INTERPRETING AVICENNA: SCIENCE AND PHILOSOPHY
IN MEDIEVAL ISLAM

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INTERPRETING AVICENNA: SCIENCE AND PHILOSOPHY IN MEDIEVAL ISLAM

Proceedings of the Second Conference of the Avicenna Study Group

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AVICENNA ON THEOLOGY AND METAPHYSICS

THE HERITAGE OF AVICENNA

NOTE ON THE TRANSLITERATION OF
ARABIC AND PERSIAN

The transliteration follows the rules of the *Deutsche Morgenländische Gesellschaft* for both Arabic and Persian, with the exception of *aw* and *ay* for dipthongs instead of *au* and *ai*, and *á* instead of *ā* for the *alif maqṣūra*. The Persian *-h* (representing the *tā' marbūṭa*) is retained, and the Persian *iḍāfah* is represented as *-i* or *-yi*.

INTRODUCTION

The papers gathered in this volume represent in part the proceedings of The Second Annual Avicenna Study Group Symposium held during the First World Congress for Middle Eastern Studies (University of Mainz, 12–13 September 2002). The Avicenna Study Group was formed in March 2001 at the end of The First Graduate Student Conference on Ibn Sīnā (Yale University). The purpose of The Avicenna Study Group is to facilitate communication concerning recent academic research on the life, times and thought of Avicenna through annual meetings, to disseminate information on manuscripts, primary and secondary material related to Avicenna and medieval Arabic philosophy in general, and to serve as the first stage in projected major collaborative research projects on Avicenna. The present volume represents the second collective activity of The Avicenna Study Group.

Considered as a whole, the papers included in the present volume represent the major trends and concerns of current scholarship on the life, thought and works of Avicenna, arguably the most important and influential philosopher during the medieval period in the East and West. The contributions of these scholars are divided here topically into four sections: (I) Methodology, (II) Avicenna on Natural Philosophy and the Exact Sciences, (III) Avicenna on Theology and Metaphysics and (IV) the Heritage of Avicenna.

Perhaps the single most important *desideratum* for future progress in Avicenna studies is the establishment of a corpus of "authentic" Avicennan texts or, conversely, identifying Pseudo-Avicenna works. Yet despite the recent advances in the textual and philological methodologies introduced into Avicenna studies, little attention has been paid to establishing such a corpus. The section "Methodology" consists of David C. Reisman's paper "The Pseudo-Avicennan Corpus, I: Methodological Considerations." Although in this paper Reisman does not hazard a list of Pseudo-Avicenna works, he does provide a prolegomenon to such future research by suggesting needed principles and methodologies appropriate to such a study. In this respect, he treats various terminological issues and defines different genre categories of the Pseudo-Avicenna corpus, as well as suggesting principles

to be used in identifying misattribution. Concerning this latter point, the evidence for misattribution will be either external or internal, as one might expect. Reisman goes on though, and delineates different types of both evidence and carefully examines under what conditions such evidence should or should not count against the authenticity of a text. Reisman's overarching principle is one of caution in identifying a work as part of the Pseudo-Avicenna corpus. Still, as Reisman remarks "caution is never to be confused with indecision." Scholars will find Reisman's study invaluable for studying the numerous treatises ascribed to Avicenna and helping to establish their true authenticity.

The section "Avicenna on Natural Philosophy and the Exact Sciences" contains five papers that address different aspects of Avicenna's philosophy of nature, or physics, psychology (theory of the soul) and mathematics. These contributions provide careful studies of various issues in Avicenna's natural philosophy and mathematics. Moreover, they point out the influence of the classical heritage on Avicenna's thought as well as Avicenna's own substantive modifications of Greek thinkers, whether of Aristotle in physics, Galen in medicine, Plotinus in psychology, or Euclid in mathematics. What becomes clear is that though Avicenna was strongly affected and deeply concerned with many of the same problems as his Greek forerunners, he was also a thoroughly independent and original thinker. The study of the relationship between Avicenna and the classical heritage is only now beginning to receive the attention it deserves, and so the observations offered in these five papers will undoubtedly open up new vistas for future Avicennan scholarship.

Catarina Belo's "Ibn Sīnā on Chance in the *Physics* of *aš-Šifā*'" explores the similarities and differences between Aristotle's and Avicenna's accounts of "chance" and "fortune." The issue is important since at its core is the more pressing philosophical issue of determinism. More markedly than Aristotle, argues Belo, Avicenna maintains that for every occurrence there is a necessary, essential cause, and consequently chance plays no part in the occurrence of events or the coming to be of things. Indeed, chance is not an independent, or even partial, cause of anything; rather, chance is only an accidental cause, namely, an end that is the culmination of a nexus of essential causes, and yet an end that was not expected. Given Avicenna's deterministic universe the problem of the relation between God and evil arises, a problem to which Belo turns at the end of her paper. Avicenna's theodicy is essentially Neoplatonic in that

Avicenna appeals to the relation between matter and evil and to matter's intrinsic lack of reality. In the end, Avicenna maintains that evil is the exception rather than the rule and that evil is in fact the consequence of God's benevolent design for the universe. Belo's paper makes clear not only Avicenna's indebtedness to the classical tradition, but also both his own contributions and his ability to synthesize disparate elements of classical philosophy.

Jon McGinnis' "On the Moment of Substantial Change: a Vexed Question in the History of Ideas" is also concerned with Avicennan physics. The physical question addressed here is whether one kind of substance becomes a different kind of substance gradually or instantly. Historically, the question can be traced back to two passages in Aristotle's *Physics*, and yet apparently neither Aristotle nor his later Hellenistic commentators either explicitly raised or addressed the question. Avicenna, however, does raise it and unequivocally argues that substantial changes occur instantaneously. Two problems face Avicenna's position: first, it appears empirically false and second it seems to be philosophically untenable. Avicenna sets the empirical case against himself; for embryonic development appears to be gradual, and yet involves the change of one substance into another. Tracing Avicenna's account of embryonic development in his *Kitāb al-Ḥayawān*, McGinnis argues that Avicenna has a theory of embryonic development that in fact confirms Avicenna's thesis of substantial change. The philosophical difficulty is that instantaneous change seems to countenance two instants that are immediately adjacent to one another, and yet for Avicenna no two instants could be immediately adjacent to one another. Although Avicenna himself does not expressly take up this problem, McGinnis suggests that there is material for an "Avicennan" response, namely that Avicenna had an incipient notion of a mathematical limit. Thus, substantial change does not strictly occur at an instant; rather, it occurs at time's limit. This final thesis is provocative, and yet as McGinnis is quick to note the evidence for such a thesis is far from conclusive and that more research must be done before any definitive answer can be given.

In "Intellect, Soul and Body in Ibn Sīnā: Systematic Synthesis and Development of the Aristotelian, Neoplatonic and Galenic Theories" Robert E. Hall argues for the thoroughgoing integration of Avicenna's psychology in virtually all aspects of his thought. Avicenna's profound interest in psychology has long been appreciated by scholars. Hall, however, shows just how deep Avicenna's interest runs. As one

would expect, Avicenna's psychological theory extends from noetics to faculty psychology, but it also connects smoothly with cosmology and physiology. It plays a role in Avicenna's understanding of astronomy and celestial thaumaturgy. It connects with epistemology and scientific methodology, with anthropology and political theory. It shows up in Avicenna's dynamics, chemistry, anatomy and zoology as well as botany. In this paper, Hall limns the connection between Avicenna's psychological theory and all of these subjects. Moreover, Hall shows how Avicenna's psychological theory informs Avicenna's own understanding of medicine as found in his rightly praised *Qānūn fī ṭ-ṭibb*. This latter analysis is perhaps Hall's most significant contribution to our understanding of Avicenna's systematizing; for in it Hall shows how Avicenna integrates his own "Aristotelian" psychology with Galenic physiology. More specifically, he shows how Avicenna enriches Aristotle's impoverished understanding of anatomy in the light of new discoveries found in Galen, while avoiding Galen's materialism. Hall's broad survey identifies numerous relations between Avicenna's psychological theory and other aspects of his thought that scholars will undoubtedly want to explore further.

In addition to Aristotle, another source of influence on Avicenna's thought, which is only now beginning to be vigorously investigated, is the work of the Neoplatonic philosopher Plotinus. In "Non-Discursive Thought in Avicenna's Commentary on the *Theology of Aristotle*" Peter Adamson traces Plotinus' influence on Avicenna with respect to non-discursive thinking. In brief, non-discursive thought for Avicenna occurs in an instant, has a simple object and is not structured propositionally. The issue of non-discursive thought in Avicenna is important not only for our understanding of how strongly Neoplatonism influenced Avicenna, but also for our understanding of Avicennan epistemology. Adamson considers Avicenna's account of non-discursive thought as it is found in *aš-Šifāʾ* and *an-Naǧāt*, but in greatest detail as it appears in Avicenna's commentary on the so-called *Theology of Aristotle*, the famous Arabic version of parts of Plotinus' *Enneads*. Although one might expect to find strong Neoplatonic influences in Avicenna's commentary, Adamson shows that Avicenna in fact "massages" the text in order to bring it in line with his own psychological accounts found in *aš-Šifāʾ* and *an-Naǧāt*. Also, some scholars have suspected that there would be a strong mystical element in Avicenna's commentary, since it was written during a period of his life when

he was engaged in what he termed "eastern philosophy." Adamson finds no such mystical influence on the epistemological doctrine of this work and again asserts that the views found in Avicenna's commentary of the *Theology of Aristotle* are substantively the views of his earlier works.

Another area that has not received the attention in Avicenna studies that it deserves is Avicenna's mathematical works. The final paper in this section is Irina Luther's "The Conception of Angle in the Works of Ibn Sīnā and aš-Šīrāzī." Luther's study helps fill the gaps in our understanding of Avicenna on mathematics, particularly with respect to Avicenna's understanding of angle. The paper begins by considering in detail aš-Šīrāzī's critique of Avicenna's account of a "horn angle" or "angle of tangency" found in a treatise Avicenna dedicated to angles. An anonymous bibliography of Avicenna's works mentions two treatises by Avicenna devoted to angles: *On the angle* and a *Summary that the angle which is formed by the circumference and the tangent has no magnitude*, which both Anawatī and Mahdavī believed referred to one and the same work. There is an edited version of Avicenna's *On the angle*, where Avicenna criticizes several views of the angle, including Euclid's own, current at his time. On the basis of Luther's summaries of aš-Šīrāzī's discussion and Avicenna's *On the angle*, she concludes that *On the angle* and *Summary* cannot be one and the same work, and so Avicenna's *Summary* must still be lost, nor can *On the angle* be the work to which aš-Šīrāzī refers. Scholars will find Luther's contribution helpful in at least two respects. It provides a summary of Avicenna's general position concerning angle found in *On the angle*. Similarly, via aš-Šīrāzī's critique of Avicenna on the horn angle, Luther has given us an idea of the content of Avicenna's lost treatise.

The papers in section III, "Avicenna on Theology and Metaphysics," consider issues in the area of what is perhaps Avicenna's most enduring contribution to philosophy, metaphysics and theology. Although we might think of metaphysics and theology as forming two distinct disciplines, in Avicenna's mind they were but a single science of *Ilāhīyāt*. Such metaphysical issues as the real distinction between essence and existence or causality found their ultimate explanation in Avicenna in a thorough understanding of God and God's relation to the world. As with the other sciences, Avicenna was both an original thinker and a synthesizer with respect to metaphysics and

theology. He drew from such Greek sources as Aristotle and Neo-platonism as well as indigenous Arabic sources such as *kalām*. In the papers collected here both the historical influences on Avicenna's thought and his own novel contributions to metaphysics and theology are traced.

Both Arabic thinkers following Avicenna, such as Averroes and Ibn Taymīya, as well as modern scholars have claimed that Avicenna's thought was influenced by the *mutakallimūn*, or Islamic speculative theologians. Ömer Mahir Alper takes up this thesis with respect to Avicenna's proof for the existence of God in his paper "Avicenna's Argument for the Existence of God: Was He Really Influenced by the *Mutakallimūn*?" Alper provides a careful study of the language and concepts of Avicenna's proof, emphasizing such terms as *muraǧǧiḥ* (preponderator) and *muḫaṣṣiṣ* (particularizer) and such concepts as contingent existence and necessary existence. He then indicates several *mutakallimūn* who used similar language and ideas in their proofs for the existence of God, of whom Avicenna may well have been aware. What is most notable about Alper's study is his conclusion that though Avicenna was almost certainly influenced by the *mutakallimūn* in his argument for God's existence, he also went beyond them and generalized their position so as to apply to existence or non-existence of the world as a totality considered as a contingent being. Interestingly, subsequent *mutakallimūn*, such as al-Ǧuwaynī, in fact used a version of the proof much like Avicenna's. Thus, Alper suggests, in the case of the proof for the existence of God we see an instance of cross-fertilization between Avicenna and the *mutakallimūn*. Whether there are other instances of cross-fertilization is an enticing subject for future research.

Rahim Acar's "Reconsidering Avicenna's Position on God's Knowledge of Particulars" treats another subject that can be traced back to medieval Arabic thinkers as well as modern scholars. The question at hand is whether Avicenna truly believed that God could know particulars. In other words, does God actually know individuals like Socrates, Plato and Aristotle, or particular events, such as an eclipse's occurring on such and such a day in such and such a country, or does God only know the species human and the cause of eclipses in general? Both al-Ǧazālī and Michael Marmura have concluded that Avicenna does *not* in fact believe that God knows particulars (or at least not all particulars in the case of Marmura), since Avicenna's theory of divine knowledge cannot accommodate such knowledge.

Acar observes that two different philosophical questions are being confused here: a that-question and a how-question. Both al-Ġazālī and Marmura have assumed that since Avicenna cannot provide a philosophically adequate explanation to the question of *how* God knows particulars, then it must be the case *that* Avicenna did not truly believe God did so. Given Avicenna's own assertion that God does know particulars—nothing escapes God's knowledge, "not even the weight of an atom"—Acar maintains that we should accept Avicenna's claim *that* God knows particulars, even if Avicenna did not have the philosophical machinery to explain *how* such knowledge was possible.

Amos Bertolacci's paper "The Reception of Book B (Beta) of Aristotle's *Metaphysics* in the *Ilāhīyāt* of Avicenna's *Kitāb aš-Šifā*'" considers Avicenna's appropriation of several of Aristotle's *aporiai* from his *Metaphysics*. The role of puzzles, or *aporiai*, in Aristotle's dialectic has recently become a major focus of attention. Given the influence of Aristotle on Avicenna it would be no surprise that puzzles would play an equally important role in the thought of Avicenna, and yet there has been no work on this subject in Avicenna studies. Bertolacci takes up this subject and observes a number of similarities and differences between Aristotle's and Avicenna's use of *aporiai*. First, Bertolacci points out the centrality that Avicenna gives to setting puzzles throughout his career. Next Bertolacci offers a catalogue of the *aporiai* found in book B of the *Metaphysics* that Avicenna takes up in the *Ilāhīyāt* and then provides a careful analysis of Avicenna's treatment of one of these puzzles. The main features of Avicenna's reception of the *aporiai* of book B are that Avicenna is (1) selective, (2) concise, (3) assertive and (4) unlike Aristotle, he does not present the *aporiai* in a single place of the *Ilāhīyāt*, but treats them individually in their appropriate contexts. Bertolacci concludes by suggesting that Nicolaus Damascenus may have been a possible source of Avicenna's use of Beta. Scholars interested both in the structuring of the problematic associated with Avicennan metaphysics as well as the influence of the classical heritage on Avicenna will find Bertolacci's contributions insightful.

The Neoplatonic doctrine of emanation, *fluxus* or the Arabic *fayḍ*, may be the most conspicuous, and perhaps problematic, feature of Avicenna's metaphysics. That is, all things, other than God, are either directly or indirectly the result of an overflow from the superabundance of God's nature. Olga Lizzini, in her contribution "The Relation

between Form and Matter: Some Brief Observations on the 'Homology Argument' (*Ilāhīyāt*, II.4) and the Deduction of *Fluxus*" argues that not only does Avicenna have a "top down" argument for his doctrine of emanation, which has been recognized by all Avicennan scholars, but also a less appreciated "bottom up" argument. This latter argument, which Lizzini calls the "homology argument," begins from an analysis of the connection between form and matter in the sublunary realm. Avicenna offers a legitimization of his doctrine of emanation through an examination of the different relations that are theoretically conceivable between matter and form. The importance of the homology argument is that it is not based on an analysis of the celestial or divine world, but on the very structure of the material, corruptible world. In this sense, the doctrine of emanation reveals itself not only in its metaphysical or "celestial" character, but also in its physical aspect. Lizzini's study confirms how in Avicennan philosophy emanation is first a kind of causality and second a way to conceive the God-world relation. Those working in Avicenna studies will find Lizzini's contribution helpful not only in understanding how Avicenna transformed classical ideas, but also in acquiring a deeper appreciation of the place of emanation in Avicenna's system.

The final section of this volume is "The Heritage of Avicenna." The two papers that constitute this section show the intellectual legacy of Avicenna in the medieval Near East. From the positive influence of Avicenna on later theological writings, such as the "nature of prophethood," to the reception of Avicenna in Persian, these contributions make abundantly clear the monumental degree to which Avicenna's thought influenced subsequent intellectual trends. Moreover, both papers find the influence of Avicenna's thought in places that are quite unexpected, and thus embolden students of Avicenna to look for Avicennan influence in hitherto unexplored areas.

The three properties of prophethood are a well-known feature of many of Avicenna's works. They include properties associated with imagination, intellect and the human soul considered as a whole. Indeed, the parallels between Avicennan sources and *Maʾāriǧ al-Quds*, a work traditionally attributed to al-Ġazālī, concerning the three properties are so striking as to have lead such scholars as W. Montgomery Watt and Hava Lazarus-Yafeh to designate the *Maʾāriǧ* among the *spuria*, or at the very least *dubia*, works of al-Ġazālī. In his study "The Three Properties of Prophethood in Certain Works of Avicenna

and al-Ġazālī," M. Afifi al-Akiti argues that a more detailed examination of the sources reveals that the case is less straightforward and more interesting. Based upon al-Akiti's very detailed and careful study of Avicennan and Ghazalian sources, he suggests that al-Ġazālī may well have in fact been the first to legitimize Avicennan theoretical psychology in the Islamic religious community. In light of his findings, al-Akiti calls for a reassessment of al-Ġazālī's relationship to Avicenna, and in particular al-Ġazālī's supposed polemic against Avicenna should perhaps no longer be taken at face value. Al-Akiti's contribution offers not only interesting, and unexpected, historical links between Islam's "greatest" philosopher and its "greatest" theologian, but also is a paradigm of a careful textual study and comparison.

The second paper in this section, and the final paper of the volume, is Roxanne D. Marcotte's "Resurrection (*Maʿād*) in the Persian *Ḥayāt an-nufūs* of Ismāʿīl ibn Muḥammad Rīzī: the Avicennan Background." Rīzī's *Ḥayāt an-nufūs* was a thirteenth century compendium of philosophy written in Persian, which was in part written to dispel the belief that philosophy could only be done in Arabic. M. T. Dānišpažūh, the editor of *Ḥayāt an-nufūs*, claimed that the work had a strong "Illuminationist" element to it inspired by the philosophy of Šihāb ad-Dīn Suhrawardī. Marcotte considers the sources for Rīzī's theory of *maʿād*, or resurrection, found in *Ḥayāt an-nufūs*. Surprisingly, Rīzī's discussion of *maʿād* is relatively free of "Illuminationist" influence, claims Marcotte, and instead shows a greater reliance on Avicenna's *al-Išārāt wa-t-tanbīhāt* and the accompanying commentaries of Faḫr ad-Dīn ar-Rāzī and Naṣīr ad-Dīn aṭ-Ṭūsī. Although Marcotte is hesitant to generalize from the single case of Rīzī's account of *maʿād* to the work overall, she is confident that further comparative study will most likely indicate similar Avicennan influence in other topics of *Ḥayāt an-nufūs*. Marcotte cautiously concludes her contribution with the suggestion that *Ḥayāt an-nufūs* may represent one of the first Persian translations and paraphrases of parts of Avicenna's *al-Išārāt* via aṭ-Ṭūsī's commentary.

Finally, the Avicenna Study Group, and especially all the participants in The Second Annual Avicenna Study Group Symposium, would like to extend their heartfelt gratitude to Dimitri Gutas, Gül Russell, Yahya Michot and Jules Janssens. These scholars generously agreed to act as respondents to the various papers presented at the

symposium. It is not an exaggeration to say that every participant's paper was enriched by their insightful and helpful comments, and so this volume overall.

Jon McGinnis
St. Louis, 16 June, 2003

METHODOLOGY

CHAPTER ONE

THE PSEUDO-AVICENNAN CORPUS, I:
METHODOLOGICAL CONSIDERATIONS*

In memoriam Franz Rosenthal

David C. Reisman

> The degree of freedom from intellectual authority
> which exists in a particular civilization is determined
> by the degree of willingness and ability to replace
> authorities which have outlived their usefulness.
>
> F. Rosenthal, *Technique*, 48b

The identification and analysis of what I refer to here as the Pseudo-
Avicenna Corpus is a relatively undeveloped aspect of Avicenna stud-
ies. Inasmuch as such work is dependent on considerable advances
in the textual and philological methodologies themselves only recently
introduced to modern Avicenna studies, this lack of attention comes
as little surprise. My own investigation, while admittedly preliminary
in many of its details, suggests the following tentative characteristics
of the Pseudo-Avicenna Corpus: it comprises a considerable number
of works in a variety of genres; it was developed and expanded over
the course of many centuries; and it is the textual result of a variety
of intellectual trends and allegiances. At this early stage in the research
I do not intend to provide a list of works attributed to Avicenna but
which I consider non-Avicennan. We should readily recognize the
folly of investigating a topic without first establishing the principles
and methodologies appropriate to the inquiry. In a more pragmatic

vein, such a list would quickly derail the investigation with debates over particulars, based on opinion, and lacking a unifying set of acceptable terms and hypotheses.

That we may begin such a study with the broad assumption that there does in fact exist a Pseudo-Avicenna Corpus should not go unremarked.[1] There has been a number of discrete inquiries into or pronouncements about the authenticity of one work or another attributed to Avicenna and even occasional attempts to adhere to the rule that to edit or translate an Avicennan work one must first establish

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[1] I do not believe that it is necessary to establish the fact that pseudepigraphy, broadly conceived and with the attendant divisions of misattribution discussed below, is a common characteristic of medieval Islamic intellectual culture, nor do I think it particularly useful to devise reasons for why it exists. Much of such discussion in other fields (Classics, Bible Studies, Ancient Languages and Literatures) has evolved with the express assumption that what we understand as pseudepigraphy requires cultural explanations for its presence, centering especially on divergent notions of authorship. David G. Meade (1988), chapter 1, has nicely summarized such debates. Of especial importance to the discussion of pseudepigraphy and forgery in ancient cultures is Wolfgang Speyer's introduction of the idea that *geistiges Eigentum* or "intellectual/creative property" was an integral part of ancient culture, thus derailing alternate interpretations, or justifications, for the presence of such literature; see Speyer (1971). Such justifications may be important for modern conceptualizations of an authoritative scriptural canon, but has little meaning for works of philosophy, as found in the Pseudo-Avicenna Corpus. It is enough to establish that medieval Islamic culture was aware of the practice of forgery and the existence of pseudepigraphy in a variety of fields; see for now Franz Rosenthal (1947), 44ff. In the Avicennan context, we have the superb illustration of Avicenna's own undertaking of forgery; see Avicenna, *The Life of Ibn Sīnā* (1974), 68–73 as evidence of such practice for the express purpose of deception. One explanation for pseudepigraphy that finds regular articulation in the literature and of importance here, however, is the idea that ancient and medieval philosophical "schools" engaged in writing practices that suggest an endorsement of "common authorship" (i.e., individual anonymity). In the context of medieval Islamic intellectual culture, there may be some truth to this in the case of the Pseudo-Aristotelian writings produced by the Kindī "circle"; see for a general description G. Endress (1997). Still, modern research on this appears simply to accept such a fact without further attention to the issue. In opposition to such a concept of "common authorship" in medieval Arabic philosophical "schools" we might consider the very important emphasis placed on correct attribution of the work of translating and revising the Graeco-Arabic corpus observable in Ḥunayn ibn Isḥāq's documentation; see G. Bergsträsser (1966). Consider also Ḥunayn's reasoning for the presence of pseudepigrapha in that corpus as discussed by Rosenthal (1947), 46. I can hardly agree with Rosenthal's counter-intuitive conclusion concerning Arabic pseudepigrapha: ". . . it would seem that pseudepigraphs in Muslim literature were comparatively small" (ib.). Whether Rosenthal is restricting this conclusion to only a precise period in medieval Islam is not certain (cf. a similar statement in Rosenthal (1941), 386), but given the relatively consistent awareness on the part of medieval Muslim scholars of the complex of genres we might group under the category of "misascriptions," his opinion cannot be correct.

its pedigree.[2] Unfortunately, it is equally the case that many past studies of Avicenna's bibliography, or evaluations of specific developments in his thought, or indeed broad characterizations of his philosophy, have proceeded with a singular disinterest in establishing a trustworthy conception of what works of his may be deemed authentic. This raises a host of issues concerning how we approach the study of medieval philosophy in the Islamic world and the relative merits

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[2] See the following studies of individual works (this list is by no means comprehensive; see also notes below): S. Pines (1951), 121–124; ʿAlī Aṣġar Ḥikmat (1955), 159ff. (questioning authenticity of the *tafāsīr* attributed to Avicenna); J. Michot (1982) (on *Masāʾil ʿan aḥwāl ar-rūḥ*; Anawatī 98; Mahdavī 135); id. (1984b) (on four questions entitled *Kitāb al-Mabdaʾ wa-l-maʿād*; Anawatī 196; Mahdavī 106b, p. 216); id., (1984a) (on *R. fī Maʿrifat an-nafs an-nāṭiqa wa-aḥwālihā*; Anawatī 103; Mahdavī 238); cf. M. E. Marmura (1992), 203, n. 86; Peter Heath (1992), 201ff., in favor of attribution to Avicenna of the *Miʿrāǧnāmah*; cf. J. Janssens (1999), 37; importantly, Heath does state that "much more basic philological work of a historical and analytical nature is required before a clear picture of Avicenna's writings emerges" (ib., 201); J. Janssens (1993). On the putative Avicenna—Abū Saʿīd ibn Abī l-Ḫayr correspondence, to which I hope to focus my attention in more detail shortly, see Reisman (2002), 138ff. The recent publication by Gotthard Strohmaier (2002) focuses on the knowledge of pseudepigraphy and forgery among Arabic-writing philosophers, as well as some Pseudo-Avicenniana in the Latin tradition. As for general methodological statements on the subject I do not mean by my opening remark above that the task of establishing a methodology of investigation has been wholly neglected in Arabic-Islamic studies, but what has been done is largely restricted to the field of Graeco-Arabica and is, thus, in many ways informed more by the Classical tradition than by the Islamic. In other words, Greek pseudepigraphy and forgery in Arabic translation is still Greek pseudepigraphy and forgery. One question here should be raised, however, since it may have bearing on the study of these genres in the Arabic tradition in which no Greek background is posited: whether or not the introduction of "new" pseudepigraphic or forged works on the part of medieval Arabic scholars to the Greek corpus constitutes an important development in the Arabic tradition that needs to be investigated in a manner distinct from the simple translation of Greek pseudepigraphy and forgery into Arabic. One indication that it does not seems to be suggested by Dimitri Gutas (1986). To the categories of "spurious" and "authentic" Gutas has added the additional category of "tendentiousness." According to his argument, elements of the Arabic biographies of Aristotle, which do not appear to be a part of the Greek originals, can be considered "tendentious" but nonetheless "authentic" in that they represent a process of projecting backward onto the interpretation of the Classical tradition the norms of later cultural expressions, in the example he provides, those of Alexandrian Aristotelianism. Taken over by the Arabic tradition, such "tendentiousness" is not spurious but authentic, in that it has Greek (though post-Classical) origin. I would suggest simply that Arabic pseudepigraphy and forgery is not strictly speaking distinct from the Classical tradition in that the same methodologies apply to researching both; this paper is intended as a reminder of such. In the category of medieval Islamic pseudepigrapha, a certain amount of useful scholarship has been undertaken with regard to the Ghazālian corpus. Below I draw on W. Montgomery Watt (1952), 24–45; and Hava Lazarus-Yafeh (1975).

of historiographical and analytical methodologies that cannot be addressed here.[3] At any rate, a first principle may be enunciated: there does exist what can be termed a Pseudo-Avicenna Corpus, and it is imperative that we devise a means to evaluate it properly.

Terminological issues immediately present themselves. What do we mean by "Pseudo-Avicenna Corpus"? We have a host of terms, developed in other disciplines,[4] to describe the particular entries of such a corpus; in order to use them we should be clear about their implications. Such terms include "pseudepigraphy," "forgery," "falsification," "plagiarism" and "pseudonymity." I draw the following distinctions. The difference between the two genres of pseudepigraphy and forgery lies primarily in intention.[5] Pseudepigraphy is the result of an error (or a series of such), usually by later scholars, scribes and bibliographers,[6] that leads to the misattribution of a work to a

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[3] These issues have been conceptualized in a far more lucid manner in previous scholarship. I record here once again the complaint that inaugurated a new stage in Avicenna studies: "The study of Arabic-writing philosophers . . . has been consistently hampered by a general lack of *historical investigations preceding and establishing the boundaries* of normative evaluations," (Dimitri Gutas (1988), 5; my emphasis). Gutas (2002c) has expanded on this observation recently. First reactions to this paper have begun to appear, peculiarly enough, in the popular press, albeit on a relatively minor aspect of Gutas' thesis; see F. Niewöhner (2002) (I thank Dimitri Gutas for providing me with copies of his paper and Niewöhner's essay). Reflecting a myopic view of the current state of research on medieval Arabic philosophy is the curious statement made by O. Leaman in his review of *Averroes and the Aristotelian Tradition* (Endress (1996)): "Despite the impressive scholarship which characterises many of the essays in this collection, as a whole it is rather representative of an old-fashioned orientalism which treats Islamic philosophy as an aspect of the history of philosophy rather than a part of philosophy itself" (Leaman (2002), 172). Labeling the philological and historical spadework so necessary to a proper understanding of Arabic philosophy as "orientalism" merely detracts attention from the very reasonable plan of research that suggests we must first establish a corpus of texts within its historical framework before engaging it philosophically.

[4] I rely here on the work of W. Speyer (1971) along with N. Brox (1975), D. G. Meade (1988) and A. Grafton (1990).

[5] Speyer (1971), 13 considers forgery a species of the genus pseudepigraphy. This has much to recommend it in that the two are similar in essence (misattributed writings) but distinct in one of their causes (as above). Here, though, I will treat the two simply as different categories because of the different ways in which scholarship must treat them (see below). I understand that this type of division based on intention may be problematic for readers accustomed to Speyer's categorization, but it would seem to me that this question of intention is largely undeveloped in the secondary literature. I focus on it here for that reason alone and hold open the possibility that the actual evaluation of particular works may require the broader genus of pseudepigraphy to account for all possible entries in the corpus.

[6] By this we should specify later scholars, scribes and bibliographers *of the tradition itself*; on modern errors and their irrelevance, see below.

given author. Forgery is a conscious and willing act of such misattribution and involves the composition of a work that is attributed to someone other than its real author (who is the forger). Falsification is the manipulation of an authentic text in such a way as to effect a substantive change in the original author's intention, whether such falsification involves manipulating the original authorial statement of intent, the insertion of new statements or passages into the work, or generally, the modification of some part of the original work. The difference between the acts of forgery and plagiarism is that, with forgery, one takes his own work and calls it someone else's, and, with plagiarism, one takes an already composed work, or part thereof, and calls it his own. Falsification and plagiarism appear to be closely related, in that both presuppose an actual work by an author; meddling with the work or stealing it outright present little distinction. Interestingly, pseudepigraphy and forgery need not imply the existence of an actual and particular composition by the original author; both need only evince apparent similarities with any of the works of the authentic corpus. In the context of a general evaluation of misattribution in the philosophical literature of medieval Islam, however, there is no methodological or ideological imperative to distinguish pseudonymity from forgery.[7]

If these definitions are acceptable, it would be reasonable to suggest further that in identifying Pseudo-Avicennan works, the three categories of pseudepigraphy, forgery and falsification will serve our purposes. I omit plagiarism for a variety of reasons, chief among which is the difficulty of establishing cases of plagiarism in post-Avicennan philosophy given the usual quotation and reference practices of medieval writers. This is not to say that there was a uniform ignorance of or disregard for sophisticated methods of reference by scholars in medieval Islam; such methods are readily observed in

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[7] I follow K. Koch's definition of pseudonymity as a deliberate act (*apud* Meade (1988), 1, n. 3), though an argument could be made for pseudonymity being a species of pseudepigraphy if the attribution is the product of later error. Certainly we need not be concerned with the question of *invented* pseudonyms, which Meade correctly notes may very well be a product of modern literature. Meade attempts to make a case for *borrowed* pseudonyms as a product of ancient practice (ib.), but his viewpoint can only be assessed within the context of debates over the religious authority of canon. It is meaningless in the context of a critical examination of medieval philosophical literature, however interesting the implications of the debate for modern evaluations of ancient or medieval cultures.

that scholarship.[8] Unlike the picture concerning the testamonia we can gather for charges of plagiarism among litterateurs of the time,[9] there does not appear to be a similar concern in philosophical writings. We can say that a later philosopher *writing under his own name* who quotes Avicenna without reference is influenced by his thought but is not engaging in plagiarism.[10]

Falsification must be retained as a category for the assessment of the Pseudo-Avicenna Corpus because, if there are instances of such, it represents a different species of activity and results in a different research interest in any of the examples. For there is still a genuine Avicennan work underneath the "falsified" elements which needs to be identified and studied as Avicennan.[11]

Why, though, retain pseudepigraphy and forgery as distinct categories? In other words, does the difference of intention (none in the first, dishonesty in the second) matter? It could be argued that once it is determined that a group of works is not by Avicenna, we may simply set them aside and focus on the task of studying the real Avicennan works. Intention is thus irrelevant to the pragmatic concerns of scholarship. Surely, though, no scholar would be so short-sighted as to find this an attractive proposition. The study of Avicenna encompasses necessarily (both in fact and ideal) the study of the reception of his thought by later thinkers. In this light, identifying intention is very important. For example, imagine that a work mis-attributed to Avicenna plays a major role in the evaluation and impact of Avicenna's thought among later philosophers. If that work is a mere pseudepigraph then the interpretation of Avicenna would rest on a historical mistake; plotting the affect of that mistake in medieval philosophy is profoundly interesting, just as correcting it for modern scholars is profoundly important. Equally, if such a mis-attributed work is the product of forgery, then identifying the origin of that forgery and the reasons for its undertaking will be crucial in

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[8] For the very sophisticated techniques employed in medieval Islamic scholarship, see Rosenthal, *Technique* (1974).

[9] See Rosenthal (1974), 45, G. E. von Grunebaum (1944) and now A. Sanni (1998); reviewed by L. Guo (2002).

[10] However, this issue of quotation without reference can cause multiple problems for identification of authentic Avicenna works; for a nice summary of the issue in relation to the Ġazālī corpus, see Lazarus-Yafeh (1975), 18ff.

[11] For a case of falsification involving the addition of an epistolary introduction designed to mask Avicenna's original authorial intention, see Reisman (2002), 142ff.

plotting the ideological use (or abuse) of Avicenna's name by later authors.[12] Thus, the differences of intention discernible in the two genres dictate the nature and undoubtedly the results of the research.[13]

Pseudepigraphy and forgery do, however, converge in another respect and that is in influence. Neither a pseudepigraph nor a forgery warrants additional scholarly interest if it can be established that the work had no intellectual influence (or influence of any other kind) on later authors. Determining such a complete lack of influence will be very difficult, especially in light of our very limited understanding of later philosophical developments in medieval Islam; however, if it is possible, it should be a factor in how we direct our energies to the study of Avicenna. In at least one instance, though, such a determination is relatively easy: the case of independent misattribution by *modern* cataloguers of Avicenna's works.[14] If an item of the Pseudo-Avicenna Corpus is the result of error by a modern cataloguer, it has had no influence on intellectual developments, unless of course

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[12] We have done little work on post-Avicennan philosophers so identifying likely authors of the pseudepigrapha will be a major undertaking. Still, such work recommends itself if only for the simple reason that the modern study of Avicenna is unavoidably informed by centuries of mediation by other scholars; identifying the agents of such mediation is thus beneficial in clarifying the preconceptions and unexpressed assumptions that govern our understanding of Avicenna's life and philosophy today.

[13] It is precisely in this distinction that my argument departs from previous studies of pseudepigraphy. If pseudepigraphy is understood to comprise both the presence and the absence of intention in the authorial attribution of a text (see Speyer's genus—species division above), there would appear to be no useful difference by which we can distinguish discrete *species* of pseudepigraphy. The arguments (or assumptions) in favor of such a genus—species division seem to rest only in distinguishing *types* of intention, sometimes good, sometimes nefarious, and both ultimately producing a collection of misattributed works. These distinctions strike me as *moral*, not categorial ones. For instance, someone who ascribes his own work to Avicenna for the sake of perpetuating what he considers great philosophy, or who invents statements which he ascribes to Avicenna for the sake of entertainment (e.g., in biographical literature) is deemed to have *good* intentions, while someone who squirrels his own modifications to Avicenna's thought under false ascription to Avicenna is deemed to have *bad* intentions. To arrive at such judgments seems to me not only practically difficult, but also productive of the very interpretive stances scholars seek to avoid in tucking forgery away under the seemingly innocuous term "pseudepigraphy." Thus, I identify "intention" as the essential difference between the species "pseudepigraphy" (erroneously misattributed works) and the species "forgery" (intentionally misattributed works). Admittedly, this might only shift the qualitative differences we might perceive in a variety of intentions to the species of forgery, but, as I note above, it does have the benefit of clearly defining a program of research into misattributed works.

[14] For one such error, see Reisman (2002), 149.

some unsuspecting modern scholar is not aware of the fact, but that falls entirely into the realm of poor scholarship.

One other consideration in plotting the broad contours of our approach to the Pseudo-Avicenna Corpus presents itself. Much of the preceding discussion builds on the assumption that misascribed works (of either of the two types: mistaken or forged) are the product of as yet unidentified individuals or groups of individuals (later scholars of the tradition in error, or later forgers). It will be difficult enough to establish works of a questionable nature that are to be investigated as possible pseudepigrapha or forgeries. Even more daunting will be identifying those responsible for such works or for their misattribution. At least one sub-group of the Corpus, however, should not prove difficult, if only for the axiomatic reason that identifying misattributed works is always easier if you have the original text and a strong indication of someone else's authorship. Thus, at least some of the Corpus consists of texts that are verifiably by other authors. Three immediately evident examples of this group are the passage from Theophrastus' *Meteorology* carrying Avicenna's name under the title *Asbāb ar-ra'd wa-l-barq*;[15] the work titled *Risāla fī n-Nafs* which is an Arabic translation of a treatise on the soul by the third-century Christian author Gregory Thaumatourgos;[16] and a section from Miskawayh's *Tahḏīb al-aḫlāq* which circulated under Avicenna's name with the title *Daf' al-ġamm min al-mawt*.[17] I suspect that this group of Pseudo-Avicenna texts is relatively small.[18]

The necessarily abstract nature of the forgoing discussion is perhaps somewhat deceptive in its simplistic outlook. It defines genre categories of the Pseudo-Avicenna Corpus so that the additional

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[15] Mahdavī 27; F. Sezgin (1967–), VII: 233; J. Janssens (1991), 52, no. 3.

[16] See Helmut Gätje (1971), 54–62 (discussion); 101–113 (text and trans. of the long version); and 121–130 (text and trans. of the short version). The attribution to Avicenna appears to be the result of scribal or cataloging errors in the exemplar British Museum 8069, and thus is a classic case of pseudepigraphy. The title page of that manuscript gives the title of the work as *Talḫīṣ kalām li-Ariṣṭū fī n-nafs li-Ibn Sīnā* and on the next leaf is found the alternate title *Risālat Talḫīṣ kalām Ariṣṭūṭālīs fī n-nafs an-nāṭiqa li-Ibn Sīnā*. The incipit of the work itself (f. 2v) states *hāḏā muḫtaṣar min qawl al-ḥakīm Ariṣṭūṭālīs al-faylasūf fī n-nafs*. Note the attribution to Aristotle, which compounded the level of pseudepigraphy! I thank Dimitri Gutas for discussions of this misattribution.

[17] See Mahdavī 168; and J. Janssens (1991), 67, no. 6.

[18] Thus, identifying them will be a simple task, but again we need to heed the exhortation to study the influence of such misascription on later authors who may have been misled into treating them as Avicennan.

research on a given text is appropriately handled. Still, in endeav-
oring to identify such misattribution, one crucial methodological state-
ment should be clearly enunciated and strictly observed: we should
always err on the side of caution in making arguments against authen-
ticity.[19] Anthony Grafton has cleverly articulated the possible short-
comings of those who seek to verify forgeries:

> [They] go wrong, usually, for the very reasons that lead them into
> criticism in the first place: because they want to find evidence either
> to support a wider thesis which is philosophical or theological, not
> philological or historical in character, or to support a philological or
> historical case which itself rests on unquestioned assumptions rather
> than testable evidence.[20]

Thus, another principle of the methodology should be articulated:
The initial interpretative position for works with authorial ascription
to Avicenna should proceed from the assumption of authenticity.
Scholars who, then, seek to establish a Pseudo-Avicenna Corpus must,
with each text, establish convincing evidence for the possibility of
pseudepigraphy, forgery or falsification. For all three assignations, we
should be aware of the intellectual, philological and historical con-
texts of our argument. There is a related concern here, though. The
implications of assigning a given work to the genre of pseudepigra-
phy are perhaps somewhat less crucial than those for forgeries, in
that no additional arguments of origin are required once a text is
so identified.[21] This is clearly not the case with forgery and falsification,
which require us to investigate the purpose such a text was designed
to fulfill. The similar facts of pseudepigrapha and forgeries, though,
in that they both exist and influence later developments, will make
it difficult to determine to which category a work belongs. This will
require careful research directed toward intellectual, social and polit-
ical developments in post-Avicennan contexts.

Setting aside the issues of categorical assignation and the positing
of motives or their lack for the Pseudo-Avicenna Corpus, it would
be productive to the goal of our task to identify some specific method-
ological principles for identifying misattributed works. Here, I see no

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[19] Jules Janssens is to be credited for this admirable statement, articulated in a
variety of different ways and contexts, during the WOCMES proceedings.
[20] Grafton (1990), 98.
[21] By this I do not imply that defining a work as pseudepigraphic should be any
less meticulous than defining it as forgery.

reason to reinvent the wheel, as it were. Traditional methods of scholarship for these types of identifications suffice and, for our concerns, establish external and internal evidence as the two main categories for such investigations.

A peculiar, and perhaps unconscious, assumption in the field of philology and textual criticism is that so-called external evidence carries less force of argument than internal evidence. A variety of reasons may be adumbrated for this assumption, but we should first try to understand what we mean by external evidence. In research directed toward determining the nature and scope of the Pseudo-Avicenna Corpus I would suggest that there is a variety of types of external evidence. The most basic definition of such evidence is that it consists of information about a text not found in the text itself. Within this basic concept of external evidence, however, we have a host of different types of such information with attendant gradations of value. Such gradations of value are directly related to what can be called *tradition*. The "Avicennan tradition" obviously has its origin in the work of Avicenna himself, but it becomes what we term a tradition through his interaction with his immediate students and contemporaries. It then proceeds through a succession of students and eventually becomes a larger *heritage* that informs later scholars, whether directly a part of that succession of students or not.[22] Now, clearly, information about Avicenna's actual (and not just supposed) bibliography is to be accorded more evidentiary weight the closer it is to the origin of the tradition. Thus, Avicenna's own references to his works, as well as references to and even verifiable borrowings from his works by his immediate students and contemporaries, carry more truth value about the contents of the authentic corpus than those by later scholars, however well-informed. We have, then, what we might call "external evidence within the tradition" and we might posit as informants of this early tradition Avicenna's direct disciples

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[22] I admit that this demarcation between "tradition" and "heritage" is but a useful one for the purpose of my point here and is open to dispute. Still, it is interesting to note that in a recent collective volume of twenty papers entitled *Avicenna and His Heritage* (Janssens, ed. (2002)), substantive discussion of what "heritage" means is entirely absent. (My failure to define what is meant by "tradition" in my *Avicennan Tradition* is also to be noted!). The broad characteristics of "tradition" and "heritage" adumbrated above should be taken as introductory remarks to future discussion.

al-Maʿṣūmī, Bahmanyār, Ibn Zayla, and al-Ǧūzǧānī.[23] We should extend the tradition to include, perhaps singularly, aṣ-Ṣiġnāḫī (fl. mid-sixth/mid-twelfth century), who was apparently a student of al-Lawkarī, himself a student in some manner of Bahmanyār.[24] Aṣ-Ṣiġnāḫī is accorded special preference in his generation since he appears to have been in possession of texts that may have their origin in Avicenna's own library.[25]

After aṣ-Ṣiġnāḫī, and even among scholars of his generation, the veracity of information regarding Avicenna's works becomes problematic.[26] While we should be flexible with terminal dates, I would suggest that after this collective source of information, the next type can be considered "external evidence of the heritage." This group of evidence might profitably be divided into information from scholars operating in the direct line of master-student transmission and scholars outside that direct line. I mean by the latter group primarily biographers and historians who compiled their information on Avicenna's works from a variety of sources, including those about which we have no reliable data. The distinction between scholars within the "direct line" and outside of it is a fine one, since all of these later scholars now have their information on Avicenna's bibliography only secondarily through books[27] and as such can be

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[23] On each of these individuals, see the "Index of Names and Places" in *Avicennan Tradition*.

