, the vocabulary of abstraction itself, shifting the focus towards different modes in which forms are perceived — rather than abstracted.[68] Another significant alteration concerns the metaphysical doctrine of forms, which Avicenna had woven into his theory of abstraction in various passages of the middle period. That multiplicity and particularity are extraneous to the form, is not a topic discussed in relation with abstraction theory in the *Dāneshnāme*.

If the section on the various degrees of abstraction (or, rather, perception) is a digest of the mature version of the doctrine — which is not surprising, given the addressee of the book — the same holds true of the passage on the active intellect. Here we meet with a number of features clearly taken from *De anima* (or *Mashriqiyyūn*): the light of the active intellect falls upon the imaginable forms; abstractions are taken from these forms; they are presented to the (human) intellect. Remember that in *Ḥāl al-nafs* and *al-Najāt* Avicenna had only spoken of imaginable forms being made intelligible in actuality. Avicenna has, however, skipped the entire discussion of the various possible ways of the transformation of sense-data; only the third possibility is left, which is abstractions from imaginable forms. No mention is made of the intellect being disposed to receive these forms.[69]

It is in the *Ishārāt* that one finds the most important development of the theory in Avicenna's late period. The *Mubāḥathāt*, in contrast, do not contain anything close to a *theory* of abstraction, to the best of my knowledge.[70] Of course, one finds various pieces of doctrine deriving from the thematic groups of the middle period, such as: imagination does not grasp concepts completely abstracted from matter (p. 177); the bodily senses can be compared to a riding animal (p. 232); consideration of what is

stored in imagination is needed to receive an emanation from above; this consideration consists in thoughts and reasonings that prepare the soul for the emanation (p. 239). It is tempting but hermeneutically hazardous to combine these scattered sentences to a coherent picture of Avicenna's theory in *Mubāḥathāt*; the collection of responsa obviously is not meant to offer a systematic treatment of philosophical questions. The same *caveat* should be kept in mind when sentences from *Mubāḥathāt* are used to explain Avicenna's position in other works of his without proper consideration of context and the precise nature of the question asked.[71]

Turning to the relevant passages in the *Ishārāt*, one finds that the text has much in common with the *Dāneshnāme* (which corroborates the late dating of the *Ishārāt*):[72] it has about the same length; it does not say much on assistance by the senses but all the more on degrees of abstraction and on the active intellect; it does not use the terminology of "multiplicity" and "particularity" of forms; it draws on *De anima* for the theory of the active intellect in abstraction but omits the discussion of the exact nature of the transformation of imaginable forms. The first passage is the following:

> Sometimes a thing is perceived [via sense-perception] when it is observed; then it is imagined, when it is absent [in reality] through the representation of its form inside, just as Zaid, for example, whom you have seen, but now is absent from you, is imagined by you. And sometimes [the thing] is apprehended intellectually when the concept 'man', for example, which exists also for other people, is formed out of Zaid. When [the thing] is perceptible to the senses, it is found covered by things which are foreign to its essence and which, if they had been removed from it, would not affect its core essence *(māhiyya)*. As, for instance, with place, position, quality, and quantity itself: if something else had been imagined in their place, it would not affect the reality of the essence of its humanity.
>
> Sense-perception grasps [the concept] insofar as it is buried in these accidents that cling to it because of the matter out of which it is made without ABSTRACTING *(jarrada)* it from [matter], and it grasps it only by means of a connection through position

[that exists] between its perception and its matter. It is for this reason that the form of [the thing] is not represented in the external sense when [sensation] ceases. As to the internal [faculty of] imagination, it imagines [the concept] together with these accidents, without being able to entirely ABSTRACT it from them. Still, [imagination] ABSTRACTS it from the afore-mentioned connection [through position] on which sense-perception depends, so that [imagination] represents the form [of the thing] despite the absence of the form's [outside] carrier.

As for the intellect, it is able to ABSTRACT *(tajrīd)* the essence which is enclosed[73] in extraneous accidents that individuate it,[74] securing it as if [the intellect] were acting upon the sense-perceptible [form] in a way that would make it intelligible.[75]

This is, indeed, a very dense fusion of various strands of abstraction theory as present in Avicenna's works of the middle period. It starts off, just as in the *Dāneshnāme*, with a distinction between different kinds of perceptions rather than abstractions. But shortly afterwards Avicenna touches upon the familiar doctrine of forms: imagine (and this is the more speculative tone of the *Ishārāt*) that one would give a different place, position, quality etc. to the essence of humanity, the essence itself would not be affected in any way. Avicenna here gives a new expression to the distinction between the forms' essences and their existence and even invokes the corresponding vocabulary, without however mentioning the forms' existential independence also of the intellect.[76]

There follow the three increasing degrees of abstraction; they are reduced from four to three by omitting estimation from the scala. Although this is a heavily abbreviated version of the doctrine, the vocabulary *(jarrada, tajrīd)* and line of argument show that the topic is the same as in the middle period: the difference between external senses, internal senses and intellect with regard to perception is explained in terms of varying powers of abstraction. A development of doctrine can be seen in the prominence given to the phrase "connection through position" *('alāqa waḍ'iyya)* existing between perception and matter, that is, the fact that there is no sense-perception if the object is not present. In earlier versions, Avicenna had also mentioned a "relation" *(nisba)*[77] between object

and perceiver as characteristic of sense-perception, but he had not yet spoken of this relation as something necessarily "grasped" by the senses and "abstracted" by imagination. We see him here elaborating a theoretical concept not yet fully developed in the middle period in order to create the highly condensed doctrine of the late *magnum opus*.

The passage in the *Ishārāt* ends with a sentence on intellectual abstraction which sounds just as a conclusion to the present article: the explicit use of abstraction terminology, the transformation of sense-perceptible forms into intelligible forms, the invoking of essentialist vocabulary with respect to the abstracted forms, and, above all, a reference — present in Avicenna's work since the early *Compendium* — to the very active part played by the human intellect: abstraction means that the intellect "acts upon" *(ʿamila bi)* the sense-perceptible form "in a way that would make it intelligible".

If the human intellect's activity is a constant feature of Avicenna's theory, this is not true of the role of the separate active intellect which changes from assistance to mediation, as we have seen. The *Ishārāt* give a final twist to the story:

> The multiplicity of the soul's occupations with sense-perceptible imaginable forms and connotational images,[78] which are in the form-bearing and the remembering [faculties respectively], with the help *(istikhdām)* of the estimative and cogitative faculty, makes the soul obtain a disposition for the reception of ABSTRACTIONS of them [i.e., of the imaginable forms and images] from the separate substance through some kind of relationship between the two. Observation and inspection of the issue verify this. These occupations [with imaginable forms and images] are those which give [the soul] a perfect disposition that is specific for [the reception of] each individual form, though an intellectual concept may [also] provide this specific [disposition] for [the reception of] another intellectual concept.[79]

One recognizes elements of doctrine central to Avicenna's abstraction theory since his earliest works: for instance, the role of "assistance" performed by the internal faculties; the soul's consideration of sense-data. But what is missing, is the analogy of light and, with it, the doctrine of

the active intellect as a mediator — not to speak of an assisting factor — in the process of abstraction. In this *al-Ishārāt* differ from all other works treated, including the *Dāneshnāme*; it may be an indication of Avicenna's gradual emancipation from the Peripatetic tradition. The result, from a doctrinal point of view, is a theory that appears to reduce the consideration of imaginable forms to a mere preparation for an emanation of abstractions. Upon closer inspection, however, this interpretation does not hold: for Avicenna has taken over from *De anima* (or *Mashriqiyyūn* or *Dāneshnāme*) the phrase "their abstractions" *(mujarradātihā)*, that is, abstractions from the afore-mentioned forms stored in imagination and memory. Even in the *Ishārāt*, no doubt is left about the origin of these intelligible forms: they ultimately derive from sense-data. The concept of the active intellect as mediator is still in force.

One also notes that there is only one active power in the process, the human intellect: it turns towards the imaginable forms and acts upon them — which is the sense of *taṣarrufāt fī*, "occupations with". These occupations give to the intellect a particular disposition to acquire a specific form; they particularize or "customize" *(mukhaṣṣiṣa)* the intellect for its reception. In other words, by looking through the many data furnished by the senses, the intellect assumes a focus that allows for the discernment of a specific intelligible form. Clearly, the protagonist in abstraction remains the human intellect.