[24] For aṣ-Ṣiġnāḫī, see Gutas (1987), especially 8–9. For additional details on his codex, see Reisman (2002), 77ff.

[25] I am hesitant to accord such significance to other individuals who are said to have been students of al-Lawkarī, including Asʿad al-Mayhanī (c. 527/1132–3), al-Ǧīlānī (fl. sixth/twelfth c.), Muḥammad ibn Abī Ṭāhir an-Nāṣirī (d. 539/1144–5) and al-Ḥasan al-Qaṭṭān (d. 548/1153–4), since much more research needs to be conducted on their knowledge of Avicenna's works; on these scholars, see for now the index to al-Bayhaqī, *Tatimmat Ṣiwān al-ḥikma* (1932). Also, despite the welcome presentation of a master-student *isnād* extending from Bahmanyār to Naṣīr ad-Dīn aṭ-Ṭūsī by Ahmed H. al-Rahim (2003), the waters remain muddy for the later generations.

[26] On the question of al-Bayhaqī's reliability, see Reisman (2003b).

[27] By "secondarily through books" I mean that they did not have the opportunity to either see Avicenna's actual holographs or to discuss his works with him orally in the manner that his immediate students and contemporaries did. There are important exceptions to this, at least in terms of access to Avicenna's holographs. For instance, the anonymous scribe of MS Istanbul University A. Y. 4755, copied some of the texts of his codex from Avicenna's own handwriting; these he probably had from Ibn at-Tilmīḏ (d. 549/1154–5) and Ibn Abī l-Ḫaraǧayn (d. 510/1117); see Reisman (2002), 46. Ibn at-Tilmīḏ, head physician of the ʿAḍudī hospital in

influenced by other sources of information (for instance from scholars outside the direct line). Still, the distinction may prove useful in assessing or comparing evidence from the two groups. At any rate, it should be obvious that questions about the reliability of external evidence should generally not be directed at such evidence that comes from "within the tradition," barring any other qualifying circumstances,[28] but they can be raised about evidence from the "heritage" scholars.

The field is to some extent far along in collecting the evidence that produces a corpus of authentic Avicenna with which to compare questionable works and much of that is based on the form of the external evidence discussed here.[29] Still, little attention has been directed toward the evaluation of the different sources for that information. In this regard, it would be very interesting to collect any extant later testamonia that either seek to establish that a given work is in fact by Avicenna or that raise critical questions about any entry in the corpus. If such testamonia do appear, it would give us a reliable sense of when the *Nachlass* of Avicenna begins to come under evaluation and, by implication, when that *Nachlass* becomes subject to spurious addition.[30] In general, it is a major desideratum of the field that we not simply reproduce medieval bibliographical lists of Avicenna's works; rather, we need to construct a critical framework in which to evaluate those lists. Can we plot historically the expansion in the quantity of works attributed to Avicenna? From where does the information for sequentially expanding lists come? Can we make distinctions between descriptive titles and actual ones? Can we identify which later scholar had access to which kinds of bibliographical sources, etc.?

Baghdad, is apparently a major figure in the reception of Avicenna's medical works. For the holograph copy of the *Qānūn* in his possession, see A. Z. Iskandar (1970) and (1981). Other such sources are likely to emerge and deserve especial attention in building a list of trustworthy witnesses to the Avicennan corpus.

[28] An instance of a qualifying circumstance might raise questions about the reliability of the textual transmission, over a significant period of time, of the evidence from Avicenna and his immediate students or contemporaries. For an important case, see Reisman (2002), 119ff., on questions about the bibliography associated with al-Ǧūzǧānī's biography.

[29] Indeed, Gutas' list of "Major Philosophical Works" (Gutas (1988), 79ff.) proceeds on just these grounds.

[30] Elsewhere I have suggested the mid-sixth/mid-twelfth century for the growth in the bibliography of Avicenna; see Reisman (2002), chapter 2.

Another type of external evidence is to be located in the information derived from the manuscripts of Avicenna's works. Such information includes datation, provenance, scribal notes, especially colophons and any indications of the source of archetypes and their condition (i.e., critical apparatuses), as well as readers' and buyers' notes. There should be no question that there existed a sophisticated scholarly body of rules related to the transmission of texts in medieval Islam. These rules were not always adhered to, but when they were, they provide us with a great deal of valuable information that can direct the inquiry into the Pseudo-Avicenna Corpus. Equally, it would be interesting to know whether there is a particular time, geographical location, or cultural context in which these rules are no longer known or followed, since it might be argued that when observance of these rules is absent, there is a greater likelihood for the appearance of spurious works. In another respect, evidence from the copy dates of manuscripts often appears to be given short shrift in the evaluation of authenticity. Certainly, in many cases it may be argued that the late date of an extant exemplar of a work is no indication of its spuriousness, since the readiest objections are that our own knowledge about all extant Arabic manuscripts is still developing and that a late copy may be the heir of an early, now lost, exemplar. These are valid objections, but consider a case in which we might observe the simultaneous appearance of manuscripts of a work ascribed to Avicenna and the first documented references, quotations or discussions of that work in the philosophical literature.[31] I note above that caution is to be exercised in judging a work spurious; it is equally applicable in judging a work authentic.[32] Thanks to the monumental efforts of modern cataloguers such as Anawatī and Mahdavī, we have a great deal of information about the manuscripts available; such efforts need to be built upon and expanded so that the manuscript evidence can be properly assessed before we make assumptions about its worth.[33]

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[31] See one example in Reisman (2002), 143. Another example—the "Poem on the Soul" ascribed to Avicenna and its relation to Ismāʿīlī circles—is discussed by Daniel De Smet (2002).

[32] This is not a methodological inconsistency. I mean here simply that the initial presumption of authenticity that I have articulated as a principle of the investigation should not become dogmatic, especially in light of any evidence to the contrary.

[33] In this regard it should be noted that Mahdavī based his classification of questionable works in part on whether or not there is an attribution to Avicenna in the

Having examined some aspects of the external evidence to be used in defining the Pseudo-Avicenna Corpus, it is logical to proceed to a discussion of the types of internal evidence of authenticity or spuriousness. I begin here by stating that the evaluation of internal evidence with regard to works that might appear, *prima facie*, to be spurious, should always rest on a prior and thorough analysis of works of impeccable Avicennan authenticity. Without this groundwork, the dilemmas I outline below will remain truly, and not just apparently, unresolvable.

With this principle firmly grasped, it would nonetheless be naive of us indeed to assume that an evaluation of the "thought" of a treatise ascribed to Avicenna would assure us that the treatise is authentic,[34] or even that "thought" alone accounts for all internal evidence. To elaborate the first point, the "thought" or "doctrine" or "intellectual stance" we ascribe to Avicenna can be both the result of close study of authentic Avicennan texts as well as a product of the assumptions and intellectual precommitments we bring to the interpretation of Avicenna. By the latter I do not imply that we cannot reconstruct the actual philosophical system of Avicenna, since such an interpretive position is both specious and, given the postmodern scholarly temperament, all too predictable in its disastrous results. I simply mean to reiterate the necessity for caution: if we find an idea in a questionable treatise that sits at odds with what we know of Avicenna's thought from impeccably established works, we should nonetheless be careful about designating that treatise spurious.

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manuscripts of a given work. I would not recommend this as a final statement on authenticity or spuriousness, but here we have solid grounds on which to build. Another interesting question about the codicology of the Pseudo-Avicenna Corpus is whether or not Pseudo-Avicennan works are transmitted in manuscript traditions distinct from those of authentic works (consider C. B. Schmitt's analysis of Latin manuscripts in which such a separation can be observed, *apud* Everett Rowson (1992), 478).

[34] Such is pronounced by Marmura in his evaluation of the authenticity of *Iṯbāt an-nubūwa*, having found no strong argument in favor from the manuscript evidence; see M. Marmura's introduction to Avicenna, *Risāla fī iṯbāt an-nubūwāt* (1991), viii. This is not to say that Marmura's evaluation of this "thought of the treatise" is not subtle and nuanced, but it is by no means an approach that alone assures conclusive results. H. Davidson's objection to Marmura's argument proceeds on essentially the same grounds; see Davidson (1992), 87, n. 56 (I thank Frank Griffel for this reference).

Here, though, we should not veer into credulousness. It seems an obvious fact to those who have studied post-Avicennan intellectual developments that the influence of Avicenna's philosophy was enormous in virtually all areas of medieval thought. Clearly, then, the process of appropriating Avicenna's philosophy for a variety of intellectual and religious ends begins in the medieval period, and that appropriation, to whatever end, is characterized by partial or wholesale adoption of Avicenna's philosophical terminology, argumentation and conclusions. Works produced in the literature we designate as Avicenna's "heritage" thus may bear remarkable resemblance to original Avicennan texts. Distinguishing between authentic Avicenna and later "heritage" works that have crept into his bibliography cannot proceed simply by noting the similarity of "thought." It is in the subtle differences, in the "exaggeration of a known or credible element,"[35] in the very different conclusions drawn from very common Avicennan postulates that the spurious work will reveal itself.[36]

Arguments against authenticity based on such differences always face the counter-argument from chronology, that is, an unusual doctrinal element may be explained by Avicenna's own intellectual development (and thus chronology of works).[37] This is a valid consideration

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[35] I take this phrase from C. Babcock (1965), 22, in his discussion of "propaganda" in historiographical representations (I thank John Ramsey for this reference).

[36] Jules Janssens has noted (private communication, 2 February 2003) an apparently difficult example of the type of "heritage work" I outline here: Ġazālī's *Maqāṣid al-falāsifa*. In as much as this work is almost wholly of Avicennan inspiration, how do we distinguish it from "authentic" Avicenna? The solution appears simple enough: Ġazālī did not write his work as a forgery in that he did not ascribe it to Avicenna. His stated aim is to explain Avicenna's philosophy. Now, if later readers happened to mistake the work, or the many others like it in the periods of reception, as written by Avicenna, this means only that it is an example of the type of pseudepigraphy I have described here.

[37] This conflict between arguments for or against authenticity and the established chronology of works is perhaps nowhere more observably problematic than in the studies on authenticity in the Ġazālī corpus. In the case of Ġazālī, the problem is directly related to the so-called "conversion" narrative of Ġazālī's *Munqiḏ*, in which he lays out the changes in his perspective on a host of issues important to him. Watt's study (Watt (1952)) of the authentic and the spurious in the Ġazālī corpus is plagued by general statements having to do with the impossibility of a work belonging to a particular stage of Ġazālī's life from which it is identified as coming. While chronology issues can be very important for arguments about authenticity, the problem needs some clarification. An argument *against* authenticity should not be based on the impossibility of a work's belonging to a particular stage of an author's career, since the counter-argument will always tend toward revising the chronology, which is no solution at all. But an argument *for* authenticity on the

since the refinement of arguments, of expository methods and of
conclusions is an observable, and perhaps essential, characteristic of
truly great minds. In Avicenna's case, the argument from chronology
appears regularly to be linked to the observation of a change in the
genre of writing or the style of Avicenna's exposition. This too may
be a valid consideration in that we can readily observe such differences
in works irrefutably Avicennan.[38] In both cases, though, we do have
a variety of means at our disposal to avoid constant irresolution in
determining authenticity. In the first case, recent scholarly studies of
the evolution in Avicenna's thought on particular topics provide us
with model examples of which aspects of his thinking Avicenna re-
evaluated as well as the methods by which he undertook such a
task.[39] The process of identifying such topics that were subject to
evolution in Avicenna's thought is still in its early stages, but it may
be fair to say, however provisionally, that Avicenna did not revise
every aspect of his philosophical thinking on a continuous basis—some
areas, notably in psychology and metaphysics, received more atten-
tion than others—and that the process of such evolution was an
incremental one. Abrupt, unexplainable and radical shifts in his
thought as observed in works of questionable authenticity should
make us wary. In the second case, too, we should begin with the
known. We have authentic Avicennan works, short treatises and let-
ters that evince stylistic differences; such posited differences, whether
in terminology, syntax, literary style, methods of internal and exter-
nal reference, etc., need to be properly evaluated and *then* compared
to questionable works characterized by unusual style or genre.[40]

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basis of the place of a work in an author's development is no better, since it rests
on an unverifiable hypothesis that necessarily assumes change. Authenticity argu-
ments that involve chronology always approach tautology, making them circum-
stantial at best in the absence of additional proof.

[38] The standard examples here are the *Išārāt* and the *Hidāya*, both of which
evince a marked concision of style in comparison to the *Šifā'* for instance; see
Reisman (2003b) for this point. Another genre of philosophical exposition is observ-
able in the so-called "philosophical stories" *Ḥayy ibn Yaqẓān* and *Risālat aṭ-Ṭayr* (the
phrase is Sarah Stroumsa's (1992), with useful summaries of other scholars' views
on these texts). Yet another genre, largely unexamined to date, is what we may
call epistolary: the letters of Avicenna to his colleagues and students, including those
that, in part, make up the *Mubāḥaṭāt*; see below for an initial list of such letters.

[39] Recent studies include Amos Bertolacci (2001a), Dimitri Gutas (2000b) and
Toby Mayer (2003). As Gutas and Mayer have both demonstrated, the *Mubāḥaṭāt*
constitutes an excellent source for the evaluation of how Avicenna refined his think-
ing on specific issues.

[40] Neither the argument from chronology nor that from genre expansion is new

To elaborate the second point above, that "thought" alone does not account for all internal evidence, we should turn our attention to another form of internal evidence worth investigating: terminology, syntax, style and structural aspects of authentic and spurious Avicennan texts.[41] First, arguments against authenticity based on technical terminology are virtually inconsequential in that medieval Arabic philosophy is characterized by a commonly employed philosophical vocabulary. Such arguments are profitable only in a few cases. One case involves what might be called the subversion of technical terms, in which a technical term employed by Avicenna in a way that is consistent with his philosophical system is given a different connotation or points to different philosophical implications in a work of questionable authenticity.[42] Another case raises the issue of metaphorical language in Avicenna's philosophy. There is no question that Avicenna does employ such metaphorical terminology, whatever reasons may be posited for this.[43] One interesting example is Avicenna's use of terms associated with the religion of Islam and, in particular, his employment of Qur'anic terms to explain philosophical ideas. Again, we need to plot such usage (which terms in particular, in what contexts they appear, how often they occur, etc.) in works of impeccable authenticity for comparison with questionable works. This is especially important when we consider the proliferation of such terms and their use among later philosophers.[44]

With syntax and style we face the same problem as that related to comparative assessments of philosophical terminology in that the patterns of educated writers of Arabic in the medieval period adhere

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to critical scholarship. Grafton observes Galen's sensible approach to his study of the Hippocratic corpus, that Hippocrates wrote "in different genres and presumably, at different ages" (Grafton (1990), 30). Further reference to Galen's evaluation of authentic and spurious Hippocrates can be found in Speyer (1971), 120.

[41] Lazarus-Yafeh's study of Ġazālī's language and style, despite its acknowledged limitations, should serve as a model for the stylistic typologies that might prove most conducive to such an investigation.

[42] The problems associated with such comparative studies of technical terminology are evident in Watt's treatment of the term _ḏawq_ in Ġazālī's thought; see Watt (1952), 27ff.

[43] It may not be extraneous to the discussion here to suggest that there is an equally subversive intention in Avicenna's use of metaphorical terms, particularly in the case of terms associated with the religion of Islam. For other views on this, see Gutas (2002b), 84ff., with references.

[44] I am thinking here of the proliferation of Qur'anic terms used as metaphors for philosophical ideas in the works of the Išrāqī school; see, for example, Hossein Ziai (1996), 475–6.

to very common standards, and so distinctions among authors writing in a given period or cultural milieu may not be significant enough for such work.[45] Ideally, a study of recurring syntactic structures in Avicenna's works, particularly across the variety of genres in which he wrote (as a means of controlling the variables) is needed. Also, there may be much profit in comparing Arabic syntactic usage during Avicenna's time to such usage afterward, particularly in the East where the influence exercised by the development of Persian literary styles becomes quite significant. Finally, a specific genre of writing relatively common to the Avicenna corpus may prove useful here: the bureaucratic epistle.[46] While much of the structure and requisite parts of the epistolary form remain constant throughout the medieval period, I suspect that preferences for certain greetings, honorific titles, and optatives of blessing may be distinctive in different generations and cultural contexts;[47] this is another aspect of internal evidence worth investigating. In concluding this discussion, it is useful to repeat that both types of evidence, internal and external, need to be defined systematically and evaluated carefully for the purpose of identifying entries in the Pseudo-Avicenna Corpus.

The preceding discussion of the Pseudo-Avicenna Corpus is admittedly both abstract in its definitions as well as demanding in its recommendations for future research. The fact that there is currently no scholarly consensus on the precise contents of the Avicenna corpus, however, is reason enough for the preliminary characteristic of this essay. The study of Avicenna is clearly experiencing a revival of scholarly interest and it is thus appropriate to reiterate the long-term goals of the endeavor: we need to establish and define a critical corpus of Avicennan writings within their attendant historical contexts before engaging in broad analyses of Avicenna's thought.

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[45] Lazarus-Yafeh (1975), 11.

[46] This type of writing in the Avicenna corpus is due for serious consideration. The list would include the letters that form part of the *Mubāḥaṯāt* as well as the following: the Avicenna—Bīrūnī—al-Maʿṣūmī correspondence; Avicenna, *al-Asʾila wa-l-aǧwiba* (1995); also *al-Aǧwiba ʿan al-masāʾil al-ʿišrīnīya* (1974); Avicenna, *Risāla fī Ibṭāl aḥkām an-nuǧūm* (1953); *Intifāʾ ʿammā nusiba ilayhi min muʿāraḍat al-Qurʾān* (1953); *Risāla ilá ʿUlamāʾ Baġdād* (1953); as well as the letters that make up the putative Avicenna—Abu Saʿīd Correspondence (for now see the list in Yahya Michot (2000), 58ff.)

[47] This may also be the case for introductory dedications and concluding remarks in Avicenna's expository works, so the pertinence of my comments may be extended here.

Approaching such a task by way of the principles and methods out-
lined above for assessing the authentic and the spurious in that cor-
pus strikes me as particularly promising. Finally, lest the reader be
left with the impression that any argument against the authenticity
of certain works currently accepted as Avicennan may prove impos-
sible, it is worth remarking that caution is never to be confused with
indecision.

AVICENNA ON NATURAL PHILOSOPHY
AND THE EXACT SCIENCES

CHAPTER TWO

IBN SĪNĀ ON CHANCE IN THE *PHYSICS* OF *AŠ-ŠIFĀʾ**

Catarina Belo

Briefly defined in the *Metaphysics* of *aš-Šifāʾ*, the concept of 'chance' (*ittifāq*) is analysed and duly developed by Ibn Sīnā (Lat. Avicenna) in the *Physics* (*as-Samāʿ aṭ-Ṭabīʿī*) of *aš-Šifāʾ* in conjunction with the concept of 'fortune' (*baḫt*). Two chapters are dedicated to chance. Ibn Sīnā first enumerates four different views on chance by four different schools of thought, mentioned by Aristotle, and then goes on to expound his own view. In chapter fourteen, he refutes the four views in question and introduces into the debate such related issues as the concept of the accidental and the role of matter.[1]

The discussion is closely modeled on Aristotle's exposition of chance in book II of the *Physics*: Ibn Sīnā addresses the same topics and uses the same examples as Aristotle. Like Aristotle, Ibn Sīnā contests the idea that the world as a whole or in its parts came about

[1] The term fortune and chance respectively reflect the Greek τύχη and τὸ αὐτόματον. The expression *min tilqāʾi nafsihī* (spontaneous), closely equivalent to τὸ αὐτόματον, occurs only once, at the opening of chapter thirteen. In Isḥāq ibn Ḥunayn's translation, τὸ αὐτόματον is consistently translated as *min tilqāʾi nafsihī*. See Aristotle, *aṭ-Ṭabīʿiyāt* (1964–5). In the Metaphysics of *aš-Šifāʾ*, *ittifāq* is defined in the following way: "chance comes to be from these clashes (*muṣādamāt*), and if all matters are analyzed, they [are seen to] rest on the principles that necessitate them, which come from God most high," (Avicenna, *aš-Šifāʾ: al-Ilāhīyāt* (1960a), 439.16–17). This definition contains in a nutshell the main elements of Ibn Sīnā's view of chance, namely, chance is a coincidence generated by the clash of two different bodies or causal chains, which ultimately go back to God, the cause of all causes. It is important to bear in mind that *ittifāq* literally means "coincidence." More on the terminology used by Ibn Sīnā later. All translations are mine unless otherwise indicated.

by chance rather than directed towards an end. A long section of the argument is dedicated to asserting the purposiveness of nature and the notion of a universal order. On occasion he criticizes later Peripatetics for misinterpreting Aristotle and adding superfluous and erroneous qualifications to their master's position. This shows his eagerness to preserve the true meaning of Aristotle's view. These chapters are not, however, a literal commentary on Aristotle's parallel passage; rather, Ibn Sīnā extracts Aristotle's ideas and constructs his own argument. The result, although not at variance with Aristotle's fundamental message, is distinct. Most notable is Ibn Sīnā's unambiguous and systematic exclusion of chance as an essential or substantial cause in the natural world in addition to Aristotle's four natural causes. A comparison between Aristotle's passage on chance and fortune and Ibn Sīnā's gloss, which deserves a detailed study on its own, reveals that Aristotle does not reject chance as systematically as does Ibn Sīnā. His usage of *ittifāq* rather than *min tilqāʾi nafsihī* (spontaneous) to denote the general concept of chance is itself telling. While *ittifāq* (coincidence) does not exclude the deterministic view that every event has a necessary cause and hence cannot be otherwise, *min tilqāʾi nafsihī* has much stronger indeterministic overtones, since it suggests something's coming about by itself, without a cause.

It is my intention here to show that the argument pursued by Ibn Sīnā in this account of chance epitomizes his deterministic agenda laid down in the *Metaphysics* of *aš-Šifāʾ*. That his deterministic position in the philosophy of nature derives from and confirms his metaphysical position can be inferred from the fact that he refers the reader to the *Metaphysics* for corroboration of his theory. The link between metaphysical and physical determinism is also observable in these two chapters in the use of key concepts such as divine power, which in his metaphysics is developed into a deterministic theory, particularly in his discussion of God's determination (*qadar*).

It is important not to lose sight of the fundamental question that these two chapters address: is chance a cause? If so, how is it related to the four causes, agent, form, matter and end? The argument roughly divides into two parts. The first part analyzes the relation between chance and the efficient cause. This part occupies chapter thirteen. The second part, occupying chapter fourteen, analyzes the relation between chance and the final cause. I shall argue that for Ibn Sīnā there is no essential connection between chance and the

efficient cause in the sense that chance is neither an efficient cause nor linked to the efficient cause. Chance has a place within the general scheme of causation only in connection with the final cause. Chance becomes an accidental cause in actions that have a purpose, i.e., in events that have a final cause, and in as much as they have a purpose.

I. *Things/Events That Occur Always, for the Most Part, or Rarely: Chance Defined*

For the sake of clarity, rather than following the order of Ibn Sīnā's exposition, I shall begin with his own views before turning to the four conflicting views listed by him, followed by his refutations.

Following Aristotle, Ibn Sīnā distinguishes between events or states of affairs that occur always (given the right circumstances), events that occur for the most part, and events that happen rarely. The assumption is that an efficient cause will always produce its effect provided that there is no obstacle precluding it. For instance, "fire burns the firewood for the most part if it comes into contact with it and someone who leaves his house for the garden reaches it for the most part."[2] Events occurring always encounter no obstacle at all, while events that occur for the most part may encounter some sort of obstacle. With regard to events occurring for the most part, it is important to bear in mind that the causes of a particular event or thing may not of themselves be able to bring about the effect and may need a subsidiary, determining cause in order to do so. The following passage summarizes the basic features of events or processes that occur always, for the most part, or rarely:

> The coming to be [of something] . . . results either from an uninterrupted sequence in the nature of the cause itself . . . or not. If not, either the cause requires a subsidiary [cause] . . . or the removal of an obstacle. If the cause does not require this, . . . the effect is not more likely to come to be from the cause than not. . . . If that which determines (*mā yuraǧǧiḥu*) the coming to be over the not coming to be is not in the thing itself . . . or . . . in its subsidiary [causes], then this thing

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[2] Avicenna, *aš-Šifāʾ: aṭ-Ṭabīʿiyāt, as-Samāʿ aṭ-Ṭabīʿī* (1983), 62.5–6; henceforth, *as-Samāʿ aṭ-Ṭabīʿī*. See also Āl Yāsīn's more recent edition of the same work, *as-Samāʿ aṭ-ṭabīʿī* (1996), 119; henceforth, Āl Yāsīn.

will not more likely come to be from another thing than not and the thing/event will not happen for the most part. If the cause does not need the aforementioned subsidiary cause, it is necessary that it should form an uninterrupted sequence by itself leading to [the effect] . . . if nothing opposes it. . . . . Hence it follows necessarily . . . that if an obstacle does not hinder it . . . and its nature is able to continue towards what it pursues, then the difference between that which always occurs and that which occurs for the most part is that what always occurs does not have something opposing it at all and that what is for the most part has something opposing it. It follows[3] that what is for the most part—pending the removal of obstacles . . .—is necessary, and this appears in the natural realm as well as in the voluntary realm.[4]

In this passage, Ibn Sīnā begins by explaining the difference between events that happen always or for the most part. This echoes Aristotle's explanation that chance is that which does not happen always or for the most part, a view espoused by Ibn Sīnā himself.[5] It stresses the power of the efficient cause to produce its effect and implies that the effect issues necessarily from its cause if the right conditions are met and in the absence of obstacles. Another point made in this passage is that if there is no sufficient cause, i.e., a cause that does not require auxiliaries, the effect is not produced. Ibn Sīnā comes close to the notion of contingency when he explains the lack of a determining principle and the possibility for a thing to be or not to be. He clearly dismisses contingency for actually existent beings since he implies that if the effect is not more likely to be produced than not, it does not come to pass. That which happens for the most part is opposed to what happens rarely;[6] however, as we shall see, even rare events, according to Ibn Sīnā, also have a necessary cause. Therefore, all conditions being equal, and in the absence of obstacles, the same cause will always, and necessarily, produce the same effect.

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[3] Reading *wa yatbaʿu* with MSS d, s, ṭ, m and Āl Yāsīn for Zāyed's *huwa yatbaʿu*.
[4] *As-Samāʿ aṭ-ṭabīʿī*, 62.7–16; Āl Yāsīn, 119.
[5] Aristotle, *Physics* (1998), II 5, 197a31–35. The opposition between chance and that which happens always or for the most part is also stated in Ibn Sīnā's *On Demonstration* (*al-Burhān*) of *aš-Šifāʾ* in connection with his views on experimentation: since one always observes scammony's purging bile, one can infer that the relation between purging and scammony is not a mere chance or accidental relation. Thus Ibn Sīnā claimed: "since after all chance is not always or for the most part . . . it is known that the [scammony's characteristic of purging] is something which the scammony necessitates by [its] nature, since it does not turn out that there is anything arbitrary about it." (46.2–3) Cited in J. McGinnis (2003). I am grateful to Jon McGinnis for showing me this article in advance of publication.
[6] *As-Samāʿ aṭ-ṭabīʿī*, 62.7; Āl Yāsīn, 119.

Fire will always burn any firewood it comes in contact with, as long
as there is no obstacle to the cause's efficacy. The other important
notion introduced here is that of an uninterrupted sequence (*iṭṭirād*);
it implies not only that a cause will always produce its proper effect,
but also that whatever comes to be always has a cause which nec-
essarily produces it. If a piece of firewood does not burn, that is due
to an obstacle and the obstacle itself—say, water or moisture—will
be the cause of the firewood's failure to burn. This view is explic-
itly stated in other works by Ibn Sīnā: everything that comes to be
has a cause and what does not come to be also has a cause. "[As
for] the possible existent with regard to itself, its existence and non-
existence are both due to a cause (*bi-ʿilla*)."[7] The determining factors
are thus the efficient cause, together with a subsidiary cause if need
be, and the absence of obstacles. Given the right conditions, the
efficient cause will produce its proper effect; nowhere is it suggested
that causes can fail or that something can come about without a
cause. Where does chance fit into this scheme? Nowhere, apparently.
Like Aristotle, Ibn Sīnā denies that chance is at the root of events
taking place always or for the most part. Aristotle claims that it is
found in events that occur rarely. For him, chance is objectively
linked with the frequency of an event.[8] As we shall see, this is not
the case for Ibn Sīnā. He holds that even the rare, when its con-
ditions are met, becomes necessary: "Indeed the rare turns out to
be necessary (*wāǧib*) if the conditions in it are established and the
circumstances are expressed."[9] The example given is that of the gen-
eration of a sixth finger, on which more later.

There remains that which has equal chances of happening (*mā
yakūnu bi-t-tasāwī*). Here, Ibn Sīnā engages in debate with later
Peripatetics on Aristotle's true position. Later Aristotelians had claimed
that chance is only to be found in rare occurrences or things, not
in those with equal chances of happening. This, in Ibn Sīnā's view,
deviates from the position taken by Aristotle, who had merely stated
that chance is not to be found in events taking place always or for
the most part and does not mention that which has equal chances
of happening. Ibn Sīnā disagrees with the later Peripatetics on the
events which are said to have equal chances of happening, especially

[7] *Al-Ilāhīyāt*, 38.11–12.
[8] Aristotle, *Physics*, II 5, 197a19–20. See also II 8, 198b34–36.
[9] *As-Samāʿ aṭ-ṭabīʿī*, 63.11–12; Āl Yāsīn, 119.

in the realm of voluntary action. While the later Peripatetics consider that the chances of a person's walking or not walking, eating or not eating are equal, Ibn Sīnā holds that "if one walks or eats by one's will this is not said to have happened by chance."[10] When eating and walking go back to an act of will, "walking and eating go from being equally possible to being [the case] for the most part."[11]

Furthermore, something can be considered to occur for the most part or be necessary in one respect and to have equal chances of happening in other respects. For example, a sixth finger is a rare occurrence in a human being, but if there is matter in excess of the usual five fingers, and "if the divine power which flows into bodies finds complete readiness (*isti'dād tāmm*) in natural matter for a deserved form (*ṣūra mustaḥaqqa*), the divine power . . . does not deprive the matter of form and so produces an extra finger" and "even if this is most rarely found and rare with regard to the universal nature, it is not rare or anomalous with regard to the causes which we have mentioned. Indeed it is necessary."[12] He goes on to say that "as long as one thing's existence does not necessarily derive from its causes and does not leave the nature of the possible it does not come to be from them."[13]

The reader is then referred to the work on first philosophy, metaphysics. One of the fundamental principles of the ontology of the possible and the necessary in Ibn Sīnā's metaphysics is that whatever is possible becomes necessary the moment it comes to exist.

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[10] Ibid., 63.9; Āl Yāsīn, 119.

[11] Ibid., 64.2–3; Āl Yāsīn, 120. In this instance, the action is not a chance event because the will becomes its necessitating efficient cause. Whether the will acts autonomously or is determined by external factors is a different matter altogether. In passages on God's determination, Ibn Sīnā suggests that everything falls under God's determining power, including human will. This emerges clearly from his definition of *qadar* and *qaḍā'*: "The decree (*qaḍā'*) of God Most High is His first, single decision (*ḥukm*) which comprises everything; from it everything branches out in the course of time; His determination (*qadar*) is His arrangement of the things arising from that first decree, one after another . . . [It] is known in all eternity that the first [cause] subordinates the second and the preceding engenders the subsequent and that their order proceeds to necessitating several *wills* and various actions, opposing movements, clashing enterprises, laudable and reprehensible effects, rightly guided and misguided consequences" (*Risāla l-Qaḍā'*, Arabic text in Y. Michot (2000), 105–108, emphasis added).

[12] *As-Samāʿ aṭ-ṭabīʿī*, 63.12–16; Āl Yāsīn, 120. In another passage, Ibn Sīnā mentions the fact that most people are born right-handed. See Avicenna, *aš-Šifāʾ, aṭ-Ṭabīʿīyāt, al-Ḥayawān* (1970), 172.12. I am grateful to Jon McGinnis for this reference.

[13] *As-Samāʿ aṭ-ṭabīʿī*, 63.17–18; Āl Yāsīn, 120.

Every actually existing being is possible in itself, but necessary through another being, its cause, with the exception of God, who is necessary in Himself.

Ibn Sīnā's explanation of events occurring always, for the most part or rarely is a rejection of the statistical model that states that chance resides in events occurring in a minority of cases *tout court*. In fact, chance is not objectively linked to the frequency of occurrence of any one event. Every natural event or substance is necessary if one analyzes the causes leading to it. If all events are necessary, why does Ibn Sīnā take the trouble to explain chance in terms of the frequency of an event? Where does chance belong in his analysis of natural causation? The statistical model, which links chance to the frequency of an event, applies to cases involving an expectation on the part of the agent when performing an action. This holds true for beings endowed with a conscious will, namely, humans. It is illustrated by the following passage:

> we could say that such and such [occurrence] was by chance even if the event (*al-amr*) used to happen for the most part; as if someone were to say, "I sought so and so for such business and it so happened that I found him at home." The fact that Zayd is to be found at home for the most part does not prevent [one] from saying this. The answer is that this person says it not with regard to the thing itself, but with regard to what he believes concerning it. For if it were his prevalent opinion that Zayd must be at home, one would not say that he happened [to find him]. On the contrary this would have been said to have happened by chance if he did not find him.[14]

In the case of natural processes or irrational beings, as we shall see, chance is linked to what a natural entity is wont to do and what its purpose is.

A chance happening is thus an action or event which has a goal and which leads to an unexpected result other than the purposed goal. This result could legitimately have been singled out by the subject of the action as a goal. The essence of chance is defined by Ibn Sīnā as "an accidental end (*ġāya*) of a natural or voluntary process (*amr*), or even of a forced event."[15] Hence chance is an end according to this definition.

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[14] Ibid., 65.6–9; Āl Yāsīn, 120.
[15] Ibid., 68.9; Āl Yāsīn, 122.

Chance is also a cause, a final cause, since he has established that it is an end:

> Chance is an accidental cause from among natural and voluntary things (*umūr*), [which] does not necessitate always or for the most part, pertaining to that which is for the sake of something, and [it does] not have a cause which necessitates it essentially.[16]

It is explicitly stated that chance belongs to events that have a final cause, in as much as they have a final cause. That is to say, chance is never said of actions or events that are not for a purpose, and the chance element consists in an outcome which is other than the expected. The fact that it does not always necessitate means that it does not always follow from the essential purpose. The accidental outcome does not bear an essential relation to the essential final cause. Hence it is an accident in relation to that final cause or goal of the event.

A rare event is a chance event because it is unexpected. The chance element therefore is tied up with the expected outcome of an action, not with the essential causes of that action. Chance is attached to the final cause, not to the efficient cause.[17]

> When something coming to be is in itself neither anticipated nor expected, since it is neither always nor for the most part, then it is right to say of the cause leading to it that it is either chance or fortune.[18]

If we take Ibn Sīnā's reference to accidental causation to point to the final cause, finding a treasure is the accidental final cause of one's digging a hole in the garden, because digging a hole does not lead always or for the most part to finding a treasure. The essential final cause would be to sow; however, as far as the efficient cause is concerned, digging would still be considered the essential efficient cause of finding the treasure.

The accidental cause, which as we have seen is linked to the final cause, only rarely produces an accidental end. So in the case of the man who encounters his debtor after having set out to find him, one cannot say that this is a chance event. Since it was his inten-

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[16] Ibid., 65.2–4; Āl Yāsīn, 120.
[17] "As for the case of chance and that it is a certain end (*ġāya*), it has already been established in the *Physics* (*aṭ-Ṭabīʿiyāt*)" (*al-Ilāhiyāt*, 284.8–9).
[18] *As-Samāʿ aṭ-ṭabīʿī*, 64.7–8; Āl Yāsīn, 120.

tion to find his debtor, the outcome is not unexpected. A rare event or substance is bound up with chance only if it is simultaneously unexpected. For example, in the case of an oversized emerald, the essential or substantial causes determine that it should exist, as they necessarily lead to its formation. The notion implied in all of these instances is that there is always an essential efficient cause for any chance event, as well as an essential final cause which may or may not be attained.

A reference to the concept of "accident" sheds light on the meaning of chance, since the two are closely related. An accident is typically an entity that only acquires its existence through subsisting in something else to which it is attached. The definition of "accident" in the *Logic* of *aš-Šifāʾ* is "that which exists in something without being a part of it, the subsistence (*qiwām*) of which is not true without that in which it is."[19] In turn, the substance "is separate from the accident and its subsistence is true without it."[20] An accident is something that accompanies the substance, but does not have an independent existence. "The accidental is opposed to the essential and the substantial."[21] Some accidents are permanent, some non-permanent. Whether permanent or not, an accident is not a constitutive part of the substance or essence.

Transferring this concept of accidental accident into the theory of chance causes, one can say that chance causes do not subsist by themselves, as they are found only in events that do have an essential, substantial cause, and they themselves do not determine events. Thus, "chance causes come to be inasmuch as they are for the sake of something, but are causes that produce their effects by accident and the ends are ends by accident, for they belong to the group of causes that are by accident."[22] The relativity of the accidental vis-à-vis the

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[19] Avicenna, *aš-Šifāʾ: al-Manṭiq, al-Maqūlāt* (1959), 28.4–5.

[20] Ibid., 32.7.

[21] Avicenna, *aš-Šifāʾ: al-Manṭiq, al-Madḫal* (1952), 85.20.

[22] *As-Samāʿ aṭ-ṭabīʿī*, 65.1–2; Āl Yāsīn, 120. Causes by accident are explained in I.12 of *as-Samāʿ aṭ-Ṭabīʿī*. The classical example is that of a physician who builds a house. A physician *qua* physician essentially cures people. Since building is not his essential attribute, his building activity is not said to be essential (*as-Samāʿ aṭ-Ṭabīʿī*, 55.13–56.2; Āl Yāsīn, 100–101). An accidental end can be said in different ways: something that is purposed but not for its own sake, i.e., a means to an end, like drinking a medicine in order to be cured; something which accompanies the end or befalls it accidentally, like eating in order to evacuate and beauty in relation to exercise, respectively; and finally, that towards which the motion is not

essential cause is illustrated by means of the example of a stone's falling.[23]

At the close of his explanation, Ibn Sīnā distinguishes between chance (*ittifāq*) and fortune (*baḫt*) by affirming that fortune is only found in actions performed by humans and that chance events are more general and embrace the totality of natural processes. Therefore chance comprises that which happens spontaneously or coincidentally—as it has already been pointed out, the term *ittifāq* literally means coincidence.

II. *Chance, Providence and Evil*

In chapter fourteen, a different issue related to chance is discussed. This chapter presents the second part of the debate, the relation between chance, divine providence and the origin of the world. In the second part of his argument, Ibn Sīnā seeks to show that nature generally acts towards an end, an Aristotelian theme. In order to defend his teleological view of nature, he has to tackle the issue of matter and also of evil, which leads him to expound and develop views that are typically Plotinian. Thus he introduces into an argument that is based on Aristotle the Neoplatonic/Plotinian view of matter and evil as negative.

Before presenting his own views on chance, Ibn Sīnā listed four different philosophical schools, all dating back to Antiquity, as he follows Aristotle and their respective positions on the subject. Ibn Sīnā finds fault with each. From the controversy with these schools there emerges a related concern bound up with the issue of chance. In addition to explaining the true nature of chance, Ibn Sīnā's task in this second part of the argument is to show that the universe as a whole and in its parts did not come about by chance, that is at random, but by a purposive and benevolent act of will. The thorniest issue he must tackle is the question of how deformations and death fit into this harmonic model of the universe and in particular the role of matter in these processes.

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directed but which stands in the way of that motion, like a head which stands in the way of a falling stone (ibid., 58.9–15; Āl Yāsīn, 101).

[23] Ibid., 65.9–66.1; Āl Yāsīn, 121.

First, mention is made of those who deny that fortune and chance are included among the causes (ʿilal), indeed that they exist at all.[24] This group argues that:

> it is impossible for us to find necessitating causes of things, to observe them and then shun them and deny that they are causes (ʿilal), seeking for these [things] unknown causes among fortune and chance.[25]

The fact that someone who is digging a well finds a treasure cannot be termed an instance of good fortune, for, it is understood, digging a well will definitely lead to finding a treasure if the treasure is there. There is an obvious cause. Ibn Sīnā's objection to this view lies in its complete neglect of the purpose or final cause, the same objection that underlies his criticism of the other schools. Their position is in fact extremely close to Ibn Sīnā's, yet in contrast to their position Ibn Sīnā wants to assert that the final cause plays an indispensable role in the outcome of an action such that chance at least plays an accidental role leading to a fortunate outcome, as we shall see. As we have seen, Ibn Sīnā, unlike this group, does not dismiss chance altogether as a mere chimera. He denies its association with the efficient cause, while asserting its connection with the final cause.

The second group defends, even extols, the existence of chance and believes it to be something divine and inscrutable. It cannot be comprehended by reason and it is worshipped as such. This view receives only a brief mention, and Ibn Sīnā does not bother to address it in detail.

For the third group, represented by Democritus and his followers, chance is a natural cause. The world came about by chance rather than by design. Natural beings are formed when the smallest particles, which travel in the void, clash. This explains the origin of the world and its particulars, and these clashes come about by chance.

The fourth group does not claim that the world as a whole originated by chance, but that individual beings come about by chance from the natural elements. "Whatever comes into being was formed from the elemental principles by chance, and the shape of its composition happened to be in a manner suited to survival."[26] This position, like the first, refuses natural events any purposive aspect.

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[24] Ibid., 60.8–9; Āl Yāsīn, 118.
[25] Ibid., 60.9–11; Āl Yāsīn, 118.
[26] Ibid., 61.15–16; Āl Yāsīn, 118–9.

According to this view, if something survives, it is because it hap-
pened to be suited to survival, not because it was generated with a
view to survive. The survival of the things which do survive hinges
on chance in so far as this survival is not due to purposive action.

Ibn Sīnā refutes all these positions. While doing so, he delves
deeper into the issue of how the four causes relate to chance.