VI

Is Avicenna's language of abstraction a *façon de parler* for emanation, and should we hence refrain from taking him literally in this context? Does he himself negate the reality of abstraction as a cognitive process? Or is he simply unable to explain intellectual abstraction in knowledge? *Pace diligentiae* of those who have given affirmative answers, mine can only be negative. It seems impossible to deny that Avicenna was convinced of the human power of abstraction, that he meant what he said and that he was fully capable of developing a theory of impressive quality, if measured against al-Fārābī's or those of his thirteenth-century Latin readers.[80]

Modern interpreters have perhaps been too impressed — and thus misguided — by some salient features of Avicenna's philosophy: the ample usage of emanation terminology, the fact that the active intellect is not part of the soul but nevertheless plays an essential role in human intellection, and the denial of intellectual memory, or rather the attribution of this function to the active intellect. It seemed impossible to integrate an actively abstracting human intellect into such a system — which however is exactly what Avicenna did. He achieved this not by turning one or the other of his discourses into a metaphorical, non-literal one, but rather by giving a new sense to transmitted vocabulary and a new explanation to traditional doctrines. Since abstraction is a complex phenomenon and since Avicenna developed his position gradually, one can find passages relevant to the topic in many different contexts of Avicenna's oeuvre. Combining these passages does not yet give us a clear picture of the theory: the increasing complexity of his philosophy makes it difficult to decide which pieces of doctrine are interrelated and which are not. This is why it seems advisable to attempt a developmental interpretation by describing the gradual transformation of groups of doctrines.

It is an entirely different question — and certainly not an interesting question for everybody — whether Avicenna's theory of abstraction deserves its name if compared to a systematic concept of abstraction derived from the longue durée of intellectual history. In view of the fact that Avicenna is a major factor in the historical shaping of the concept, one feels reluctant to believe that he falls short of speaking properly about it.

Notes

1. Avicenna, *al-Shifā'*, *al-Ṭabī'iyyāt*, *Kitāb al-nafs*, edited by F. Rahman (London: Oxford Univ. Press, 1959) (quoted as: *De anima*, ed. Rahman), ch. V,5, p. 235, line 7.
2. F. Rahman, *Prophecy in Islam: Philosophy and Orthodoxy* (London: George Allen and Unwin, 1958), p. 15. Cf. L. Gardet, *La Pensée religieuse d'Avicenne* (Paris: J. Vrin, 1951), p. 151: 'Il n'y a donc pas abstraction proprement dite'.
3. H. A. Davidson, *Alfarabi, Avicenna, and Averroes on Intellect* (New York, Oxford: Oxford Univ. Press, 1992), p. 94.

4. Davidson, *Alfarabi*, p. 93.
5. J. A. Weisheipl, "Aristotle's Concept of Nature: Avicenna and Aquinas", in *Approaches to Nature in the Middle Ages*, edited by L.D. Rogers (Binghamton, N.Y.: Center for medieval and early Renaissance studies, 1982), p. 150. Cf. D. Black, "Avicenna on the Ontological and Epistemic Status of Fictional Beings", *Documenti e studi sulla tradizione filosofica medievale* 8 (1997), p. 445: '... he denies the reality of abstraction as a cognitive process'. Cf. as probable sources for this line of interpretation, F. Brentano, *Die Psychologie des Aristoteles* (Mainz: Kirchheim, 1867), p. 14 ('das Sinnliche hört auf die Quelle des geistigen Erkennens zu sein') and Thomas Aquinas, *Summa contra gentiles*, 2.74, and idem, *Summa theologiae*, I.84.4.c.
6. Avicenna, *De anima* V,5, ed. Rahman, pp. 235-6.
7. A.-M. Goichon, *La Distinction de l'essence et de l'existence d'après Ibn Sīnā* (Paris: Desclée de Brouwer, 1937), p. 309: "Mais l'intelligible est-il abstrait par l'âme ou donné par l'Intellect actif? En rigueur de termes, ni l'un ni l'autre".
8. See D. Gutas, *Avicenna and the Aristotelian Tradition* (Leiden: E. J. Brill, 1988), pp. 79-145; M. Marmura, "Plotting the Course of Avicenna's Thought", *Journal of the American Oriental Society* 111 (1991), pp. 334-336; J. Michot, "La Réponse d'Avicenne à Bahmanyār et al-Kirmānī", *Le Muséon* 110 (1997), pp. 153-163. Cf. also Michot's earlier book *La destinée de l'homme selon Avicenne* (Louvain: Peeters, 1986), pp. 6-7, and L. E. Goodman, *Avicenna* (London/New York: Routledge, 1992), pp. 1-48.
9. See P. Aubenque, T. Kobusch, L. Oeing-Hanhoff et al., "Abstraktion", *Historisches Wörterbuch der Philosophie* (Basel: Schwabe and Co, 1971-), vol. 1, pp. 42-65. On Thomas Aquinas's distinction between *abstractio* and *separatio* see J. F. Wippel, "Metaphysics and *Separatio* in Thomas Aquinas", in idem, *Metaphysical Themes in Thomas Aquinas*, Washington, D.C.: The Catholic University of America Press, 1984, pp. 69-82. Cf. also (on Alexander of Aphrodisias, Boethius, Abelard and Avicenna): A. de Libera, *L'art des généralités. Théories de l'abstraction* (Paris: Aubier, 1999).
10. For comparisons of al-Fārābī and Avicenna on abstraction see F. Rahman, "Ibn Sīna", in *A History of Muslim Philosophy*, edited by M. M. Sharif (Wiesbaden: Harrassowitz, 1963), vol. 1, p. 495, and Davidson, *Alfarabi*, p. 93. For the late Greek and early Arabic tradition see Arnzen's commentary on Ibn al-Biṭrīq's paraphrase (extant in a revised version) of Aristotle's *De anima* in R. Arnzen, *Aristoteles' De anima: eine verlorene spätantike Paraphrase in arabischer und persischer Überlieferung* (Leiden: E. J. Brill, 1997), pp. 335 and 451-2.

11. Al-Fārābī, *Mabādiʾ arāʾ ahl al-madīna al-fāḍila*, edited and translated by R. Walzer (Oxford: Clarendon Press, 1985), pp. 202-203.
12. Al-Fārābī, *al-Mabādiʾ*, pp. 204-205.
13. Al-Fārābī, *Risāla Fī al-ʿaql*, edited by M. Bouyges, Bibliotheca Arabica Scholasticorum, Série arabe 8,1 (Beirut: Imprimerie catholique, 1938), p. 12. Cf. the Latin translation, *De intellectu et intellecto*, edited by E. Gilson, "Les sources gréco-arabes de l'augustinisme avicennisant", *Archives d'Histoire Doctrinale et Littéraire du Moyen Age* 4 (1929), p. 117: "... vel aliquid cuius essentia apta est abstrahere quidditates omnium quae sunt et formas eorum a suis materiis".
14. Al-Fārābī, *Risāla Fī al-ʿaql*, p. 20, line 6. Cf. Latin tr., *De intellectu et intellecto*, p. 120, line 185.
15. Aristotle, *De anima* III.4, 430a2-6.
16. Al-Fārābī, *Risāla Fī al-ʿaql*, p. 27, line 6. Cf. Latin tr., *De intellectu et intellecto*, p. 122, line 265.
17. As maintained by Davidson, *Alfarabi*, p. 93.
18. The early dating is well established: see S. Landauer, "Die Psychologie des Ibn Sīnā", *Zeitschrift der deutschen morgenländischen Gesellschaft* 29 (1875), pp. 336-9; Michot, *La destinée*, p. 6; Gutas, *Avicenna*, pp. 82-4; Marmura, "Plotting", p. 341.
19. For textual comments the following abbreviations are used: La = Landauer's edition, Ah = al-Ahwānī's edition, A = manuscript A in Landauer, B = manuscript B in Landauer, tr. Al = Alpago's Latin translation, tr. La = Landauer's German translation in "Die Psychologie" (full references in footnote 29). The phrase 'form-bearing' translates *al-mutaṣawwira* (La, Ah, tr. Al: *informativa*); this does not refer to the rational soul and its power to form concepts, but is an alternative term for common sense in the *Compendium* (cf. ed. Landauer, p. 352, line 13, p. 359, lines 4-5). In later writings, Avicenna uses the term *al-muṣawwira* for the faculty of imagination, the storing-place of sense-data (see the *Lexiques* in S. Van Riet, editor, *Avicenna Latinus. Liber de anima seu sextus de naturalibus IV-V* (Louvain: Éditions orientalistes/Leiden: E. J. Brill, 1968), pp. 244-245).
20. 'forms': *ṣuwar* (Ah); 'form': *ṣūra* (La), *formae vel speciei* (tr. Al).
21. 'man': *insān* (B, Ah); *zayd* (A, La); *Platonis* (tr. Al).
22. 'in someone forming concepts': *fī mutaṣawwir* (La, Ah); 'wenn man an den Begriff ... denkt' (tr. La); *in forma* (tr. Al).
23. 'it': *wajadat-hā* (conj. La), 'inuenit eas' (tr. Al); *wajadnā-humā* (A, La, Ah); *wajada-humā* (B).