The first group wrongly denies chance any role in Ibn Sīnā's view.
This is not because he himself assigns chance an essential role, but
because to deny chance categorically means to deny that there is a
purpose in every action and a corresponding expectation. Overlooking
the final cause is the basic criticism leveled at all three positions. As
regards the first group, Ibn Sīnā claims: "even if everything has a
cause, it does not mean that chance does not exist; rather, the chance
cause itself is that which necessitates the thing neither always nor
for the most part."[27] To say that opting for one thing as a goal does
not change events, as this group maintains, is also false. We have
seen how knowledge and the resulting expectations determine whether
an event is said to be casual or not. Furthermore, it is clear that
volition has a determinative power. The person who knows the where-
abouts of his debtor will in most cases find him, otherwise he is less
likely to find him. This does not detract from the view that every
action and event has a definite and necessary efficient cause. We
have seen that within the debate on *qadar*, Ibn Sīnā states unam-
biguously that human will is effectively determined by divine power.[28]

Against Democritus—represented by the third group, who believed
that the world came about by chance—Ibn Sīnā argues that will
and nature, with the assumption of purposive action, precede chance
and that the first cause of the world is nature or will. In Ibn Sīnā's
philosophy the efficient cause is threefold: natural, voluntary or acci-
dental. To state that the first cause is nature or will is automatically
to exclude the accidental from that first cause. Simultaneously, it is
an affirmation that the world was produced by an essential efficient
cause.[29]

He goes on to refute Empedocles' position, that of the fourth
group, that particulars originate from chance. Empedocles and his
followers mixed chance and necessity by saying that the coming to

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[27] Ibid., 67.11–12; Āl Yāsīn, 122.
[28] See note 11.
[29] Avicenna, *Dānišnāmah*, (1986; translation), 172–173.

be of matter is by chance, while the shaping of it with a form is by necessity and without a purpose, i.e., it has an efficient but not a final cause. They also deny that nature has any kind of deliberation on the grounds that deformities and death are found in nature. Since these are not intended, other natural processes cannot be either. For them natural events come about through the necessity of matter and chance, intended here as a lack of purposiveness. One such example is rain:

> We know for certain that rain comes to be due to the necessity (*ḍarūra*) of matter, because when the sun causes [water] to evaporate, vapors are released into the cold air, becoming cold and becoming heavy water and so coming down necessarily.[30]

Ibn Sīnā counters this view by upholding that although chance occurs in individual events, both in generation and corruption there is a definitely purposive order, since species are for the most part preserved. A seed of barley produces barley, not wheat. The preservation of the species for the most part—which in Ibn Sīnā's terminology means always if there is no obstacle—is indicative of the general purposiveness of nature and the achievement of God's plan for the universe.

One particular expression, the "necessity of matter" recurs and has a pivotal role in the context of causality in nature and the debate on chance. It can be understood as attributing a determinative power to matter; however, this does not imply assigning to matter an active role. Matter, for Ibn Sīnā, as for Aristotle before him, is synonymous with passivity and receptivity. This determinative power of matter is merely passive. Thus the necessity of matter serves to indicate the deficient nature of matter, more specifically informed matter, and its limitations. In an article on Ibn Sīnā's determinism, Alfred Ivry attributes what he perceives as Ibn Sīnā's indeterminism to his twofold conception of matter:

> he entertains two models of matter: one of matter as pure receptivity, a mere receptacle of forms, that mirrors them faithfully . . .; and the other of matter as a real principle of being, the source of chance and privation/evil, unknowable in itself and hence unpredictable in its relation to form.[31]

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[30] *As-Samāʿ aṭ-ṭabīʿī*, 69.8–9; Āl Yāsīn, 123.
[31] A. Ivry (1984), 167. Ivry rightly identifies the pivotal role of matter for the

In fact, Ibn Sīnā does not explicitly grant matter an active role independently of form, as his theory is consistent in subordinating matter to the other causes, formal, efficient, and final. Whatever power matter possesses, it is a power of reception and even that issues from a divine efficient power which prepares matter to receive form and being informed by it.[32]

Ibn Sīnā maintains that matter is always subordinate to, and always follows, form and not the other way around. Also, he mentions that matter by itself does not move itself or others. Instead, it is moved towards a certain form by natural powers according to God's will. This motion is caused by a natural purpose always, or for the most part, provided that there is no obstacle.[33] The failure to attain an end leads to an evil that was not intended. Human intervention when nature fails to attain a particular end shows that everything in the world, natural and human, is for an end.

As we have seen, in explaining the connection between chance and the efficient cause, Ibn Sīnā automatically excludes matter from independently and actively intervening in the natural process of generation and corruption because for every generated being or event there is a necessary efficient cause. Every generated being goes indirectly back to God through an uninterrupted chain of efficient causes and as such matter does not constitute a principle of indeterminism.[34] The connection between matter and the final cause requires a more complicated explanation, because it raises the broader question of the justification of evil. Matter is associated with evil in the way that

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debate as well as the links with Ibn Sīnā's metaphysics: "Avicenna's theory of providence as well as of determinism thus depends upon a cluster of related concepts, viz., potentiality, possibility, matter and evil, and above all upon the concept of the necessity of existence as we know it" (162).

[32] This view of evil has its roots in a Neoplatonic/Plotinian theory of evil as privation and its association with matter. Matter comes last in the Neoplatonic emanation scheme: "...alors que le Très-Haut est le 'super-parfait' dont on ne peut pas dire qu'il 'a' l'être mais, plutôt, que l'être jaillit du trop plein de sa surabondance, l'être matériel déficient, ne peut se parfaire que par une cause extérieure" (J. Michot (1986), 59).

[33] *As-Samāʿ aṭ-ṭabīʿī*, 71.1–7; Āl Yāsīn, 123.

[34] In a lapidary passage on God's determination, Ibn Sīnā says: "in the world as a whole and in its parts, both upper and earthly, there is nothing which forms an exception to the facts that God is the cause of its being and origination and that God has knowledge of it, controls it, and wills its existence; it is all subject to His control, determination, knowledge, and will," cited in G. F. Hourani (1966). The authenticity of this text has been disputed; see D. Reisman (2002), 140, n. 79.

evil is attributable to the deficiencies of matter.[35] Downplaying the role of evil and matter, its analogue, is the obvious solution found for upholding God's providence, omnipotence and benevolence and the maintenance of a universal order. As regards evil, Ibn Sīnā thinks it is relative rather than substantial. What is bad for a particular individual is necessary and good in the context of the whole. Matter, like evil, rather than being positive, or actually existing, is considered a privation, and only exists in combination with form, or good. Pure matter, prime matter, does not actually exist; all matter can only be found in individual substances in conjunction with form. Evil too cannot be found in isolation, but only as a side effect of a purposive action. Since God is the causer of causes and benevolent, the real existence of evil must be explained away as a non-entity. Absolute evil is non-existence.[36] His theory combines a negative view of matter as passive and inert, which is already found in Aristotle, with the Plotinian/Neoplatonic view of matter as privation and source of evil.

What is the explanation for natural evil? Ibn Sīnā thinks that nothing in nature is in vain, but admits that sometimes nature is unable to move matter towards its end. The implication here is not that nature may not always act for an end, but that it may fail to attain its end because matter does not measure up to the task. Furthermore, this failure lies in what he terms "the disobedience of matter" (*ʿiṣyān al-mādda*). When matter is compliant, nature's acts are for an end. The use of such expressions as "disobedience" to characterize matter could suggest that matter is not mere passivity. As we have seen, however, the emphasis is on the shortcomings of matter rather than those of nature *qua* efficient cause.[37]

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[35] For Ibn Sīnā's conception of evil see J. Michot (1986) 59–68, and C. Steel (2002). "Having established that evil *per se* consists in privation, Avicenna explains how all forms of evil are connected to matter and therefore occur only in the sublunary sphere. In fact, if evil is a privation, it can only occur in those beings that are susceptible of privation, that is in those beings characterized by potentiality, which according to Avicenna is due to matter" (178). For the relation between potentiality/possibility and matter see J. McGinnis (forthcoming). I am grateful to Jon McGinnis for showing me this article in advance of publication. The main Neoplatonic themes of emanation and progressive degradation as one moves away from God, the association of evil with matter, the necessity of evil, the providence theme of the order of the whole are set out by Ibn Sīnā in his Commentary on the *Theology of Aristotle*. For Plotinus' views on the link between matter and evil, see Plotinus (1951–1973), vol. 1, *Ennead*, I.8.3–4 and 6–7.

[36] *Dānišnāmah*, 60.

[37] Because Ibn Sīnā does not really hold that matter is in any way autonomous,

On a more detailed note he claims that corruption and death "are due to the inability of corporeal nature to force upon matter its form and preserve form in matter."[38] Still, one must distinguish here between the corporeal nature, which always strives to maintain a particular body, and nature in general, which is always preserved and always for an end. "Inasmuch as it has an order and is directed towards a goal, corruption is an act of nature even if it is not an act of corporeal nature."[39]

It is clear that any natural act is for an end, but where there is incompatibility between the particular and the universal good, the universal takes precedence; nevertheless, the universal order (*nizām al-kull*) is preserved.[40] Ibn Sīnā goes on to say that death and any excess of matter is for an end, for nature always strives to find a form for it. As for the necessity of matter to be found in the already mentioned rain cycle, he stresses that divine action uses matter and imposes an end upon it. In this sense, the necessity of matter does not explain every natural process, as some Presocratics maintain; rather, it is divine action that disposes and indirectly shapes matter in a particular way and towards a goal.

Chapter fourteen closes with the reaffirmation of the fact that matter is for the sake of form and not the other way around and that nature is for an end; these are themes Aristotle sets in his analysis of chance. Ibn Sīnā's explanation of evil is twofold: on the one hand, evil is the exception rather than the rule and affects individuals rather than the whole. On the other hand, it is an accidental consequence of God's benevolent design for the universe.

In these chapters, Ibn Sīnā has a twofold task: denying that chance is an essential efficient cause in natural events/things and stressing that nature always acts for an end. He seeks to show that chance has only a secondary, accidental role. In my view, he is consistent in affirming that every occurrence in nature has an essential efficient cause. In that sense his view of chance reveals an undeniably deterministic streak.[41] This determinism, expressed here in philosophical

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we must take the expression 'the disobedience of matter' to be a mere rhetorical device used by him to illustrate the shortcomings of nature.

[38] *As-Samā' aṭ-ṭabī'ī*, 73.1–2; Āl Yāsīn, 125.

[39] Ibid., 73.7–8. Reading *al-badan* with MSS s, m and Āl Yāsīn, 125, for Zāyed's *al-badanī*.

[40] Ibid., 73.9–10; Āl Yāsīn, 125.

[41] Within the history of philosophy Ibn Sīnā's systematic determinism closely

terminology and presented in Aristotelian and Neoplatonic trappings, has deep roots in the Islamic notion of God's decree and determination, as the treatises on *qadar* show. Towards that end, and in order to salvage God's benevolence, he seeks to demonstrate that in nature everything is for an end and that matter and evil are purely negative.

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resembles that of the Stoics and that of Spinoza in the way that it does not admit of any deviation or break in natural efficient causation. I am not here concerned with the question of whether Ibn Sīnā was directly influenced by the Stoics or Spinoza by Ibn Sīnā. See, for instance, A. A. Long and D. N. Sedley (1987), 1: 337–338; and Spinoza's preface to the third part of his *Ethics*, in Spinoza (1955), 2: 129.

CHAPTER THREE

ON THE MOMENT OF SUBSTANTIAL CHANGE: A VEXED QUESTION IN THE HISTORY OF IDEAS*

Jon McGinnis

Does substantial change occur immediately or gradually? That is to say, when one kind of thing becomes a different kind of thing, does the transformation take place all at once or does the process take some time? That such changes occur is an empirical fact about our world. Bread is eaten and converted into chemical substances that our bodies either absorb and assimilate or excrete as waste. Leaves and grass clippings decompose into soil. Wood combusts, producing ash, charcoal and smoke. Iron, copper and certain other metals oxidize producing rust, verdigris and the like. And of course this list can be multiplied. In the argot of Aristotelian science all of these transformations are instances of substantial change. The most salient feature about these types of changes is that one kind of substance becomes a new kind of substance such that the initial substance is no longer found in the new substance.

Yet the question still remains: does substantial change occur all at once or does it take place gradually? Although this question would become standard in later medieval commentaries on Aristotle's *Physics*, interestingly, Aristotle himself, as far as I can judge, neither explicitly raised nor addressed the question either in the *Physics* or elsewhere in his corpus.[1] Moreover, Aristotle's later Greek commentators

[1] See Thomas Aquinas (1954), L. VI, l. viii (834). Ockham (1989), VI, 1, iii *ad* 3 and 4 (97–99). Also see Norman Kretzmann (1976) for a discussion of how later medieval Latin logicians and natural philosophers treated this subject.

do not appear to have explicitly raised the question either, although certain comments that they make suggest that our question was beginning to emerge as a philosophical problem.[2] For instance, Alexander of Aphrodisias, Themistius, Simplicius and John Philoponus all consider the more general question of whether instantaneous change is possible at all.[3] All of their arguments for instantaneous change, however, were drawn from changes in the category of quality, not in the category of substance. For instance, milk appears to curdle instantly when rennet is added; or light seems to illuminate a dark room all at once, when a lamp is uncovered; or again, two surfaces come into contact all at once. Still, the more specific question of whether substantial change is a case of instantaneous change is absent from these commentators.[4] The first person of whom I aware that explicitly addresses our question is Ibn Sīnā in the *Physics* of his *Šifāʾ* (II.3), where he unequivocally argues that substantial changes must occur all at once (*dufʿa*).[5]

Despite Ibn Sīnā's assurance of his answer, the question is a vexed one. The question clearly has its source in Aristotle's *Physics*, even if Aristotle himself did not explicitly address the issue.[6] The difficulty is that different passages in Aristotle can be interpreted so as to give

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[2] Of the Greek commentators of Aristotle's *Physics* known in Arabic, an-Nadīm in the *Fihrist* mentions Porphyry, Alexander of Aphrodisias, Themistius and John Philoponus. For discussions and fragments of what is still extant of these authors in Arabic, see the following. For Porphyry, see Porphyry (1933). For Alexander, see E. Giannakis (1995–1996). An Arabic translation of Themistius' paraphrases can be found in M. Steinschneider (1960). A "free" summary of Philoponus' commentary of books III–VII of the *Physics* (and to a very limited extent book VIII) were attached to Isḥaq ibn Ḥunayn's translation of this work under the name "Yaḥyā"; see MS Leiden Warner 583, which has been edited by ʿA. Badawī in Aristotle (1964/65). G. Endress (1977) suggested that "Yaḥyā" refers to John Philoponus, and this suggestion has been systematically borne out by E. Giannakis (1992) and P. Lettinck (1994). Lettinck has translated the Arabic Philoponus in Philoponus (1994). Although Simplicius' great commentary on the *Physics* is still a rich source for understanding various debates generated by Aristotle's *Physics* in the late antique period, it does not seem to have been available in Arabic; see H. Gätje (1982).

[3] Alexander's and Themistius' positions, along with Simplicius' own views, are recorded in Simplicius' commentary on *Physics* VI, 4 (*In phys. ad* 234b10–20, 968, 1–969, 24); and Philoponus' commentary *ad* 234b10–20, 649, 24–650, 4.

[4] I have not had a chance to check whether Arab philosophers, such as al-Kindī or al-Fārābī, address this issue and so will have to leave open the possibility that Ibn Sīnā's position may not be original.

[5] *Aš-Šifāʾ: aṭ-Ṭabīʿiyāt, as-Samāʿ aṭ-ṭabīʿī* (1983), 98.5–101.7; henceforth, *as-Samāʿ aṭ-ṭabīʿī*. *Dufʿa* is probably the Arabic equivalent of the Greek ἀθρόος; see Aristotle's *Physics* I 2, 186a15.

[6] See *Physics*, VI 4 and 5.

different answers to the question. For example, on the one hand, at *Physics* VI 5, Aristotle argues for the thesis that whatever has changed has done so in an indivisible now. This argument can be, and indeed was, extended—admittedly in a way that Aristotle does not—to show that at least substantial changes must occur all at once. On the other hand, at *Physics* VI 6, he argues that whatever has changed was changing earlier and this argument seems to apply to all types of change, including substantial change, and so it suggests that all changes, including substantial changes, are gradual.

In the following study I briefly consider these two passages in Aristotle and their accompanying arguments both for and against instantaneous substantial change. Next, I examine in detail Ibn Sīnā's own position and arguments, especially his treatment of what appears to be falsifying empirical evidence contrary to his thesis. I conclude with a suggestion as to how Ibn Sīnā might have reconciled his own position with the apparent opposing argument of Aristotle's *Physics*. The suggestion I offer is that Ibn Sīnā has an incipient notion of a mathematical limit that he successfully applies to physical problems.

<div style="text-align:center">I</div>

At *Physics* V 1, Aristotle distinguishes between change in general and motion taken in the strict sense. Change in general (μεταβολή), Aristotle tells us, is found in the categories of substance, quantity, quality and place, while motion in the strict sense (κίνησις) belongs only to the categories of quantity, quality and place. The reason for this distinction is that motion in the strict sense is always between two contrary poles, for example, completeness and incompleteness in the category of quantity, or black and white in the category of quality, or up and down in the category of place. In contrast, substances have no contraries, a thesis that Aristotle had argued for in the *Categories* and reasserts in the *Physics*.[7] Consequently, since motion in the strict sense is always a transformation between contrary poles, and yet substances have no contrary poles, change of substance cannot properly speaking be a type of motion and so is only a change in general.

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[7] *Cat.*, 5.

Bearing this distinction in mind, let us turn to *Physics* VI 5 and consider how the argument there might suggest that substantial change occurs all at once.

> It also is evident that that which comes to be, when it has come to be, will be, and likewise, that which ceases to be will not be. For [this conclusion] is said universally of all changes (περὶ πάσης μεταβολῆς), but most clearly in the case of contradictories. It is clear, therefore, that that which has changed, when it first has changed, is in that [to which it has changed], but that in which that which has changed first changed is necessarily indivisible (235b27–33).

"Indivisible" (ἄτομον) at the end of the passage could mean either an indivisible interval of time or an instant. Since Aristotle had argued against the possibility of indivisible intervals or stretches of time at *Physics* VI 3, it is safe to think that "indivisible" here means an instant.[8] Thus this passage implies that when something has changed from one state to a different state, whether in the category of substance, quantity, quality or place, it acquired its new state at an instant. Or in Norman Kretzmann's summation of the passage: "The acquisition of any designated changed state takes place instantaneously (235b31 ff.), and so each temporal limit must be identified with some instant."[9]

Since substances have no contraries according to Aristotle, then *a fortiori* they have no intermediary contraries, e.g., as gray is intermediate between black and white. Consequently, whenever a substance has changed and so acquired some designated changed state, in this case a new species form, the change on this analysis would take place instantaneously. For example, if one substance A changed to B, the change would not involve the gradual transformation into intermediary states between A and B, since substances do not have intermediary contraries. Thus, the mutation from A to B would be all at once or instantaneously. Again, let me be clear that Aristotle himself does not draw this inference, but Ibn Sīnā will and indeed he will present an even stronger argument for this conclusion.

This would be all there is to say except that in the immediately succeeding chapter (*Phys.* VI 6), Aristotle presents an argument that

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[8] This reading is reaffirmed by both Simplicius and Philoponus in their commentaries on this passage. See Simplicius' *in Phys.*, 982, 3–6; and Philoponus' *in Phys.*, 672, 2.

[9] Kretzmann (1976), 102.

suggests that all changes take some period of time and so occur gradually.

> Not only is it necessary for that which is changing to have changed, but also it is necessary for that which has changed to have been changing before; for that which has changed from something to something else did so in time. For let a thing which has changed from A to B be at an instant (ἐν τῷ νῦν). Then it has not made the change at the same instant at which it exists at A, for otherwise it would be at A and at B simultaneously (ἅμα); for that which has changed, when it has changed, was shown earlier not to be at that [from which it has changed]. And if it has made the change at another instant, there will be time between [the two instants], for, as shown earlier, instants are not contiguous.[10] So since it has changed in an interval of time and every interval of time is divisible, in half that interval it must have made another change, and in half of that half it must have made still another change and this is always so; hence, the thing must have been changing before (237a17–28).

The argument relies on Aristotle's earlier analysis of the nature of time at *Physics* IV 11. There Aristotle argued that time is a continuous interval (μεταζύ) limited by nows or instants (τὰ νῦν). For Aristotle all magnitudes, which includes time, are continuous and so dense.[11] Consequently, no two points on a continuum are immediately adjacent to one another; rather, between any two points there is always a potentially infinite array of other points. Thus, between any two instants, i.e., temporal points, there is always some interval of time.

In a substantial change, then, there is the transformation from a substance of kind A to a new kind B. Clearly, at any instant that the substance is of kind A it cannot simultaneously be a substance of kind B. For since to be a substance of kind A is not to be a substance of kind B, if something were simultaneously both of kind A and kind B, then it would simultaneously both be and not be the same thing, which is clearly a contradiction. Hence, any instant when there is a substance of kind A is different from any instant when there is a substance of kind B. We know from Aristotle's analysis of time, however, that any supposed last instant of being substance A cannot be adjacent to some supposed first instant of being substance B. Thus, there must be an interval between the two instants and so

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[10] See *Physics*, VI 1, where Aristotle argues generally that no indivisible can be contiguous and VI 3, where he argues that the now or instant (τὸ νῦν) is indivisible.
[11] See *Physics*, VI 1–2.

a time. Consequently, the change takes time and so is gradual. Thus Richard Sorabji ascribes to Aristotle that:

> in all four kinds of change [that is, whether in the category of substance, quantity, quality or place], [Aristotle] thinks that there is a gradual process of transition. Qualitative change, such as change of colour, is said to take time. Change to a new place or size involves passing through intervening points. The creation of something like a house takes time, and occurs part by part, the foundation before the whole.[12]

Substantial change, so the argument suggests, is a gradual process.

Again, we should qualify this conclusion. Aristotle in this chapter goes back and forth indiscriminately between μεταβολή and κίνησις. Thus, it is possible that this argument came before Aristotle distinguished between change in general and motion in the strict sense. If that were so, though, then given the fundamental difference between substantial change and the other motions, viz. the latter is between contrary poles, while the former is not, his considered opinion whether all changes require time may have been different.

Moreover, even in certain passages (237a11–17) where he uses μεταβολή and its derivatives rather than κίνησις and its derivatives, he seems to have in mind something that changes continuously or gradually (τὸ συνεχῶς μεταβάλλον). Thus the argument may not be intended to show that *all* changes are gradually, but only that there cannot be motion or gradual change at an instant. Obviously, such a thesis would be compatible with the claim that non-gradual changes are instantaneous.

Finally, Aristotle's example of the purported gradual generation of a substance, which Sorabji mentions, is ambiguous. The passage runs:

> Therefore it is apparent that both what is coming to be must come to be before and that which is coming to be must have come to be, in as much as they are continuous and divisible. Yet it is not always that which is coming to be [for which this claim is true]; rather, sometimes it is something else. For example, some [part] of that latter thing, such as the foundation of the house (237b913).

The example seems to allow that the gradual coming to be of a substance might be explained simply through the successive coming to be of its parts. In this case, however, the coming to be of the

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[12] Richard Sorabji (1983), 410.

actual substance itself, as opposed to merely its parts, might come
to be all at once with the coming to be of its last part, or when the
disparate parts are informed by an organizing structure, i.e., a form,
that unifies and coordinates their activities. Indeed, this is the inter-
pretation that John Philoponus suggests in his commentary on this
passage.

> He means by that [example] that when that which comes to be has
> come to be, then it was not [necessarily] the case that that thing into
> which it has changed has come to be and was completed; rather, it
> might be something other than it. For example, that which will come
> to be a human was before, while it still was not a human; rather, it
> is flesh or some other thing that is not human. Similarly, the saying
> concerning the coming to be of the house that it has come to be from
> its foundation, and before the whole foundation [came to be] one of
> its parts after another [came to be] (692.10–15).

Of the great later Greek commentaries on the *Physics* Philoponus'
was available in Arabic and almost certainly known by Ibn Sīnā.
Consequently, although Philoponus does not explicitly argue that
substantial changes occur all at once, his gloss on Aristotle's example
is conducive to such an interpretation and most likely influenced Ibn
Sīnā's own reading of this passage.

Again my purpose here is not to adjudicate between whether
Aristotle believed that substances change all at once or gradually,
but simply to observe that the question is both textually and philosoph-
ically open. Also, I would like to reiterate that neither Aristotle nor
his later Greek commentators, as far as I can see, explicitly ask the
question nor implicitly provide a decisive answer to the question.

II

Ibn Sīnā, in contrast, both explicitly raises and answers the ques-
tion. At II.3 of the *Physics* of his *Šifāʾ* Ibn Sīnā decidedly affirms
that substantial change occurs all at once (*dufʿa*) and presents impres-
sive arguments for this thesis. Moreover, he explains away what ini-
tially appears to be an empirically falsifying counter example to his
thesis. The difficulty that remains, and is not explicitly handled by
Ibn Sīnā, is the argument of Aristotle's *Physics* VI 6, which seems
to imply that all changes, including substantial changes, must be
gradual. Fortunately, based on arguments made both earlier and

later in Ibn Sīnā's *Physics* one can reconstruct a possible Avicennan response to the challenge.

Ibn Sīnā's arguments that substantial change must occur all at once are found within the broader context of identifying the categories to which motion belongs. Motion only belongs metaphorically to the category of substance, Ibn Sīnā tell us. For motion is gradual, but "when the substantial nature is corrupted, then it is corrupted all at once and when it is generated, then it is generated all at once" (*as-Samā' aṭ-ṭabī'ī*, II.3, 98.10–11). The proof Ibn Sīnā gives for this conclusion is similar to the one already suggested above. Between the mere potentiality of being a certain substance and actually being that substance there is no intermediary. Substantial forms do not undergo intensification (*ištidād*) or diminishing (*tanaqquṣ*). That is to say, with respect to any given substance there are not degrees of "substancehood." For example, among humans there are not some humans who are "more" human and others who are "less" human. All humans are identical in their humanity. Being a substance of a certain kind, then, is an all or nothing affair. Consequently, when one substance changes into another, it does not do so by becoming less and less of one type of substance, while becoming more and more like another. It simply changes all at once.

Ibn Sīnā is not content merely to assert that substances have no intermediary. Thus he advances an argument for this thesis.

> If [substantial forms] allowed of intensification and diminishing, then either (1) the species of the substance, when it is in the middle of the intensification or diminishing, would remain or (2) it would not remain. On the one hand, if its species remained, then the substantial form would not change at all; rather, only an accident due to the form would change. Thus, that which is diminishing or intensified [namely, an accident] has ceased to be (*'adima*), but the substance has not ceased to be. This, however, is a case of alteration or the like, but not generation [that is, substantial change]. On the other hand, if the substance does not remain with the intensification, then the intensification has brought forth another [new] substance. And likewise for any instant one posits during the intensification another [new] substance would come to be, when the first has corrupted (*baṭala*). Now between a substance and a substance there would be a potentially infinite [number of] substantial species [forms], just as with qualities.[13] But one already knows

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[13] Reading a full stop after *baṭala* for Zāyed's comma and then no period after *ǧawhar*.

> that this is contrary to fact. Thus, the substantial form, then, [both] corrupts and comes to be all at once (as-Samāʿ aṭ-ṭabīʿī, II.3, 98.12–18).

The argument is fairly straightforward. If a substance were to change gradually, then during the change either the species form remains or it does not remain. If the species form itself remains during the transformation (or any part of the transformation), the same specific substance remains, and only an accident belonging to the substance has changed. For example, grass clippings change from green to brown during their decomposition to soil, but this change is not a substantial change, but merely an alteration of a perduring substance.

In contrast, if the substantial form were to change gradually, then the change would take some time, but at any instant during the change there would necessarily be some new substantial form. Since for Ibn Sīnā, as well as for Aristotle, time is continuous, that is to say, it is potentially divisible *ad infinitum*, then during the purported gradual change of a substance at any of the potentially infinite number of instants during the transformation there would necessarily be a new substance. Consequently, during a purported gradual substantial change from a substance of kind A to a substance of kind B, there would be a potentially infinite number of substances different from either kind A or B that have come to be. Although Ibn Sīnā claims that such a change is possible with respect to quality, he thinks that one should already know that such cannot be the case with respect to substantial forms.

The question that one can raise is "what principled reason does Ibn Sīnā have for permitting a potentially infinite number of states with respect to quality, but not with respect to substantial forms?" Ibn Sīnā's next argument for his thesis that substantial changes occur all at once seems to have this question in mind. Ibn Sīnā, like Aristotle before him, quite reasonably demands that there is no such thing as abstract motion independent of concrete determinate things.[14] Thus, in the case of qualitative change, there is always the underlying substance that can be the subject of the potentially infinite number of qualitative predicates or accidental forms. If there were substantial motion (al-ḥaraka al-ǧawharīya), then likewise there would have to be an underlying subject of the various substantial forms;

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[14] *As-Samāʿ aṭ-ṭabīʿī*, II.3, 99.2–3; also see Aristotle's *Physics*, III 1.

however, this subject would already have to be a substance. If this substance is the initial substance, then during the supposed substantial motion there is only change of accidental states, but not a change of the substantial form (*aṣ-ṣūra al-ğawharīya*). If the substance is some supposed intermediate substance, then one of two scenarios follows. One, during the entire time of the supposed gradual transformation, the intermediate substance remains and then all at once changes into the final substance, in which case the change was not really gradual at all, but occurred all at once. Or two, for part of the time of the supposed transformation, there is the intermediate substance and for part of the time there is the final substance. In this case, though, the change from the intermediate substance to the final substance has not required a second intermediate substance. Thus, there is no principled reason why the change from the first substance to the final substance could not take place without an intermediary.

Returning to our initial question, then, there is a principled distinction between substantial and qualitative changes. In every qualitative change there is a concrete determinant thing that underlies the gradual change and can be the subject of various different qualitative forms. In contrast, when there is substantial change, no underlying determinate subject persists throughout the change that could be the subject of a gradual change. Since there cannot be gradual change without an underlying concrete thing, substantial change must take place all at once.

One might maintain that prime matter, or *hayūlá*, might underlie the gradual change of a substance, but this suggestion fails to grasp the nature of Avicennan *hayūlá*. Ibn Sīnā treats the nature of prime matter in the first treatise of the *Physics* of the *Šifā'*.

> Let it also be laid down that this which is the matter is never stripped of form, positively subsisting on its own. It is not something existing in act, unless the form is there so that through [the form] it exists in act. And the form which departs from [the matter], were it not the case that its departure occurs only with the appearance of another form that replaces it and takes its place, then the matter would actually cease to be. This matter from the point of view that it is in potency to receiving a form or forms is called "prime matter" (*hayūlá*) (*as-Samā' aṭ-ṭabī'ī*, I.2, 14.12–15).

Although Ibn Sīnā suggests that prime matter of its very nature does possess the form of corporeality (*aṣ-ṣūra al-ğismīya*), he is also clear that prime matter considered in itself is indeterminate with respect

to concrete existence.[15] What gives prime matter any determinate existence is the species form that it (contingently) possesses, but no specific species form is inherent in prime matter. If prime matter were ever without a determining species form, then it would simply cease to exist.

Bearing this understanding of prime matter in mind, it is clear why Ibn Sīnā argues that prime matter cannot underlie a gradual transformation of one substance to another substance.[16] All motion takes place with respect to some concrete, determinant object, which persists throughout the change. Prime matter, however, is only determinate insofar as it possesses a given species form. Consequently, prime matter could not play the role of a persisting concrete subject of gradual substantial change, that is to say, a change involving the replacement of one species form for another. For in order to persist prime matter would need a persisting species form, but it is just the species form that does *not* persist throughout a substantial change. Substantial change, then, Ibn Sīnā unequivocally holds, must occur all at once.

III

This would be all there is to say, if it were not the case that Ibn Sīnā's position seems to be at odds with what one actually observes. Ibn Sīnā himself sets the empirical case against his position. "Since it is seen that the sperm develops into an animal gradually and that the seed develops into a plant gradually, it is imagined on account of these [observations] that there is motion [i.e., gradual substantial change]" (*as-Samā' aṭ-ṭabī'ī*, II.3, 101.1).

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[15] *As-Samā' aṭ-ṭabī'ī*, I.2, 14.10. Also see A. Hyman (1977); and McGinnis (forthcoming).

[16] Ibn Sīnā's proof appears indebted to arguments already present in Philoponus' commentary, albeit in a different context. Thus, at 506, 20–23 Philoponus argues:

First, the moving thing must be something existing, but prime matter which changes and receives the form is not something existing in the absolute sense, since it is neither a perfection nor is it in act. But if it is not a perfection, then it cannot be perfected, whereas motion is a certain perfection. Hence, then, it does not belong to matter that it be moved.

Here, however, the argument is intended to show the distinction between motion in the strict sense and generation. Also see Philoponus' comments at 526, 17–23.

Traditionally, the rational, one might even say *a priori*, elements of Ibn Sīnā's epistemology have been emphasized to the exclusion of the empirical.[17] Consequently, one might think that for Ibn Sīnā a "metaphysically sound argument" trumps mere observation. One would be wrong. At least with respect to the natural sciences Ibn Sīnā was an empiricist. In II.9 of his *Kitāb al-Burhān* (*Book of Demonstration*) he emphasizes the role of experience (*taǧriba*) in arriving at scientific theories. Theories in the natural sciences, of which physics is certainly one, are made against the backdrop of multiple observations and might need to be re-evaluated in the light of new observations.[18] Thus, when a metaphysical argument is proffered in the natural sciences it must line up with empirical observations.

Still, Ibn Sīnā was no naïve empiricist. One must carefully examine, test and analyze the data. One must investigate whether there are any non-immediately perceptible factors that might be contributing to the observation. In short, one must approach the observations as a scientist and not merely as a lay person. Consequently, if the observation of the apparently gradual transformation of semen into an animal truly is to count against Ibn Sīnā's thesis, then this observation must be confirmed by the science of embryology.[19]

Ibn Sīnā was not only an outstanding philosopher, but also an accomplished physician and biologist. So it should come as no surprise that in his major biological work, *Kitāb al-Ḥayawān* (*The Book of Animals*), he dedicates an entire section to embryology.[20] The proper account of embryonic development, so claims Ibn Sīnā, is what one might call "punctuated equilibrium" (with apologies to Stephen Gould). Once the observations about the sperm's development have been properly, scientifically scrutinized, Ibn Sīnā argues that they actually confirm rather than falsify his thesis about substantial change.

This claim is subsequently borne out in *Kitāb al-Ḥayawān*:

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[17] This trend, I am happy to say, is changing. See Dag Hasse (2001) for a careful discussion of the role of particulars, that is, empirically perceptible objects, in the philosophy of Ibn Sīnā.

[18] See McGinnis (2003).

[19] Ibn Sīnā's argument will be much like that of Philoponus' gloss of *Physics* 237b9–13 seen above, although Ibn Sīnā develops his own account significantly beyond Philoponus' comments.

[20] *Aš-Šifāʾ: aṭ-Ṭabīʿiyāt, al-Ḥayawān* (1970), IX.5. Also see Remke Kruk (2002), §5, where she touches on the chapter discussed below; and Basim Musallam (1990), 33–34.

> Concerning an analysis of the alterations of the matter of the fetus up to its completion, the first state is the churning (*zabadīya*) of the semen, which is the actuality of the formal power. The next state is the manifestation of the drop of blood in the uterine wall, and its continued dilation in the uterine wall [or endometrium]. The third state is the alteration of the semen into the embryo [lit. "blood clot," *ʿalaqa*] and after [this alteration], its alteration into the fetus.[21] Afterwards is its alteration leading to the generation of the heart and primary organs, as well as its blood vessels, which is followed by the generation of the extremities [or limbs]. And for each alteration, or two together, there is a period of time where [the developing thing] remains at rest in [that state] (*al-Ḥayawān*, IX.5, 172.3–8).

Although it would be difficult to map Ibn Sīnā's descriptive account of embryonic development point for point against our current knowledge of it, his observations do roughly approximate what modern embryologists now believe, especially if we limit ourselves to naked eye observations. So setting aside the details, what is significant for our purpose is the stages of the development. First, there is the initial substance, the semen (*minan*), which remains for a while, and then all at once a new substance appears, namely, the embryo (or blood clot, *ʿalaqa*).[22] Similarly again, after a while the embryo is replaced by a new substance that comes to be all at once, in this case, the fetus (*muḍġa*). This state is followed by the generation of the various organs and limbs. Finally, the perfected animal itself comes to be, which is yet a different substance. The change from semen to animal, thus, takes place through a series of discrete substantial changes, not a continuously gradual process.

Unfortunately, Ibn Sīnā's language in this passage can be misleading. He speaks of "alteration" (*istiḥāla*), which is the standard Arabic term for change with respect to quality and thus implies gradual change. Indeed, as we shall see below, Ibn Sīnā does believe that during each state there are a number of gradual qualitative

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[21] Or perhaps Ibn Sīnā has in mind the *neurula* stage of the embryo.

[22] Ibn Sīnā's example obviously relies on an ancient and medieval theory of biology. Since early biologists were unaware of the female's egg, it was believed, at least by Aristotle, that the woman's input in prenatal development was to provide the nourishment for the man's seed via her menstrual blood. Consequently, these biologists did not realize that it was the man's sperm and the woman's egg, two distinct substances, that came together to form a new substance, the zygote; rather, they thought it was only the man's sperm that became a human, albeit significantly affected by the nourishment it received from the woman's menstrual blood.

changes; nevertheless, the transformation from state to state is not gradual, but punctuated. Later in *Kitāb al-Ḥayawān* he states explicitly that the transformation from state to state involves discrete "leaps," which we shall discuss more fully in the sequel.

The passage where he clarifies this point is made within the context of addressing the question "Do females produce an equivalent to male semen and if so what role does female semen play in procreation?" Aristotle had argued that the female's role in procreation was wholly passive. The female merely provides the matter for procreation, namely, the nutritive menstrual blood. Ibn Sīnā, following Galen with certain important modifications, argues that in fact the female does produce something akin to semen. Although the female semen does not possesses a generative power in the way male semen does, it nonetheless does possess a power by which it affects the menstrual blood's receptivity to the formative power of the male semen. The female semen imparts to the matter, that is, the menstrual blood, varying degrees of determinateness, which the male semen in turn structures or organizes, and so gives an even greater degree of determinateness. The stronger the influence of the female semen on the matter, however, the greater the degree of determinateness of the matter. Thus the male semen will have less opportunities to structure or organize the matter, and vice versa, the male semen has more opportunities the lesser the power of the female semen.

We might suggest an example that, though not found in Ibn Sīnā, hopefully will clarify this point. Clay is receptive to a number of different shapes or forms that the craftsman can impose upon it; however, if the clay is exposed to the sun, then to the degree that the sun affects the clay and so hardens it, the clay becomes less pliable and so becomes less receptive to the number of forms that the craftsman can impose upon it. In our example, the clay would correspond with the menstrual blood or matter; the craftsman and the forms he imposes upon the clay correspond with the male semen and its formative power; and the sun's power to dry clay corresponds with the female semen's power to affect or determine the menstrual blood. It should be noted that the sun does not actively structure or impose form upon the clay, although it does positively affect the clay. Similarly, neither does the female semen actively inform or structure the menstrual blood, although it does actively affect it.

This lengthy prelude is necessary to understand Ibn Sīnā's next point, which is directly relevant to our issue, namely, that embryonic development involves discrete, non-gradual transformations. Here Ibn Sīnā is concerned with the interplay of the male and female semen on the matter and particularly the various stages where the matter either resists or is inclined towards the structuring or organizing of the male semen's formative power.

> These individual resistances and inclinations [of the matter] are not unmixed [i.e., they are not gradual], but are punctuated (*iḫtilāǧīya*, literally "jerky"), as if each one of them were composed of motions; however, they are not completed except upon a number of convulsions (jerks). Indeed, it is perceived that after each group of convulsions there is a certain [period of] rest (*al-Ḥayawān*, 176.17–19).

As I understand Ibn Sīnā's intent in this passage, the matter undergoes several stages of preparation such that it is in varying degrees of receptivity to a form. The transformation from one stage to the next, however, does not occur gradually, but in discrete or punctuated leaps (*iḫtilāǧāt*).

Indeed, this reading is confirmed if we return to the passage in the *Physics* that initiated our discussion.

> What one must know is that up to the point that the semen develops into an animal, other developments befall [the semen] and between [these other developments] there are continuous alterations with respect to quality and quantity. Thus the semen is still being altered gradually, though it is still semen up to the point that the seminal form is displaced and it becomes an embryo (blood clot, *ʿalaqa*). And likewise is [the embryo's] state up to the point that it is altered into a fetus and after it bones, a nervous system, veins and other things that we shall not mention. And [the development goes on] like this up to the point that [the developing thing] receives the form of life. Thereupon, it is altered and changed like this [that is, in stages] until it becomes viable and then is separated [from the parent]. Someone perceiving the transformation, however, imagines that this is a single process from one substantial form to another substantial form, and from that [perception] supposes that with respect to substance there is a motion. That is not the case; rather, there are many motions and rests (*as-Samāʿ aṭ-ṭabīʿī*, 101.2–7).

At each stage in the embryonic development there are numerous accidental changes that do occur gradually. For instance, there may be changes in the bulk or shape of the substance. Similarly, there may be changes in the hotness or coolness or dryness or dampness

of the substances.[23] All of these changes as it were prepare or ready the matter of the currently existing substance so that the matter can take on a new substantial form. Once a sufficient number of gradual accidental changes has occurred in the matter, then the matter is capable of receiving a new substantial form all at once. The stages continue in this fashion until the developing thing receives its ultimate substantial form. Thus far from undermining Ibn Sīnā's philosophical thesis, the development of the embryo, when carefully examined and understood in its proper scientific context, actually supports it.

IV

One difficulty remains. As we have seen at *Physics*, VI 6, Aristotle provided an argument that at least seems to imply that all changes must occur gradually. The argument again briefly is this. If something were to change from A to B all at once, and so not gradually, then one of two things would seem to follow. One, the last instant of being A would be immediately adjacent to the first instant of being B; however, if time is continuous, as both Aristotle and Ibn Sīnā believe, then no two instants can ever be immediately adjacent. Thus, the suggestion of instantaneous substantial change seems incompatible with another deeply embedded philosophical thesis. Or, two, if something were to change from A to B all at once, and so not gradually, then, the change would occur at either the last instant

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[23] The contrary sets of hot/cold and wet/dry were the most basic "constitutive forces" or "powers" in both ancient elemental theory and medicine. Both humors and elements were ultimately defined in terms of the relative proportions of these basic powers. For example, the element fire and the humor yellow bile involved a preponderance of hot and dry; air and blood a preponderance of hot and wet; earth and black bile a preponderance of dry and cold; and finally water and phlegm a preponderance of wet and cold. Thus, for instance, if the substance water were heated, then at some point, when there is a greater preponderance of heat than cold, the water becomes the new substance air (we would say steam). This example exactly fits Ibn Sīnā's account. A gradual accidental change or alteration of a quality of the water, namely, its temperature, leads ultimately to a substantial change. The substantial change, however, occurs all at once and only the accidental change in temperature occurs gradually. One would not say that when cold water becomes tepid, it has become any less water. It only ceases to be water, when it becomes steam and this change, according to Ibn Sīnā, is instantaneous.

that the changing thing is A or the first instant that it is B. If A changes into B at the last instant that it is A, then at one and the same instant it is simultaneously A and B, and *mutatis mutandis* if A changes into B at the first moment it is B. Thus this suggestion seems to entail a contradiction. In either case, instantaneous change is philosophically problematic.

Ibn Sīnā does not explicitly address this problem in the present chapter of the *Šifāʾ*. Fortunately, based upon what he has said in an earlier chapter of the *Physics* of the *Šifāʾ* as well as in a subsequent chapter, one can reconstruct what his response might have been.[24] In II.1 of the *Physics* Ibn Sīnā makes the quite remarkable claim, especially for a medieval Aristotelian, that motion is possible in an instant.[25]

> [The form of motion found in the moving thing] is its intermediate state when it is neither in the first limit of the spatial interval nor actually existing at its end. Rather, [the moving thing] is in an intermediate point (*ḥadd*) in such a way that it does not exist as something fully realized at that point, nor [as something fully realized] in one of the instants (*ān min al-ānāt*) which occurs during the duration of its emergence into act, but its fully being realized at any moment (*waqt*) you posit is as something traversing (*qāṭiʿ*) some spatial magnitude (*masāfa*), while it is still in that traversal. This is the form of motion found in the moving thing, i.e., an intermediateness between the posited starting point (*mabdaʾ*) and the end so that, unlike the two points of the two termini (*ḥaddi ṭarafayni*), any point (*ḥadd*) in which [the moving thing] is posited neither its before nor its after is found in it (*as-Samāʿ aṭ-ṭabīʿī*, II.1, 84.10–14).

Ibn Sīnā is here considering the moving thing only insofar as it is at, or passes through, an intermediate point. Since points do not have extremities, the motion at, or through, an intermediate point cannot have a "before" and "after." For if the object had a before

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[24] These are *as-Samāʿ aṭ-ṭabīʿī*, II.1 and II.12. The first has been translated and commented by Ahmad Hasnawi (2001), and I have translated the latter in McGinnis (1999). As Hasnawi has rightly noted (Hasnawi (2001), footnote 47) my commentary of II.12 does not adequately take into consideration Ibn Sīnā's dual notion of motion articulated by Ibn Sīnā at II.1.