24. 'axioms': *al-badā'ih* (B, La, tr. Al: *principiis*); *bidāya* (A, Ah).
25. 'the object of sense-perception ... imitation of': om. Ah.
26. 'assimilation': *al-tashabbuh* (B, La, Ah); *al-tashbīh* ('comparison': A).
27. 'performs the abstraction': *taf'alu ... tajarrud* (La, tr. Al: *operatur ... denudando*); *ta'qilu ... bi-tajrīd* ('knows the abstraction': Ah).
28. 'For this reason ... active'; om. tr. Al.
29. Avicenna, *Compendium on the Soul*, edited by Landauer, "Die Psychologie", p. 362, line 16; edited by A. F. al-Ahwānī, *Aḥwāl al-nafs* (Cairo: el-Halaby and Co., 1952), p. 169, line 10; Latin translation by A. Alpago, *Compendium de anima* (Venice: Giunta, 1546, repr. Farnborough: Gregg International, 1969), p. 23v; alternative English translation by E. A. van Dyck, *A Compendium on the Soul* (Verona: Nicola Paderno, 1906), p. 72.
30. On Avicenna's theory of axioms and primary intelligibles see D.N. Hasse, 'Das Lehrstück von den vier Intellekten in der Scholastik: von den arabischen Quellen bis zu Albertus Magnus', *Recherches de Théologie et Philosophie médiévales* 66 (1999), pp. 31-36.
31. 'in it [scil. the rational soul]': *fī-hi* (La with footnote: "suffixum masc.?"; Ah); cf. tr. Al: "in ea", scil. *virtus rationalis*, tr. La: "in ihr", scil. "denkende Seele".
32. Avicenna, *Compendium on the Soul*, ed. Landauer, p. 371, line 9; ed. al-Ahwānī, p. 177, line 3; Latin tr., *Compendium de anima*, p. 34r, line 6.
33. For matters of chronology in general, see the references in n. 8 above.
34. Gutas, *Avicenna*, pp. 41 and 103-106; the earliest possible dating for *De anima* is 1015, but since in 1021 only 20 folia of the section on natural philosophy had been finished (as reported by Jūzjānī, Avicenna's secretary; see the translation in Gutas, ibid., p. 41), the later dating (1022-4) is more probable. Michot argues for a dating earlier than 1021; see his 'La Réponse', p. 157, n. 58.
35. Avicenna, *Ḥāl al-nafs al-insāniyya*, ed. al-Ahwānī, *Aḥwāl* (as in n. 29 above), pp. 69-73; Avicenna, *De anima* II,2, ed. Rahman, pp. 58-61 (= the Latin *Liber de anima seu Sextus de naturalibus*, ed. Van Riet, pp. 114-20); Avicenna, *al-Najāt* (2nd edition: Cairo, 1357/1938), pp. 168-71; Avicenna, *al-Mashriqiyyūn*, MS Istanbul, Ahmet III 2125, fols 665v-666v.
36. F. Rahman, *Avicenna's Psychology. An English Translation of Kitāb al-Najāt, book II, chapter VI* (London: Oxford Univ. Press), pp. 38-40.
37. 'concept': *al-ma'nā* (*De anima*, *Mashriqiyyūn*); om. (*Ḥāl*, *Najāt*).
38. Avicenna, *Ḥāl al-nafs al-insāniyya*, ed. Ahwānī, p. 69; = *al-Shifā': De anima*, ed. Rahman, II,2, p. 58, line 4; = Latin tr., ed. Van Riet, p. 114, =

Mashriqiyyūn MS Ah, fol. 665v, = *Najāt*, ed. Cairo, p. 168, line 22, translation by Rahman, slightly modified, p. 38.