[25] See Hasnawi (2001), 234–235. Hasnawi's analysis of this thesis rests on a distinction Ibn Sīnā makes between mental and extra-mental motion (II.1, 83.18–84.17). My analysis, which I do not believe is incompatible with Hasnawi's, exploits Ibn Sīnā's notion of a limit (*ṭaraf*) sketched in II.1 and then more fully developed at II.12.

and after state at the intermediate point, then in fact it would be at rest at that point for the increment of time between these two states. In other words, then, there is not some temporal point when the moving object has come to be at some intermediate spatial point and then some different temporal point when it has ceased to be at that same intermediate spatial point. Roughly speaking, then, the moving thing is not at an intermediate point for more than an instant, and so it does not remain at rest at that point, nor is the instant some minimal atomic unit of time since it has no positive magnitude. Therefore, the moving thing is literally in motion at that point for only an instant, where "being in motion at a point" signifies being at an intermediate limit (*ṭaraf*).

The challenge for Ibn Sīnā, as well as us as his interpreters, is to make sense of the notion of a limit and thus motion at a limit. The challenge is all the more difficult since "limit" here seems to refer to an instant, which is not a period of time, while motion seems to require some period of time during which a certain interval is covered. The needed explanation, I believe, can be found at *Physics* II.12, where Ibn Sīnā explains different senses of "non-gradual."

It is natural to think that the opposite of occurring gradually is to occur all at once in the sense of in an instant. Ibn Sīnā, however, points out that this is a false dichotomy (*as-Samāʿ aṭ-ṭabīʿī*, II.12, 161.12–162.14). The logical opposite of "gradual" is not "all at once," but "not gradual." "All at once," or the Arabic *dufʿa*, Ibn Sīnā indicates can be understood in two distinct ways, both of which mean non-gradual, but entail different philosophical commitments.

> We say that the nonexistent or existent happening "all at once," in the sense of occurring in a single instant (*ān*), is not necessarily the opposite of what either gradually (*qalīlan qalīlan*) ceases to be or comes to be; rather, it is more specific than that opposite. [The opposite of what comes to be gradually] is what does *not* go gradually to existence or nonexistence. . . . This holds true of (1) what occurs "all at once" [in the sense of occurring in a single instant]; but it also holds true of (2a) the thing which is non-existing in all of a certain time, but is existing in [time's] limit (*ṭaraf*), which is not time, or (2b) the thing which is existing in all of a certain time but is not existing in [time's] limit which is not in time. For indeed it is not the case that these [last] two exist or not exist gradually . . . (*as-Samāʿ aṭ-ṭabīʿī*, II.12, 161.14–162.1).

On the one hand, if one takes *dufʿa* in the first sense, as occurring in a single instant, Ibn Sīnā tells us, one is committed to treating

the instant like a period of time (162.2). Just as one period of time immediately follows another period of time, so one instant would immediately follow or be adjacent to another instant. In short, one treats the instant as if it were a minimal duration of time, or a time atom, and so is committed to a type of temporal atomism, a position that Ibn Sīnā explicitly denies.[26]

On the other hand, if one takes *dufʿa* in the second sense, one treats the present instant as time's limit (*ṭaraf*). In this sense, no two instants are ever immediately adjacent to one another, nor does the instant have an inherent positive magnitude, i.e., it is not some smallest increment of time capable of existing. Thus, if one takes some instant *t* as a limit, then for any other instant *t′*, no matter how close one wants to take *t′* to *t*, then there is another instant *t″* that is not identical with *t*, but is closer to *t* than *t′*. Since this same analysis will be true of *t″*, *t‴* and so on, one can get indefinitely close to *t* without actually being at *t*. Given this interpretation of Ibn Sīnā's text, I want to suggest that Ibn Sīnā has a notion of a limit that is closely akin to our modern mathematical notion of limit.

Moreover, if Ibn Sīnā does have a mathematical notion of a limit, then it is relatively easy to see how he can make sense of motion at an instant, where an instant is considered a limit. Motion at an instant just involves motion at indefinitely decreasing increments of time. At the limit there will indeed be motion at an instant.

One can now see how Ibn Sīnā might make sense of a substantial change's occurring all at once or at an instant. Let some limit point *t* be the dividing point between two consecutive states, where one state involves the period where there is a substance of kind A and the other state the period where there is a substance of kind B. Also, let *t* be the first instant where we have the new substance of kind B. Consequently, given the suggested analysis of an Avicennan limit, then for any instant prior to *t*, no matter how close to *t* one cares to chose, the substance is still A. One can get arbitrarily close to *t* and there is still substance A, but at *t* itself, there is the new substance B. There is no gradual process of changing from A to B here, and there is no instant where one has a substance of both kind A and kind B. Moreover, on this analysis the substance has not changed in an instant such that the change entails an atomic con-

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[26] See *as-Samāʿ aṭ-ṭabīʿī*, II.11, 159.9–16.

ception of time. The substance has changed at an instant in the sense of at time's limit.

Clearly more can and should be said about Ibn Sīnā's conception of a *ṭaraf*, or a limit. I suggested that there are certain affinities between Ibn Sīnā's notion of *ṭaraf* and the modern mathematical idea of a limit; however, the evidence for such a thesis is as of yet far from conclusive. Consequently, I shall merely claim that the above reconstruction is a possible Avicennan account of the instant of change, and that more research must be done before one could even begin to give a definitive answer. Still, I hope that these brief comments suggest both that Ibn Sīnā had the resources to respond to the challenge and how he might have answered the objection.

I conclude by way of summary. The question of whether substantial change occurs all at once or gradually appears to have its source in Aristotle's *Physics*. Aristotle himself, however, never explicitly raises the question. Moreover, it is not clear what Aristotle's answer might have been. Indeed, Aristotle's text lends itself to two mutually exclusive answers to this question. Ibn Sīnā explicitly raises the question and unqualifiedly asserts that substantial change must occur all at once. This thesis not only stands up to rigorous philosophical scrutiny, but also best explains our empirical observations concerning substantial change, albeit once these observations are understood within their proper scientific context. Finally, Ibn Sīnā's analysis of a limit may well be an untold chapter in the history of the calculus that has yet to be written.

INTELLECT, SOUL AND BODY IN IBN SĪNĀ: SYSTEMATIC SYNTHESIS AND DEVELOPMENT OF THE ARISTOTELIAN, NEOPLATONIC AND GALENIC THEORIES

Robert E. Hall

The writings of Ibn Sīnā (Latin, Avicenna, 980–1037) presented the best-unified general system of thought in Western traditions up to his time and probably in any tradition; certainly so, if one takes into account only systems that included natural science. One of the most striking attributes of his corpus is the importance of encyclopedic works and self-standing expositions of fields and topics, as opposed to commentaries; that fact is surely explained by Ibn Sīnā's high valuation of system, i.e., of ordered completeness.

More tightly integrated and better organized than Aristotle's, Ibn Sīnā's systematizing embraces medicine, which Aristotle's did not, although it is worth noting that Aristotle had intended to write an account of medicine. *Kitāb aš-Šifāʾ* (*The Book of the Cure*), Ibn Sīnā's most important encyclopedic work, covers logic, physics and metaphysics and also the four mathematical disciplines of the *quadrivium*, whereas Aristotle only makes passing remarks about mathematics. Still, those mathematical disciplines are not well-integrated into Ibn Sīnā's philosophy as a whole, and I shall not consider them. Unlike Aristotle, Ibn Sīnā does not write systematic accounts of ethics and political science, although he intended to; but some topics in these areas, especially ones relating to metaphysics, he does take up.

My aim is to probe the remarkable interconnectedness of Ibn Sīnā's thinking. The task of making sense of past thought by close and non-anachronistic analysis of texts and the search for contradictions and inconsistencies, as well as the investigation of the origins and later use of particular concepts, doctrines and methods, should be supplemented by a search for long-range conformities within a thinker's writings, especially unexpected ones. That is certainly the case with Ibn Sīnā, whose systematizing is detailed and

crosses the boundaries of all the scientific and philosophical disci-
plines. Ibn Sīnā immerses himself in Aristotelian, Neoplatonic, Galenic
and Muslim currents and integrates them within his own system in
accordance, as he believes, with the ordered pattern of the celestial
Active Intellect. His system shows the strains of its diverse origins,
and it is impossible to understand his thought well without knowing
the sources of his theories.

An especially large number of important problems that confront
Ibn Sīnā lie within theoretical psychology, and the centrality of psy-
chology within his system is one of its most conspicuous features.
Psychological theory extends from noetics down to faculty psychol-
ogy and to physiological psychology; it connects smoothly with cos-
mology at one end and physiology at the other. It connects also with
astronomy and with a celestial thaumaturgy at the cosmological end;
with epistemology and methodology; with anthropology, in the orig-
inal sense of the theory of the person; with political theory; with
dynamics; with chemistry; and with anatomy and zoology and botany
at the physiological end. Helping to structure and support a very
large part of Ibn Sīnā's philosophy and science, psychological the-
ory is really the spine of the system. Moreover, Ibn Sīnā seems to
find the congruence of other parts of his thought with psychologi-
cal theory to be a prime means of testing them.

Ibn Sīnā's theorizing is grounded in Aristotelianism. In matters
regarding the rational soul/intellect and its individual immortality
and its relationship to the higher world, however, Neoplatonic and
Muslim thought supplement or replace Aristotle. There, psycholog-
ical theory joined to ontology becomes central in religious or reli-
giously sensitive topics, such as human immortality, salvation, Prophecy
and Prophethood, God's knowledge, (veridical and other) dreams and
(inward) prayer. More mundane questions relating to religion and
to theoretical psychology include what kinds of knowledge (ʿilm) are
properly Islamic and what roles there are for the intellectually gifted
believer in an Islamic community. The nature, origin and certainty
of human knowledge are among the large questions of pure philos-
ophy needing attention from theoretical psychology. Physiological/med-
ical concerns of that sort include the relations between soul and body
in cognition and action.

Strains and conflicts are frequent in his writings, the more so as
Ibn Sīnā likes to take over whatever ideas he finds valuable. Some-
times—too often—he aggregates doctrines and theories and integrates

them *ad hoc*. Sometimes—and admirably—he follows out a line of reasoning to a point where it cannot be entirely integrated. Yet the greater part of his synthesizing is done properly and thoroughly from fundamentals. The result of Ibn Sīnā's efforts to produce an inclusive and interlocking system is very successful. Moreover, Ibn Sīnā sets the standards and prepares the way for the later systematic thinkers of the Islamic and Jewish middle ages and helps to do so also for the systematizers in the medieval Christian West.

It is some of the problems in psychological theory that are the focus of the present paper.[1] They enter also into fields outside of psychology that I have mentioned. I take into account primarily the *Šifā'* and the comprehensive medical work *al-Qānūn fī ṭ-ṭibb* (*The Canonical Work on Medicine*), the major writings of Ibn Sīnā's first fully mature period.[2] (I do not go later than that here.) I also give attention to *Kitāb an-Naǧāt*, the famous introductory work written at about the same time and in the same spirit as the *Šifā'*;[3] and to the *Maqāla fī n-Nafs*.[4] I shall present a psychology-centered sketch-map of Ibn Sīnā's systematizing, showing lines of connected thought drawn in terms of problems, concepts and doctrines.

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[1] The "higher" part of the Avicennan system, involving the rational soul, immortality and associated matters of epistemology and ontology, is well known, and I shall not investigate it here. I shall look at some matters in ordinary, and not-so-ordinary, cognition and action and at some aspects of physical cosmology, chemistry and dynamics, although my principal focus is the relation of psychology to physiology. (It is impossible to cover all the point and arguments, but the aim here is different—as I hope I have made clear.) On faculty psychology and noetics, or related, especially metaphysical, parts of Ibn Sīnā's system, see variously: Dimitri Gutas (1988) (with a chronology of writings, which I adopt unless otherwise stated; the work has a helpful orientation towards psychology); Jean R. [Yahya] Michot (1986); Lenn E. Goodman (1992); Fazlur Rahman (1963), 1: 480–506, and Rahman's "Introduction" and "Commentary" to Avicenna, *Kitāb an-Naǧāt* (1952) (partly outdated and exaggerates the possibilities of Stoic influence; but still essential); M. Mahdi (1989), 3: 66–110.

[2] The references to the *Šifā'* will be given below for the individual books as they are cited. Avicenna, *al-Qānūn fī ṭ-ṭibb* (1877).

[3] Avicenna, *Kitāb an-Naǧāt* (1938); English translation of the psychological part by Fazlur Rahman, *Kitāb al-Najāt* (1952).

[4] *Al-Maqāla fī n-Nafs 'alá sunnat al-iḫtiṣār* (1875), 339–372; included in this work is also a German translation by S. Landauer, 373–418.

I

The Active Intellect (*nous poietikos; al-ʿaql al-faʿʿāl*), that complex idea of the intellect that produces the actual intelligibles (the objects of what we call conceptual thinking), was first presented by Aristotle in the overly brief, even cryptic, *De Anima*, III 5. It became, arguably, the most discussed topic in the Aristotelian corpus, and several roles were variously assigned to it over the centuries through the excogitation of Aristotle. According to Ibn Sīnā, the Active Intellect emanates the human soul, which is essentially the rational soul, to the fetus that becomes its particular body. There it emanates its own sub-rational (animal, vegetative) faculties. The Active Intellect is responsible thereafter for human intellection-in-act. Ibn Sīnā considers the human soul an individual substance, and thus it can survive the death of the body. (Allowing the survival of the individual soul is surely Ibn Sīnā's motive—not only because of religious pressures, but because this matters greatly to him himself.) The subrational faculties, which require the body, simply need no longer be actualized. The rational faculty—the human intellect—remains, embedded in an incorporeal and eternal individual substrate, an "ego," the ultimate substrate of personal experience. Ibn Sīnā is a pioneer in arguing for such a substrate, and his basic idea regarding the afterlife is that the intelligibles of the Active Intellect will forever be present to the soul.

In this life cognition and action proceed in an Aristotelian way, but Ibn Sīnā's theory includes important clarifications and extensions. The main addition is an "estimative faculty" (*wahm* or *qūwa wahmīya; vis aestimativa*), which seems to be original with Ibn Sīnā in that he made it a separate faculty with cognitive objects of its own. The *wahm* is one of the "internal senses," the faculties of the sensory part of the soul that lie beyond the external or special senses. The proper objects of the *wahm*, apprehended only by this faculty, are the *maʿānī* (Latin, *intentiones*); they somehow accompany the special sensibles (colors, pitches and the like) or are contained in them, yet differ from them in kind. Standard instances are benevolence/desirability and enmity/undesirability—like the *intentio* of enmity found by the sheep in the wolf.

The highest cognitive product of the animal level of the soul is "experience" (*empeiria; taǧriba*). In Aristotle's accounts (*Posterior Analytics*, II 19, and *Metaphysics*, A 1), the starting-points of the arts and the

sciences come from "experience" and the content of experience arises from sensory images *via* memory and imagination. For Ibn Sīnā, however, "experience" must be composed of cognitive objects more abstract than images. These are the objects of *wahm*, the *intentiones*; here they include pre-conceptual "common natures" (quiddities) of natural species (horses, oaks, etc.) and artifacts (knives, tables, etc.). Not fully abstract, not yet intelligible, in the human soul these are "proto-intelligibles" (or "pre-intelligibles"), but not potential intelligibles: the *intentiones* lead to the acquisition of actual intelligibles but are not converted into them. The establishing of an *intentio* by *wahm* occasions the reception by the human intellect/rational faculty of the corresponding (truly abstract) intelligible from the Active Intellect.[5] The space for genuinely empirical knowledge, that in which observation of the sensible world and acquisition of intelligible premises through *taǧriba* are strictly necessary—if truly there is any—is found in areas such as medicine, where many universals are radically immattered. The most famous example of a proposition whose truth can be known only through *taǧriba* is "scammony purges yellow bile."[6]

There are other important theories in Ibn Sīnā's natural philosophy/science that have a structure parallel to the psychological doctrine of the receiving of actual intelligibles by a prepared soul. In these, the Active Intellect acts as *wāhib aṣ-ṣuwar*, what the Latin scholastics called the *dator formarum*.[7] In Ibn Sīnā's account of the ensouling of an embryo, the (primarily "chemical") nature of the embryo as it develops makes it suitable to receive its soul—its particular individual soul in the case of a human being at least—and this soul emanates from the Active Intellect onto this prepared matter.[8] This doctrine obviously belongs both to psychology and to embryology.

Analogously, in "chemical" change (substantial change of non-living entities), when one or more materials are heated or otherwise appropriately prepared, they become potentially one or more new

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[5] For *taǧrīd*, *taǧriba* and acquisition of intelligibles, see Robert E. Hall (1979), 54–73.

[6] Avicenna, *aš-Šifāʾ: al-Manṭiq, al-Burhān* (1956), III.5, 224.2; *an-Naǧāt*, 182.19–21; tr. Rahman, 55.31–35; and elsewhere. The *locus classicus* is *Qānūn*, II.1.2; 1: 225.9–11.

[7] I have had the privilege of reading Jules Janssens' paper related to this topic that was delivered at the Eleventh International Congress of Medieval Philosophy (Porto, 26–31 August 2002).

[8] Hall, (1979), 50–53, has an introductory discussion. See also note 48 below.

materials of different species. The new specific difference(s) (sing., *diaphora; faṣl; differentia*) shines down upon them from the Active Intellect and they become actually the new species. Despite Ibn Sīnā's denial of transmutation of metals in the *Šifāʾ*, alchemy can be understood exactly as a preparation of materials to receive new specific differences in the Avicennan way: as some later alchemists, for example aṭ-Ṭuġrāʾī (1061–?1121), realize.[9]

Practical knowledge, that which relates to actions and habitual behavior, is the domain of the human intellect *qua* practical. Again, *wahm* is required; for the practical intellect acts on the body through that faculty. The incomplete, conflated, even jumbled, account given by Aristotle of the soul *qua* practical (of practical wisdom, the "practical syllogism"—a later expression—and actions) in the *Nicomachean Ethics*, particularly Book VI (*Eudemian Ethics*, V) and his analysis in *De Anima*, III 9–11, became the starting-points for much of the later theory-construction in that area. Ibn Sīnā's more advanced and orderly account makes an important contribution in the concept of *iğmāʿ* and the *qūwa iğmāʿīya*: this consensual faculty "weighs" the desires, the one of repulsion, the other of attraction, and initiates movement (or refuses to initiate it) accordingly. A cluster of complex matters is at issue: I shall only quote Ibn Sīnā's statement that "desire (*šawq*) does not exist at all except after consideration by *wahm* (*tawahhum*) of the object of desire."[10]

The *wahm*, as the leading sub-intellectual faculty, is assigned many jobs, most of them leading to a stronger integration. The impressive treatments by Ibn Sīnā of instinctive behavior and of the emotions center on *wahm*. So does his reoriented account of Aristotelian "recollection." The "processing" of visible forms (and probably of every

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[9] Avicenna, *aš-Šifāʾ: al-Ilāhīyāt* (1960a), IX.5, 2: 410–414; French translation by Georges C. Anawatī in *aš-Šifāʾ: al-Ilāhīyāt* (1978–1985), 2: 145–148. *Aš-Šifā: aṭ-Ṭabīʿīyāt, al-Maʿādin wa-l-āṭār al-ʿulwīya* (1960), I.5, 20–23, and an earlier edition of the same (1927); French translation by G. C. Anawatī (1971). Ibn Ḥaldūn: *The Muqaddimah of Ibn Khaldūn* (195; translation), 3: 272–277, and 279–280 (for the habitually ignored actions at the level of soul). Ibn Ḥaldūn discusses transmutation in works from al-Fārābī onwards, including Ibn Sīnā and aṭ-Ṭuġrāʾī. See below, 9 and note 14, on "operant *wahm*."

[10] Ibn Sīnā, *aš-Šifāʾ: aṭ-Ṭabīʿīyāt, Kitāb an-Nafs* (1959), IV.4, 196.10–11 (the discussion of *wahm* and *iğmāʿ* runs from 196.8 to 197.2). Another important account appears at *Šifāʾ: Nafs*, V.1, 206.10–208.7. Note also *Qānūn* I.1.6.6, 1: 72.31–32, where Ibn Sīnā speaks of the additional nature (*ṭabīʿa*) in every muscle whereby it follows the judgment of the *wahm*, which necessitates *iğmāʿ*.

sensible) uses all the internal senses, especially *wahm* and its store-house.[11]

So far the *wahm* has appeared as an element in an Aristotelian structure, one that fills perceived gaps in Aristotelian faculty psychology.[12] There is also an "operant *wahm*" (or "*wahm* that acts," *al-wahm al-ʿāmil; aestimatio operans*) that is associated with thaumaturgy and the power of souls to act directly upon other souls or bodies, where its actions are a form of supernatural causation.[13] Ibn Sīnā remarks that true medical healing is that which occurs when the form (*ṣūra*; then *tawahhum*) of health, found in the soul and specifically in the *wahm* of the physician, is transmitted directly to the patient and is the cause of his cure. Moreover, a powerful soul can go beyond its own body and establish new forms in the external world, that is to say, it can act directly at the level of soul on other bodies without contact. It does not follow the standard processes of Aristotelian science, where bodies that change "chemically" must be in contact with each other and act and be acted upon through the primary natural qualities of hot and cold, moist and dry. Still in acting in supernatural ways, such a soul must nevertheless operate in accordance with the intelligible structure of the world.[14] This theorizing is in harmony with the more extreme currents of Neoplatonism and with Hermeticism, and I see no clear path for the activities of the operant *wahm* in Ibn Sīnā's systematized physics, faculty psychology and ontology. Still, Ibn Sīnā likes the explanatory power of the oper-

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[11] Instinct features in Galen's thought, and the emotions are more prominent in Plato's and Galen's theoretical psychology (see below) than in Aristotle's—the ethics, political theory, rhetoric and poetics of Aristotle have interest in this regard. Ibn Sīnā's analysis, however, is Aristotelian in outlook. For instinctive behavior, see especially *Šifāʾ: Nafs*, IV.3, 183–184; for the emotions, 187, and IV.4, 196; for recollection, IV.1, 167–168, and IV.3, 185–187. On visual "processing," see note 37 below.

[12] For a general introduction to *wahm*, as treated in the same works of Ibn Sīnā that are considered here, see Robert E. Hall (forthcoming).

[13] The actions of the operant *wahm* have been too little discussed in Western scholarship. A nice *mise-en-scène* for the operant *wahm* is provided by Michot (1986), 142–147.

[14] *Šifāʾ: Nafs*, IV.4, 197.3–201.9. Notice that the operant *wahm* should be able to effect a change of metallic species; for transmutation of metals, see above, 6 and note 9. It is likely that the account of transmutation in the "Meteorology" of the *Šifāʾ* is an example of "exotericism": alchemy produces socio-political, economic and religious risks. The possible role of the Avicennan idea of the operant *wahm* in the "occult" or "Hermetic" disciplines, whether in the medieval Islamic world or the medieval or Renaissance and early modern West, wants serious attention.

ant *wahm*, perhaps especially in connection with Prophecy, and he introduces it regardless.

The operant *wahm* concerns Ibn Sīnā's celestial hierarchies. There the Active Intellect is the lowest in a hierarchy of separate intellects: all of them incorporeal, eternally in act and emanated eternally from the Necessary Being (Avicenna's "God"). Such hierarchies are standard components of philosophical noetics, but they derive from physical cosmology and ultimately from Aristotle's discussion of the heavenly movers for his cosmos of concentric spherical shells (*Metaphysics*, L 8). Al-Fārābī (*ca.* 870–950), Ibn Sīnā's most important predecessor in this area, had only a hierarchy of separate intellects. It was correlated with the spheres of the physical heavens, whose motions were essentially natural. Ibn Sīnā, however, has also a second hierarchy, this time of celestial Souls, which are the movers of the corresponding celestial bodies. (Ibn Sīnā's talk of Intellect and Soul in the celestial realm should not be understood in terms of Neoplatonic hypostases— despite the emanation and the thaumaturgy. The elaboration of the structure of the Higher World is as much Aristotelian in kind as it is Neoplatonic.) The mathematical astronomy of the Ptolemaic tradition, however, presented in an undeveloped form in the astronomical work (*'Ilm al-hay'a*) of the mathematical division of the *Šifā'*, and elsewhere in the Avicennan corpus, is incompatible with Ibn Sīnā's psychologico-physical cosmology. This is a major failure of his systematizing.[15]

Another matter that concerns the celestial hierarchies is Ibn Sīnā's theory of Prophethood. This is important, more so than it might seem, because it enables the theoretical identification of true prophets, and thus authentic religions and legitimate political regimes: a good society/polity is one that obeys a Law revealed by a true Prophet. The criteria for a true Prophet, which relate to actions both by separate Intellects and by celestial Souls, are the key matter and they are determined by psychological theory: thus psychology underlies political theory in part.[16] Ibn Sīnā, like al-Fārābī, has further aims

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[15] Ibn Sīnā seems aware of this failure; for he is said to have sought to establish an observatory and an observing program in Isfahan just prior to his unexpected death. This desire might be related to the "scandal" in astronomy, namely, the incompatibility of Ptolemaic astronomy with Aristotelian physical cosmology. Ending that notorious state of affairs would become a primary concern of later Islamic astronomers.

[16] The basic account (which depends primarily on the *Šifā'*, however) remains

in this theorizing. (Al-Fārābī introduced a major synthesis with Plato's political theory, much of which is retained by Ibn Sīnā.) The teachings on the afterlife, the "ascent" of the soul and Prophethood are important for developing philosophy (*falsafa*) so as to make it acceptable as Islamic *ʿilm* and credible as the version of Muslim faith that is best for the intellectually gifted believer. Had that goal been achieved, thinkers like Ibn Sīnā and thought like Ibn Sīnā's philosophy and science would be fostered in the Islamic world (and authoritative Muslim opinion would find orthodoxy in views like Ibn Sīnā's, not al-Ġazālī's).

Ibn Sīnā's cosmology with its dual hierarchy of Intellects and Souls is perhaps ontologically too complex. The basic scheme and the physical cosmos are satisfactory; ordinary intellection and even intellectual conjunction (*ittiṣāl*) are well-analyzed. Still, there are unresolved difficulties in the ontological aspects of the ensoulment of the embryo, the intellectual ascent (in this life), the interrelations with the celestial souls, and—least clear of all—the ontology of the afterlife. The ontological problems run deep.

The next topic is largely non-celestial, but not entirely so. "Impetus," an "impressed, incorporeal motive force" is an anti-Aristotelian concept used in the first instance to modify Aristotelian dynamics. The result is a halfway house between Aristotelian and Newtonian dynamics that does not make the crucial change to Cartesian-Newtonian inertia. Ibn Sīnā bases his efforts in impetus-theory on a good knowledge of earlier work, especially that of John Philoponus (*ca.* 490–570s). He defines three kinds of impetus (*mayl*): natural *mayl*, associated with the natural upward or downward movement of light or heavy bodies; violent *mayl*, associated with the unnatural, forced movement of bodies, including projectile motion; and psychic *mayl*, associated with movements initiated by a soul. Psychic *mayl* is introduced not only to complete a symmetry, but also to fill important explanatory gaps. The movements of the ensouled heavenly spheres need to be brought within the same general analysis as sublunar movements (with circular rather than rectilinear motions). So too, the movements caused

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Fazlur Rahman (1958). Ibn Sīnā's most systematic discussion, among many, is in *Al-Mabdaʾ wa-l-maʿād*. All of them are considered in M. Afifi al-Akiti, "The Three Properties of Prophethood in Certain Works of Avicenna and al-Ġazālī," which appears in the present volume.

by souls outside their own bodies need a proper grounding in dynamics: psychic *mayl* makes a start. Ibn Sīnā also applies *mayl* to heating. In fact, he uses *mayl* as a technical term with wide analytical applications in his works in natural philosophy and science generally, as he explains early in his book on general physics (*as-Samāʿ aṭ-ṭabīʿī*) in the *Šifāʾ*. The systematic attention to *mayl* and the idea of psychic *mayl* appear to be new with Ibn Sīnā. *Mayl* is another important system-integrating concept and again one that ties into theoretical psychology.[17]

II

Some of the subjects that have been considered have already extended into the domain of medicine, and there is much to be said about the integrating of psychological theory on the biomedical side. The influence of medical authors on Ibn Sīnā extends into his philosophy. The works of Ibn Sīnā that have the most bearing on such matters are the *Qānūn*, Books I and III. Also the *Šifāʾ: Kitāb an-Nafs* has important passages (and there are a few also in the psychological part of the *Naǧāt*); however, it is especially the zoological book of the *Šifāʾ: Fī Ṭabāʾiʿ al-ḥayawān* (*On the Natures of Animals*; hereafter, "*Ḥayawān*") that is in question here.[18] (The *Ḥayawān* corresponds with Aristotle's *Historia Animalium*, including the spurious Bk. X, plus *De Partibus Animalium* and *De Generatione Animalium*, the three of which entered Arabic as a single work, *Kitāb al-Ḥayawān*.)

The Islamic medical tradition built upon Greek medicine in the very largely Galenic form it acquired by the fourth century. Theoretical psychology in that tradition was materialist: no intelligibles, no intellect. Nor did the physicians have a separate faculty corresponding with the *wahm*. Materialist psychology is hateful to Ibn Sīnā since the central insights of his system are Aristotelian/Neoplatonic/Muslim in orientation. Still, he has to deal with the Galenists because he

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[17] For impetus generally, *aš-Šifāʾ: aṭ-Ṭabīʿiyāt, as-Samāʿ aṭ-ṭabīʿī* (1983), I, *passim*, especially 5. See Ahmad Hasnawi (1984); of particular interest are the remarks on circular *mayl*. Impetus in medieval Islamic dynamics overall is treated in Robert E. Hall (2001), 320–333. There is no extended study of psychic *mayl* in Ibn Sīnā. On psychic *mayl* and operant *wahm*, note *Šifāʾ: Nafs*, IV.4, 200.17–20.

[18] Avicenna, *aš-Šifāʾ: aṭ-Ṭabīʿiyāt, al-Ḥayawān* (1970).

takes on the duties of localizing the appropriate sub-intellectual fac-
ulties of the soul in bodily organs and of explaining their corre-
sponding functions in terms of a material substrate, tasks that he
inherits from both the medical and the philosophical traditions.

Aristotle assigned all psychological functions except intellection
(which has no corporeal organ) to the heart. Anatomical and physio-
logical research in the third century B.C., however, led Greek physi-
cians to allocate the higher psychological faculties/functions to a
nervous system seated in the brain. Psychological thinkers in late
antiquity and the Islamic middle ages faced philosophical naïveté in
the Galenic tradition, but anatomical and physiological ignorance in
Aristotle and the philosophical tradition. In theoretical psychology,
Ibn Sīnā wants to protect his fundamental doctrines against Galenic
subversion. Yet he must accept Galenic anatomy and physiology,
especially with respect to the nervous system. Both Aristotle and
Galen must have had exceptionally good contact with the Active
Intellect, yet their systems are far apart and lie partly askew to each
other. What is he to do?

What Ibn Sīnā does do is to create a well-systematized synthesis,
using his own well-connected intellect. He begins by defining the
areas of strength of the philosophers and the physicians in a suitably
fine-grained way. In the *Qānūn*, a work aimed towards physician
readers familiar with Galenic (Graeco-Islamic) medicine, Ibn Sīnā
says very early that matters in theoretical natural science and meta-
physics—and thus theoretical psychology and cosmology—lie outside
the province of the physician *qua* physician; it is a point he continues
to emphasize.[19] The chapter of the *Qānūn*, "On the Faculties (*quwá*)
and Functions (*afʿāl*)," is very important.[20] Physicians are instructed
here not to deal with the *wahm* or the intellect: indeed all theoreti-
cal questions relating to the "internal senses" and even to external
sensation are to be decided within physics by trained philosophers.
The same applies to questions of the dividedness of the soul, of the
organs that serve as the seats of the main faculties of the soul and
of the pneumas that are the media of their functioning. For practical

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[19] *Qānūn*, I.1.1.2; I.1.5, introductory sect.; and especially I.1.6, 1: 4–5, 19–24,
and 66–73. A French translation by P. de Koning of *Qānūn*, I.1.5, introductory
sect. is in *Qānūn fī ṭ-tibb* (1903), 432–451; henceforth, de Koning.

[20] *Qānūn*, I.1.6. It also treats the pneuma(s), and states clearly that (simple) func-
tions and faculties correspond one-to-one.

purposes, Ibn Sīnā says, a physician may use the accounts from the medical tradition (the Galenic-Platonic psychological scheme and related doctrines), but in terms of theory, Aristotle is right. In fact, Ibn Sīnā often nudges his physician readers towards an Aristotelian understanding of the soul and its faculties.

The most important task in synthesizing the opposed Aristotelian and Galenic traditions in psychology is getting away from the deeply and unsatisfactorily divided soul of Plato, which was adopted by Galen. The Platonic tripartition of the soul/person is almost an assertion of three contending souls within each individual and is disastrous for general theoretical psychology—however interesting it may be as a starting-point for abnormal psychology or for certain aspects of the psychology of ordinary actions. The exclusively human viewpoint of Galenic psychology was also a disadvantage (ironic in that Galen's mature dissections were only of animals), in contrast with the comparative Aristotelian perspective that included all species of life. Unfortunately, having the heart as the central, primary organ made Aristotle's more unified psychological model almost a non-starter.

The Galenic person had a rational soul (*to logistikon*), but one which had no possibility of contact with the Forms; an irascible soul (*to thumoeides*); and a concupiscent soul (*to epithumetikon*). The Galenic rational soul was divided into sensory, motor and hegemonic ("controlling") parts.[21] The three faculties of the hegemonic part (*to hēgemonikon*), responsible for the three highest mental functions, were "imaging," "cogitation" and memory (see below).[22] The brain for Galen was not only the seat of the rational soul, as with Plato, but also the center and source of the nervous system. In the heart, Galen placed the higher emotions, which belonged to the irascible soul; there, too, he located the "vitalizing" function, which maintained life throughout the body by way of the arterial system. The liver had the lowest of the three Galenic souls, an ill-analyzed entity that was stretched between two poles; one was Plato's concupiscent soul, which

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[21] It is a startling fact that although "*to hēgemonikon*" often emerges properly in Arabic as *al-mudabbira*, it also comes out as *al-ʿaql*; an example in ʿAlī ibn al-ʿAbbās appears below.

[22] Galen's faculty psychology has been little studied in recent decades (Rudolph E. Siegel's work is to be used with caution); some discussions by R. J. Hankinson are relevant in part; see Hankinson (1991a) and (1991b) (especially 208–216 for Galen, and 249–250 for a bibliography), as well as (1993). Galen's accounts are found mainly in *De Placitis Hippocratis et Platonis* [*De Plac.*], Galen (1980–84).

was the seat of the lower emotions/appetites, and the other was the very different vegetative soul of Aristotle.

The corporeal substrates that all Galenic psychological faculties required for their functions and for communication were pneumas, i.e., breaths or vapors. Aristotle had thought in terms of a single pneuma, formed by evaporation from the blood in the heart (or from the nutriment there in the final stage of its transformation). It was the substrate for all sensory processes, external and internal; it had major but unclear roles in causing bodily movements; and it controlled the formation of the embryo. Galen normally talked of two pneumas. The nervous system had as its instrument the psychic pneuma (or "animal spirit"), which filled the ventricles—the hollow spaces—of the brain, (probably) permeated its substance, and flowed through the sensory and motor nerves. The arterial system, serving the irascible soul, used a zoic pneuma ("vital spirit"), produced in the left ventricle of the heart and carried through the arteries along with the arterial blood (and secondarily with the venous blood through the veins) in order to maintain the vitality of all the parts; the effects are to be compared with those of oxygen. The Galenic pneumas were maintained at least partially—Galen may have wanted to be consistent on this—from the outside air. The main transformation that produced zoic pneuma took place in the left ventricle of the heart. For psychic pneuma there was a further transformation in a supposed arterial network near the base of the brain (the *rete mirabile*) and in the ventricles of the brain; or else a sufficient transformation of the breath as it passed in through the olfactory bulbs.[23]

So, having learned above that Ibn Sīnā gives short shrift to the Galenists regarding cosmology and most of psychological theory, we need to examine his treatment of the matters that have just been set out: the primary divisions of the soul, the organs that are their

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[23] Systematic physiology in Galen is also poorly served. Mention should be made of Jerome J. Bylebyl (1969), 10–137; and Owsei Temkin (1973), *passim*. Among Galen's own works the most important for general physiology is *De Usu Partium* [*UP*]; English translation in Galen (1968); May's introduction is less authoritative than one would hope and it is inadequate on the pneumas). See also *De Plac*. On the pneumas specifically, see Temkin (1950); in Galen's writings, especially *De plac.*, VII.3–4, 2: 438–449; *UP*, VIII.10, IX.4 (*rete* and psychic pneuma), and VIII.6 (olfactory buds and psychic pneuma); *De Methodo Medendi*, XII.5; and *De Usu Respirationis*, 5. To the liver-centered venous system Galen usually allotted the venous blood as the operating fluid, but a third pneuma, mentioned in *De Methodo Medendi*, XII. 5, became standard among later Galenists.

physical seats and the pneumas that are their instruments. Because of the differently educated audience, the exposition in the *Qānūn* is less straightforward than in the *Šifāʾ*. Ibn Sīnā is consistent, carefully so, between the *Qānūn* and the *Šifāʾ*, while tending to cite or not to cite Galen or Aristotle in ways that will make his medical readers, on the one hand, and his philosophical ones, on the other, feel easy with what he is saying. In fact the *Qānūn* and the *Ḥayawān* of the *Šifāʾ* have many passages in common.[24] For the moment, I shall follow the *Qānūn*, as being more illustrative of the tensions.

How, then, does the *Qānūn* use the teachings of the philosophical and medical traditions? First, Ibn Sīnā takes over the four elements and the four humours, which are common to Aristotle and Galen; he embraces the temperaments, which are primarily Galenic; but the causes that he uses are the four of Aristotle, not Galen's five.[25] The process of integration continues impressively when Ibn Sīnā lists three main divisions of the human faculties/functions, choosing for them medical names that are conciliatory towards Aristotelian terminology: the natural (*ṭabīʿīya*) faculty(-ies) [natural soul], the animal (or vital; *ḥayawānīya*) faculty(-ies) [irascible soul]; and the "mental" (*nafsānīya*) faculty(-ies) [rational soul].[26]

The vital faculty, which is associated with the heart, provides the parts of the body with their potentialities for sensation, motion and other functions of life above those of plants. (Actual sensation and actual voluntary motions belong to the *nafsānīya* faculties.) The vital faculty provides those potentialities through the vital spirit (*rūḥ*), which is produced by evaporation in the heart. The emotions of fear and anger are also included in the vital faculty because of their association with this *rūḥ*; but the emotions are roused by the cognitive processes

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[24] Some of this ground is covered in Basim Musallam (1985–), 94–99; for a list of *Qānūn*—*Šifāʾ: Ḥayawān* correspondences, 98. The topic is nicely developed in Remke Kruk (2002).

[25] *Qānūn*, I.1.1.2, (esp. causes), 1: 4–5; I.1.2 (elements), 1: 5–6; I.1.3.1 (temperaments, or constitutions; sing., *mizāj*), 1: 6–9; I.1.4.1 (humors), 1: 13–17. *Šifāʾ: Ḥayawān*, XII.2, 192–197, on the *mizāj*, is approximately the same as *Qānūn*, I.1.3, but the accounts of causes and elements are elsewhere in the *Šifāʾ*. A very interesting aspect of these physiological foundations is the theory of the homoeomerous parts of the body—moist/liquid/liquefiable parts and dry/solid parts—where Ibn Sīnā works between Aristotle, especially in *De Partibus Animalium*, and Galen, e.g., in *On the Homoeomerous Parts of the Body*; note *Šifāʾ: Ḥayawān*, XII.1, 189–191.

[26] *Qānūn*, I.1.6; 1: 66–73; this is the systematic account of faculty psychology for the *Qānūn*.

in the brain. The vital faculty (like the physical/vegetative faculty) is without volition—a matter that is decided in natural philosophy.[27] The *nafsānīya* faculty, which is associated with the brain, Ibn Sīnā divides into cognitive (*mudrika*) and motor (*muḥarrika*) faculties. The cognitive faculties are (i) the external senses, (ii) the internal senses and (iii) the human rational (*nāṭiqa*) faculty.[28] As for the other basic matters, Ibn Sīnā affirms that there is a single primary and central organ, which is the heart. Moreover, like Aristotle and Harvey, Ibn Sīnā says that it must be the heart since that is the first organ formed in the embryo (a view that is essentially correct in the sense that is meant). After suitable development of the organism, however, the relevant functions are delegated to the brain or to the liver.[29]

In the same spirit, Ibn Sīnā makes it clear that there is only a single *rūḥ*, which is connate and associated initially with the embryonic heart, then renewed after birth by evaporation in the heart of the newly independent organism. At an appropriate stage of development, however, the *rūḥ* starts to be modified in the brain and the liver for their specific functions. The three kinds of pneuma are further modified, one assumes slightly, for each of the more specific faculties; e.g., into a visual pneuma. The effects on the Galenic scheme in the case of the pneumas are rather small, although the

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[27] Ibid., I.1.6.4, 1: 70–71 (vital faculty); see below for locating it in the heart.

[28] Ibid., I.1.6.5, 1: 71–72 (cognitive faculties); I.1.6.6 (motor faculties), 1: 72; see below for locating it in the brain.

[29] For the chief organs see the following (1) *Qānūn*: I.1.5, in the preliminary section of that chapter, 1: 20.29–22.12; tr. de Koning, 436–445; also *Šifā': Ḥayawān*, I.2, 13.2–16.5; and *Qānūn*, I.1.6.1 and 4, 1: 66–67 and 70–71. All of those, particularly *Qānūn* I.1.6.4, relate to the pneumas as well. (2) *Šifā': Ḥayawān*, especially III.1, 40–46, on the faculties (on the heart as first organ formed, 44.12–14); see also VI.1, 77ff., for the embryonic development of a bird (on the two semens, see below); XII.1, 190.14–191.1, for the heart as principal organ; XII.7–8, 222.18–230.14, on the faculties and pneumas in connection with the parts; for the anatomy of the brain in XII.8 and in the *Qānūn*, see below; on the anatomy of the heart see XIII.3, 283.4–284.9 (= *Qānūn*, III.11.1.1, 2:261.5–262.10; tr. de Koning, 686–693), which has little for psychological theory; and for remarks on the emergence of the faculties in a baby, XIX.1, 428.5–429.2. *Šifā': Nafs* is richer on the physiological side than one might think, although there are several forward references to the *Ḥayawān*. On the heart, brain and liver and the pneumas and faculties see the following. (1) *Šifā': Nafs*, V.7, 252 (the mistaken schema, unattributed, of Plato and Galen). (2) V.8, 263.9–268.19, for (i) *rūḥ*; (ii) the heart (is the one primary organ a unitary soul requires, uses the *rūḥ*, and—as dissection showed—is the first organ generated); (iii) delegation of faculties from the heart; (iv) the other interrelations among heart, brain, and liver; and (v) the faculties relating specifically to the brain and to the liver, in physiological context. For embryology and ensoulment, see note 49.

formulation is made more precise, and the origin of the pneumas is made exclusively internal.[30] After the changes regarding the principal organs and the pneumas have been made, the nervous, arterial and venous systems function very largely in the Galenic way.

A particularly intractable problem of synthesis arises when Ibn Sīnā attempts to localize his "internal senses," which are partly analogous to the faculties of Galen's *hēgemonikon*, but also exhibit great differences from them. Galen did not assign places to the faculties of the *hēgemonikon*, for he was still unsure about the role of the brain substance. The Galenist schema for localizing those three faculties in the ventricles of the brain emerged at latest in the writings of the fourth-century Byzantine physician, Poseidonios, and had some basis in Galen's descriptions of the effects of serious wounds to the brain.[31] Islamic physicians, including the great medical writers, Muḥammad ibn Zakarīyā' ar-Rāzī (Latin, Rhazes; *ca.* 855–925 or 935) and ʿAlī ibn al-ʿAbbās al-Maǧūsī (Latin, Haly Abbas; d. *ca.* 990), both very well known to Ibn Sīnā, used this later Galenist schema.[32]

The encephalon has four ventricles; Galen's writings made that already well-established fact plain. Two, paired ventricles at the front join together and connect at the middle ventricle; the other end of the middle ventricle is linked to the rear (cerebellar) ventricle by a short channel. The ventricles became treated functionally as three, however, the front pair taken as a single organ. The *vermis* (vermiform epiphysis), a wormlike structure between the middle and rear ventricles, was thought by Galen, who had made a rare mistake in dissection, to be able to open and close the passage that connected them. Galen's dissection-based descriptions of the ventricles and the *vermis* (including the idea that it served as a valve) provide the anatomical foundation for the discussions of the encephalon in Islamic medicine.[33]

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[30] For the pneuma(s) see the preceding note and also below for pneuma and the internal senses.

[31] On the effects of head injuries, the main Galenic texts are *De Locis Affectis* III.9, in Galen (1821–1833), 8: 160–161, and *De Symptomatis Differentiis* 4, in Galen (1821–1833), 7:60–62.

[32] A convenient presentation of the developments in the medical tradition from Galen to Avicenna (which is based, however, on the Latin texts) is found in E. Ruth Harvey (1975), 8–21.

[33] For the ventricles and *vermis* in the works of Galen see *De Anatomicis Administrationibus* (*On Anatomical Procedures*) [*Anat. admin.*], IX.3–7 and 10–12, and *UP*, VIII.6 and 10–14, and in Galen (1968) the valuable notes to these chapters of *UP* (for the *vermis*, especially 1:420–421, note 76); two English translations are Galen, *Galen on*

Among Islamic physicians, ʿAlī ibn al-ʿAbbās seems to have particularly impressed Ibn Sīnā.[34] Since his principal work, the *Malakī*, has a notably materialist orientation, the problems on the physiological side of theoretical psychology are made all the more urgent for Ibn Sīnā. ʿAlī ibn al-ʿAbbās localized the faculties of *tadbīr* ("controlling," "managing"; i.e., the faculties of the Galenic *hēgemonikon*) as follows. (1) In the "front ventricle" he puts "imaging" (*phantasia* [Greek and Latin]; *taḫayyul*, also *taṣawwur* and *tawahhum/wahm*), the faculty that unifies the data of the external senses, equivalent to Aristotle's and Ibn Sīnā's "common sense." (2) In the middle ventricle comes "cogitation" or "reasoning" (*dianoia; fikr*, also *naẓar* and *ẓann; cogitatio*), the only rational faculty, which functions like Ibn Sīnā's *mutaḫayyila* and involves solely the manipulation of images in the pneuma. And (3) in the rear ventricle is placed (sensory) memory (*mnēme; ḏikr*, also *ḥifẓ; memoria*), the storehouse for the other two faculties of the *hēgemonikon*.[35]

Ibn Sīnā has more difficulties than ʿAlī ibn al-ʿAbbās did. He does not need a physical substrate or a bodily location for the intellect (the rational faculty), but he does require places for the "internal senses," of which there were five, but only the three ventricles. As well as being relatively larger, the paired front ventricles in human beings have a shape that is different from and more complicated than their shape in the species of animals dissected by Galen (especially Barbary apes), where the front ventricles are prolonged into the olfactory bulbs but have no posterior horns.[36] The Galenic geometry

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Anatomical Procedures (1956) and *Galen on Anatomical Procedures, the Later Books* (1962). Greek and Arabic texts of *De Anatomicis Administrationibus* are in Galen (1986 and 2000); and the Arabic text with a German translation is in Galen (1906).

[34] Claims of very strong influence on Ibn Sīnā by ar-Rāzī that have been made by A. Z. Iskandar should be kept to one side for the present; see Iskandar (1967). It is not unlikely that the manuscript on which they are principally based has been misattributed to ar-Rāzī and should be assigned instead to a follower of Ibn Sīnā or to Ibn Sīnā himself.

[35] ʿAlī ibn al-ʿAbbās al-Maǧūsī, *Kāmil aṣ-Ṣināʿa aṭ-Ṭibbīya (al-Kitāb al-Malikī)* (1877), I.iv.9, 1: 143–144. Anatomy of the brain, ibid., I.iii.11, 1: 93–97; tr. de Koning, 278–297. At 93.20 (tr. de Koning, 278.14) *to hēgemonikon* is represented by *al-ʿaql* ("intellect" or "noetic reason," Greek *nous*; tr. de Koning, 279.21, "*l'entendement*") *wa-t-tamyīz* ("distinguishing," "differentiating"; but also renders the Greek *dianoia*, and that must be the meaning here).

[36] See notes from *On the Usefulness of the Parts of the Body* to VIII.6–14, *passim*. Galen regarded the "channels" in the optic nerves, as well as the olfactory bulbs, as joining the double front ventricle; see especially *UP* VIII.6 for the olfactory bulbs and *Anat. Admin.*, IX.7). The front ventricles are not unique in being a paired organ regarded as single: the most famous example is probably Aristotle's designation of

makes Ibn Sīnā's localization of the internal senses somewhat less unbelievable than would the actual shape of the human ventricles.

The topic of the internal senses and their localization is a very interesting one in the thought of Ibn Sīnā. Here I shall summarize the primary introductory account in the *Šifāʾ* and *Naǧāt*; it accords with the partial, "expurgated," description in the *Qānūn*. The names, definitions, and locations of the five faculties/functions called the "internal senses" are as follows. (1) *Al-ḥiss al-muštarak* is the Aristotelian "common sense" (*sensus communis*), which integrates the reports of the special sensibles and adds "common sensibles" of its own; Ibn Sīnā gives an alternative, "medical," name, *banṭāsiyā* (in the *Šifāʾ*; *fanṭāsiyā* in the *Naǧāt*). It is placed in the "front half" of the front ventricle of the brain. (2) *Al-muṣawwira* is the passive imagination, which is the sensory memory, the passive storehouse for the products of *sensus communis*; sometimes called *al-ḥayāl* (which can also mean imagination in a less specific sense). It is placed in the "rear half" of the front ventricle. (3) *Al-mutaḫayyila* is the combinative, or active, imagination; alternatively called *al-mufakkira*, and specifically so when being used by the intellect. It is placed in what must be interpreted as the "front half" of the small middle ventricle. (4) *Al-wahm* (or *al-qūwa l-wahmīya* and sometimes *at-tawahhum*, which is often used, however, in a non-technical sense). The "estimative" faculty (*virtus aestimativa*), rarely also called *aẓ-ẓānna* (the "opinative" faculty), is squeezed into the "rear half" of the middle ventricle. (5) *Al-ḥāfiẓa* (*aḏ-ḏākira* or *aḏ-ḏikr*) is the retentive, or memorative, faculty and is the storehouse for the *intentiones*, the products of *wahm*. This faculty is sometimes given other names, including *al-mutaḏakkira*, the "recollective" faculty, in the Aristotelian technical sense. The retentive faculty is placed by itself in the rear ventricle; there it is beyond the *dūda* (*vermis*), which is supposed to control the inward and outward flow of *intentiones* in the pneuma.[37]

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the lungs as "the lung." The external senses are paired, and since smell and vision (seem to) report to the front ventricles, the other senses may be inferred to do so; yet the effect is single. The correlating of left and right inputs, as well as the combining of the different species of sensory reports, must be considered when producing an anatomical and physiological account of the ventricles.

[37] *Šifāʾ: Nafs*, I.5, 43.1–45.15; *Naǧāt*, 162.6–163.16; tr. Rahman, 30.3–31.30; *Qānūn*, I.1.6.5, 1:71.28–72.25. For *banṭāsiyā/fanṭāsiyā* see *Šifāʾ: Nafs*, 44.4 and *Naǧāt*, 163.1. To the usual five internal senses, Ibn Sīnā suggests in the *Qānūn* that there might be added a faculty of recollection (*al-mutaḏakkira*), if it actually is distinct; he would

Ibn Sīnā employs the Galenists' names, or close cognates, as alternatives for three of those faculties, one in each ventricle. Yet this is a specious synthesis, not least because two of the names used by the physicians are introduced in a way that is badly misleading, at least initially (and most of all to physician readers). *Al-mufakkira* relates to *fikr*, the Islamic Galenists' usual translation of *dianoia*; it means here, as it does for the physicians, combinative imagination. In Aristotelian/Neoplatonic usage, *dianoia*, "discursive reason," is a process that uses only intelligibles; the Galenic physicians take *dianoia*, "cogitation," to be a process that uses only (corporeal) images in the psychic pneuma (*rūḥ nafsānīya*), but to be the only possible process of reasoning. Let me repeat that this is far from being a true faculty of thought for Ibn Sīnā, let alone the only one. *Aḏ-ḏākira* is the Galenists' name for the entirely different sensory memory, which is actually the *muṣawwira* in Ibn Sīnā's scheme. *Ḏākira* is placed in the rear ventricle, where the Galenists have their faculty of the same name, yet they have nothing which resembles the *maʿānī/intentiones*, the objects that Ibn Sīnā stores there.[38]

The knowledge that Ibn Sīnā has of anatomy is derivative (remember the Muslim dislike of dissection), and he does not have very good judgment on anatomical matters. That is the case with the ventricles of the brain. He simply does not know anything about the actual structure of the ventricles beyond what he can gather from Galen's descriptions based on animals. Inconsistently and unsatisfactorily, Ibn Sīnā adopts Galen's idea of the role of the *vermis*. This "worm" is not located where it could open and close the channel between the middle and rear ventricles, but even if it were, Ibn Sīnā would need two such structures: one to separate the combinative imagination from sensory memory—the function that the *vermis* has for the Galenists—as well as one between *wahm* and its storehouse.[39]

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place this in the rear ventricle along with the memory for the products of *wahm* (with which it would primarily be working). For Ibn Sīnā's anatomy of the brain see *Qānūn*, III.1.1.2, 2: 3.6–5.33; tr. de Koning, 646–661; also at *Šifāʾ: Ḥayawān*, XII.8, 226.6–233.6.

    [38] Gotthard Strohmaier (1988) has little for the present topic, since the article shows insufficient familiarity with Aristotelianism, but see 234–238.

    [39] Even so, Ibn Sīnā provides a marvelous and impressive (but impossible) account of how the internal senses work by means of their specific pneumas; the subject is the processing of a visible form, which involves all the internal senses. The form travels through the ventricles until it is acted upon by *wahm* and suitable *intentiones* are sent to be stored in the rear ventricle; it then returns to the *ḫayāl* (i.e., the

It is difficult to praise too little this part of the attempt to inte-
grate Galen and *ṭibb* with Aristotle and *falsafa*. In this instance, unusu-
ally, the discussion by Ibn Sīnā has as much to do with rhetoric
and conversion of the intellectually able physician as it does with
proper theoretical systematization.

Ibn Sīnā is certainly aware of some of the difficulties, and his
early treatments of the internal senses illuminate a large number of
problems in his theoretical philosophy and science. The scheme of
the internal senses in his first psychological work, the *Maqāla fī n-
Nafs*, differs in several particulars from the one just described, for
example, in the location of *wahm*. In the *Maqāla*, the *qūwa mutawah-
hima* (as the *wahm* is called at this point) is said to have its domin-
ion (*sulṭān*) in the whole of the brain, but especially in the domain
of the combinative imagination (i.e., the middle ventricle).[40] *Wahm*
ought to be in direct contact with all the other inner senses, but
geometrically it cannot be. Moreover, Ibn Sīnā has a tendency to
think of the human *wahm* as pushing towards the unlocalizable status
of the intellectual faculty. Despite the elaborate account I have just
presented, he does not forget this early idea when he is composing
the *Šifāʾ*. In *Šifāʾ: Kitāb an-Nafs*, V.8, Ibn Sīnā says that the *wahm*
has mastery over the whole brain, but that its dominion (*sulṭān*) is
in the middle [ventricle].[41] On this and the other points of difference
in the analyses of the internal senses, there is a fascinating history
of development in Ibn Sīnā's writings from the *Maqāla fī n-Nafs* to
the time of the *Šifāʾ*.[42]

The rest of the integration of the theoretical psychology of the
philosophers and the physicians leads into what is now purely phys-
iology, but the boundary is drawn differently at that time and some
of this fascinating process ought to be sketched in. The lowest set
of faculties of the Aristotelian soul is the vegetative faculties of nutri-
tion, growth and reproduction.[43] Neither in *Kitāb an-Nafs* of the *Šifāʾ*

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muṣawwira): a remarkable description of something like the perceptional process in
the modern psychological sense. See *Šifāʾ: Nafs*, III.8, 153.9–154.10.

[40] *Maqāla fī n-Nafs*, 360.18–19; tr. Landauer, 402.

[41] 268.9.

[42] I am preparing an article on the localization, functions and nomenclature of
the internal senses in Ibn Sīnā's writings to the end of his "middle period" (*ca.*
1027).

[43] This neat arrangement comes from a somewhat smoothed and tightened
Aristotle, but is authentic enough.

nor in the psychological part of the *Naǧāt*—where the approach is unusually simplistic—is there much indication that Ibn Sīnā has anything un-Aristotelian to say.[44] Moreover, neither the book on plants of the *Šifāʾ* (*Kitāb an-Nabāt*) nor the *Ḥayawān* of the *Šifāʾ* gives a complete overview of how Ibn Sīnā wishes to analyze and structure the vegetative level of soul. For such a presentation, given in a succinct and introductory way, one has to turn to the *Qānūn* and, once again, to the chapter on the faculties and functions.[45]

Here in the *Qānūn* Ibn Sīnā speaks of two sets of "natural faculties." The "nature" in "natural faculties" is Galen's "nature" understood as lower soul. The higher set of these faculties is equated by Ibn Sīnā to Aristotle's vegetative soul, and it indeed comprises nutrition, growth, and reproduction.[46] Ibn Sīnā groups the faculties of nutrition and growth together and subdivides the faculty of reproduction into the generative and formative faculties. (The "formative" faculty is called *al-muṣawwira* and thus bears, surprisingly and unhelpfully, the same name as the [passive] imagination/sensory memory of the philosophers.) The faculty of reproduction has as its purpose the preserving of the species and it is served by nutrition and growth, Ibn Sīnā says. The division into nutrition, growth and reproduction is Aristotelian, whereas the sharp separation of reproduction from nutrition and growth, and its subdivision into generative and formative faculties belongs to the physicians.

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[44] See, however, the following places: *Šifāʾ*: *Kitāb an-Nafs*, I.5, 51.8–16; also, with slight differences, *an-Naǧāt*, 168.16–20; tr. Rahman, 37.30–38.2 and 122, notes 4 and 5 to Ch. VI. Those texts include mention of the four natural faculties treated by Galen and their interrelationships (the latter are given variously in the *Naǧāt* MSS). Yet the main account of the vegetative soul in *Kitāb an-Nafs*, II.1, 52.1–57.14 (not in the *Naǧāt*)—which immediately follows the passage just mentioned—does not continue with even the Galenic natural faculties. The last part of the chapter (56.4ff.), however, deals with the question of why a given vegetative soul produces the right kind of living thing; the answer includes the constitution (*mizāǧ*) of the new being—something that is largely but not entirely a Galenic theme (one that I shall not discuss). At the very end of *Kitāb an-Nafs* V.8, 269.10–15, Ibn Sīnā brings up the faculty of reproduction and is Galenic in speaking of the testes as basic organ and mentioning their attraction and expulsion of matter; he refers the reader forward to *Kitāb al-Ḥayawān*; see next note.

[45] *Qānūn*, I.1.5. intro., 1: 20.29–22.12; tr. de Koning, 436–445; also in *Šifāʾ*: *Ḥayawān*, I.2, 13.2–16.5. What are effectively the "natural faculties" of Galen are mentioned at the start (these texts have already been cited with respect to the interrelations among the organs). In the *Ḥayawān* (and the *Nabāt*), such faculties appear in specific physiological accounts without being situated in a general theory; such a theory, with its many Galenic elements, is set out in *Qānūn*, I.1.6.1–3, 1:66–69.

[46] *Qānūn*, I.1.6.2, 1: 67–68.

The natural faculties just discussed, called in full the "served" (*maḥdūma*) natural faculties, are indeed served—by the second set, called in full the "serving" (*ḫādima*) natural faculties.[47] The latter are actually the ones treated by Galen in his well-known work, *On the Natural Faculties*, namely, attraction, retention, alteration and expulsion. "Alteration," however, is represented by the "digestive faculty" (*hāḍima*) in the *Qānūn*, since Ibn Sīnā needs a term that means, in the language of *falsafa*, a change of substance, not of quality, as Galen's did.[48] The "serving" natural faculties are served in turn by the primary qualities, which in both traditions were hotness, coldness, dryness and moistness. That is a lot to join together, but the combining has been done well, on the whole, and has produced a properly systematic result.

Those doctrines are connected with Ibn Sīnā's identification of the vital organs: one might expect three, the brain, the heart and the liver—and indeed there are—but there is another, the testes, which are the seat of the faculty of reproduction. Aristotle was notorious for his male bias in questions of reproduction and heredity, but he gave a very good account of embryological development (in the chick). Galen was not as discerning as one would expect in embryology, but he assigned roughly equal and symmetric roles to men and women in generation and heredity. Ibn Sīnā follows Aristotle in saying that the heart is the first organ generated, whereas Galen claimed the liver was first (although the matter is not entirely straightforward). Ibn Sīnā, though, does accept, as far as he has to, the Galenic view that there are both a male and a female semen. Aristotle allowed only a male semen in his writings, with the important exception of the (in fact pseudonymous) Book X of the *Historia Animalium*; and Ibn Sīnā is familiar with Book X, which was included in the Arabic translation of Aristotle's *Historia Animalium* (*Kitāb al-Ḥayawān*). The female analogue of the testes is the ovaries, again parts that were discovered after Aristotle's time but well before Galen's. Once more, Ibn Sīnā must accede to post-Aristotelian anatomical knowledge.

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[47] For the "serving" natural faculties, *Qānūn*, I.1.6.3, 1: 68–69.

[48] Ibid., 68.2. At *Qānūn*, I.1.5, 1: 20.29–30; tr. de Koning, 436; *Šifāʾ: Ḥayawān*, I.2, 13.2–3. Ibn Sīnā says that every member has its own innate power (*qūwa ġarīzīya*) of being nourished; this comprises the four Galenic natural faculties, but instead of "digestion" he now uses "making similar and incorporating [the nutriment]" (*tašbīhuhū wa-ilṣāquhū*). In current physiological usage, those constitute "assimilation." The other three functions/faculties are *ǧaḏb* (attraction; *al-ǧāḏiba*, in the *Qānūn*), *imsāk* (retention; *al-māsika*, in the *Qānūn*), and *dafʿ* (expulsion; *ad-dāfiʿa*, in the *Qānūn*).

Ibn Sīnā's acceptance of the apparent fact of two semens is not the end of the story, however. In the full account given in the *Šifā'*, Ibn Sīnā refutes Galen's attribution of an equal role to the female parent and returns to Aristotle's view that the woman's contribution to the forming of the embryo is passive, a material cause only—a view fully compatible with Ibn Sīnā's own cultural environment.[49] The female in truth does not have semen, Ibn Sīnā says, for her fluid has no active generative power (*qūwa muwallida*) but only a passive one (*qūwa mutawallida*). More technically (although Ibn Sīnā is being loose with his *qūwa*'s here), the female fluid does not possess the necessary (active) formative faculty (*al-qūwa l-muṣawwira*), but only a "faculty" (potentiality) of being formed (*qūwat at-taṣawwur*), a capacity to be acted upon in the requisite way.[50] (So *taṣawwur* is another word with a second technical use—if the use here is indeed technical—for it is also, of course, the term much used in Ibn Sīnā's logic and epistemology for the grasping of intelligibles.) The female "semen" plays in this regard the part played by the (pre)menstrual blood for Aristotle. The features observed in offspring are (very) hard to square with the Aristotelian-Avicennan theory, it is true; but how skillfully the differing Aristotelian and Galenic ideas have been drawn together and systematized here.[51]

In relation to the souls of lower animals, Ibn Sīnā makes an interesting and significant extension to Aristotelian theory; he does not

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[49] *Šifā'*: *Ḥayawān*, IX, especially chapter 3, 158–164. This is at the place of the relevant passages in *Historia Animalium*, X; the further discussions answering to *De Generatione Animalium* are mostly in *Ḥayawān*, XV.2 and 3 and XVI.1 (which corresponds with *De Gen. An.*, II 3). That is a point missed by Musallam in his discussion of the two-semen problem, (1989), 96–97; he creates a drama here in what he sees as the relocation of the discussion from a later place. *Ḥayawān*, XVI.1, 401.7–405.12, is a principal text on the ensoulment of the embryo; see note 8 above.

[50] *Šifā'*: *Ḥayawān*, IX.3, especially 161.5–162.16 (161.16 and 162.8 for *muṣawwira* and *taṣawwur*). The chapter-title (158.3–5) is "Return to the Source in the First Teacher [Aristotle], and Proof that Women in Truth Do Not Have Semen and that the Matter from Women which is Called Semen Does Not Have an [Active] Faculty of Generating but Only [a Faculty] of Being Acted upon in Generation, ..."

[51] There is much more to be said on the systematizing of Ibn Sīnā's embryology, even on the synthesizing of Galen and Aristotle and even on the "first-formed organ." Basim Musallam (1990) adds little on Ibn Sīnā; but Kruk (1990) is valuable on generation, including the topic of the two semens. Moreover, a major study is available; see Ursula Weisser (1983). A considerable part of the book is devoted to Ibn Sīnā and both the *Qānūn* and *Šifā': Ḥayawān* are carefully covered, note esp. B.10.2.2.2, "Dreibläschen-Theorie," 244–249. See also Weisser (1985).

refer to anything Galenic, but exhibits the independent side of his systematizing. He argues that since there is a lowest species of sensation in the souls of animals, there should be, correspondingly, a lowest species of self-movement. He identifies this as contraction and expansion, a kind of movement found in certain shellfish that lack a proper power of locomotion, and says that he has observed and tested it for himself.[52]

The vegetative faculties and seed (= semen) enter not only into the theory of human and animal life but also the life of plants. An important topic is the localization of the faculty of reproduction and that of growth in plants and lowly animals (in reproduction of plants by cuttings, grafting of plants, regrowth of starfish "arms," to take familiar modern examples). Such matters I also omit—and, again, they are now physiological.

I have also ignored external sensation in general and all the individual senses; and the functioning of nerves, pneumas, and muscles in producing movements; and the grand Galenic theme that the disposition of the soul (the character of the person) follows the temperament (or constitution; *phusis, ṭabīʿa*) of the body. So the map of Ibn Sīnā's systematizing, drawn in terms of psychological theory, has large blanks where it covers physiological psychology and Galenic matters. Still, the pervasiveness of themes from theoretical psychology in Ibn Sīnā's system has been widely illustrated where it reaches into physiology.

III

Ibn Sīnā strove to integrate the knowledge and theories of the Galenic physicians with his Aristotelian natural science. Most of Galenic anatomy and physiology is saved (as are the strictly medical fields of diagnostics, prognostics and therapeutics), but at the same time, the anatomical and physiological matter is integrated with and subsumed under Ibn Sīnā's basic philosophical doctrines in ontology and psychology. In physiological and faculty psychology, Ibn Sīnā

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[52] Dag Hasse (2000), 93–95. He cites *Šifāʾ: Nafs*, II.3, 68.6–19; and *Maqāla fī n-Nafs*, 351.7–14; tr. Landauer, 388. Ibn Sīnā's own observations are described in the *Maqāla* but not the *Šifāʾ*.

brings Galen and Aristotle into a far-reaching, if incomplete, synthesis. Certain anatomical components are regrettable. Yet the unsatisfactory Platonic faculty psychology promoted by Galen is eliminated, as is the materialism of Galenic theory, and the worst of Aristotle's physiology is thrown out. (Remember that Aristotle was unaware of the nerves and ovaries and other parts; was ill-informed on the heart, lung, arteries, veins and other parts; and was risible in his views on the brain and some other organs as well.) Over a large and central area of incompatibility, Ibn Sīnā combines Galenic medicine with *falsafa*, at most places into a full and successful synthesis within his overarching theoretical system. That is a major achievement.

The large domain of theory that has been discussed gains much of its interconnectedness and integrity from theoretical psychology. Ibn Sīnā's integration of noetics, faculty psychology and physiological psychology interlocks with ontology and epistemology and physical cosmology; incorporates topics from ethics and political science, dynamics and chemistry; and combines closely with physiology proper and anatomy. The synthesis includes Greek and Islamic thought in the Aristotelian, Neoplatonic (and Platonic) and Galenic traditions. Muslim teachings and sensibilities are accommodated or embraced; for psychological theory saves, among other beliefs, the fundamental ones concerning individual salvation and prophethood.

The systematizing itself is one of the most interesting features of the reasoning and of the resulting structure. Doctrines are often developed or selected for the sake of systematization in order to strengthen the construction or fill it in or extend it. Very frequently the motive is to preserve a solution or insight from one tradition of thought in a synthesis with another. Understanding a doctrine depends on grasping its place in the synthesis and its function in the system. Heeding the synthetic and systematic nature of the thought of Ibn Sīnā should improve our comprehension of it—and our appreciation—and help us to define and analyze the problems that he encountered and that he so often admirably resolved.

NON-DISCURSIVE THOUGHT IN AVICENNA'S COMMENTARY ON THE *THEOLOGY OF ARISTOTLE**

Peter Adamson

Did Avicenna believe that thinking could be non-discursive? If so, what would he have understood by non-discursive thinking, and what role would such thinking play in his epistemology? The present paper attempts to begin answering these questions, which as far as I know have not explicitly been addressed in their own right before. They are important questions, not only because of their obvious relevance for Avicennan epistemology, but also because answers to them would in turn help us to answer another basic question about Avicenna: how strongly was he influenced by Neoplatonism? He certainly knew about the central Neoplatonic distinction between *dianoia* and *noēsis*: discursive thought and intellection. He would have found it, among other places, in the *Theology of Aristotle*, the famous Arabic version of parts of the *Enneads* of Plotinus.[1] Not only did Avicenna know this work, but also he wrote a commentary on it as part of the immense but mostly lost work titled *al-Inṣāf*, or *The Fair Judgment*.[2] The *Inṣāf*, the only other extant part of which discusses Book Lambda of Aristotle's *Metaphysics*, was to give Avicenna's evaluation of important works of philosophy in the light of his own original system, which he at that point in his career was calling the "eastern philosophy (*al-ḥikma al-mašriqīya*)." Though the commentary on the *Theology*

[1] The Arabic text for the *Theology* and other parts of the Arabic Plotinus are in Plotinus (1955). Citations are to page and line number of this edition. An English translation by G. Lewis is in Plotinus (1951–1973). See also Adamson (2002).

[2] For an edition of both extant sections of *The Fair Judgment*, see Avicenna, *al-Inṣāf* (1947), with the commentary on the *Theology* at 37–84. French translation by G. Vajda in Avicenna, *al-Inṣāf* (1951). Citations are of the page and line number from the (1947) edition.

is largely sympathetic, Avicenna does not refrain from taking exception to what he finds in Plotinus (as filtered through the Arabic version), as I have shown elsewhere.[3] In general, the commentary is of course an important document for establishing Avicenna's attitude towards Neoplatonism. I hope to show here that the above questions regarding non-discursive knowledge in Avicenna can also be answered by looking at the commentary against the background of his more familiar works.

In order to discuss the problem clearly, a distinction is in order. It is often assumed that "non-discursive" knowledge is the same as, or akin to, "mystical" knowledge. Clearly both terms are in need of definition, but it seems to me wrong to assume that "non-discursive" thought need be "mystical." Consider Plotinus himself. He certainly does have a theory of non-discursive thought, and he also has a theory about knowledge that is sometimes described as mystical, but they are not the same theory. For Plotinus discursive thought (*dianoia*) is proper to the soul, while non-discursive thought is the knowledge that pure intellect has of itself. It is non-discursive at least in the sense that it cannot adequately be represented in language. But it is not mystical: it is part of, in fact the essence of, rational philosophy and it does not involve any extraordinary experience. In fact, according to Plotinus it happens not only frequently but always for every human, even if we are not always aware of it.[4] This is to be sharply distinguished from the knowledge or awareness that pure intellect has of the One. If Plotinus does countenance mysticism, it is only at this rarefied level. Thus mysticism does not play a significant role in Plotinus' general epistemology, as opposed to his theology.

We need to bear this distinction in mind as we turn to Avicenna. Like Plotinus, Avicenna distinguishes between the knowledge or thought that happens at the level of the rational human soul and at the level of pure intellect. In some respects the latter kind of knowledge is indeed non-discursive, as we will see. But like Plotinian *noēsis*, it is not in any way mystical. Studying Avicenna's general theory of intellection needs to be kept apart from the question of whether

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[3] See Adamson (forthcoming). Other studies of the commentary include L. Gardet (1951a) and J. Janssens (1997).

[4] This is because of Plotinus' infamous doctrine of the undescended soul. On the late ancient debate over this doctrine see C. Steel (1978).

Avicenna believes that the intellect's knowledge of God must be mystical. Though the latter question is not my main focus, I will address it at the end of the paper by showing that we can understand intellectual knowledge of God within the theory that accounts for all other intellection. There is something special about knowledge of God, but it has to do with the affective experience that accompanies the knowledge, not the mode of the knowledge itself. Purely from an epistemological point of view, for Avicenna knowing God is not unlike knowing a triangle.

Avicenna's theory of human intellection is set out in numerous works, especially his treatises on the human soul. These range from what was probably his first work, the *Compendium on the Soul*, to his very last work, the brief *On the Rational Soul*, by way of the *Nafs* sections of *an-Naǧāt, aš-Šifāʾ* and *al-Išārāt*, to mention only some of the main texts.[5] In all of these works Avicenna is happy to refer to the rational soul's knowledge of an intelligible as the "grasping of a form (*ṣūra*)." This he has taken from Aristotle. How does one go about grasping such an intelligible form? The first step is to go through a process of abstracting the forms from sense experience.[6] It is important that the resulting abstracted forms are universal and not particular. As such they cannot come solely from encounters with particular objects; rather, the grasp of the intelligible must be facilitated by contact with the active intellect, which is the seat of the intelligible forms. Thus the soul receives the form, as it were, from two directions: more accurately, it receives the intelligible form from the active intellect, but is "prepared" to do so through the process of abstraction. How does the soul understand the form that is emanated into it from the active intellect? Avicenna says that the soul engages in a process called "combination and division (*tartīb* and

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[5] I have made use of the following editions, consulting translations where they were available. Avicenna, *Maqāla fī n-Nafs ʿalá sunnat al-iḫtiṣār* (1875), with German translation by S. Landauer. Avicenna, *Fī n-Nafs an-nāṭiqa* (1952), 195–198; English translation by D. Gutas in Gutas (1988), 72–78. Avicenna, *an-Naǧāt: an-Nafs* (1912), 256–316; English translation by F. Rahman in *an-Naǧāt* (1952). Avicenna, *aš-Šifāʾ: Kitāb an-Nafs* (1959); henceforth Rahman. Alternate edition and French translation in *Šifāʾ: Kitāb an-Nafs* (1956); henceforth Bakoš. Avicenna, *al-Išārāt wa-t-Tanbīhāt* (1957–1960); French translation by A. E. Goichon in *al-Išārāt wa-t-Tanbīhāt* (1951). All translations given in this paper are my own unless otherwise noted—where I have used the translations of others I have sometimes modified them in the interest of keeping terminology consistent.

[6] See D. Hasse (2001).

tafṣīl).” The terminology has as its ultimate ancestor the method of "collection and division" used in Plato's *Sophist*, though in Avicenna's hands its use owes more to the procedures of Aristotelian science.[7]

Let us take for example the intelligible form "man." The soul knows this form only after it has gone through a process of seeing what is common to all men (*tartīb*), as well as what it is that distinguishes man from other species, such as horse (*tafṣīl*). The Avicennan text that explains this process best is *aš-Šifā': an-Nafs* V.6. Here Avicenna says that "forming the concept of the intelligibles (*taṣawwur al-maʿqūlāt*)" occurs "in the soul when it divides and combines them" (Rahman, 241.5ff.; Bakoš, 237.14). He goes on to add that the process of dividing concepts is proper only to the rational soul:

> One of the two [kinds of knowledge][8] is knowledge involving discursive thought (*ʿilm fikrī*), which is perfected completely only when it is combined and synthesized (*tarattaba wa-tarakkaba*). The second is simple knowledge (*al-ʿilm al-basīṭ*), which does not involve having one form after another; rather, it is the only [kind of knowledge] from which the form emanates into what receives the form. The latter [sc. simple knowledge] is knowledge that is the agent (*ʿilm fāʿil*) of the thing that we call knowledge involving discursive thought (*ʿilm fikrī*), and is its principle. It is[9] the absolute intellectual power of the soul that participates in the active intellects. Division (*tafṣīl*) belongs to the soul as such, and what does not have this does not have psychic knowledge. [. . .] Know that in the unmixed intellect there is from these two [kinds of knowledge] no multiplicity at all, and no combining (*tartīb*) of forms. Rather it [sc. the intellect] is the principle of all the forms, which

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[7] The Platonic echo is also noted by C. Baffioni (1981), 609.

[8] The context of the passage cited here is a discussion of how one can store previously acquired knowledge such that it is immediately (*fī l-waqt*) available, for example, if someone asks you a question to which you already know the answer. Avicenna goes on to point out that you could be certain that you know something without actually thinking about it—perhaps an example would be knowing that I know what the Pythagorean theorem is, even though I am not thinking about it or using it now. Avicenna suggests that the "simple knowledge" is the knowledge one has, e.g., of the theorem, while the discursive knowledge is what provides certainty that one has the knowledge. To extend our example: one grasps the theorem intellectually and simply, but one can also think discursively through the proof by which one first arrived at the theorem (in general this is the kind of knowledge used to answer any instance of the question "but how do you know that?" or "how can you be sure?"). All of this, however, is only one application of a distinction between two kinds of knowledge, one simple and one discursive, which is of wider significance in Avicenna's epistemology, as we will see presently.

[9] Reading *huwa al-qūwa* with MSS C, D, E, F and H for Rahman's *huwa li-l-qūwa*, which is found only in MSS A, G and K.

emanate from it to the soul. [. . .] But the soul of the knower, inso-
far as it is soul, forms concepts by combining and dividing, and there-
fore it is not simple in any way. (*aš-Šifāʾ: an-Nafs*, Rahman, 243.7–244.4;
Bakoš, 239.11–240.8)

Avicenna here sets out a distinction between two kinds of knowl-
edge. The first is called *ʿilm fikrī*, or "knowledge involving discursive
thinking." It belongs to the soul and only to the soul. (For reasons
that will become clear shortly I will translate *fikr* as "discursive
thought," rather than simply "thought.") The second is "agent" or
"simple" knowledge (*ʿilm fāʿil* or *basīṭ*). It belongs to pure intellect,
but soul partakes of it when it "participates in the active intellects."
What Avicenna seems to be saying here is that *fikr* involves divid-
ing up concepts or intelligible forms that are simple and unified in
the intellect. The division happens only *after* these forms are emanated
from the intellect into the soul (243.17).

This theme is a constant one throughout Avicenna's epistemolog-
ical works. Already in the *Compendium on the Soul*, he had written of
"analysis and synthesis (*at-taḥlīl wa-t-tarkīb*)" (364.7) ascribing this to
"intellect (*ʿaql*)," which here as often means the theoretical faculty
of the soul. At the end of his career in *On the Rational Soul*, he defines
fikra as reaching the secondary intelligibles via "composition and syn-
thesis (*at-taʾlīf wa-t-tarkīb*)" of the primary intelligibles (196.1). This
seems to take us rather close to something we might call "discur-
sive" knowledge, as is already suggested by the terminology he uses:
fikr is used in the *Theology of Aristotle* as a rough analogue to *dianoia*.
The notion of *dianoia* in Plotinus and other Neoplatonists turns, like
Avicenna's notion of "division and combination," on the relation-
ship between intellect and soul. For Plotinus the soul thinks discur-
sively because it "unfolds" or divides the pure forms that are in
intellect. The distinction between these two kinds of mental activity
is the basis of the Plotinian distinction between soul and intellect.
For Avicenna, both kinds of mental activity exist in the soul: the
soul's proper and basic ability is, as we have seen, *fikr*, which is the
division and combination of intelligibles. Still, it is also capable of
pure intellection, which is its immediate reception of intelligibles in
an emanation from the active intellect.[10]

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[10] Actually things are even more complicated than this, because eventually Avicenna
will recognize a secondary kind of thought (*fikr*) that takes place in the "cogitative
faculty," which is located in the middle ventricle of the brain, as has been shown

This puts us in a position to say more clearly what Avicenna might have in mind when he gestures towards a non-discursive kind of thinking. As so often in Neoplatonism, the basic contrast is between what is simpler and what is more complex or multiple. Here are three closely related candidates for explaining what is distinctive about non-discursive thought, all of them based on the contrast between simplicity and multiplicity:

(a) Discursive thought requires time, because it "goes from thing to thing": as a thought process it has discrete parts or stages that are not grasped all at once. Non-discursive thought does not require time, but happens outside of time or in an instant.

(b) Discursive thought, on the one hand, has as its object something multiple, because the various parts of the temporal process just mentioned grasp either different things or different aspects of the same thing. Non-discursive thought, on the other hand, has a simple object. A corollary is that what engages in non-discursive thought is itself simple, for such a thinker grasps its object by

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by Dimitri Gutas (2002b), 22. Like the thinking that happens in the rational soul, the thinking in this embodied faculty has the responsibility to "combine" and "divide," but using images gathered by the senses rather than intelligibles. I have been greatly helped by Gutas' paper, though the connections between my account here and his are too complex to detail here. Essentially I am accepting Gutas's interpretation of what he calls the "standard version" of Avicenna's epistemology, i.e., the version found in *aš-Šifāʾ* and other texts from the middle period of Avicenna's career (including his commentary on the *Theology*). I am suggesting, though, that there is an aspect of the soul's knowledge that Gutas does not discuss, namely, a non-discursive kind of knowledge in which soul "thinks" the way that a pure intellect thinks. In the standard version intuition (*ḥads*) is part of *fikra*, or discursive thought. Following Gutas, I believe that what happens in the "revised" theory of *al-Išārāt* and *al-Mubāḥaṯāt* is that Avicenna fundamentally changes his notion of intuition. I would add, though, that in the revised version intuition takes on some characteristics of what in the standard version had been non-discursive thinking. This is shown, first, by the fact that in the standard version intuition is not instantaneous. Even the quickest form of intuition, namely, "acumen (*ḏakāʾ*)," is merely "very fast" (taking "an infinitesimally short period of time"; see Gutas (2002b), 4–5), while non-discursive knowledge is instantaneous, as we will see below; however, in the revised version intuition is instantaneous or "all at once" (see Gutas (2002b), 20). Second, intuition in the standard version is explicitly said to be an aspect of discursive thinking (*fikra*), whereas it is opposed to *fikr* in the revised version. Despite these differences, and despite the development of a split theory of *fikr* into two processes, one bodily and one immaterial, the doctrine I am outlining is generally consistent through all of the texts I have examined. In particular, the standard and revised versions are united in using the term *fikr* to refer to a specifically *discursive* kind of thought, which involves combination and division.

becoming identical with that object; if the object is simple, then so is the subject.

(c) Discursive thought is structured linguistically or propositionally, whereas non-discursive thought is not. This is suggested by points (a) and (b): to express something linguistically takes time, and what is expressed (the utterance, or the bit of linguistically structured thought) has parts. Because of his commitment to Aristotelian logic, Avicenna believes that knowledge is expressed in language by means of propositions that are arranged in syllogistic arguments. Thus, for Avicenna the proposal that there is a kind of thought that is non-linguistic boils down to the proposal that there is thought that is *non-syllogistic*.

As it turns out, Avicenna believes that the properly intellectual mode of thinking is non-discursive in senses (a) and (b), but not in sense (c). That is, it grasps its object "all at once" and it grasps a simple object, but its grasp is nevertheless structured syllogistically. I will first review the evidence for this interpretation in Avicenna's psychological works, before moving on to his commentary on the *Theology*.

Regarding (a), time, Avicenna says this:

> Now concerning the intellect, when it perceives things among which there is prior and posterior, it necessarily knows time along with them, yet it does this without being in time itself, but in one instant (*wa-ḏālika lā fī zamānin bal fī ānin*). The intellect thus knows time in an instant. As for its synthesis (*tarkīb*) of the syllogism and definition, it is without doubt in time, except that its forming a concept of the conclusion and of what is defined happen all at once (*dufʿa*). (*aš-Šifāʾ: an-Nafs*, Rahman, 237.12–15; Bakoš, 234.5–8)

The terminology here is also used throughout Avicenna's career. Early on his epistemological theory has not yet been worked out fully, but still he speaks of intellect proper as grasping something in an instant (*al-āna*, corresponding with the Greek *to nun*):

> The process (*ṭarīq*) of the intellect's act takes place in a period of time, as it goes through the syllogisms by using deliberation (*rawīya*). But its reaching the conclusion in itself—which is the fruit of discursive thought (*fikr*) and the end of the inquiry—does not require any time and happens in an instant (*fī ān* [cf. Gk. *to nun*]). In fact, the essence of the intellect is completely above time.[11] (*Compendium on the Soul*, 364.10–14)

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[11] The last statement should be compared to *Liber de Causis* Proposition 2, and

Later than the *Šifāʾ*, Avicenna is still using the "all at once" language, when he defines "divine emanation" as an "inspiration coming from the Lord (*al-ilhām ar-rabbānī*),[12] occurring all at once (*dufʿa*) and revealing some intellectual truth" (*On the Rational Soul*, 197.18–19, Gutas' translation, modified).

The idea presented in all of these passages is that the intellection of soul does not require time. In the passage from *aš-Šifāʾ*, Avicenna speaks of the "intellect (*ʿaql*)," which again here means the theoretical faculty of soul,[13] as thinking in two ways. The passage alludes to the "composition" that is involved in *fikr* and affirms that this does require time. The properly intellectual way for it to think is for it to grasp its objects "in one instant," despite the temporal relations that obtain between them in the physical world. An example of the contrast is also supplied: one may be thinking one's way through a syllogism or working towards a definition via the process of combination and division outlined above. This takes place over a period of time, but when the conclusion is reached, or the definition is achieved, that is a moment of pure intellection and is instantaneous, requiring no time at all.

When this occurs, the soul has gone beyond *fikr* and engaged in the "simple knowledge" that is proper to intellection, which, as we saw above, does not need to go "from one form to another," but grasps the relevant intelligible or intelligibles all at once. The soul thus engages in a kind of thinking that fulfills criterion (b) for non-discursivity: its thinking is simple. To use once again our example of the form "man," one might go through the process of noting that men are rational, that they are mortal, that they are animals, and that they are substances. "Rational," "mortal," "animal" and "substance" are separate forms and are grasped separately, so this process takes time. Still, there is also a single, intellectual grasp of the form "man." This one act of intellection includes within it a grasping of the forms

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Theology of Aristotle II.14, which both say that the soul is above time. It is perhaps worth reminding the reader that, according to the Aristotelian conception of the instant or "now," which Avicenna broadly accepts, the instant is not a minimal part of time or even an infinitely small period of time, but occupies no time at all. It is therefore, in a sense, "outside of time." See further J. McGinnis (1999).

[12] Compare this to the phrase *ilhām ilāhī* at *Compendium on the Soul* 361.11; see further below.

[13] This becomes clear when Avicenna subsequently speaks of this *ʿaql* as being "weak" because the soul is paying attention to the body (Rahman 237.16–18; Bakoš 234.8–10).

"rational," "mortal," "animal" and "substance" and is instantaneous and is nothing more than coming to understand that "man" is defined as a "rational, mortal, animal substance" (the example is drawn from the *Compendium on the Soul*, 364.6ff.). The non-discursive intellection will normally happen only when one has already gone through the more laborious discursive process.

Like Plotinus, Avicenna accepts that there are numerous grades of simplicity. He often speaks as though all immaterial things were alike in their simplicity, whereas material things are complex. According to this broad division the rational soul is simple, and Avicenna proves this on the basis that its objects are immaterial, which is in turn shown by the fact that the objects are universal. Avicenna follows Aristotle, however, in holding that an immaterial knower is of the same nature as, if not completely identical to, its object. Thus if soul's rational knowledge is more complex or divided than the knowledge that belongs to a pure, separated intellect, then there must be a corresponding difference between the simplicity of soul and of pure intellect. Avicenna affirms this in the following passage (partially cited above):

> Thus one must believe that the state of separated, pure things is in accordance with (*fī*) their intellection (*ʿaql*) of things. For their intellection is the intellection that makes and creates the forms, not the one that is because of the form, or in accordance with the forms of the soul. But the soul of the knower, insofar as it is soul (*min haytu hiya nafs*), forms concepts by combining and dividing, and therefore it is not simple in any way. (*aš-Šifāʾ: an-Nafs*, Rahman, 243.17–244.4; Bakoš, 240.4–8)

This passage is clear that the human soul, *insofar as it is soul*, is complex precisely because of the discursivity of its thinking,[14] and this despite the fact that it is both immaterial and capable of grasping immaterial objects. Indeed, Avicenna will in the *Discussions* (*al-Mubāḥatāt*) say that "synthesizing (*tarkīb*) universal terms is not something that is apt to be done through faculties or organs of the body."[15] So the soul's ability to combine and distinguish universals proves that it is

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[14] Avicenna is not particularly consistent on this point, especially in other contexts where he is only trying to contrast soul to bodily things. Thus in *ar-Risāla al-Aḍḥawiya fī l-maʿād* (*Epistle of Immolation on the Afterlife*) he says that the rational soul is "completely simple (*basīṭa ʿalá l-iṭlāq*)"; Avicenna, *ar-Risāla al-Aḍḥawiya fī l-maʿād* (1969), 197.4.