39. 'by accident': *lā ya'riḍu* (*Ḥāl*, *Najāt*); *lā 'araḍa* (*De anima*, *Mashriqiyyūn*).
40. [...]: *Ḥāl*, *Najāt*, *Mashriqiyyūn*; om. *De anima*.
41. 'completely': *min kulli wajhin* (*Ḥāl*, *Najāt*, *Mashriqiyyūn*); om. (*De anima*).
42. 'takes': *fa-ta'khudhu* (*Najāt*); *fa-ya'khudhu* (*Ḥāl*); *wa-ḥattā yakūna qad akhadha* (*De anima*, *Mashriqiyyūn*).
43. 'if': *wa-law* (*De anima*, *Mashriqiyyūn*); *thumma* (*Ḥāl*, *Najāt*).
44. Avicenna, *Ḥāl al-nafs al-insāniyya*, ed. Ahwānī, p. 72; = *al-Shifā': De anima*, ed. Rahman, II,2, p. 61, line 5; = Latin tr., ed. Van Riet, p. 120, = *Mashriqiyyūn* MS Ah, fol. 666r-v, = *Najāt*, ed. Cairo, p. 170, line 20, translation by Rahman, slightly modified, p. 40.
45. Avicenna, *Ḥāl al-nafs al-insāniyya*, ed. Ahwānī, p. 69; = *al-Shifā': De anima*, ed. Rahman, II,2, p. 58, line 11; = Latin tr., ed. Van Riet, p. 115, = *Mashriqiyyūn* MS Ah, fol. 665v, = *Najāt*, ed. Cairo, p. 169, line 4, translation by Rahman, p. 38 (slightly modified).
46. On these doctrines see Rahman, "Ibn Sīna", pp. 483-6.
47. For the *Logic* part see: Avicenna, *al-Shifā', al-Manṭiq, al-Madkhal* (Eisagoge), edited by G. C. Anawati et al. (Cairo: Imprimerie nationale, 1952), ch. I,12, pp. 65-9 (on particularity and universality as accidents to the essential concept).
48. Avicenna, *al-Shifā': al-Ilāhiyyāt*, edited by G. C. Anawati and S. Zayed (Cairo: Imprimeries Gouvernementales, 1960), V.1, p. 205 (= Latin tr., *Liber De Philosophia prima sive Scientia divina*, edited by S. Van Riet, 3 vols, Louvain/Leiden: E. Peeters/E. J. Brill, 1977-83, vol. II, p. 238).
49. At present state of research, the influence has only been documented for the Latin tradition; see the references to Dominicus Gundissalinus, anonymous *De anima et de potentiis eius*, Jean de la Rochelle, Alexander of Hales, Albertus Magnus, Vincent of Beauvais, Petrus Hispanus and Anonymous (MS Siena) in D.N. Hasse, *Avicenna's De anima in the Latin West*, Warburg Institute Studies and Texts 1 (London/Turin: The Warburg Institute/Nino Aragno Editore, 2000), pp. 200-203 and Index Locorum II.2.b-g.
50. The *Mashriqiyyūn* write: 'The rational soul, however, sometimes employs the help of the animal faculties: they assist it in various ways'.
51. 'mind': *dhihn* (*De anima*, *Mashriqiyyūn*); *nafs* (*Ḥāl*, *Najāt*).
52. 'in it': *fī-hi* (*De anima*, *Mashriqiyyūn*, *Najāt*); *fī-hā* ('in them': *Ḥāl*).
53. Avicenna, *Ḥāl al-nafs al-insāniyya*, ed. Ahwānī, p. 87 (= *al-Shifā': De anima*, ed. Rahman, V,3, p. 221, line 17, = Latin tr., ed. Van Riet, p. 102, =

Mashriqiyyūn MS Ah, fol. 685r-v, = *Najāt*, ed. Cairo, p. 182, tr. Rahman, pp. 54-55).

54. Cf. Rahman's translation in *Avicenna's Psychology*, p. 56: "When not so diverted, [the soul] does not need the lower faculties for its special activity, except in certain matters wherein it specially needs to refer once more to the faculty of imagination for finding a new principle in addition to what had already been obtained, or for recalling an image" (for references to the Arabic text see next footnote). The theory of acquisition and reacquisition is discussed most fully by Avicenna in *De anima* V,6, esp. p. 247; it is put in context in Hasse, *Avicenna's De anima in the Latin West* (as in n. 49), pp. 174-89, esp. pp. 186-7.