[15] Cited in Gutas (2002b), 22; Gutas' translation, modified.

simpler than body; yet its need to go through this process shows that it is less simple than intellect. This leaves open the question of what we should say about a rational soul that has achieved intellection, either sporadically in this life or eternally in the next: perhaps a soul like that would be equal to intellect both in its simplicity and its mode of thinking.

The final and most problematic question about Avicenna's theory of non-discursive thought is (c): whether he believes that intellectual knowledge is structured syllogistically. Or, to put it another way, whether there is any way to grasp an intelligible *other* than by grasping propositions and fitting them together into syllogisms. The question is a matter of controversy with regard to Plotinus,[16] and with Avicenna the answer is equally difficult. In the early *Compendium*, he seems to hold that there is indeed knowledge that is non-syllogistic. This emerges from two passages:

> Intelligible forms come about in [the rational soul] in two ways. The first is through divine inspiration (*ilhām ilāhī*), without learning or using the senses, for instance the self-evident intelligibles (*al-maʿqūlāt al-badīhīya*), such as our conviction that the whole is greater than the part and that contraries are not joined in one and the same thing at the same time. Accomplished and learned persons are in agreement in accepting these forms (*ṣuwar*). The second way is acquiring them syllogistically (*qiyāsī*) and finding them out through demonstration (*burhānī*). (*Compendium on the Soul*, 361.10–14)

> In some people, the rational faculty may be prepared by alertness (*yaqẓa*) and conjunction with the universal intellect, such that it may refrain from having recourse to syllogism and deliberation (*al-qiyās wa-r-rawīya*). Instead, it is provided for sufficiently by inspiration (*ilhām*) and revelation (*waḥy*). (*Compendium on the Soul*, 364.19–365.2)

Both of these passages contrast syllogistic thinking to something Avicenna calls "inspiration (*ilhām*)." In the first passage the mechanism in question seems to provide only first principles, but in the second it would seem to cover all intelligible objects, since the inspired person is thereby "provided for sufficiently."

The view expressed here, though, is left behind in later works. As Dimitri Gutas has shown, Avicenna developed a different theory of

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[16] A. C. Lloyd (1969–1970) holds that intellection in Plotinus is non-propositional. This was questioned by R. Sorabji (1983), chapter 10. A rejoinder appeared in Lloyd (1986).

how we grasp the first principles, namely, the theory of intuition (*ḥads*).[17] I believe that the development of the theory of intuition is part of a more general rethinking of the rather vague epistemology of the *Compendium* and that another aspect of this shift is that Avicenna comes no longer to accept the idea of non-syllogistic thinking. In a text already cited above, Avicenna contrasts the soul's assembling or "synthesizing" (*tarkīb*) the syllogism to "drawing a conclusion" from that syllogism and says that the latter is instantaneous. The point seems to be that in this non-discursive sort of knowledge the whole syllogism is grasped at once rather than that in such knowledge there is no syllogism to be grasped.

There are many passages in Avicenna's mature works where he says that the rational soul or mind in general always grasps intelligibles by laying hold of the terms or middles of syllogisms.[18] I do not see any reason to exclude from this rule the knowledge that the rational soul has when it is actually receiving an immediate emanation from the separated intellect. It is also worth noting that even in the *Compendium*, though Avicenna claims that the first principles can be grasped without using syllogisms, he is happy to express them in propositional form (e.g., "that the whole is greater than the part"). Indeed it may be that in these two passages from the *Compendium* he does not even mean that the "inspiration" is non-syllogistic in form, but only that if you have an inspiration you may reach it without the trouble of going through the syllogism step-by-step, much as he suggests in the later works.

In the *Mubāḥaṯāt*, however, Avicenna is clear that such emanation is syllogistic. Consider the following two passages:

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[17] See D. Gutas (1988), 159–176. Remarking there on the first of these two passages, Gutas writes that "the body of what was later to become his theory of intuition is perceptible, but its soul, intuition itself, is missing. He says that intelligibles are acquired either through syllogistic reasoning or, in the case of some keen-minded people, through inspiration and revelation" (171).

[18] See e.g. *an-Naǧāt*, 272.17–273.2: "the intelligible truths are acquired only when the middle term of a syllogism is obtained" (parallel to *aš-Šifāʾ: an-Nafs*, Rahman 249.4–5; Bakoš 245.9–10; tr. Rahman, 36). For discussion of a useful example from Avicenna's logical writings, see D. Hasse (2000), 181. Here the middle term of the syllogism, which Avicenna expresses as a proposition ("the cause of the shining of [the moon] is the sun")—though as Hasse notes strictly the middle term should be "having the sun as the cause of shining"—is grasped by "intuition (*ḥads*)," which I take to be a kind of non-discursive thought (see above, n. 9).

> Discursive thinking (*fikr*) needs to come in contact with the principles in order to bring forward definitions and to form concepts of them and in order to bring forward the middle [terms]. But the function of combining (*tarkīb*) is up to it. (*al-Mubāḥaṯāt*, 595, Gutas' translation modified)

> Middle terms come only from the divine emanation. Sometimes they come through intuition . . . and sometimes they come without any attention having been paid even to the two extreme terms. (*al-Mubāḥaṯāt*, 599–601, Gutas' translation modified)

Gutas aptly cites these passages[19] in tracing the development of Avicenna's account of intuition. I think that they also show something more general about his epistemology. The first passage makes it clear that, as we saw in the *Šifā'* and other works, the rational soul goes through two stages in its grasp of an intelligible. The second stage, as mentioned here, is "combining" the intelligibles. The first stage is its union with the active intellect. We saw before that this union is non-discursive in senses (a) and (b)—it takes no time and grasps a simple object with a simple act of intellection. Yet here it is said to be concerned with forming concepts, definitions and middle terms, in other words, with acquiring the building blocks of syllogisms. The second passage shows the same thing, because it states that emanation of intelligibles from the active intellect involves middle terms. It seems fairly clear, then, that in Avicenna's psychology there is no such thing as knowledge that is non-discursive in the sense (c) that it is not structured syllogistically.[20]

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[19] Gutas (2002b), 19 and 27.

[20] An obvious problem for Avicenna, on my interpretation, is that he says both (b) that intellection is simple, that is, without parts and (c) that it is syllogistic—but syllogisms have parts. As we have seen Avicenna would recognize that there are grades or degrees of simplicity: not everything called "simple" is equally simple. The most straightforward way of understanding this is that the more multiple is characterized by more *kinds* of multiplicity than the simpler. For example, intellection is simpler than discursive thought, because intellection has parts only in the sense that its object is complex (the syllogism has parts), whereas discursive thought is multiple in this sense, but also in other senses, notably that it takes time, that is, has temporal parts. As we will see below, however, Avicenna also believes that the intellect grasps numerous intelligibles implicitly by grasping a single intelligible. For example, as suggested already, it grasps "rational" and "animal" *by* grasping "man," not separately. Ultimately it may be supposed that the active intellect grasps itself, and thus grasps without any separation all of the intelligibles with which it is identical. This is implicitly to grasp all the syllogisms involving those intelligibles. On this view, the division of the syllogisms into parts is not actually, but only implicitly, present in the act of intellection.

We can now turn to Avicenna's commentary on the *Theology of Aristotle*, which will help us to confirm and deepen our understanding of non-discursive thinking in Avicenna. As one would expect, the commentary is also quite revealing about Avicenna's attitude towards the Plotinian source text. In his commentary he is at pains to agree with the *Theology*, at least superficially. In fact, though, he does so simply by glossing the text so as to bring it into line with the system familiar from the encyclopaedic works of Avicenna's middle period. Epistemological issues are no exception. All of the key aspects of Avicenna's epistemology are deployed in the commentary, even when the view put forward in the *Theology* runs counter to Avicenna's view. More often, the points Avicenna raises seem simply irrelevant to the line of thought being pursued in the passages he is commenting.

For instance, the *Theology* inherits Plotinus' pessimism about gleaning knowledge from sensation and urges us to turn away from the body entirely. Avicenna takes a more optimistic attitude towards the body throughout the commentary[21] and alludes to the soul's need to abstract the intelligibles from sense experience. This is in response to a passage in the *Theology* (19.9–10) that sets out a distinction between the soul's "universal desire" and its "particular desire." The point of this is to say that the soul, as the principle that gives form to the physical world, exercises providence over material things in two ways. On the one hand, as the world soul, it governs the world as whole, expressing a "universal desire." On the other, it may govern individual physical things and "adorn them and augment them in beauty and purity." Here is part of Avicenna's commentary on this passage:

> In other words, the thing that perfects the soul when the soul desires it may be something universal or something particular. If it is something universal, the soul takes on the thing's universal form in act, and treats it as a universal, "without separating from its" intellectual, "universal world." That is, even though this intellect of the soul is in the body in a way appropriate for its essence, insofar as it is united to the active intellects, it is not separated from them, i.e., turned towards other things. Whereas if this desire is for particular things, which are forms in [matter] that imitate the universal forms, then the soul "adorns them and augments them in purity and beauty," and so on. The soul "augments them in beauty" insofar as it abstracts them in the ways

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mentioned in the books *De Anima* and *On Sense and Sense Objects*. The most excellent of these is intellectual abstraction. (*Commentary on the Theology*, 40.3–9)

Here Avicenna, essentially ignoring the point of the source text, introduces the two chief components of his own epistemology: on the one hand, the soul takes its intelligibles through contact with the agent intellect, but, on the other hand, the acquisition of these intelligibles will normally require a process of abstraction from sense experience. Avicenna even refers us to Aristotle's psychological works so that we can understand how this occurs.

This passage and others like it show us Avicenna's remaking the *Theology* in his own image. The (rational) soul is an immaterial substance related both to the body and pure intellect. The body is the source of the soul's knowledge of particulars. Pure intellect, which he in the commentary calls the "world of intellect" in deference to the terminology used in the *Theology*, is the seat and source of universal forms. This incidentally raises a problem for Avicenna, familiar from his famous discussion of God's knowledge (see *aš-Šifāʾ: al-Ilāhīyāt* VIII.6), namely that a pure intellect apparently cannot know particulars. As usual Avicenna's answer is that the intellect knows the particulars indirectly, insofar as particular truths are derivable from universal truths.[22] Avicenna says that even the soul, in its state of greatest separation from the body, lacks knowledge of the particular *qua* particular.[23]

Avicenna uses this distinction between the universal and particular to great effect in glossing problematic sections of the *Theology*. One such section is found in the second chapter of the *Theology*. This passage is original in the Arabic version and represents a considerable departure from Plotinus, both textually and doctrinally.[24] The part of the argument relevant for us reads as follows:

The intellect is ignorant of the things that are under it, as we have said before, because it does not need knowledge of them, since they are in it and it is their cause. The ignorance of the intellect is not a privation of knowledge; rather, it is the ultimate knowledge, for it

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[22] He says, for example, that "every particular is grasped there [i.e., in the intellectual world] as necessitated by its causes, and this manner of grasping makes the particular universal" (*Commentary on the Theology*, 48.17–18).

[23] See *Commentary on the Theology*, 48.2–3: "it is known that the soul, when its essence is separated, does not attend to the particulars insofar as they are particular."

[24] On this passage see C. D'Ancona Costa (1993) and Adamson (2002), 4.2.1.

knows the things not as with the knowledge the things have of them-
selves, but [with a knowledge] above this, and more excellent and
higher, because it is their cause. The knowledge that things have of
themselves is, for the intellect, ignorance, because it is not proper or
complete knowledge. (*Theology of Aristotle*, 37.10–14)

The author seems to be saying that intellectual knowledge is like
"ignorance" only in the sense that it is "not knowledge," where
"knowledge" means the sort of knowledge proper to lower things:
the knowledge involved in sense perception or the *dianoia* that is
engaged in by soul, for example. To call intellection "knowledge"
in this lower sense would be to damn intellect with faint praise.
While the author is clear that he means to contrast intellection to
these lower forms of knowledge, he is not very forthcoming about
the basis of the distinction. He seems to draw primarily on the
premise that adequate knowledge is knowledge through causes, a
commonplace of Greek philosophy since at least Aristotle (see e.g.,
Posterior Analytics, I 2, 71b10ff.). It is better to know the cause than
the effect, and intellect does this by knowing itself; it does not know
its own effects at all, except insofar as they are contained within its
own causal power.

   In his commentary Avicenna agrees with the author of the *Theology*
that intellection is differentiated from lower forms of knowledge
because it is a grasp of different objects. Insofar as it is so distin-
guished one might call it "ignorance." Thus Avicenna says, "and
this kind of awareness . . . is ignorance of the particular insofar as it
is particular" (53.4–5). The position is much more rigorous than
what we find in the *Theology*: intellect grasps universals, whereas lower
kinds of awareness grasp particulars.[25] Really, though, Avicenna is
being disingenuous when he accepts the *Theology*'s epithet "ignorance"
for intellection, as contrasted to "knowledge," *ma'rifa* or *'ilm*. For
Avicenna is in fact simply asserting that intellection is Aristotelian
epistēmē (usually translated *'ilm*), insofar as it grasps universals and not
particulars: a point for which Aristotle has argued in *Posterior Analytics*
I 24. If he calls this ignorance, it is merely to point to the fact that
there are objects not grasped in this manner, namely, particulars.

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[25] He has just made the same point in his comment on *Theology*, II.40: heavenly
souls, insofar as they are embodied, "perceive the corporeal states through the
medium of their perception of their corporeality, the perception's being corporeal
and particular, separated from the pure intellectual perception" (51.2–3).

As Avicenna adds, quoting Aristotle,[26] "in many cases it is better not to know than to know" (54.6).

Clearly then Avicenna draws a sharp distinction between intellectual awareness of universals and a lower kind of awareness that deals with particulars. Still, his taxonomy of awareness proves on closer inspection to be more complicated. Awareness of particulars, as Avicenna proves in the *Naǧāt* and *Šifāʾ* using a geometrical diagram, must be awareness that is located in the body: only the body can receive a form together with the accidents that necessarily accompany the particular as such. When we distinguish between discursive and non-discursive thought, though, this is not a distinction between awareness of particulars and of universals respectively; rather, it is a distinction between two different ways for the immaterial soul to think about universals. To recapitulate, the distinction is based on the differing functions of pure intellection and "psychic" discursive thought (*fikr*): the former has an instantaneous and simple grasp of intelligible objects, whereas the latter has the responsibility for dividing and combining intelligibles that are so grasped.

This distinction is maintained in the commentary on the *Theology*, and Avicenna presents some aspects of the distinction in greater depth than elsewhere. Consider the following passage:

> For there is no transition (*intiqāl*) there [sc. in the intellect] from state to state. So much so, it does not happen that the universal concepts precede the particular concepts in time, as happens here when one possesses the intelligibles. For the universal occurs first, then some time elapses, and then division (*tafṣīl*) occurs. But rather, the knowledge is undivided (*muǧmal*), insofar as it is undivided, and divided (*mufaṣṣal*), insofar as it is divided, simultaneously, not at two different times. (*Commentary on the Theology*, 48.10–14)

In these important lines Avicenna makes several of the points we have seen elsewhere. First, and most importantly, he reaffirms the two-stage process outlined in the *Šifāʾ*: when the soul grasps an intelligible, first it acquires the universal (e.g., "man") and then it engages in division of the intelligible (e.g., into "rational," "animal" etc.). This is in contrast to the active intellect, which grasps everything together, including the division that is implicit in this encompassing awareness.[27]

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[26] Badawī identified the source as *Metaphysics* XII(L) 9, 1074b33; see *al-Inṣāf* (1947), 54 n. 4.

[27] In this at least Avicenna is on firmer ground in his interpretation of the *Theology*.

Second, intellectual thinking does not require the passage of time. The reason is given in the passage just cited: unlike the lower thinking of the soul, intellection need not make a "transition from state to state," precisely because it grasps the thing in its complexity all at once rather than in stages. Elsewhere in the commentary Avicenna writes:

> The quiddities (*māhīyāt*) are not known by the principles [sc. the pure intellects] as separated, paradigmatic quiddities like the Platonic Forms. Rather, the second quiddity is known only because it gets its existence from and is necessitated by the first quiddity. But to the extent that [a quiddity] is not necessitated in [the intellect], the intellect does not know the many separate parts among which there is no single order and in which no priority and posteriority occurs. (*Commentary on the Theology*, 50.15–18)

Again, Avicenna says here that to the extent that there is any essential structure of prior and posterior in a single intelligible (an example might be that the human must be an animal before he can be rational), or between two intelligibles (for example that fire necessitates heat, perhaps) the intellect will grasp this structure. Yet the intellect grasps this all at once, in a simple act of awareness. It is thus outside of time:

> The higher world is in the domain of endless duration and eternity and is the stable world, not the world where new things happen (*ʿālam at-taǧaddud*),[28] for example discursive thought (*fikr*) and memory. The world where new things happen is precisely the world of motion and time. The pure intellectual concepts, as well as the intellectual concepts that come to be particular and material are all there [sc. in the

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A passage he does not comment directly reads as follows: "I say that all intelligibles and living things are in the intellect, because they are divided (*tanqasimu*) in it. The division in the intellect, though, is not because the things there are abiding in it, nor because the things are composed in it; rather, it is the maker of the things, even though it makes one thing after another thing, with ordering (*tartīb*) and arrangement (*taqis*, transliterating the Greek *taxis*)" (98.9–11). In his commentary, Avicenna also emphasizes the simplicity and unity of the forms in the intellect, despite the implicit structuring or division among the forms: "these forms that are in the intellectual world are not distinguished or separated from each other, nor does any one of them stand in isolation from any other, as in the corporeal world where you see that the sun is isolated from the moon, and Zayd from ʿAmr; rather, all of them are simultaneous (*maʿan*), and each of them is in every other" (59.2–4).

[28] Jon McGinnis has pointed out to me that the terminology here reflects that used in the *Physics* of the *Šifāʾ*, and in fact might most accurately be translated "the world of temporal becoming." This is confirmed by the next sentence, where Avicenna explains that *ʿālam at-taǧaddud* is "the world of motion and time."

> higher world] in act, and likewise is the state of our souls. (*Commentary on the Theology*, 48.6–8)

We have here again the opposition of an atemporal act of intellection to *fikr*, which takes place in time. Note too that our souls, as long as they are in contact with the pure intellect, are also said here to escape time; it is only the lower, discursive activity of soul that is temporal.

Intellection as described in the commentary thus fulfills conditions (a) and (b): it takes no time and is simple, having a simple object. We now need only to determine whether Avicenna would here recognize thinking that is (c) non-syllogistic. The answer is already suggested to some extent by passages we have just examined: although the intellect's act of awareness and its object are simple, there is a structure for the object insofar as there is an order of priority and posteriority within the intelligible. At one point Avicenna even goes so far as to admit that multiplicity is not completely excluded from the world of intellect, precisely because there are still relations of entailment between the intelligibles.[29] It would be natural to suppose that these entailment relations could be captured syllogistically, and this seems to be confirmed by the following passage:

> He says that this world [sc. the intellectual world] is complete in the extreme, which is its excellence. There is no doubt that in it are all things. In other words, insofar as it is intellect, it necessarily knows its own essence and all things necessitated by its essence. For if it knows its essence, it knows what its essence necessitates, with no intermediary. It also knows all the things that are in turn necessitated by what it necessitated, without an intermediary. For it is not intellect in potency, needing anything to be brought to its attention. (In which case it could happen that something that it necessarily knows and could not possibly be ignorant of, would yet come to its attention; that happens only in deficient intellects. If this were the case, then its understanding (*ḥukm*) would be the same as our understanding had the middle terms been brought to our attention according to their ordering (*tartīb*), after which we would by necessity know all the conclusions.) There [i.e., in the intellectual world], however, what we have in deficient potency, or in potency that is near completion, is complete in act, so it is necessary that [the intellect] knows everything, and that everything is known:

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[29] "It is not the case, as some say, that there is no multiplicity there [sc. in the intellect]. Not that there is multiplicity there in the sense that its essence would have parts; rather, the multiplicity is due to what is necessitated by the essence, since some things are necessitated by others in the intellectual world." (*Commentary on the Theology*, 58.7–9)

that the form of every intelligible thing is present to it, purified of foreign trappings. (*Commentary on the Theology*, 62.7–15)

According to this, the difference between intellection and the deficient knowledge of soul is *not* that the soul's knowledge is syllogistic and intellect's knowledge is non-syllogistic. Instead, the difference is that the intellect grasps all the middle terms and the resulting conclusions (the relations of necessitation mentioned earlier in the passage) necessarily and always, and all at once. The soul, by contrast, grasps them only potentially and so must discover them separately.

Here Avicenna definitely disagrees with the *Theology*, which says at one point:

If the intellect were the producer (*mubdiʿ*) of discursive thought (*fikr*), then it would no doubt be so either through premises or through conclusions. But premises and conclusions belong to the knowledge of sensibles, and the intellect does not know anything from the sensibles, with knowledge of the sort involved in sensation. Therefore the intellect is not the principle of discursive thought. For the intellect begins in and ends at its knowledge from the spiritual intelligible (*al-maʿqūl ar-rūḥānī*). If the intellect is this way, then how could the intellect reach the sensibles through discursive thought or deliberation (*fikr wa-rawīya*)? (*Theology of Aristotle*, 66.16–67.2)

The *Theology* anticipates Avicenna in contrasting discursive thought to pure intellection. This is a contrast the author often draws when pointing out that God's thinking is non-discursive, when he says that God thinks without *fikr* or *rawīya*, a frequently used couplet in the text. The author, though, also says explicitly here that the premises and conclusions that make up a syllogism belong only to this discursive, non-intellectual mode of thinking. Avicenna does not follow the *Theology* this far, but keeps to the position that he has suggested elsewhere, namely that all knowledge, discursive or not, involves syllogistic reasoning.

The commentary thus agrees with Avicenna's other works in its portrayal of the non-discursive awareness possessed by intellect and intermittently shared by the rational human soul. This leaves open a final question, however: in the passage just cited from Avicenna's commentary, we saw that the intellect, and eventually the human soul, is able to discover everything about itself and therefore everything about what it necessitates. This takes in quite a bit, in fact everything about the sensible world as well as the intelligible world; however, it leaves out God. Indeed, it suggests strongly that the intellect cannot know God, at least not in the same way it knows other things,

because it cannot know God by knowing itself. This is why we must investigate separately the question of whether knowledge of God must be "mystical" in a way that normal intellection is not, even though the latter is non-discursive in the sense seen above.

Again, the commentary on the *Theology* is helpful in determining Avicenna's answer to this question. His answer is twofold. On the one hand, there is a way that the intellect can know God by knowing itself. On the other hand, this self-knowledge is not the only way for it to know God: the intellect can also receive a direct revelation from God Himself. Both paths are described in the following passage:

> The true nature of the divine (*al-ḥaqīqa al-ilāhīya*) is not conceived in the intellect except through a kind of analogy (*muqāyasa*), through a consideration of what [God] necessitates and through the things that emerge from Him, like something that is brought to one's notice, by means of His trace (*rasm*). If the essence of the intellect could on its own achieve a clear understanding of the true nature (*kunh ḥaqīqa*) of the First, then it would be as though the essence of the intellect were what makes the essence of the First necessary. [. . .] But its quiddity (*māhīya*) is not what makes the quiddity of the First necessary—rather the reverse. The fact that the intellect has its own essence revealed to it does not bring it on its own to the essence of the First. Instead, the truth of the essence of the First appears to the intellect only from the essence of the First in such a way that the appearance is necessary for everything prepared to receive it, but the necessity is on the side of God, not on the side of the receiver, apart from the requirement that the receiver be prepared. [The intellect's] perception of it is such that it receives from it only, with no necessity at all from the intellect's own essence or quiddity. (*Commentary on the Theology*, 53.9–16)

On its own, the intellect can achieve an indirect knowledge of God simply by observing what God has created (His "trace"). An example might be that the intellect becomes aware of God's generosity and goodness by seeing that He has created a good world. But intellect can also receive a more adequate knowledge of God from an extrinsic source, namely, God Himself. The intellect's role in bringing about this bestowal of knowledge, which Avicenna here and elsewhere in the commentary calls a "revelation" (*tağlīya*, 49.10), is limited to making itself ready to receive it. It cannot provoke the revelation using its own resources, because the revelation is necessitated only by God's generosity.[30] This is an epistemological analogue to the necessary emanation of existence in the ontological sphere.

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[30] See Gardet (1951a), 140. Avicenna further argues (50.6–10) that if intellect

There is thus a structural similarity between God's relationship to the pure intellect and the intellect's relationship to soul. Avicenna explicitly draws attention to the similarity, in fact:

> The essence (*huwīya*) of the True One is revealed when it is attained by the essence of the intellect, and the form of the intellect [is revealed] when it is attained by the soul. (*Commentary on the Theology*, 58.15–16)

The emanation of the intelligibles to the soul is thus analogous to the revelation of the true nature of God (His *ḥaqīqa*) to the intellect. How close an analogy is this? As we have seen, at the level of soul there is a two-stage reception of the intelligibles: the first a moment of non-discursive intellection, followed by properly "psychic" and discursive thinking about the intelligible. This suggests that there could be a similar two-fold process in intellect: the moment of revelation could involve a fuller grasp of God than properly intellectual knowledge of God. There is an equally good reason, however, to suspect that this is not the case. The reason that the rational soul is capable of the higher kind of knowledge is that in its highest perfection it becomes assimilated to, or even identical to, pure intellect. Thus it transcends its nature as soul—as Avicenna says, it cannot partake of this kind of thinking insofar as it is soul. If intellect had an analogous grasp of God, it would have to become unified with, even identical to, the divine essence. Avicenna seems to suggest that this is not the case when he points out that the reception of the divine revelation happens only in accordance with the innate powers of the receiver:

> The First Good bestows three things on the things [that He creates]. The first is existence. The second are the secondary perfections of existence. And the third is the revelation of His essence, [which allows things] to attain Him and to know Him *insofar as is possible*. (*Commentary on the Theology*, 52.4–6, my emphasis)

The question is how to take this final caveat: what limits are placed on the reception of divine revelation in the case of pure intellect?

The idea that there is a special, super-intellectual grasp of God is superficially suggested in the commentary by the fact that Avicenna has a special term for it: *al-mušāhada al-ḥaqqa*, or "true vision."[31] I

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knew God it would be His cause, an argument that also appears in the *Theology of Aristotle* (37.7–8).

[31] For citations of the term in Avicenna's other works, see E. Panoussi (1968), 248, nn. 40–42. See also A. M. Goichon (1938), 165.

take it that this true vision is supplied when God bestows a revelation of the sort just discussed. Avicenna describes it as follows:

> Perception (*idrāk*) is one thing and true vision is another. True vision follows perception, when the intention is turned towards the True One, and is kept away from all that preoccupies it and detains it from seeing Him, until there is, together with perception, a cognizance of the object of perception, inasmuch as the object of perception is suitable and delightful. And this is the resplendence of the pure soul that is in a state of that kind, and is liberated from every ordeal, and attains the beloved, which is loved in itself: not inasmuch as it is merely an object of perception and intellection, but inasmuch as it is beloved in its substance. When preoccupations veil perception from it [sc. the soul], how can there be true vision?! I say that this is something disclosed to you only by experience; it is not among the things known by syllogism (*qiyās*). For in the case of every one of the sensible and intelligible things[32] there are states known by syllogism and certain aspects (*ḥawāṣṣ*) of states that are known by experience. Just as taste (*ṭaʿm*) is not grasped through a syllogism, and likewise the true nature of sensory pleasures (in fact, the most that can be perceived of them through syllogism is the vague affirmation of them on the basis of analysis (*tafṣīl*)), so too, with regard to intellectual pleasures and the true nature of the states of witnessing the highest beauty, the syllogism provides you only with the fact that they are the more excellent in splendor. As for the specific nature (*ḥaṣṣīya*), you are not informed about this except by being contacted directly (*mubāšara*).[33] (*Commentary on the Theology*, 44.5–16)

Several aspects of this passage deserve comment. First, at least two features of the passage suggest that Avicenna was here influenced by, or at least alluding to, sufism. The mention of God as "the beloved" (*al-ʿašīq*) evokes the sufi theme of love for God (*ʿišq*), and Avicenna also compares true vision to "taste" (*ṭaʿm*), a common sufi metaphor for the direct experience of God.[34] Finally, Avicenna seems

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[32] Following the MS variant *wa-l-umūr al-ʿaqlīya aḥwālun tuʿlamu bi-l-qiyās* for the text's *bal akṯar mā yudrik minhā bi-l-qiyās*.

[33] My translation and interpretation of this passage have been greatly helped, once again, by Dimitri Gutas, who discussed it in a paper delivered at Cambridge University in June, 2002, titled "Avicenna: Imagination, Intellect and Mysticism." I also received valuable help from David Reisman, who confirmed that the manuscript readings followed here (see Badawī's apparatus) are found in the most accurate manuscript, Cairo Ḥikma 6m, and Jon McGinnis.

[34] The classic term for this in sufism is not *ṭaʿm*, but *ḏawq*. Still, the context of the passage, where taste is used to illustrate direct experience, supports reading the passage as influenced by sufism. A similar passage, *Commentary on the Theology*, 56.10–13,

to say that one cannot know what true vision is like until one has experienced it; it is ineffable in that "it is not among the things known by reason." Thus there are at least rhetorical gestures in the direction of mysticism here.

A second feature of the passage might also seem to support a mystical interpretation: Avicenna says explicitly here that there is something about true vision that is inaccessible to syllogistic reasoning. If true vision is non-syllogistic, then it is knowledge of a very different kind than pure intellection, which as we have seen is syllogistic despite its non-discursivity. A closer inspection of the passage, though, does not bear out this mystical interpretation. All that Avicenna says is that a syllogism cannot capture the experience of having the true vision: in other words, grasping a syllogism will not tell you *what it is like* to have such a vision. Uncharacteristically, Avicenna provides an illuminating example: a syllogism about taste (such as "all sugary foods are sweet, apples are sugary, therefore apples are sweet") will not tell you what it is like to experience taste (what it would be like to bite into the apple). Analogously, grasping something about God syllogistically will not provide you with an understanding of the pleasure of seeing God's essence; this affective experience can be grasped only directly.

This does not mean, however, that on the epistemic front there is any non-syllogistic knowledge of God.[35] Indeed Dimitri Gutas has pointed out that when Avicenna's students pressed him about the nature of true vision, he responded in the *Mubāḥaṯāt* by saying that in such vision "the middle term does not cease to be present."[36] Other passages in the commentary also indicate that the intellect's grasp of God is just like its non-discursive grasp of the intelligibles:

> When God reveals Himself to the intellect, the intellect knows Him and knows itself and from these two it knows everything all at once (*dufʿa*), not through inquiry or discursive thought (*fikr*). (*Commentary on the Theology*, 60.6–7)

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compares true vision of God with the perception of sweetness. In the *Išārāt*, Avicenna does use the term *ḏawq* in a similar context (261.10).

[35] For a contrary view see L. E. Goodman (1992), 124: "If the idea of God is not to remain an opaque virtuality, it must be the object of thoughts which a syllogism merely frames and to which a progression merely points the way, but which are grasped not discursively at all but in a pure intuition, the very intuition that orients any such progression and anchors any such syllogism."

[36] This is discussed in Gutas' paper, "Avicenna: Imagination, Intellect and Mysticism." The passage is at *al-Mubāḥaṯāt*, 597.

This passage shows that intellect's knowledge of God is part and parcel of its general intellection, which is here described along lines now familiar to us: it transcends *fikr*, and takes in all things at once. Still, as we have seen, this does not at all imply that the revelation is non-rational or non-syllogistic. What it implies, in fact, is that the revelation is received by the intellect *intellectually*, that is, non-discursively but syllogistically.[37]

In numerous passages in the commentary that mention the divine revelation in question, Avicenna is concerned with the "directness" and immediacy of the revelation. This might, again, be taken to gesture towards a kind of mysticism, but in fact all Avicenna means to say is that God can reveal Himself directly, without using any intermediaries:

> In the revelation of the truth, there is no screening of God's essence from those who receive it. Even if the reception does not happen except through an intermediary, then this intermediary is the conjunction [itself], which is removal of any screen [that could prevent immediacy]. So the intermediary is like the removal of mediation, and the revelation of the truth goes forth to the furthest thing that can receive knowledge—even if the intermediaries are many—so as to tear the screen apart. (*Commentary on the Theology*, 52.10–13)

The dramatic language brings with it a subtle critique of the parallel passage in the *Theology* (36.8–16), which does say that nothing can "screen" God from what He creates, but also makes the more general point that God is always known through intermediaries, except by His first effect. Avicenna rejects this, insisting that God can reveal Himself immediately to any creature capable of grasping the revelation. This immediacy goes along with the visual metaphor conveyed by the term *mušāhada* and with Avicenna's emphasis on the "experience" that results from the revelation. Again, though, it does nothing to imply that the revelation is mystical, any more than soul's equally immediate relationship to the active intellect is mystical.

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[37] Compare *aš-Šifā': al-Ilāhīyāt* (1960a), VIII.7, which describes even God's own knowledge in similar terms: "You must know that one speaks of the First as 'intellect ('aql)' in the simple sense that you learned about in the *Book on the Soul*, namely, that there is in it no differentiation of ordered forms, differentiated the way they are in the soul, in the sense made clear in the *Book on the Soul*. Thus He knows (*ya'qilu*) things all at once (*duf'atan wāḥidatan*), without being multiplied in His substance, or forming a concept in the true nature of His essence (*fī ḥaqīqati ḏātihī*) through the forms [of the things]" (362.17–363.2). Notice again the contrast here between psychic knowledge and intellection, which is "all at once" and not multiple.

Whether there are other Avicennan works that describe knowledge of God in a more mystical way is not a topic I can address here. But it is in any event significant that in the commentary on the *Theology*, we do not find any mystical epistemological doctrine. This implies at the very least that if Avicenna was a mystic, he did not get his mysticism from reading Neoplatonists. The fact that Avicenna's commentary alludes to the sufi tradition, but without in the end endorsing sufi mysticism, suggests, further, that Avicenna was not inclined towards mysticism by his acquaintance with that tradition.[38] The question of mysticism, though, should not distract us from what is genuinely Neoplatonic about Avicenna's epistemology, both in the commentary and his other works: he recognizes the existence of a non-discursive kind of thinking, which is the principle of discursive thinking, and he associates the former with the intellect and the latter with the soul. Although various aspects of this distinction show Avicenna's originality (the analysis of *fikr* as a faculty of the rational soul, for example) and his Aristotelianism (the syllogistic nature of both kinds of thought), still, in its broad outline, the distinction represents one of Avicenna's most important and nuanced borrowings from Neoplatonism and one in which his reading of the *Theology of Aristotle* itself played an important part.

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[38] An adequate exploration of this dimension of Avicenna's thought would require an analysis of the infamous final part of *al-Išārāt*; see English translation by S. Inati in *al-Išārāt wa-t-tanbīhāt* (1996). For a skeptical view, see D. Gutas (1989), 79: "Avicenna . . . did maintain the validity of Sufism, just as he maintained the validity of other manifestations of Islamic religious life, but he interpreted it, just as he interpreted them, in terms of his own system." The same goes, I would say, for his interpretation of Neoplatonism.

CHAPTER SIX

THE CONCEPTION OF THE ANGLE IN THE WORKS
OF IBN SĪNĀ AND AŠ-ŠĪRĀZĪ*

Irina Luther

In this paper, I present one aspect of the mathematical legacy of
Ibn Sīnā, based on my research into the commentaries of the famous
Iranian astronomer, mathematician and philosopher Qutb ad-Dīn
aš-Šīrāzī (634–710/1236–1311)[1] on the no longer extant treatise *On
the motion of rolling and the relation between the plane and curve* (*Fī ḥarakat
ad-dahraǧa wa-n-nisba bayna-mustawī wa-l-munhanī*) composed by his
anonymous contemporary.[2] Aš-Šīrāzī, known primarily as the fore-
most disciple of the eminent scholar-encyclopaedist Naṣīr ad-Dīn aṭ-
Ṭūsī (597–672/1201–1274), was equally a true admirer and adherent
of Ibn Sīnā's thought. In fact, it was precisely the philosophical and
medical works of Ibn Sīnā, available to aš-Šīrāzī in his youth, that
had predetermined his scientific future. For it was aš-Šīrāzī's very
desire to master the philosophical and logical doctrines of Ibn Sīnā
and to find a teacher corresponding to Ibn Sīnā's level that had led
him finally to the Maragha scientific community headed by aṭ-Ṭūsī.

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    [1] Aš-Šīrāzī is also known for his writings on medicine, geography, theology and
language. He composed a commentary on Ibn Sīnā's *al-Qānūn*, and his famous
Persian encyclopedia of Peripatetic philosophy and sciences, titled *Durrat at-tāǧ* was
greatly influenced by Ibn Sīnā's works and was modeled on *aš-Šifāʾ*. For further
information on aš-Šīrāzī see H. Suter (1900), 158–159 (no. 387), C. A. Storey (1972),
1:64 and S. H. Nasr (1970–1990), 11:247–253.
    [2] Aš-Šīrāzī describes the anonymous work that was the subject of his commen-
tary as an interesting treatise (*risāla*) and notes that he was asked by the anony-
mous author "to explain the treatise, to give some useful opinions, to answer those
who have objections, and to find the truthfulness of the problem," etc. See also
E. Wiedemann (1970), 2:644–652, who describes the commentaries as "erläternden
und erweiternden Bermerkungen"; and S. H. Nasr (1970–1990), 248, n. 1. Aš-Šīrāzī
himself appears not to have given his commentaries any formal title. They are
extant in three manuscripts, used for this study: Ahmet III 3336, ff. 130v–140v;
Yeni Cami T 221/2, ff. 1v–26; and Gotha 158/18, ff. 70v–94.

The commentaries of aš-Šīrāzī are very important for a number of reasons, chief among which, for the present context, is aš-Šīrāzī's discussion of numerous aspects of Ibn Sīnā's mathematics.[3] In the course of one such discussion, aš-Šīrāzī quotes a treatise by Ibn Sīnā devoted to the study of the angle, or more precisely, to the so-called "horn-like" angle.[4] A horn-like angle is an angle between a circumference (*muḥīṭ*) and a tangent (*mumāss*) of a circle (see fig. 1). It is also known as an angle of tangency (*zāwiyat at-tamāss*). Aš-Šīrāzī writes:

> This is one of the weak points put forward by the wise men thoroughly versed in philosophy, including the Šayḫ ar-Ra'īs. For he has a treatise (*maqāla*) [in which he argues] that an angle which is between a circumference and a tangent, such as angle CAE, does not have quantity (*kammīya*). [This argument] results from his [view] that it is an angle only in quality (*kayfīya*) since it is a contact of two lines under inclination (*bi-inḥirāf*) to one another in a plane and whose intersection (*ittiṣāl*) is not in a straight line (*istiqāma*).[5]
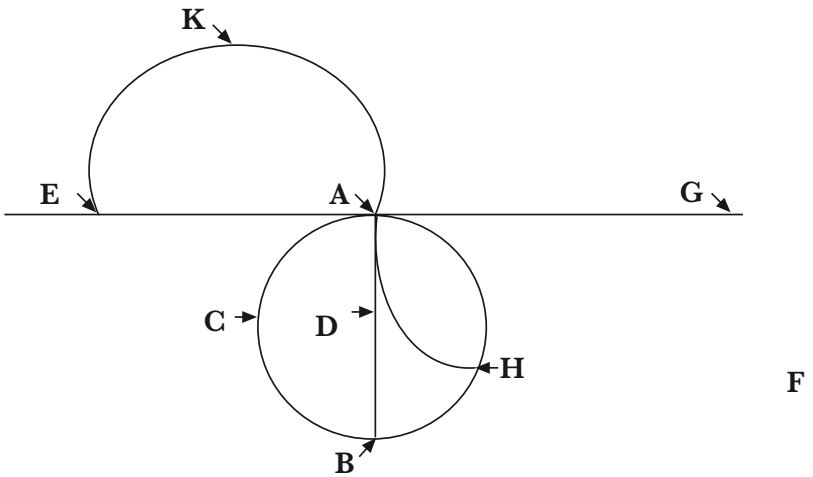
Figure 1

Here we should note Ibn Sīnā's definition of a plane angle presented in the geometrical part (*Uṣūl al-handasa, al-Fann al-awwal min ǧumlat al-ʿilm ar-riyāḍī*) of his *aš-Šifāʾ*, which is in fact his redaction of the geometrical chapters of Euclid's *Elements*: "A plane angle is bounded by two lines joined (*muttaṣil*) so as not to be straight and bending outward in a plane (def. I, 6)."[6] As a rule, when a given commentator or editor of Euclid's *Elements* had doubts about a certain statement in the book, he either commented and argued it or simply replaced it with his own opinion. At first sight Ibn Sīnā has changed almost nothing in Euclid's definition of a plane angle, which is the following: "A plane angle is the inclination to one or another of two lines in a plane which meet one another and do not lie in a straight line (*Elements*, def. I, 8)."[7]

But there is an essential difference. In their definitions of a plane angle both Euclid and aš-Šīrāzī (though he ascribes his definition to Ibn Sīnā) explicitly indicate the genus of a plane angle as an inclination and a contact, whereas Ibn Sīnā's actual statement tacitly skirts such a direct indication by saying only that it is something bounded in such-and-such a way. Thus, it would seem quite premature to assert here that Ibn Sīnā followed Euclid and considered a plane angle as an inclination (*inḥirāf*) or a contact, thereby putting it in the category of relation (*iḍāfa*).[8] We will see below that such a definition of a plane angle by Ibn Sīnā was quite intentional and carefully considered.

To return to aš-Šīrāzī, he next presents Ibn Sīnā's proof of the statement that a horn-like angle is not a magnitude. First, Ibn Sīnā had proceeded from the fact that a horn-like angle is always less than any acute angle (the statement proved in proposition III, 16 of Euclid's *Elements*; in Ibn Sīnā's *aš-Šifāʾ*, *Uṣūl al-handasa* it is proposition III, 15).[9] Then he had proceeded from the notion of a magnitude

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[6] Avicenna, *aš-Šifāʾ: Uṣūl al-handasa* (1977), 16.

[7] Euclid, *The Thirteen Books of the Elements* (1956), 1:153.

[8] In the *Metaphysics* (I.9) of his *Dānišnāmah-yi ʿAlāʾī*, Ibn Sīnā defines a relation as "the characteristic condition of a thing by which it is known because another thing exists in relation to it and something else is an object to it." See P. Morewedge's translation in Avicenna, *Dānišnāmah-yi ʿAlāʾī* (1973), 26; hencefor th, *Metaphysica*. On relation also see G. C. Anawatī's translation of *aš-Šifāʾ: al-Ilāhīyāt* (1978–1985), III.10, 1:200–5; henceforth, *La Métaphysique*.

[9] For a brief historical survey of the concept of a horn-like angle, see Heath's commentary on Euclid in Euclid (1956), 2:39–42.

that was peculiar to the geometry of that period; in accordance with that notion, any magnitude must satisfy the conditions of the so-called Archimedes-Eudoxus axiom (such magnitudes are now called the Archimedean magnitudes). The axiom is in fact definition V, 4 of Euclid's *Elements*, which asserts that "magnitudes are said to have a ratio to one another which are capable, when multiplied, of exceeding one another."[10] This is worth comparing to Ibn Sīnā's version of this definition in *aš-Šifāʾ, Uṣūl al-handasa*, def. V, 5: "Magnitudes having a ratio (*nisba*) are those that exceed one another by multiplication (*bi-t-taḍāʿif*)."[11] Ibn Sīnā's proof that a horn-like angle or an angle of tangency is not a magnitude is based on a *reductio ad absurdum*. He begins with a supposition that the given angle of tangency EAC is a magnitude. In this case it satisfies the Archimedes-Eudoxus axiom, that is, there is such an *n*-multiple (*iḍʿāf*) of EAC that exceeds, for example, the right angle EAB. Let it be the angle EAH (see fig. 1). Then Ibn Sīnā divides the right angle EAB by *n* and obtains a rectilinear angle less than the angle of tangency EAC (for, if angle EAB < angle EAH, then the acute angle EAB/*n* < EAH/*n* = EAC). It contradicts the above-mentioned proposition III, 16 of Euclid's *Elements*, however, which states that any angle of tangency is less than any acute angle. Therefore, the supposition that an *n*-multiple of the horn-like angle EAC can be greater than a rectilinear angle is not true. Therefore any *n*-multiples of an angle of tangency is not capable of exceeding a rectilinear angle, that is, the angle of tangency does not satisfy the Archimedes-Eudoxus axiom and is not a magnitude.

As it follows from aš-Šīrāzī's commentaries, Ibn Sīnā had also proved that a horn-like angle does not satisfy one more condition imposed on magnitudes, scil., that expressed in proposition X, 1 of Euclid's *Elements*:

> Two unequal magnitudes being set out, if from the greater there be subtracted a magnitude greater than its half, and from that which is left a magnitude greater than its half, and if this process be repeated continually, there will be left some magnitude which will be less than the lesser magnitude set out.[12]

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[10] Euclid, *Elements* (1956), 2:114.
[11] *Uṣūl al-handasa*, 153.
[12] Euclid, *Elements* (1956), 3:14–15.

Ibn Sīnā's version of this statement in *aš-Šifā': Uṣūl al-handasa*, prop. X, I is as follows:

> The magnitude AD being greater than E, if one subtracts from AD [its part or a magnitude] greater than its half, and from the remaining [a magnitude] greater than its half, there will be left a magnitude less than E.[13]

It should be noted that the proposition in turn is based on the Archimedes-Eudoxus axiom.

Moreover, Ibn Sīnā's conclusion that a horn-like angle is not a magnitude allowed him to prove that the angle between the circumference and diameter of a circle, such as angle CAB (fig. 1), is a right complete (*tāmma*) angle.[14]

Aš-Šīrāzī sets out to disprove Ibn Sīnā's conclusion that a horn-like angle is not a magnitude. He points out that it is false in the first place because it is refuted by "sensation and intellect," for one can divide a horn-like angle infinitely (*ġayr nihāya*) by circular arcs, but it is precisely divisibility that is a characteristic property of quantity. Furthermore, in aš-Šīrāzī's opinion, the falsity of the conclusion is proved by the fact that not every magnitude has a ratio to another magnitude; otherwise a line could have a ratio to a surface. Aš-Šīrāzī indicates that a horn-like angle does not have a ratio to a right angle because they are non-homogeneous magnitudes, unlike those of line and surface: their boundaries are in fact the lines of different species, whereas the line and surface are of different dimensions. He adds the reminder that a quantitative ratio between magnitudes is possible only if they are homogeneous. Therefore, aš-Šīrāzī concludes, the absence of the ratio between these angles does not signify that a horn-like angle is not a magnitude. By proceeding in this manner, aš-Šīrāzī has in fact extended the concept of a magnitude to the case of those magnitudes which do not satisfy the Archimedes-Eudoxus axiom and which are now called the non-Archimedean magnitudes.[15]

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[13] *Uṣūl al-handasa*, 299–301.

[14] The right angle EAB is equal to the sum of the horn-like angle EAC and angle CAB. Therefore, since the angle EAB is a right angle and the horn-like angle EAC has no magnitude, the angle CAB is equal to the right angle EAB.

[15] For Archimedean and non-Archimedean magnitudes, see F. Klein (1925), Geometrie, Part II, Chapter III: "The foundations of geometry" and the section on "Archimedean axiom" in Euclid's *Elements* and digressing [from the subject] on the "horn-like angles" as a non-Archimedean system.

It is odd that Ibn Sīnā had omitted from his argument this essential condition of homogeneity of two magnitudes that have a ratio to each other, since this condition was undoubtedly known to him. After all, the Archimedes-Eudoxus axiom used by him is based on the Euclidean definition of a ratio between two magnitudes in which their homogeneity is specified: "A ratio is a sort of relation in respect of size between two magnitudes of the same kind" (*Elements*, def. V, 3). Ibn Sīnā's version of this definition is spelled out in *aš-Šifāʾ: Uṣūl al-handasa*, defs. V, 3–4: "A ratio is a kind [of state] of a magnitude with respect to the magnitude homogeneous to it."[16] The difference between the two definitions lies in Ibn Sīnā's omission of the quantitative ratio "in respect of size."

As for aš-Šīrāzī, he considered angles, whether rectilinear or curvilinear, solid or plane, to be qualities pertaining to (*muḫtaṣṣ*) quantities, like circular and straight. He defines an angle in general as "a form (*hayʾa*) that is particular to a magnitude either at its point or at its line and as such possessing one or more boundaries intersected at this [point] or along this [line]."[17] He adds that divisibility, equality and inequality, which are the intrinsic properties of magnitudes, relate not to the essence of an angle but to its location or place (*maḥall*), which is part of a plane in the case of a plane angle. Thus, as he states, "the equality of one angle to [another] angle is [the equality] of one form to [another] form in size (*qadr*) with respect to the equality of their places."[18]

The preceding discussion is the context in which aš-Šīrāzī makes his reference to Ibn Sīnā's "treatise" concerning the angle. It would appear that this "treatise" to which aš-Šīrāzī refers is none other than Ibn Sīnā's *On the Angle* (*Fī z-zāwiya*). The complete text of the treatise, in four chapters, is extant in five manuscripts: Istanbul University 4724, ff. 92r–102r; Ayasofya 4849, ff. 13v–22v and 4829, ff. 47v–49v; Nuruosmaniye 4894, ff. 453v–457v; and Pertev Pa a 617, ff. 126v–134r. In 1998 M. Mawāldī published the Arabic text of the *Risāla fī z-zāwiya li-Ibn Sīnā* on the basis of these five manuscripts.[19] There is an additional manuscript—Yale Beinecke Arabic MSS Suppl.

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[16] Cf. *Uṣūl al-handasa*, 153.
[17] Aš-Šīrāzī, *Dahraǧa*, MSS Gotha, 82v–83r; Yeni, 13v–14r; Ahmet III, 137v.
[18] Ibid.
[19] Avicenna, *Risāla fī z-zāwiya li-Ibn Sīnā* (1998).

51, ff. 36v–39r—which contains only the first two chapters and which, according to the anonymous scribe, "was copied from a manuscript that was copied from the rough draft of Ibn Sīnā" (*min an-nusḫa al-maktūba min muswaddat al-muṣannif . . . Ibn Sīnā*).[20]

As noted, Ibn Sīnā divided this treatise into four chapters: [1] "Enumeration of the teachings on the angle"; [2] "Consideration of the major teachings on the angle"; [3] "Elucidation of the true conception of the angle"; and [4] "Concerning the correctness of the statement that an angle is enclosed by two boundaries, either lines or surfaces, and that if the line which bounds an angle is single (*wāḥid*) in kind, then this singleness differs from the singleness which is attributed to magnitudes in that it is absolute, and therefore the connection (*ittiṣāl*) which generates an angle differs from the connection which makes magnitudes indeed isolated."

Ibn Sīnā lists five main points of view concerning the nature, or more precisely, the genus of angle:

[1] An angle is a *quantity* (*kamm*) since it is susceptible of equality or inequality and divisibility, which are the intrinsic properties of quantity.

[2] An angle is *a certain quantity*, but is neither a line nor a surface nor a body; rather, it is *a species of quantity* which is brought about by two other species. For example, a plane angle is a plane magnitude (*miqdār*) which is "between" a line and a plane. The adherents to this point of view state that a plane angle, like a plane magnitude proper, also originates from the motion of a line but is of another dimension than a plane magnitude; for:

> It derives from the line, not along the direction of the extension of the line, but is produced only when the line as a whole moves and [only] one of the points of its two extremities is not assumed at rest, so that the production of a second dimension is not completed, since then it would be a perfect plane.[21]

In modern terms, the matter in question is that an angle originates from the rotation of a ray around its summit. As a result of such a kinematical approach, a plane angle had been defined as "a plane devoid of breadth" and a solid angle as "a body devoid of depth".

With respect to this view, it should be noted that Ibn Sīnā did not consider motion as part of a true description of plane; rather, it involves an analogy possible only in our imagination. For in reality "this motion presupposes a place and that this place had depth and dimensions before a point can generate a line, a line can generate a surface and a surface can generate depth."[22] Ibn Sīnā attributes this "recent" conception of angle to Abū Ḥāmid al-Isfizārī (fl. fourth/tenth century).[23]

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[22] *Metaphysica*, 28. It may be important to note that many of the quotations of a mathematical nature I take from the Metaphysics of the *Dānišnāmah* are absent in the corresponding metaphysics section (*al-Ilāhīyāt*) of the *Šifāʾ*.

[23] This would appear to be Abū Ḥāmid Aḥmad ibn Abī Isḥāq al-Isfizārī, a little-known scientist and philosopher of the fourth/tenth century who has had the misfortune of being subject to multiple misidentifications by medieval and modern scholars. Cf. Suter (1900), n. 268 and 114, 225−6, who misidentified him as al-Muʿaffar al-Isfizārī, the mathematician and contemporary of ʿUmar Ḥayyām (Suter also read his name as "el-Isfarledi" due to a peculiar orthographic variation of his name). Futhermore, Abū Ḥāmid al-Isfizārī is most certainly not the Šāfiʿī jurist Abū Ḥāmid Aḥmad ibn Muḥammad ibn Aḥmad al-Isfarāʾinī (344−406/955−1016; see, for instance, Ziriklī, 1:211a), as Mawāldī (in Avicenna, *Risāla fī z-zāwiya*, 56, n. 7) identified him. The confusion is produced in part by an interesting orthography of the name al-Isfizārī in multiple manuscripts (including MSS Pertev Pa a 617, Ist. Uni. 4724, and Nur. 4894 of the *Risāla z-zāwiya*) in which the *aliph* and *rāʾ* of Isfizārī are joined, producing Suter's "el-Isfarledi" and which eventually came to be read by scribes as al-Isfarāʾinī, presumably leading to Mawāldī's error (MSS Yale Beinecke Arabic Suppl. 51 and Ayasofya 4829 and 4849 have the correct *rasm*). A most thorough attempt to identify Abū Ḥāmid al-Isfizārī, although in a different context, was undertaken by D. Gimaret (1978). Gimaret managed to locate three references to him: one in Šahrastānī's *Kitāb al-Milal*, where the name Abū Ḥāmid Aḥmad ibn Muḥammad al-Isfizārī is found in a list of philosophers; a second in *Ṣiwān al-ḥikma*, where only the *nisba* al-Isfizārī is mentioned as part of a group of scholars, including Abū Sulaymān as-Siǧistānī, who attended a *maǧlis* of Abū Ǧaʿfar al-Babūya; and a third reference in al-Bayhaqī's *Tatimmat Ṣiwān al-ḥikma*, where a brief biographical notice is given on the mathematician and philosopher Abū Ḥāmid ibn Isḥāq al-Isfizārī. Gimaret concluded that Abū Ḥāmid al-Isfizārī was a contemporary philosopher of as-Siǧistānī and probably, like him, from the environs of Siǧistān. J. Ragep and E. S. Kennedy (1981), identified a work by this Abū Ḥāmid al-Isfizārī, titled *al-Umūr al-Ilāhīya*, on metaphysical questions, and referred to Gimaret's article for their identification. Another exemplar of this work is found in the codex Raġıp Pa a 1463, where the author's name is given on the title page as Abū Ḥāmid Aḥmad ibn Abī Isḥāq al-Isfizārī [an edition of this work is planned by David C. Reisman]. We can reconcile the minor variants in the three versions of al-Isfizārī's name in Šahrastānī, *Ṣiwān al-ḥikma*, and the *Tatimma*, by suggesting that Šahrastānī provided Abū Ḥāmid's father's name "Muḥammad" in place of his *kunya* Abū Ḥāmid and that al-Bayhaqī's "Isḥāq is a scribal error that omitted "Abī" (this would not be surprising since the "b.n." of "Ibn" is often attached to the first name, here "Aḥmad" and thus overlooked, and the "Abī" may have been taken as "Ibn"). His full name might then be Abū Ḥāmid Aḥmad ibn Abī Isḥāq al-Isfizārī. Still, the

[3] An angle is *a quality* (*kayf*). According to Ibn Sīnā, those who adhere to this point of view assert that while it is true that angles, like figures, are receptive to equality or inequality and divisibility, an angle is nonetheless not a quantity, but "a quality in a quantity."[24] Therefore, quantity is not its generic subject (*mawḍūʿ*); rather, an angle is *a certain form*. It is an accident (*ʿaraḍ*) of either lines or surfaces; in the case of lines, it is like a straightness (*istiqāma*) and a curvature (*iḥdīdāb*, lit. convexity), and in the case of surfaces, it is like "square" (*tarbīʿ*) and "circular" (*tadwīr*).

[4] An angle is something *connected* or *subjoined* (*muḍāf*). In this view, angle is placed in the category of connection or *relation* (*iḍāfa*). Ibn Sīnā indicates that, just as in the previous case, adherents of this conception state that divisibility, equality and inequality are accidents (*ʿaraḍ*) of angle. These accidents do not belong to its essence; rather, they relate to its subject, as in the case of the qualities of figures. The adherents of this conception assert that not everything that is receptive of equality or inequality and divisibility is a quantity; rather, a quantity is that which is receptive of these properties intrinsically. As for that which is receptive of this "not by nature," then it has a quantity either as substance (*ǧawhar*) or potentially, such as light, warmth, etc. Thus, an angle carries a quantity accidentally and therefore a quantity is not its genus.

Ibn Sīnā points out that everyone who puts an angle in the category of relation has proceeded from Euclid's definition of an angle as a contact (*tamāss*) of two lines; thus a contact is set as the genus of an angle. As it follows from such a conclusion, Ibn Sīnā had proceeded from the version of Euclid's definition of a plane angle different from the canonized one (see Euclid's definition above): in the given case the "generic accent" was moved from "inclination" and put on "contact." Thus a plane angle was defined obviously as a contact of

addition of "Muḥammad" cannot be confirmed on the basis of Šahrastānī's reference alone. That Avicenna appears to have read this individual's works can be surmised from his reference to him in the *Mubāḥaṯāt* as part of a response to a letter from his student Ibn Zayla (ed. Bidarfar, 569; see Reisman (2002), "Letter to Ibn Zayla," Index of Avicenna's Works; this reference would appear to be to al-Isfizārī's *Kitāb al-ḥikma l-ʿamalīya*, to which al-Isfizārī himself refers in *al-Umūr al-Ilāhīya*; MS RP 1463, 32r.17). To which work Avicenna is referring in his citation of al-Isfizārī in the *Zāwiya* is presently unknown. [David C. Reisman]

    [24] On the existence of the qualities in the quantities see *La Métaphysique*, III.9, 195–9.

two lines inclined in a plane, etc. I provided Euclid's definition of
a plane angle and Ibn Sīnā's version of this definition above and
noted that Ibn Sīnā does not appear to share Euclid's view on the
genus of angle and, furthermore, that Ibn Sīnā may have deliber-
ately omitted any indication that he supported Euclid's definition.
This supposition can now be confirmed on the basis of what Ibn
Sīnā says in the *Treatise on the angle*. Ibn Sīnā writes that "it should
be known that Euclid was wrong" when speaking about an angle as
a contact, for one can say about an angle that it is "greater," "smaller"
and "divisible," but all these characteristics cannot be attributed to
the contact. Moreover, argues Ibn Sīnā, "neither is it that the whole
of <it>[25] [i.e., an angle] is a contact; for a relation is to two things
and predicated of them equally, while angle is not predicated of two
things." Thus, it is safe to say that Ibn Sīnā did not consider an
angle to be a contact or inclination, i.e., relation.

There is reason to disagree with Ibn Sīnā's point of view con-
cerning Euclid's comprehension of angle. Although Euclid had defined
a plane angle as an inclination or contact, he understood an angle
as a thing which partakes of quantity as well: first because he had
operated with angles in the same way as with magnitudes: he bisected
them (for example, proposition I, 9), and considered their equality
(for example, propositions I, 8 and I, 13), etc.

[5] An angle is *a situation* (*waḍʿ*). Situation (or, in Aristotelian ter-
minology, position) according to Ibn Sīnā refers to the condition of
parts of the body in different positions (*Metaphysics*, I 9).[26] Among
those who had put angles in the category of situation Ibn Sīnā names
ābit ibn Qurra (221–288/836–901) as the first to grant that an
angle happens from the relation (*nisba*) of boundaries of two things
or components of the thing.

When one considers the treatise as a whole, one sees that Ibn
Sīnā disputes these and other conceptions of angle mainly either by
challenging the "substance" (or "genus") and "accident" associated
with the suggested definitions of angle, or by way of syllogistics. We
have seen an instance of the former type of argumentation in his
argument against defining angle as a contact of two lines. An instance

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[25] Slightly emending Mawāldī's text from *wa-lā anna kulla tamāssin* to *wa-lā anna kullahā tamāssun*.

[26] *Metaphysica*, 27.

of the latter is, for example, the case of the syllogism of some people who state that every quantity is either finite or infinite, but no one angle is finite and infinite, therefore an angle is not a quantity. Ibn Sīnā subsequently argues against the form and matter of this syllogism's premises from the position of his own teaching on divided syllogism (*qiyās mutaqassam*).[27]

Although research on Ibn Sīnā's *Treatise on the angle* is in its preliminary stages, it is already possible to assert that while Ibn Sīnā criticizes therein almost all of the teachings and definitions of angle known to him, he does not provide his own answer to the question "what is an angle?" Still, it is possible to discern in his critical survey his own support for the view that an angle partakes of all above-named categories.

Additionally, he does provide a sort of answer to the question in the fourth chapter of the third book of his *Metaphysics* of *aš-Šifāʾ* titled "The magnitudes are accidents."[28] Ibn Sīnā points out that some scholars state that "an angle is the fourth genus" of the magnitudes (on the basis of Ibn Sīnā's *Treatise on the angle*, we can now identify one of those scholars as al-Isfīzārī). As a criterion of the existence of a magnitude they consider the possibility of its kinematical definition or description, e.g., a surface is generated with the movement of a line "with its two points"; under such a movement "the length moves along the breadth, the breadth comes to pass after the length," in the end two dimensions have been brought about and, therefore, a surface has been generated. Those scholars had also a kinematical definition of a plane angle. In this case a line is moved by one of its "summits," i.e., one rotates the line. Ibn Sīnā criticizes this point of view indicating that a line which generates an angle moves neither along the length nor along the breadth, as takes place in the case of a plane. Hence, a plane angle does not receive those two dimensions which are peculiar to a plane magnitude. Therefore, it contradicts the statement that a thing must have either three or two dimensions in order to be either solid or possessing a surface. Thereby Ibn Sīnā has rejected also the definitions of a plane angle as a plane without breadth and a solid angle as a body without depth indicated in the *Treatise on the angle*.

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[27] This syllogism is discussed in the second chapter of Ibn Sīnā's treatise; see Avicenna, *Risāla fī z-zāwiya*, 59.

[28] *La Métaphysique*, 173–175.

Here Ibn Sīnā presents almost the same counter-argument as that provided above: that it is impossible to define a plane as generated by the moving line (the first chapter of the *Metaphysics* of *Dānišnāmah*). He states that if there is a moving point, then there is necessarily a certain thing in which or over which the movement is carried out. Such a thing is a body, a surface and a line, which are capable of movement; therefore, they must exist before the movement of a point. For that reason the movement of a point cannot bring about and cause their existence. The same is related also to the angles, which have either two or three dimensions, being correspondingly on a surface or in a body. The true reasons of the existence of the continuous magnitudes, according to Ibn Sīnā, are the following: the existence of a body is evident; the existence of a surface is provided by the necessary finiteness of a body; the existence of a line is provided by the possibility to cut a surface and to suppose that it has limits. Thus, Ibn Sīnā concludes that there are only three possible varieties of the continuous magnitudes, namely, a body, a surface and a line (thereby excluding an angle from the category of continuous magnitudes) and, together with a time, these magnitudes are the only four kinds of the continuous quantities.

It should be noted that amazingly close to Ibn Sīnā's list of the teachings on angle and some of his critical arguments is the fragment on the definition of an angle from the *Commentary on the First book of Euclid's Elements* by Proclus (410–485), much of which is apparently taken directly from a work of his master Syrianus (fl. fifth c.).[29] In addition, Proclus also presents the arguments against a horn-like angle's being a magnitude that aš-Šīrāzī would later attribute to Ibn Sīnā. Thus, it is quite probable that both Ibn Sīnā and aš-Šīrāzī knew the work of Proclus, a work which is not only the primary source for the philosophy of Greek mathematics today but also in medieval Islam.[30]

Some other precise borrowings from the work of Proclus, relating to other aspects of the teaching on angle but not touched upon by

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[29] See Proclus (1992), 98–109.

[30] This supposition can be extended to aš-Šīrāzī as well since his commentaries contain some other reasonings that are also found in the commentary of Proclus. For example, the proof of the incorrectness of the statement that is the converse of the 4th postulate of Euclid's *Elements* which states that "all right angles are equal to one another, that is, the proof of the statement that the angle equal to a right angle is not always a right angle."

Ibn Sīnā, were reproduced by his nearest predecessor Abū l-'Abbās al-Faḍl ibn Ḥātim an-Nayrīzī (d.c. 310/922) in his commentary on the definitions, postulates and axioms of the first book of Euclid's *Elements*.[31] Moreover the Arabic term for a horn-like angle, i.e., *qarnī*, is found only in an-Nayrīzī's commentary; but aš-Šīrāzī, when referring to Ibn Sīnā, used the expressions "an angle between a circumference (*muḥīṭ*) and a tangent (*mumāss*) of a circle" or "an angle of tangency" (*zāwiyat at-tamāss*).

To summarize, I have presented above a passage of aš-Šīrāzī's commentary in which he quotes a treatise on a horn-like angle that he attributes to Ibn Sīnā. In order to determine the source of aš-Šīrāzī's reference, I have given a brief analysis of Ibn Sīnā's *Treatise on the angle*, the only extant work by Ibn Sīnā on the subject. Now, there is nothing in the contents of this treatise (as outlined above) that relates directly to the conception of a horn-like angle or which presents geometrical reasonings attributed to Ibn Sīnā by aš-Šīrāzī. Thus, we may suppose that Ibn Sīnā had composed two different treatises on the angle. Such a supposition appears to be corroborated by the anonymous bibliography of Ibn Sīnā's works, which includes *two* relevant treatises: *On the angle*[32] and a *Summary that the Angle which is formed by the circumference and the tangent has no magnitude*.[33] On the basis of the foregoing it is possible now to question the views of G. C. Anawatī and Y. Mahdavī that these two titles refer to one

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[31] See Abū l-'Abbas an-Nayrīzī (2002). The main importance of this commentary lies in the quotations from Hero (c. third century) and Simplicius (sixth c.); see T. Heath (1981), 2:296–307. But my examination of the fragment on angles (motivated by the study of Ibn Sīnā's *Treatise on the angle*) has suggested that while certain reasonings and statements are ascribed by the author to Simplicius (*Sinbiliqiyus*), these were perceived (perhaps via Simplicius) to be from Proclus's work, for instance, the classification of angles in species, including a species of horn-like angles. There are also some direct parallels, such as that between an-Nayrīzī's statement that "angles have many species . . . however Euclid in this passage defines a plane angle under the common species" (12) and Proclus's statement that "All these angles . . . our geometer defines in this treatise under the common designation of 'plane angle' . . ." (Proclus (1992), 103).

[32] The author of the anonymous bibliography records this treatise as a "letter to Abū Sahl al-Masīḥī" written in Ǧurǧān between 403–5/1012–1014; see Avicenna, *Life of Ibn Sīnā* (1974), 99, 139, no. 5, and 124–125, no. 43.

[33] The anonymous list was added after the death of Ibn Sīnā to his autobiographical fragment expanded and edited by his student and collaborator Abū 'Ubayd al-Ǧuzǧānī (d.c. 463/1070). The account of al-Ǧuzǧānī lists only forty-six works by Ibn Sīnā (with no mention of the treatises on the angle). For a discussion of the later bibliographies of Avicenna's works see Reisman (2002), 119–138.

and same work.[34] Thus, the search for the treatise to which aš-Šīrāzī refers continues.

This should not diminish the importance of Ibn Sînâ's *Treatise on the angle* itself for the history and philosophy of Arabic mathematics. It treats the philosophical grounds of medieval Arabic geometry, allows us to compare the foundations of Arabic mathematics as articulated in the tenth-eleventh and thirteenth-fourteenth centuries (when aš-Šīrāzī's passage is taken into consideration), and it is an excellent illustration of the problems involved in tracing the transmission of ancient Greek mathematical and philosophical knowledge, and its development in medieval Islam.

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[34] Anawatī (1950), no. 160 and (1951), 431; Mahdavī (1954), no. 80. See also Avicenna, *Life of Ibn Sīnā* (1974), 148, 152; and Ali A. al-Daffa and J. J. Stroyls (1984), 62, 63.

AVICENNA ON THEOLOGY AND METAPHYSICS

AVICENNA'S ARGUMENT FOR THE EXISTENCE OF GOD: WAS HE REALLY INFLUENCED BY THE *MUTAKALLIMŪN*?

Ömer Mahir Alper

The studies of Avicenna (d. 428/1037) in recent years have clearly stated that as a member of the Islamic intellectual environment, in which "*mutakallimūn*" and "*falāsifa*" had much in common conceptually as well as terminologically, the *mutakallimūn* did influence him. Jean Jolivet suggested that the origins of Avicenna's distinction between essence and existence lay not in ancient Greek philosophy, as has generally been supposed, but in early *Kalām*, and specifically in the ninth and tenth century debates among *mutakallimūn* over how the terms "thing" and "existent" relate to each other.[1] Robert Wisnovsky also, providing evidence that gives qualified support to Jolivet's hypothesis, argued that Jolivet is correct in highlighting the *Kalām* background to Avicenna's essence-existence distinction.[2] Michael E. Marmura's article, "Avicenna and the *Kalām*" focuses on Avicenna's criticisms of *Kalām*, that is to say, its negative influence on him; however, he also claimed that Avicenna was possibly influenced on some issues like his theory of efficient causality and his concept of *tawātur*, that is, an epistemological principle, in a positive way by *Kalām* as well.[3]

Certainly the claim that Avicenna was influenced by the *mutakallimūn* is not new. Averroes (d. 595/1198) himself, as a *faylasūf*, criticized important elements of Avicenna's philosophy based on these grounds. Thus Averroes blamed Avicenna for being influenced both in his philosophical method and in certain concepts of metaphysics and physics by the *mutakallimūn* and then criticized him for failing to follow Aristotle.[4] In a similar manner Ibn Taymīya (d. 728/1328) also

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[1] Jean Jolivet (1984).
[2] Robert Wisnovsky (2000a).
[3] Michael E. Marmura (1992), especially 177.
[4] For an analytical study of Averroes' criticism of Avicenna see Ömer Mahir Alper (2001).

asserted in his several books, such as *Darʾ taʿāruḍ al-ʿaql wa-n-naql* and *ar-Radd ʿalá l-Manṭiqīyīn*, that Avicenna had been influenced by the *mutakallimūn* and used their methods and ideas.[5]

One of the important issues, which both Averroes and Ibn Taymīya, starting from similar points, claimed for evidence that Avicenna had been influenced by the *mutakallimūn*, is Avicenna's proof for the existence of God (*iṯbāt al-wāǧib*). The aim of the present work is to study and discuss whether the *mutakallimūn* really did influence Avicenna's argument for the existence of God, and if so, exactly to what extent. I do this within the framework of Averroes' and Ibn Taymīya's arguments and also analyze the basic points of their arguments. In the first section, I deal with the claims of Averroes and Ibn Taymīya, and in the second section with Avicenna's argument for the existence of God. In addition, in the final section, I compare Avicenna's argument for the existence of God with that of the *mutakallimūn*'s and demonstrate the extent of the influence of *Kalām* thinkers on Avicenna in light of the main points of criticism by Averroes and Ibn Taymīya.

I. *An Outline of The Claims of Averroes and Ibn Taymīya*

In several works Averroes asserts that Avicenna had followed the *mutakallimūn*, especially Ašʿarites, in his argument for the existence of God by using their method, which is dialectical, and their concepts.[6] In his *al-Kašf ʿan manāhiǧ al-adilla*, which has a chapter dedicated to examining the arguments of the different theological groups regarding the creation of the world and our knowledge of God's existence, Averroes refers to Ašʿarite theologians who base their proof for the existence of God on the argument from the creation of the world (*al-ḥudūṯ*). Regarding the creation of the world, the Ašʿarites had two main arguments. The first argument, which is famous and is adopted by most Ašʿarites, is based on three premises:

1. Atoms cannot exist without accidents.
2. Accidents were created (*ḥādiṯ*); and so likewise by extension atoms.
3. The world is a composite of atoms and accidents.

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[5] See, for example, Ibn Taymīya, *Darʾ taʿāruḍ al-ʿaql wa-n-naql* (1979–1981), 8:131–136; henceforth, *Darʾ taʿāruḍ*; and also *ar-Radd ʿalá l-manṭiqīyīn* (1993), 2:56.

[6] See, for example, Averroes, *Tahāfut at-tahāfut* (1981), 1:125–126; II:444–445; henceforth, *Tahāfut at-tahāfut*. Also see ʿAbdurrahman Badawī (1980), 285 fn.

Hence the world was created, and so it must necessarily have a Creator (*Muḥdiṯ*).[7]

The second argument by which Avicenna was influenced according to Averroes, was developed by al-Ǧuwaynī (d. 478/1085) in his book, *ar-Risāla an-Niẓāmīya*. It is based upon two premises:

1. The world in its totality is contingent (*ǧā'iz/mumkin*).
2. The contingent was created.

Hence the world was created, and so it must have a Creator necessarily.[8]

Only the second argument of al-Ǧuwaynī for the creation of the world is examined here because of its centrality in this study. Moreover, I treat the argument as it is found in his own work rather than Averroes' presentation of it.

Al-Ǧuwaynī argues that it is admissible or acceptable that the world or nature could have been different from what it is now. It could be greater or smaller and have a different form. The natural world and laws could be different from what we know now. This does not need reflection, but could be known by necessity. Since out of all possible states and shapes one state came into existence, there must have been something that singled it out (*muraǧǧih*), which proves that the world is created. The same agent that selected that particular state is the Creator who is endowed with a will.[9]

It should be mentioned that al-Ǧuwaynī explains not only shapes or states of possible things, but also "the existence of the contingent world" through particularization (*taḥṣīṣ*). He states that "the existence of a contingent thing is possible (*ǧā'iz al-wuǧūd*), for it is possible to conceive its existence (*wuǧūduhū*) rather than its non-existence (*'adamahū*). Similarly, we may conceive its non-existence rather than its existence. Since it was particularized by the possible existence rather than the admissible non-existence, it must have needed a particularizer (*iftaqara ilá muḥaṣṣiṣ*). This particularizer is the Almighty Creator."[10]

Averroes claims that Avicenna followed this second manner of reasoning of the Aš'arites for his proof of the existence of God. In other

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[7] Averroes, *al-Kašf 'an manāhiǧ al-adilla* (1998), 105; henceforth, *al-Kašf*.

[8] *Al-Kašf*, 111–112.

[9] Al-Ǧuwaynī, *al-'Aqīda an-Niẓāmīya fī l-arkān al-Islāmīya* (1992), 13, 16.

[10] Al-Ǧuwaynī, *Luma' al-adilla fī qawā'id ahl as-Sunna* (1965), 80–81; see also, *Kitāb al-Iršād* (1950), 28.

words, he claims that Avicenna, in a way, used al-Ǧuwaynī's argument and premises.[11] The world in its totality is contingent; since the contingent can equally exist or not exist, the world as a contingent being must have a particularizer who particularized its actual existence.

In his *Tahāfut at-tahāfut*, Averroes makes clearer the point that the *mutakallimūn* influenced Avicenna. According to him the first to bring into philosophy the proof of the impossibility of an infinite modal causal series was Avicenna. The argument in a nutshell is: each single cause of a series is either possible in itself or necessary; if it is necessary, it needs no cause, and if it is possible, then the whole series needs a cause additional to its essence, a cause standing outside of the series. Avicenna regarded this proof as superior to those given by the ancients (*al-qudamāʾ*), since he claimed that it was based on the essence of the existent, whereas the older proofs were based on accidents consequent on the First Principle. This proof Avicenna took from the theologians, who regarded the dichotomy of existence into possible and necessary as self-evident, and assumed that the possible needs an agent and that the world in its totality, as being possible, needs a necessarily existent agent. This was the theory of the Muʿtazilites before the Ašʿarites, and it is a good argument, except for the assumption that the world as a whole is contingent, which is not self-evident.[12]

Similarly, Ibn Taymīya maintained that regarding the proof for the existence of God Avicenna followed the *mutakallimūn* and that they influenced him rather than ancient philosophers such as Aristotle.[13] Avicenna argued that the world in its totality is contingent since the contingent (world) can equally exist or not exist. Hence the world must have a particularizer, a necessarily existent agent, who particularized the world's actual existence. According to Ibn Taymīya Avicenna took this proof from the books of Muslim theologians, especially Muʿtazilites, and used it by combining it with certain philosophical ideas.[14]

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[11] *Al-Kašf*, 113.

[12] *Tahāfut at-tahāfut*, 2:444−445.

[13] *Darʾ taʿāruḍ*, 8:127.

[14] Ibid., 8:135; *li-annahū aḫaḏa ʿanhum [mutakallimī l-Islām] anna taḫṣīṣa aḥadi š-šayʾayni l-mutamaṯṯilayi l-muḥdaṯayni dūna l-āḫar lā budda lahū min muḫaṣṣiṣin . . . fa-aḫaḏa min ḏālika anna taḫṣīṣa l-mumkini bi-l-wuǧūdi lā budda lahū min mūǧib.*

Consequently, according to both Averroes and Ibn Taymīya the main points of *Kalām* influence on Avicenna's argument for the existence of God can be summarized as follows:

1. Existence is divided into the *possible* and the *necessary*. Here the former means that which has a cause and the latter means that which has no cause.
2. The world in its totality is contingent, and every contingent being that can equally exist or not exist needs a particularizer, who particularized its actual existence.

Next we will examine Avicenna's argument for the existence of God to see whether the *mutakallimūn* in fact influenced him in light of these two points. In other words, we will see to what extent Averroes and Ibn Taymīya got Avicenna right regarding this issue.

II. *Avicenna's Argument for the Existence of God*

It is possible to say that Avicenna used several proofs for the existence of God, such as the proof from movement[15] and the proof from causality.[16] His most famous and comprehensive proof, though, and the one that had the most wide-ranging influence in both the East and the West is the proof from necessarily existent being and possibly

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[15] The basic origins of the proof from movement can be found in Aristotle's *Physics* VII 1 and VIII 5. The world possesses movement and all movement requires a mover. Since there cannot be an infinite series of movers, the series must ultimately rest in the Unmoved First Mover. As Avicenna himself summarizes it: "It must be clear to you, after our discussion in the *Physics*, that an infinite incorporeal power exists who is the origin (*mabda'*) of the first movement" (Avicenna, *aš-Šifā': al-Ilāhīyāt* (1960a), 2:373).

[16] The proof is not much more than a variation on the proof from necessarily existent being. In brief, it holds that although causes might be infinite in number, their series cannot go on *ad infinitum*. There does, therefore, exist a Necessary Uncaused Being in whom the series terminates and the world owes its existence to that Being. Ibn Sīnā puts it thus: "Every totality formed successively of causes and effects in which there is a cause which is not an effect must have that cause as its outermost point; because if it were in the middle it would be caused. Every chain, which comprises causes and effects, is finite or infinite. It is clear that if it is only comprised of what is caused, it would need a cause external to it to which it would be attached, without any doubt, by an outermost point. It is clear that if that chain contained something that was not an effect, that would be an outermost point and extremity. So every series culminates in the Being necessary by His essence" (Avicenna, *al-Išārāt wa-t-Tanbīhāt ma'a šarḥ Naṣīr ad-Dīn aṭ-Ṭūsī* (1957–1960), 3:26–27).

existent being. We can say that the other proofs are actually aspects of this proof.[17] Moreover, the claims of Averroes and Ibn Taymīya are related to this argument. For these reasons I deal only with this proof of Avicenna here.[18]

When we examine the works of Avicenna, it will become clear that Avicenna's argument for the existence of God has two stages.[19] In the first stage, he logically, or conceptually, divides existence into necessary existence, whose existence has no cause, and possible existence, whose existence does have a cause. This mentally constructed dichotomy of existence is quite explicitly stated in the *Šifā'*: "The things which are included in existence are susceptible in the mind to dichotomy into two divisions" (*inna l-umūra llatī tadḫulu fī l-wuǧūdi taḥtamilu fī l-ʿaqli l-inqisāma ilá qismayni*).[20] At this stage, as in the *Šifā'*, he also explains why necessary existence has no cause, but possible existence does have a cause.[21]

In the second stage, he applies this mental division of existence to actual existents in the external world: "There is no doubt that something exists" (*lā šakka anna hunā wuǧūdan*).[22] Thus this existent is always either necessary, and so has no cause for its existence, or possible, and so has a cause for its existence; for existence is logically subjected to the above mentioned dichotomy, and it is impossible to think existence outside of this dichotomy. It cannot be said that it is impossible (*mumtaniʿ*) in itself after it has existed, since an impossible being is defined as that whose non-existence is necessary (*ḍarūrīyun fī l-ʿadam*).[23] If it is possible, it must have a cause that determines or gives precedence to its existence over non-existence, since nothing in a possible being's own nature requires it to exist and there is no

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[17] See Ian Richard Netton (1994), 172–173.

[18] Recent interpretations of this proof vary widely. Some who interpret the argument as cosmological are H. A. Davidson (1987), 298, L. E. Goodman (1992), 75–76 and M. E. Marmura (1980), 337. Some who interpret the argument as ontological are Parviz Morewedge (1979), 188, 193 and F. Rahman (1963), 482. Another approach to Avicenna's argument takes it to be cosmological overall, but containing an ontological aspect; see, for example, Faruq Abdullah (S. A. Johnson) (1984), 3. More recently, Toby Mayer has described Avicenna's argument as simultaneously ontological and cosmological; see Toby Mayer (2001), especially 35.

[19] *Al-Išārāt*, 3:19–21; Avicenna, *an-Naǧāt* (1992), 2: 89–90; *ar-Risāla l-ʿaršīya* (1980), 15–16.

[20] *Al-Ilāhīyāt*, 1:37.

[21] Ibid., 1:37–41.

[22] *Naǧāt*, 2:89.

[23] Ibid., 1:30.

contradiction involved in its never having existed. According to Avicenna, since the contingent can equally exist or not exist, the knowledge that it must have a particularizer, who particularized its actual existence or non-existence, is *a priori*.[24] Turning to that cause we ask whether it is necessary or contingent. We so follow the series until we reach a necessary being. For if the cause for something that exists contingently is also contingent, then either (a) there is a further cause that is contingent, and so on *ad infinitum* or (b) the chain culminates in a necessary being. If there were a chain of contingent beings extending infinitely, nothing would exist. (For nothing that is contingent comes into existence except through a cause.) There is something that exists contingently. Therefore, there is a necessary being. If it (this existent) is necessary, then the existence of the Necessary has been proved and that is the conclusion sought.

Consequently, it seems that the two points mentioned above, which both Averroes and Ibn Taymīya claimed that Avicenna took from the *mutakallimūn*, were used in Avicenna's proof for the existence of God. In other words, concerning the issue of the similarity between the proofs of Avicenna and the *Kalām* for the existence of God, Averroes and Ibn Taymīya were right in their assessment. One can still ask, though, whether the *mutakallimūn* really influenced Avicenna on those points. Did the *mutakallimūn* use these arguments and principles in their proofs for God before Avicenna or did these points originally belong to Avicenna? Also, could Avicenna have had philosophical sources other than the *mutakallimūn*? Here we will examine these issues in light of the above mentioned two points.

III. *The Arguments for the Existence of God According to Avicenna and the* Mutakallimūn: *Comparison and Result*

The terms "necessary existence" and "contingent existence," or the distinction between necessarily existent and possibly existent can be seen explicitly in the works of certain Muslim philosophers such as al-Fārābī[25] (d. 339/950) and al-ʿĀmirī[26] (d. 381/992), who both

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[24] *Al-Išārāt*, 3: 96–97; *kullu šayʾin lam yakun ṯumma kāna fa-bayyinun fī l-ʿaqli l-awwali anna taraǧǧuḥa aḥadi ṭarafayi imkānihī ṣāra awlā bi-šayʾin wa-bi-sababin.*

[25] Al-Fārābī, *as-Siyāsa l-Madanīya* (1927), 66–67.

[26] ʿĀmirī, *Kitāb at-taqrīr li-awǧuh at-taqdīr* (1988), 304–309.

attempted a synthesis of Greek philosophy and Islamic theology, although they gave these terms different meanings. It could even be said that the distinction is supplemented by Avicenna with a further distinction that Aristotle suggested.[27] Actually Averroes does not criticize Avicenna for this distinction; rather, he criticizes him for his definitions of necessary existent and contingent existent. He claims that the *mutakallimūn* influenced Avicenna in his definition of necessary existent as an existent which has no cause and of contingent existent as an existent which has a cause. Indeed, one element in Avicenna's proof for God is based on his definition of possible existent, namely, every possible existent has a cause and the world in its totality is possible; hence the world has a (necessary) cause.

To what extent did the *mutakallimūn* influence Avicenna concerning the definitions of necessary existent and contingent existent? Firstly, it should be stated that Averroes argues that this definition goes back to Avicenna. He notes, however, that Avicenna reached this definition by generalizing the *mutakallimūn*'s principle that every possible existent has an agent. As will be seen below when we present the *mutakallimūn*'s use of the argument from particularization, it is true that the *mutakallimūn*, before Avicenna, accepted the principle that contingent existents in the world must have an agent to be as they are, or, simply, every contingent existent has an agent. Since according to them the contingent existent cannot exist by itself without a cause, then it needs an agent to exist. It is also accepted as a principle by the *mutakallimūn* that necessary existent does not have an agent and indeed is simply defined by them as "what does not have an agent." For example, the Muʿtazilite ʿAbd al-Ǧabbār (d. 416/ 1025), writes with regard to accidents: "If a body in the world is necessarily aggregate, it never needs an aggregator who aggregates it. It is as if a voice, in the state of non-existence of a voice, does not necessarily exist, it does not need an annihilator who annihilates it. It is similar to the existence of the Necessary Existent (God) that does not needs an agent to give existence to him due to his necessarily existing.[28]

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[27] See Aristotle, *Metaphysics* V(Δ) 5, 1015a30–1015b15; XII(Λ) 7, 1072b5–15. See also H. A. Davidson (1987), 291.

[28] ʿAbd al-Ǧabbār, *Šarḥ al-uṣūl al-ḫamsa* (1965), 97; *wa-kaḏālika wuǧudu l-qadīmi taʿāla lammā kāna waǧiban istaǧnā ʿan mūǧidin yūǧiduhū.*

As can be seen, according to the *mutakallimūn* contingent existent has an agent and it indeed *must* have an agent, whereas the necessarily existent does not have an agent. It is possible, then, that Avicenna, as Averroes claims, reached his definitions of necessary existent and possible existent by generalizing the *mutakallimūn*'s principle that every possible existent has an agent since we have not found that exact definition in the earlier philosophical literature.

The second essential point about which Averroes and Ibn Taymīya claim that the *mutakallimūn* influenced Avicenna, concerns the existence of the contingent world through particularization (*taḫṣīṣ*) by a particularizer. According to Avicenna if the world is a possibly existent (as indeed it is), then it must have a cause. That is to say that it must have a particularizer who particularized its actual existence rather than its non-existence, or a preponderator who preponderated its existence over non-existence. This is the very point that concerned Averroes and Ibn Taymīya. Therefore, we will now concentrate on the particularization argument.

When we consider the development of the argument from particularization, it is found in Islamic theology before Avicenna. Still, it should be mentioned that Avicenna contributed to its development in certain aspects, as we will see below. First of all, though, we will examine the *mutakallimūn*'s use of it.

In his *Kitāb ad-Dalīl al-kabīr*, al-Kāsim ibn Ibrāhim (d. 246/860), who was strongly influenced by Muʿtazilism, supports the argument from design by the argument from particularization (*taḫṣīṣ*). This argument deduces the existence of God from the diverse phenomena in the world. The fact that in the world there exist different things, perfect and imperfect, high and low and so forth, proves the existence of a creator who particularized them (*ḫaṣṣahā*) by means of the different qualities that appeared in them. If there were no particularizer, i.e., God, all the phenomena would be equal to one another.