55. Avicenna, *Ḥāl al-nafs al-insāniyya*, ed. Ahwānī, p. 89, line 4 (= *al-Shifā': De anima*, ed. Rahman, V,3, p. 223, line 8, = Latin tr., ed. Van Riet, p. 105, = *Mashriqiyyūn* MS Ah, fol. 685v, line 18, = *Najāt*, ed. Cairo, p. 183, line 7, tr. Rahman, p. 56). Some of these editions or manuscripts erroneously read *dhāt* instead of *dābba* (*Ḥāl*, *Najāt* and *Mashriqiyyūn*; corrected on the basis of better manuscripts by Rahman, *Avicenna's psychology*, p. 125). The example of the riding animal is briefly discussed by Davidson, *Alfarabi*, p. 104.

56. Avicenna, *Ḥāl al-nafs al-insāniyya*, ed. Ahwānī, p. 112; = *Najāt*, ed. Cairo, p. 193, = translation by Rahman, p. 69.

57. Gutas argues for an early dating of *Ḥāl al-nafs*; see his *Avicenna and the Aristotelian Tradition*, pp. 99-100. See Michot, *La destinée de l'homme*, pp. 6-7, n. 29, for the contrary opinion.

58. Such terminology is also missing in the Avicennian treatise on prophetic knowledge called *Fī ithbāt al-nubuwwāt*, edited by M. E. Marmura (Beirut: Dār Al-Nahār, 1968).

59. *jumla* here means 'gist', 'essence', not 'all', 'whole' (the Latin has *similis*).

60. 'or rather': *bal* (*De anima*); om. (*Mashriqiyyūn*).

61. Avicenna, *De anima* V,5, ed. Rahman, p. 235, line 2; = Latin tr., ed. Van Riet, p. 127; = *Mashriqiyyūn* MS Ah, fol. 688v.

62. Cf. Weisheipl, 'Aristotle's Concept of Nature', p. 150: "According to Avicenna, human teachers and books can only dispose the mind to be receptive of new concepts from the dator formarum, the 'agent intellect'"; and Davidson, *Alfarabi*, p. 93: "Activity leading up to the ostensible act of abstraction thus does not come to fruition in a true act of abstraction. It rather prepares the way for the reception of abstract concepts from the emanation of the active intellect".

63. *Pace* Rahman, who translates (in *Prophecy in Islam*, p. 15): "... but only in

the sense that its consideration prepares the soul so that the abstract form should emanate upon it from the Active Intelligence" (my emphasis).

64. Davidson, *Alfarabi*, pp. 102 and 93.

65. Davidson takes *fikr* ("reasoning", "cogitation") to refer only to the cogitative faculty *(al-mufakkira)*; see his *Alfarabi*, pp. 95-102. In fact, Avicenna's use of the term is varied and it refers to reasoning processes both in the animal soul, where the cogitative faculty resides, and in the rational soul. At one point in the *De anima* (IV,2, p. 175, line 9) he even implies that intellectual reasoning *(al-fikr al-nuṭqī)* is hindered by the imaginative/cogitative faculty of the animal soul. Further, one of the key passages for Davidson's interpretation (*Alfarabi*, p. 96) is *Mubāḥathāt* (edited by A. Badawī, *Arisṭū ʿinda l-ʿArab*, Cairo: al-Nahḍa al-Miṣriyya, 1947, pp. 122-239) p. 199, line 12, where it is said that *fikr* consists in seeking the perfect disposition to make contact with the active intellect. But this passage is adopted from *De anima* V,6, p. 247, line 3, where the term is not *fikr* but *taʿallum*: "acquiring knowledge", or "acquiring an intelligible form". See also the article by Dimitri Gutas in this volume.

66. Gutas, *Avicenna*, p. 114, suggests the year 1027; Michot, *Destinée*, p. 7, and 'La Réponse', p. 161, places it between 1030 and 1034.

67. Avicenna, *Dāneshnāme*, edited by S. M. Meshkāt (Tehran, 1974), vol. 2, pp. 125-6; cf. the French translation by M. Achena and H. Massé in *Avicenne: Le Livre de science* (2nd edition: Paris: Les belles lettres/Unesco, 1986), p. 79.

68. Cf. the first sentences of the doctrine in its classical formulation (translated above, reference in n. 38) with the opening paragraph in *Dāneshnāme*, ed. Meshkāt, p. 102, tr. Achena/Massé, p. 66: "Toute connaissance que nous acquérons est la quiddité, l'idée et la forme de telle chose que nous appréhendons. L'on saisit de diverses manières la forme d'une chose. A cette fin, prenons comme exemple l'humanité".

69. Avicenna, *Dāneshnāme*, ed. Meshkāt, vol. 2, p. 124, tr. Achena/Massé, p. 78: "Mais tant que tout d'abord les sensations et les imaginations n'existent pas, notre intelligence ne vient pas à l'acte. Et quand les sensations et les imaginations viennent à l'existence, les formes se mêlent à des accidents qui leur sont étrangers, et elles sont alors voilées comme les choses qui se trouvent dans l'obscurité. Mais ensuite le rayonnement de l'intelligence active tombe sur les imaginations, de même que celui du soleil tombe sur les formes [des choses] qui se trouvent dans l'obscurité. Puis, partant de ces imaginations, les formes ABSTRAITES se présentent à l'intelligence, de même qu'à cause de la lumière les formes visibles se présentent dans le miroir ou dans l'oeil: comme ces formes sont ABSTRAITES, elles sont universelles; en effet, si tu

retranches de [la perception] d'humanité les parties superflues, il en reste le concept général, tandis que les particularités individuelles disparaissent".

70. The references are to the edition of Badawī, *Arisṭū* (as in n. 65 above). A similar case is Avicenna's *Marginal Notes on the De anima* (edited by Badawī in the same volume, pp. 75-116): it is doubtful whether a collection of passages employing abstraction terminology (e.g., *Marginal Notes*, pp. 96.4, 110.4, 111.7-8) or an analysis of key passages (such as p. 110, lines 10-12, on the light of the active intellect falling upon forms stored in imagination with the effect of their abstraction) will offer us more than heterogeneous pieces of a theory which Avicenna treats systematically elsewhere.

71. Cf. n. 65 above.

72. The anonymous Longer Bibliography, which is based on a list by Jūzjānī, calls it "the last and best work he wrote on philosophy, to which he held steadfastly", edited and translated in W. E. Gohlman, *The Life of Ibn Sina* (Albany, N.Y.: State University of New York Press, 1974), pp. 96-97. Gohlman dates the book to 1024-37 (ibid., p. 154); Gutas, *Avicenna*, p. 140, argues more specifically for the years 1030-34. Michot, 'La réponse', pp. 153-163 — against his earlier view on the problem (cf. *La destinée*, p. 7) — prefers a date as early as 1016, but acknowledges that the *Ishārāt* postdate the *De anima* and the logic part of *al-Shifāʾ*, which was begun in 1015 at the very earliest and completed in 1027. However, in view of the enormous scale of *al-Shifāʾ* and of its intellectual complexity, which would demand a longer period of composition, and on the basis of the internal evidence laid out in the present article, the traditional dating seems much more probable.

73. 'enclosed': *maknūfa*; cf. the passage in *De anima* II.2, p. 61, line 4: *maknūfa bi-lawāḥiqi al-mādda* (Latin tr.: 'stipatam accidentibus materiae').

74. 'that individuate it': *mushakhkhaṣ* (misprint in Dunyā: *mushakhkhash*).

75. Avicenna, *al-Ishārāt wa al-tanbīhāt*, edited by S. Dunyā, 4 vols (Cairo, 1960-68), vol. 2, p. 367. Cf. the French translation by A.-M. Goichon, *Avicenne: Livre des Directives et Remarques, traduction avec introduction et notes* (Beirut/Paris: J. Vrin, 1951), p. 314.

76. On the object of perception see also the preceding paragraph in *al-Ishārāt*, ed. Dunyā, vol. 2, pp. 359-66 (tr. Goichon, *Livre des Directives et Remarques*, pp. 311-12).

77. Avicenna, *De anima* II,2, ed. Rahman, p. 59, lines 11-12.

78. 'connotational': *al-maʿnawiyya* (Dunyā; ='intentional', refers to the objects of estimation); *al-maʿqūla* (Goichon: 'intelligibles').

79. Avicenna, *al-Ishārāt wa al-tanbīhāt*, ed. Dunyā, vol. 2, p. 403; cf. Ṭūsī's comment, ibid., footnote 1. Cf. tr. Goichon, *Livre des Directives et*

Remarques, p. 333.

80. For general information on the history of abstraction theory, see notes 9 and 49 above. See also J. Rohmer, "La Théorie de l'abstraction dans l'école franciscaine d'Alexandre de Halès à Jean Peckham", *Archives d'Histoire Doctrinale et Littéraire du Moyen Age* 3 (1928), pp. 105-184.