> Does the blind man and the ignoramus, let alone the knower and the intelligent man, not know that if these creations and elements and what reason perceives of them by sight were and came about according to their will and desire, as the ignoramus hold with regard to them, then some of them would not surpass the others at all? The earth would not be low and earth, and the degree of the inferior and low thing would not be less than the degree of the loftiest and highest thing. All things would be equal to each other and some of them would not be stronger than others until all of them would be one

thing and no opposite would exist to one of them. But contradiction among things certainly exists and the perfection of certain things and the imperfection of others is clear to every sense of the five senses. Anyone among the people whose senses are sound can bring proof from the difference and defects that he sees in things, [namely,] that they have a creator who particularized them by difference and particularities, which are clearly shown in them.[29]

The geographer and religious thinker Abū Zayd Aḥmad ibn Sahl al-Balḫī (c. 849–934) also uses the argument from particularization. In his *Kitāb al-Badʾ wa-t-taʾrīḫ*, he similarly considers the difference seen among the created things as an argument for God's existence.[30] If things were produced by the natures of the things, their conditions would be equal. Since we find created things in contrary conditions, i.e., they are not equal to one another and are in different degrees, we know that a director directed them (*mudabbir dabbarahā*) and an arranger arranged them (*murattib rattabahā*), and this is God.[31]

In Māturīdī (d. 333/944) the term "particularization" is absent, but the thought is clearly identifiable. He writes:

> If the world had come into existence by itself, there would have been no time more appropriate for its existence than a certain other time, nor would there have been a state more proper than a certain other state, nor would there have been a characteristic more suitable than a certain other characteristic. But since the world's existence has different times, states, and characteristics, then it is clear that the world did not come into existence spontaneously. For, if it had been permissible for the world to create every thing for itself by itself, the world would have created the best states and characteristics, which would have, in turn, eliminated all the evil and ugly things. Therefore, it proves that the world came into existence through something else.[32]

The "something else" here is clearly an agent who chose a particular time, state, and quality for the world to come into existence.

Bāqillānī (d. 403/1013) too has an argument from creation to a particularizing agent; however, he looks not at the coming into exis-

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[29] Al-Kāsim ibn Ibrāhim, *Kitāb ad-Dalīl al-kabīr* (1990), 114; *wa-man salimat lahū ḥawāssuhū min ǧamīʿi l-insi fa-qad yastadillu bi-mā yará fīhā min al-iḫtilāfi wa-n-naqāʾiṣi ʿalá anna lahā ṣāniʿan ḫaṣṣahā bi-mā bāna fīhā mina l-iḫtilāfi wa-l-ḫaṣāʾiṣi*. Also see Binyamin Abrahamov (1986).

[30] Brockelmann attributed this work to al-Muṭahhar ibn Ṭāhir al-Maqdisī under the title *Badʾ al-ḫalq wa-t-taʾrīḫ*.

[31] Al-Balḫī, *Kitāb al-Badʾ wa-t-taʾrīḫ* (1899), 1:65.

[32] Al-Māturīdī, *Kitāb at-Tawḥīd* (1979), 17.

tence of the world as a whole, but at the coming into existence of the world's countless parts. He writes:

> Another proof for the existence of God is the certain things that come into existence earlier than others and the certain things that come into existence later than others despite being similar to one another. The cause of a thing's coming into existence at an earlier time cannot be the thing itself and its genus. For should a thing come into existence earlier or later by virtue of itself, everything of the same genus would come into existence at the same time earlier or later. The fact is proof that it has an agent rendering it early (*muqaddim qaddamahū*) and assigning it a definite span of existence in conformity with the agent's will.[33]

Although Bāqillānī does not expressly speak here of a particularizing agent who brings the world into existence, he does use the term "particular" and "particularizing" in another argument in a parallel context. He states:

> We know that each body in the world has the possibility (*ṣiḥḥa*) of receiving a different composition from the composition it has. And we also know that what is square has the possibility to become round, and what is round has the possibility to become square, and what has the form of one animal has the possibility of receiving a different form from the form it has, and each body has the possibility to transform from the shape it has to another shape. A body that is particularized (*iḫtaṣṣa*) in a specific, particular (*maḫṣūṣ*) shape cannot have been particularized (*iḫtaṣṣa*) in its shape by virtue of itself or merely by virtue of its having the possibility of receiving the shape. For then a body would have to receive, at the same time, every shape it has the possibility of receiving, which of course does not, and cannot, occur. Thus whatever possesses a shape, received its shape through a combining agent who combined it (*mu'allif allafahū*) and an intending agent who intended that it should be as it is.[34]

The great Mu'tazilite theologian and judge 'Abd al-Ğabbār, whom Avicenna probably met in Rayy between 403/1013 and 405/1015,[35] did not employ a particularization argument to support the inference of a creator from creation. Still, he uses a particularization argument explicitly to prove the existence of accidents and highlights the term "particularizer" (*muḫaṣṣiṣ*). He writes with regard to proving that desire is an accident:

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[33] Al-Bāqillānī, *Kitāb at-Tamhīd* (1947), 45.
[34] Ibid., 45.
[35] Dimitri Gutas (1988), 261.

> It is possible that one does not have desire when the situation is the same and the conditions are the same. Meanwhile, if one has desire, then a particularizer (*muḥaṣṣiṣ*) is necessary to have desires; otherwise it would not be (characterized) in the given fashion in preference to the contrary fashion. Since having desire is not more appropriate than not having desire, it necessitates the existence of a thing (*ma'nâ*) that is the desire.[36]

He also uses a particularization argument with regard to accidents, but he stresses that, like Avicenna, what has contingency has the possibility of being impossible and necessary, but what has contingency does not become impossible or necessary by itself. For its being impossible or necessary is no more appropriate than the other, inasmuch as it is contingent. If one of them, then, becomes more appropriate, it is due to the particularizer. He states: "If the body which has the possibility to become both impossible and necessary became impossible or necessary, it is due to the particularizer (*muḥaṣṣiṣ*) to become impossible or necessary. For its being impossible or necessary is no more appropriate than the other."[37]

As we have seen, the *mutakallimūn* use the particularization argument for different ends and employing various terms. Still, their primary use of the particularization argument is to prove the existence of God as a "principle." Avicenna, however, seem to have added a new dimension, namely, the premise that there is the possibility that the world, as contingent being, exist or not exist, and thus as a contingent being the world needs a preponderator who preponderated its existence over non-existence. It seems that Avicenna, as Averroes and Ibn Taymīya claim, took the idea of particularization from the *mutakallimūn*,[38] but generalized it by applying it to the dichotomy of the "world's existence and non-existence." I could not find a *mutakallim* who applied particularization to the dichotomy of the world's existence and non-existence, using either the term "*taḥṣīṣ*" or "*muḥaṣṣiṣ*" until al-Ǧuwaynī.[39] Thus it could be said that Avicenna, who was influenced in regard to the particularization argument by the *mutakallimūn*,

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[36] 'Abd al-Ǧabbār, *Šarḥ*, 93, and also see 96.
[37] Ibid., 98.
[38] See also L. E. Goodman (1992), 63–65, 114.
[39] Al-Ǧuwaynī's special position in regard to the use of the particularization argument for the existence of God is mentioned not only by Averroes but also by Šahrastānī (d. 548/1153) in *Kitāb Nihayat al-aqdam fī 'ilm al-kalām* (1934), 12. See also Mohammad Moslem Adel Saflo (2000), 158, 163, 202ff.

influenced al-Ǧuwaynī with regard to the premise that a contingent world needs a preponderator (*muraǧǧiḥ*) who preponderated its existence over non-existence. Although al-Ǧurǧānī (d. 816/1413) in his *Šarḥ al-Mawāqif* mentioned that the particularization argument was used by the *mutakallimūn*[40] and claimed that most of the Muʿtazilites used the premise that the contingent world needs a preponderator (*muraǧǧiḥ*) who preponderated its existence over non-existence,[41] I have not found such a premise in the literature of the Muʿtazilites themselves.[42] Consequently, it seems that Averroes and Ibn Taymīya were right in their claim: Avicenna really was influenced both in the definitions of contingent existence and necessary existence and in his use of the particularization argument by the *mutakallimūn*. Yet, it would also seem that Avicenna added a new element that went beyond the *Kalām* sources that might have been available to him, namely, he generalized the *mutakallimūn*'s positions so as to apply to the existence or non-existence of the world as a totality considered as a contingent being.

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[40] Maimonides (d. 601/1204) also ascribed the particularization argument to the *mutakallimūn* before al-Ǧurǧānī, see Maimonides, *Ḍalālat al-ḥāʾirīn* (1980), 217–218.

[41] Al-Ǧurǧānī, *Šarḥ al-mawāqif* (1850), 466.

[42] See Muḥammad ʿAbd al-Hādī Abū Rīda (1989), 96–97.

CHAPTER EIGHT

RECONSIDERING AVICENNA'S POSITION ON GOD'S KNOWLEDGE OF PARTICULARS*

Rahim Acar

Avicenna has often been criticized for maintaining that God does not know particulars, despite his frequent confirmations that God knows everything; nothing escapes from God's knowledge, not even the weight of an atom.[1] In the following I will examine one classical

[1] See, e.g., Majid Fakhry (1983), 155 and 228–229; David B. Burrell (1986), 71–91; Louis Gardet (1951b), 71–85. Gardet acknowledges that Avicenna affirms that God knows particulars and asks whether al-Ġazālī's accusations are groundless (71). He argues that Avicenna's position cannot be interpreted in conformity with the position of orthodoxy, i.e., God knows each and every particular not simply their universal properties, mainly because such an interpretation does not conform to Avicenna's cosmogony and theology (76). Gardet argues that since for Avicenna (1) God knows things insofar as he is their principle, (2) God causes only the first intellect immediately and (3) God's knowledge is not creative, God has direct and immediate knowledge of only the first intellect (76–77). God knows other things through their causes as if there is a backward action from the effect to the cause with regard to knowledge (79–80). Gardet thinks that Avicenna, by asserting that God knows particulars, wanted to conceal the real import of his philosophical position on this issue. Hence he finds al-Ġazālī's accusations against Avicenna justified. See also, Beatrice H. Zedler (1995). Zedler discusses St. Thomas' interpretation of Avicenna's position concerning God's knowledge of particulars and evaluates whether Aquinas' interpretation of Avicenna is justified. She considers Avicenna's understanding of God's knowledge of particulars within the context of his theory of cosmogony, i.e., his theory of emanation. She generally agrees with Gardet in arguing why for Avicenna God does not know particulars. She argues that "a direct production of the many is here excluded because a direct knowledge of the many is excluded; and the latter is excluded lest it would thrust multiplicity into the divine essence" (6). She maintains that for Avicenna "God knows singular effects through their universal causes" (10). Since God is not the direct or intentional cause of all things "God can know directly in its singularity only the first effect" (11). Gardet's and Zedler's arguments amount to saying that for Avicenna God neither directly nor immediately knows any other thing except for the first intellect, let alone particulars in the world of generation and corruption. A detailed discussion of their interpretation of Avicenna's texts goes beyond the objective of this article; however,

and one modern interpretation of his position. The classical interpret-
ation is that of al-Ġazālī and the modern interpretation is that of
Michael Marmura.[2] Broadly speaking, they argue that for Avicenna
God does not know particulars, although Marmura clearly states that
the particulars that God does not know on Avicenna's account are
those that are subject to generation and corruption. The strategy
shared by al-Ġazālī and Marmura is to dismiss Avicenna's affirmation
of God's knowledge of particulars in light of his explanation of how
God knows other things, or specifically that in light of Avicenna's
account of divine knowledge it seems impossible that God could
know particulars. Avicenna's explanation of how God knows other
things may not provide a satisfactory explanation of God's knowledge

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I would like to point out that Avicenna clearly argues that God knows many things
without his simplicity being jeopardized. See, e.g., Avicenna, *aš-Šifāʾ: al-Ilāhīyāt*
(1960a), 362.17–363.4; henceforth *The Healing: Metaphysics*. He also argues that God's
knowledge is the cause of everything not simply the first intellect; e.g. Avicenna,
The Healing: Metaphysics, 366.8–13, and again 402.13–403.1. For a discussion of the
relation between God's knowledge and the existence of things, see Rahim Acar
(2002), 170–193.

    [2] Oliver Leaman provides another modern interpretation of Avicenna's position.
His interpretation is in line with that of Michael Marmura; see Oliver Leaman
(1985), 108–120. Leaman argues that al-Ġazālī was right in accusing the philoso-
phers of denying God's knowledge of particulars. Leaman's overall argument is that
for Avicenna God does not know those particulars that are subject to generation
and corruption, despite the fact that Avicenna states that "nothing escapes his knowl-
edge" (111). Then Leaman adds that on Avicenna's metaphysical premises, he could
validly argue that God knows all particulars (117). Leaman interprets Avicenna's
contention that God's knowledge is all-at-once and atemporal such that this knowl-
edge contains only the essential structure of the universe through its basic princi-
ples. He further states that for Avicenna God does not know corruptible "particulars
in all their contingency," but simply their "general, abstract and universal" aspects,
because otherwise God would need sense organs and so lack a perfection (112–113).
If Avicenna could have validly argued that God knows all particulars, then why did
he not do so? Answering this question, Leaman maintains that by denying knowl-
edge of all particulars to God, Avicenna wanted to "avoid too closely identifying
God's mode of knowledge with our own." On Leaman's interpretation, for Avicenna
if God knew all particulars including those that come to be and cease, this would
require God's having sensory apparatus (117). Leaman's conclusion, however, does
not seem to be warranted. Although Avicenna maintains that God's knowledge of
those particulars that are subject to generation and corruption is not in time and
does not require sense organs, he never says that God's atemporal and non-sense-
perceptual knowledge excludes particulars; see Avicenna, *al-Išārāt wa-t-tanbīhāt* (1892),
185, henceforth *Išārāt*. To the contrary, he clearly states that God knows each and
every thing. Leaman could have argued that Avicenna did not sufficiently explain
how God's universal manner of knowing reaches to particulars that are subject to
generation and corruption.

of particular events and things; nevertheless, this does not justify the claim that for Avicenna God does not know particular events and things.

I

In his *Incoherence of the Philosophers* (*Tahāfut al-falāsifa*), al-Ġazālī dedicates one chapter to criticizing Avicenna's position concerning God's knowledge of particulars.[3] After his attempts to show that philosophers are not able to prove that God knows other things (discussion 11) and that God knows himself (discussion 12), in the thirteenth discussion, al-Ġazālī aims at refuting the position of philosophers, specifically that of Avicenna, concerning God's knowledge of particulars. This discussion is specifically directed against Avicenna because al-Ġazālī states that among philosophers Avicenna maintains that God knows other things through a universal knowledge (*ʿilm kullī*). It is not temporal knowledge; it "does not change in terms of the past, the future and the present." Even though al-Ġazālī acknowledges Avicenna's affirmation of God's knowledge of particular events and things, at the end of his discussion he concludes that for Avicenna, in fact, God does not know particulars.

Al-Ġazālī's criticism of Avicenna's position concerning God's knowledge of particulars is twofold: God's knowledge of particular events and his knowledge of particular things. Presenting Avicenna's explanation of how God knows particular events that come to be and pass away, al-Ġazālī argues that for Avicenna, since God is not changeable, "it is inconceivable" that God knows things that change in time. To illustrate Avicenna's explanation of how God knows particular events, al-Ġazālī examines Avicenna's example of an eclipse. For Avicenna, since God is unchangeable, he knows an eclipse, all its attributes and accidents, by an eternal (*fī l-azal*) and unchangeable knowledge (discussion 13, para. 5). For Avicenna, al-Ġazālī reports, God's knowledge of an eclipse, i.e., before the eclipse, at the time when it occurs and after it clears, is unchangeable and does not necessitate a change in God's essence. This paradigm is applicable to all temporal events since all of them happen as resulting

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[3] Al-Ġazālī, *The Incoherence of the Philosophers* (1997).

from their causes, which ultimately "terminate with the circular heavenly motion" (ibid.). Hence everything is known to God by one homogeneous unveiling (*inkišāf*), which is not affected by time; however, al-Ġazālī comments that on this account one cannot say that God knows an eclipse at the time it exists that it exists then. Similarly, God does not know that the eclipse is over when it clears. Consequently, God cannot know anything that requires for its knowledge a relation to time because it would necessitate a change in God (ibid.). Lacking any temporal relation to the object of knowledge, God does not know what the actual situation is. God cannot know whether some event happened, or that it will happen.

Al-Ġazālī's argument against Avicenna's explanation of God's knowledge of events can be construed as follows. For Avicenna (1) God's knowledge is unchangeable and is not temporal. (2) God knows particular temporal events through their causes. (3) Knowledge of a particular temporal event requires a temporal relation between the knower and the event known, since without a temporal relation one cannot know events to hold at the time of their existence, or to expect them at any time before they existed or to be over at any time after they existed. (4) Therefore, for Avicenna, God does not know particular temporal events.

Al-Ġazālī argues that for Avicenna God does not know particular things either. The particular things that al-Ġazālī seems to have in mind in this context are particular entities in the sublunar realm, i.e., particulars that are subject to generation and corruption.[4] Al-Ġazālī argues that Avicenna's position concerning particular things is similar to his position concerning particular events. Proceeding in a manner similar to the argument seen above concerning God's knowledge of particular events, al-Ġazālī attempts to show that God's universal knowledge of things does not reach to individuals either.

Underscoring Avicenna's contention that God knows things in a universal manner, al-Ġazālī argues that the universal manner of knowing limits the object of knowledge to universal things. That is, God knows only universals, but not particulars or individuals. For example, God knows man through an absolute and universal knowledge. God knows man's accidents and properties universally, for instance, that man has a body which is composed of certain organs

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[4] Michael E. Marmura (1962); henceforth "Some Aspects."

and that man has certain necessary concomitants, i.e., all that constitutes man universally. God does not know accidents of individual men, since God's knowledge is intellectual. Individuals are distinguished by the senses and not by the intellect since the basis of distinction between individuals is pointing at them as "this" or "that." Intellect understands only "universal direction and universal space." Since individuals can be pointed to at a specific direction, and in this pointing there holds a spatial relation between the object and the perceiver, it is impossible that God has knowledge of individual beings (discussion 13, para. 6).

Al-Ġazālī's argument can be reconstructed as follows. (1) God knows things universally. (2) Universal knowledge is intellectual as opposed to sense perceptual knowledge. (3) Individuals are known only by sense perception, i.e., by pointing at them. (4) Sense perception and pointing at an individual requires a spatial relation. (5) God cannot have a spatial relation and so does not have sense perceptual knowledge. (6) Hence for Avicenna, who subscribes to this account, God does not know particular things.

Through the examination of Avicenna's explanation of "how God knows events and things," al-Ġazālī concludes that for Avicenna God does not know either particular events or particular things. Al-Ġazālī is aware of the fact that Avicenna claims that God knows particular events and individuals; however, he argues that on Avicenna's account, since God has neither a temporal nor a spatial relation to things, God does not know particulars, which are conditioned by time and space. Although al-Ġazālī examines Avicenna's answer to the question of "how God knows," he concludes concerning the question "whether God knows."

The legitimate conclusion that can be drawn from his examination, however, is that Avicenna's theory does not successfully explain how God knows particulars. One may grant al-Ġazālī this conclusion, but this is not the conclusion al-Ġazālī wants. Instead of this, he infers that for Avicenna God does not know particulars. Heavily occupied with defeating Avicenna, he does not provide an explanation why such a leap is justified. There might be good reasons why Avicenna's explanation of how God knows particulars should override his affirmations that God knows particulars, but this point must be argued, not assumed.

II

A similar interpretation of Avicenna's position concerning God's knowledge of particulars is given by Michael Marmura, whose contribution to understanding Avicenna's conception of the divine knowledge of things is invaluable. Marmura wrote two articles on this issue, one specifically discussing Avicenna's position[5] and one discussing al-Fārābī's and Avicenna's position on divine omniscience and future contingents.[6] Marmura is well aware of the problems Avicenna's theory posed to his readers.

Marmura argues that for Avicenna, "the corruptible particulars are not known individually by God: it is only their general features and their universal aspects that are known by Him."[7] This, more or less, conforms to al-Ġazālī's interpretation of Avicenna's theory. Unlike al-Ġazālī, Marmura clearly limits the particulars that cannot be known by God, according to Avicenna's account, to particulars in the realm of generation and corruption. Just as al-Ġazālī did, he determines Avicenna's answer to the question "whether God knows particulars" on the basis of Avicenna's answer to the question "how God knows particulars." Marmura also pays attention to Avicenna's affirmations that God knows everything and attempts to explain how his interpretation of Avicenna's position can be reconciled with Avicenna's affirmations. Marmura's argument to justify his interpretation is not convincing.

In order to determine whether God's universal knowledge includes every particular, Marmura clarifies what Avicenna means by the term "universal" with regard to God's knowledge. He identifies Avicenna's use of the terms "universal" and "particular" to be the source of the problems Avicenna's theory posed to his readers. He intends to arrive at a clearer understanding of Avicenna's position through separating various meanings that the terms "universal" and "particular" covered in Avicenna's usage.[8] In fact, his examination of the semantic width of the term "universal" in this context is indispensable to a

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[5] "Some Aspects."

[6] Michael E. Marmura (1985). Since Marmura's article "Some Aspects" is more detailed and since in this article Marmura does not change his interpretation of Avicenna's position, I will pay attention only to his article "Some Aspects."

[7] "Some Aspects," 304.

[8] Ibid., 300.

clear understanding of what Avicenna intends to convey. One of the meanings of the term universal, Marmura states, is conceptual as opposed to sensory. For Avicenna, God's knowledge is universal in the sense that it is intellectual and not sensory. Since God is intellect, not soul, and sensory knowledge requires an organ to perceive, God's knowledge must be intellectual, not sensory.[9] Another sense that universality conveys is changelessness. Since God is eternal and immutable God's knowledge must also be immutable.[10] Unity is another sense Avicenna wants to include within the scope of the term "universal" when he characterizes God's knowledge with universality. God primarily has self-knowledge; however, since he is the origin of everything, his self-knowledge includes his knowledge of other things.[11] Marmura also includes the creative character of divine knowledge and its simplicity in the meaning of universality of God's knowledge. Since God's knowledge is creative, God's relation to his object of knowledge is the opposite of the relation holding between a subject and a known object in human knowledge. Whereas a man acquires his knowledge of things from things themselves, God does not acquire His knowledge from things. To the contrary, things come to exist because of God's knowledge of them. By the simplicity of God's knowledge, Avicenna maintains that God's knowledge does not involve either a temporal or an ontological sequence. God knows everything all at once. There is no transition either from one concept to another or from one event to another.[12] Thus the term "universal," as Avicenna uses it with reference to the divine knowledge, indicates that God's knowledge is (1) intellectual, as opposed to sense perceptual, (2) eternal and immutable, as opposed to temporal and changeable, (3) one and simple, even though it is inclusive of many things, and (4) creative of things, as opposed to being acquired from things.

Based on Avicenna's explanation in the *Metaphysics* of *The Healing*, Marmura determines the scope of God's universal knowledge. In the *Metaphysics* part of *The Healing*, concerning God's knowledge of corruptibles, Avicenna states "when corruptibles are apprehended in their abstract nature and attributes that are not particularized, . . . these

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[9] Ibid., 301.

[10] Ibid., 301, with reference to Avicenna, *The Healing: Metaphysics*, 360.8–10.

[11] Ibid., 302, with reference to Avicenna, *al-Išārāt wa-t-tanbīhāt* (1892), 181.

[12] Ibid., 303, with reference to Avicenna, *The Healing: Metaphysics*, 362.17–363.4.

are not conceived in as much as they are corruptibles."[13] In another passage, Avicenna is clearer: "[God] apprehends particulars in as much as they are universal, that is, in as much as they have qualities."[14] These two features, i.e., "not knowing corruptibles inasmuch as they are corruptible" and "knowing particulars inasmuch as they have qualities," follow from the nature of God's knowledge. That is, since divine knowledge is not temporal, changeable and it is not sense perceptual but intellectual, God does not know corruptibles inasmuch as they are corruptible, but he knows them inasmuch as they have qualities. If divine universal knowledge includes only the properties of particulars then God does not know particulars individually.[15]

In order to support his interpretation, Marmura brings in Avicenna's epistemological discussions concerning particulars. He maintains that (1) Avicenna's conception of universal knowledge of particulars and (2) his criteria for intellectual knowledge imply that for Avicenna God does not know each and every particular entity or event.[16] Firstly, as I related above, God's universal knowledge comprises only qualities and general properties of corruptible particulars. Secondly, intellectual knowledge is grounded on definitions, and individuals cannot be defined. Since definition applies to species, only individuals that are the one and only member of their species can be intellectually known. Since corruptible individuals are not the one and only members of their species, definition of their species does not pick them out in their individuality. Individuals can only be described, but descriptions may, in turn, apply to more than one definite particular.[17] Consequently, corruptible individuals cannot be individually

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[13] Avicenna, *The Healing: Metaphysics*, 359.7–8.

[14] Ibid., 360.3.

[15] Marmura, "Some Aspects," 303–304.

[16] Ibid., 306.

[17] Ibid., 306–307. A transient or corruptible individual possesses an individual essence consisting of its necessary accidents, but it cannot be defined (*The Healing: Metaphysics*, 245–247). One can reach a definition through universal descriptions; however, these apply only to kinds not individuals. No matter how specific a description is, it does not specify a particular entity, applying to nothing else but this particular entity. A corruptible particular or individual, *x*, "has a description (*rasm*) confined to it." One can arrive at this description through its attribution (*isnād*) to another particular, *y*, such as time or circumstance, already known to the intellect as an individual. Even though a particular is known through sensory apprehension, if a particular is the only member of its species, then it can be known intellectually (Marmura uses "conceptually"). Hence God can know *y* intellectually immediately, and through *y* God can know *x* intellectually.

known, because they cannot be defined, and no description of any particular thing is limited to this and only this individual. Thus, since God's knowledge is intellectual and corruptible particulars cannot be intellectually known, Marmura concludes that for Avicenna God cannot know the particular entities in the realm of generation and corruption.[18]

Discussing whether on Avicenna's criteria God could know particular events, Marmura argues that even though God knows individual celestial events, God cannot know individual events in the realm of generation and corruption. Emphasizing Avicenna's explicit statements concerning the celestial eclipses, Marmura argues that for Avicenna God knows particular celestial events individually since these events can be attributed to individuals which are the only members of their species. This may not be the case, however, with events in the realm of generation and corruption. That is, events in the realm of generation and corruption are not immediately attributable to entities which are the one and only member of their species.[19] Consequently, events in the realm of generation and corruption are not individually known. In this respect, Avicenna's choice of a celestial eclipse as an example to illustrate how God knows particular events, Marmura argues, "was not meant to show how God knows any particular event whatsoever,"[20] but it suits the kind of particular events which God knows.

The conclusion of Marmura's arguments, i.e., for Avicenna God does not know all particular entities or all particular events, seems to contradict Avicenna's affirmations that God knows everything. In order to reconcile his interpretation of Avicenna's position concerning God's knowledge of particulars and Avicenna's claim that God knows everything, Marmura urges us to take the term "everything" in a looser sense. Marmura argues that if one takes "everything" in the sense of "each and every thing," then there is a flagrant contradiction. That is, the outcome of Avicenna's explanation of how God knows particulars and his claim that God knows everything contradict each other. If one takes the term "everything" in a looser sense, not meaning each and every thing, then to know everything

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means to know "general actions and natures of everything." In this sense God can be said to have the knowledge of everything, including particulars in the world of generation and corruption.[21]

Marmura explains away Avicenna's insertion of Qur'anic expressions such as "nothing escapes His knowledge, not even the weight of an atom." He claims that by inserting Qur'anic expressions, Avicenna intended to conceal the implications of his theory. One can see Avicenna's attempt to narrow the gap between the Greek and the Qur'anic conceptions of divine knowledge. Although Avicenna extended divine knowledge of particulars to the sphere of the moon, he could not go below that without violating his epistemological principles. Marmura reminds us of the importance of the epistemological discussion concerning knowledge of particulars. He suggests that given that Avicenna was a philosopher and that for many Muslim philosophers scripture should accommodate philosophy, not vice versa, one should not require that Avicenna's position concerning God's knowledge of particulars conform to Qur'anic teachings.[22]

III

Marmura's examination of Avicenna's position concerning God's knowledge of particular entities and events is based on an assumption similar to that of al-Ġazālī's examination: Avicenna's answer to the question "how God knows particulars" should be given predominance in determining Avicenna's answer to the question "whether God knows particulars." Let us suppose that Avicenna's account is not successful. This does not show that for Avicenna divine knowledge does not cover particulars. Avicenna's inability to provide a successful account does not require, or imply, that he denies knowledge of particulars to God. The deduction of "for Avicenna God does not know particulars" from the failure of Avicenna's account of how God knows particulars is logically deficient.

One cannot directly deduce the answer to the question "whether" from the answer to the question "how," because the question "whether" is logically prior to the question "how." For example, one would like

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[21] Ibid., 311–312.
[22] Ibid., 312.

to know "whether," say, there is a city called New York. Only after we have an affirmative answer to this question does the question about the properties of this city become meaningful as a question inquiring about a really existing city. If, for example, one imagines the existence of something that does not in fact exist, and says "yes" to the question whether it exists, then the question about its properties is meaningful. Still, the answer to the question "whether" and the meaning of asking the question "how" are simply assumed. If there were, in fact, no New York city, the question about its properties, which can be subsumed under the rubric of a "how-question," would be pointless. The meaning of the question "how" is determined on the basis of the answer to the question "whether," but not vice versa.

The failure of Avicenna's account of how God knows particulars does not require that he believed that God does not know particulars. Suppose one asks me whether I have read Avicenna's *Metaphysics* of *The Healing.* On the one hand, if I answer this question negatively, then this person does not ask me, say, to talk about Avicenna's theories based on my reading of his *Metaphysics* of *The Healing.* On the other hand, if, as a person who writes on Avicenna, I answer the question in the positive, only then does such a question make sense. Suppose, I am further asked to give an outline of Avicenna's theories based on my reading of the *Metaphysics* of *The Healing.* I may come up with an answer to the question and give a more or less accurate outline of Avicenna's major theories articulated in it, or I may mix up his teachings with some other philosopher. For example, I may say that in this book Avicenna argues that we cannot convincingly answer the question whether the universe has a temporal beginning. This answer contradicts what Avicenna actually argues in the *Metaphysics* of *The Healing.* Does the fact that I attribute a theory to Avicenna, a theory that contradicts what Avicenna actually taught, show that I did not read the *Metaphysics* of *The Healing*? Or, does it show that I simply lied, because, say, as somebody writing on Avicenna I was too intimidated to tell the truth? This is a possibility. Still, my failure to give a more or less correct outline of Avicenna's theories does not require that I simply have not read Avicenna's *Metaphysics* or that am lying. There may be several other reasons to explain my failure to give an accurate presentation of Avicenna's theories despite the fact that I have read Avicenna's *Metaphysics.* For example, my memory may be weak, or maybe I did not grasp his argument at the outset. Analogously, then, even if one grants that Avicenna fails

to give an acceptable explanation of how God knows particulars, one cannot immediately deduce from this failing that Avicenna, in fact, believed that God does not know particulars.

The failure of Avicenna's account of how God knows particulars could be used as indirect evidence to determine his answer to the question whether God knows particulars, if Avicenna were silent or not clear with regard to this question. For example, if Avicenna were to have said simply that God knows everything, without specifying that God knows particulars, then on the basis of the conditions of the divine knowledge, which is intellectual, immutable, etc., one could conclude that divine knowledge does not reach each individual but their general properties. This could also be the case, if Avicenna were simply to have said that God knows everything and that particulars are not knowable without further clarification. If Avicenna's discussions were ambiguous, only then could one use the failure of Avicenna's account of how God knows particulars as indirect evidence to determine Avicenna's possible answer to the question whether God knows particulars. In order to show that it is not merely a possibility but that in fact Avicenna taught that God does not know particulars one needs further evidence.

Although it is possible that Avicenna wanted to conceal his true views, Marmura argues that this is in fact actually the case. One part of Marmura's evidence to show that this is the case is based on the assumption that Avicenna's account of how God knows particulars contradicts his affirmation that God knows everything and that there cannot be such a contradiction in Avicenna. In this respect Marmura goes beyond al-Ġazālī's argument. While al-Ġazālī does not bother with justifying his interpretation *vis à vis* Avicenna's claim that God knows "everything," Marmura attempts to justify his interpretation. Marmura argues that depending on the sense in which one takes the term "everything," there may or may not be a contradiction. I have already mentioned his suggestion that the term "everything" should be taken in a "non-literal sense." Otherwise there will be a contradiction between Avicenna's claim that God knows particulars in a universal manner and that God knows everything. Avicenna's failure to explain how God knows particulars may result in a contradiction with his claim that God knows everything. Still, there is no reason that we have to consider Avicenna to be an infallible or omniscient philosopher. Marmura's attempt to interpret the term "everything" in the statement "God knows everything" in

a looser sense cannot be justified simply because otherwise there will be a contradiction. Furthermore, the fact that Avicenna specifies that "even the weight of an atom" is included in "everything," belies Marmura's interpretation.

The second part of Marmura's evidence is his claim that Avicenna is being disingenuous. As I have related above, Marmura argues that by using the term "everything" ambiguously and inserting Qur'anic expressions into his text Avicenna wanted to conceal the implications of his position. The expression "even the weight of an atom" reflects Qur'anic expressions describing God's knowledge. Marmura considers the appearance of Qur'anic expressions in Avicenna's text as a means of concealing the implications of his theory concerning God's knowledge of particulars. This is too big a claim to prove or disprove conclusively.[23] Unless there is a compelling reason to reject what is *prima facie* understood, however, there is no good reason to look for something hidden. Not being able to provide a successful theory is not a compelling reason to reject what Avicenna's text explicitly says.

In fact, Avicenna does not seem to have maintained that God knows everything simply out of pretense. If he were to have said it out of pretense, then he would not have paid as much attention to it as he did in his works. In addition to arguing that God knows everything in the *Metaphysics* of *The Healing*, he consistently defends it in works written later than the *Metaphysics* of *The Healing*.[24] Indeed, in Avicenna's later works one may find more detailed accounts of God's knowledge of particulars and passages indicating why one must pay due attention to Avicenna's answer to the question whether God knows particulars. For example, in his *Išārāt*, Avicenna states that even if God's knowledge of particulars must be above time and sempiternity (*dahr*), God knows particulars in a sacred (*muqaddas*) manner. The existence of particular temporal things is identical to the divine execution (*qadar*) of God's primal decree (*qaḍāʾuhū al-awwal*). If they were not necessary, they would not be. If they were not known, they would not be necessary.[25]

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[23] Neglecting what is obvious in search of what is hidden reflects a long tradition, with modern repercussions, of reading Muslim philosophers. For a discussion of modern attempts to find out what is hidden in the texts of medieval Muslim philosophers, see Oliver Leaman (1985), 182–201.

[24] See for example, Avicenna, *Taʿliqāt* (1973), 116, 118, 119; *Išārāt*, 182–183, 185.

[25] *Išārāt*, 185.

Arguing that al-Ġazālī's and Michael Marmura's interpretation of Avicenna's position concerning the question whether God knows particulars is not well established may not be enough to show that Avicenna sincerely thought that God knows everything.[26] In order to establish firmly whether Avicenna is sincere in his attribution of

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[26] Another argument urging that one should not stress Avicenna's affirmations that God knows each and every thing may run as follows. For Avicenna, who follows Aristotle on this issue, particulars are not intellectually 'knowable.' Hence even though Avicenna affirms that God knows everything and quotes Qur'anic expressions to this effect, they are not known even by men. See Oliver Leaman (1999), 60. Charlotte Witt gives a detailed and careful analysis of Aristotle's position on this issue; see Witt (1989), ch. 5, especially 150–175. It is true that Aristotle associates particulars with perception and universals with knowledge; see *Posterior Analytics*, I 18, 81a38–b9; I 31, 87b29–34; *Metaphysics*, III(β) 4, 999a24–b3 *apud* Witt, 150. If one limits Aristotle's position on particulars with regard to the question of whether they are known or perceived to these references and similar passages, then it is clear that for Aristotle, particulars are not known, but perceived; however, this does not seem to be the whole story. Aristotle formulates an *aporia* in Metaphysics III(β) 6 concerning the principles of substances asking whether they are universal or particular. If they are assumed to be universal, then they are not substances; if they are particular, then they cannot be known. While the claim that knowledge is of universals urges one to think that essence or form is universal, the claim that substance is distinct and particular makes one think that essences or forms are particular (Witt, 145–148). Both claims have firm grounds in Aristotle's thought. For the first claim, without doubt, Aristotle thinks that the universal is the object of knowledge. As for the second claim, Aristotle clearly states that essences or forms are substance, (e.g., *Metaphysics* VII(Z) 3, especially 1028b34–36 *apud* 148), and substances are particular. As his solution to the *aporia*, Aristotle divides knowledge into actual and potential. The actual knowledge is that of the individual and the potential knowledge is that of the universal (*Metaphysics* XIII(M) 10, 1087a10–21 *apud* 163). In fact, if one endorses Witt's interpretation of Aristotle's conception of essence, i.e., Aristotle conceives essence as "individual-essence" not as "species-essence," then individuals are primarily known and universals are only secondarily known. Thus it is difficult to argue that for Avicenna God does not know particulars because they are not objects of knowledge on the basis of Avicenna's affiliation with Aristotle's thought. This is, because, on at least one interpretation of Aristotle, particulars, in the sense of substances, are objects of knowledge, not simply that of sense-perception. Of course, this does not by itself insure that for Avicenna too particular substances are objects of knowledge either. Nicolas L. Rofougaran interprets Avicenna's conception of *ḏāt* in a manner similar to Witt's interpretation of Aristotle's conception of essence. He interprets Avicenna's conception of *ḏāt* such that it corresponds with the "individual essence" and he explains Avicenna's claim that God knows particulars through his conception of *ḏāt*; see Nicolas L. Rofougaran (2000), especially 241–261.

One may find in the *Kitāb an-Nafs* part of Avicenna's *The Healing* hints indicating that Avicenna's position concerning the question whether individuals can intellectually be known is in conformity with that of Aristotle. Without going into details and discussing the problems to which such a position may give rise, I want simply to point out that Avicenna does not limit the domain of intellectual knowledge to species-forms. There is no doubt that Avicenna emphasizes that the intellectual form

knowledge of particulars to God, one needs a detailed examination of Avicenna's relevant passages paying attention to his later works as well as earlier ones. Still, al-Gazālī's and Marmura's arguments, which one might consider representative of the dominant interpretation of Avicenna's position, do not show that for Avicenna God does not know particulars. Granting their arguments, the most one can conclude is that Avicenna does not provide a successful theory for explaining how God knows particulars. Based on their arguments, there is no ground to neglect or explain away Avicenna's subscription to the theory that God knows each and every thing.

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must be applicable to all members of the species (see, e.g., Avicenna, *Šifā': aṭ-Ṭabī'īyāt, an-Nafs* (1959), 58.10–12, 61.5–9); however, he also acknowledges that there is nothing like this existing by itself *in re*. This species-form exist *in re* in association with specific properties of each individual. As far as individuals are concerned, intellect knows the species-form in them and their individual properties, and it is able to distinguish what is specific to this individual and what can be applicable to all members:

> When sense perception provided imagination and imagination, in turn, intellect with a form, intellect takes an intention (*ma'nâ*). If it [i.e., imagination] provides with another form of the same species, this is only numerically different. Intellect does not take from this [second form] a certain form that is different from [the former], except for the accident that exclusively belongs to (*yaḥiṣṣu*) this [second image-form] insofar as it is this accident. [Intellect] takes it once abstractly and once together with this accident. That is why it is said that Zayd and Amr have one intention with regard to humanity, [but] it is not such that the humanity associated (*muqārina*) to the properties (*ḫawāṣṣ*) of Amr is identical to the humanity that is associated to the properties of Zayd, as if one essence (*ḏāt*) belongs to both Zayd and Amr. . . . To the contrary, humanity is multiple in existence. There does not exist a humanity that is shared in the external existence, so that it could be simply (*bi-'aynihā*) the humanity of Zayd and Amr. (*Kitāb an-Nafs*, 236.16–20–237.1–6)

In fact, if Avicenna argued that individuals cannot be intellectually known, then human soul could not intellectually know itself. This is because human soul is an individual, not something in which all members of its species share. Consequently no individual human soul could be an intellect, intelligizer (*'āqil*) and intelligible. That individuals cannot be intellectually known contradicts what Avicenna clearly argues; see *Kitāb an-Nafs*, 236.7–8.

THE RECEPTION OF BOOK B (*BETA*) OF ARISTOTLE'S *METAPHYSICS* IN THE *ILĀHĪYĀT* OF AVICENNA'S *KITĀB AŠ-ŠIFĀʾ*

Amos Bertolacci

Already during his philosophical education, Avicenna conceives the practice of philosophy as an endeavor to solve theoretical problems. In the Autobiography, for example, when describing what has poignantly been called his "undergraduate education" in philosophy (which occupied him from the age of sixteen for one and a half years), Avicenna says the following:

> Every time I was at a loss about a problem (*wa-lladī kuntu atahayyaru fīhi min al-masāʾili*), concerning which I was unable to find the middle term in a syllogism, I would repair on its account to the mosque and worship, praying humbly to the All-Creator to disclose to me its obscurity and make its difficulty easy. At night I would return home, set the lamp before me and occupy myself with reading and writing. Whenever I felt drowsy or weakening, I would turn aside to drink a cup of wine to regain my strength and then I would go back to my reading. Whenever I fell asleep, I would see those very problems (*masāʾil*) in my dream; and many problems (*masāʾil*) became clear to me while asleep.[1]

The details of this passage, such as Avicenna's recourse to prayers, wine-drinking and dreams, do not concern us here.[2] What is noteworthy is his peculiar attitude towards the problems (*masāʾil*) he encountered during his philosophical studies, namely, his resolute will to find a solution to them. In this regard, his resort to all the procedures at his disposal, even non-philosophical ones, in order to find the "clarification" (*ittiḍāḥ*)—i.e., the explanation in syllogistic form—

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[1] Avicenna, *The Life of Ibn Sīnā* (1974), 28.3–30.3. English translation as in Dimitri Gutas (1988), 27–28. The expression "undergraduate education" is taken from the detailed account of Avicenna's autobiography in Gutas (1988), 149–198.

[2] See Gutas (1988), 181–187.

of the still unsolved problems is significant. Already at this early
stage, solving puzzles appears to be an essential and inescapable ele-
ment of Avicenna's way of doing philosophy.

   Avicenna's approach to philosophical difficulties remains similar
to the one emerging from the Autobiography also later on in his
life, when he passes from the position of student to that of teacher of
philosophy. The collection of texts known as the *Mubāḥaṯāt* (*Discussions*)
contains three letters by Avicenna to the disciple Bahmanyār. In one
of these, written probably in 1030 (seven years before his death),
Avicenna states:

> As for the questions (*masāʾil*) which you asked me, they are significant
> questions (*masāʾil*) about the philosophical sciences and especially these
> particular ones. But treating such [questions] briefly leads to error,
> while too many of them overtax a mind preoccupied with cares, and
> it can hardly concentrate in the areas requiring explanation, especially
> for somebody who is like me and in my situation. I have studied [these
> questions] carefully and I have found them to be the proper ones;
> some I have answered at sufficient length, other by means of point-
> ers, and still other perhaps I have been unable to answer at all. . . . You
> should engage in more such discussions [with me] on anything you
> wish, because in them lies pleasure and benefit. Whatever I am able
> to bring to light I will do so either openly, or from behind a veil
> which will act as a useful kind of stimulus and drill for it [i.e. the
> question at hand]; whatever I am unable to do so, I will excuse myself
> and admit it, since what is known to mankind is limited.[3]

The continuity between the two texts is striking. In the Autobiography,
an exceptionally precocious self-taught Avicenna has to pray humbly
in the mosque during the day and to do intensive research in his
house at night in order to receive in a dream, while sleeping on his
books, directly from the Agent Intellect, the syllogistic elucidation of
many of the problems he is unable to solve. In the letter to Bahmanyār,
on the other hand, an experienced Avicenna encourages the disci-
ple to submit to him his "questions" (*masāʾil*), so that the teacher,
more aware now of the limits of human reason than he was during
his youth, can express an authoritative "answer" (*ǧawāb*) on some of

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[3] Avicenna, *Kitāb al-Mubāḥaṯāt* (1992), 50.11–51.4 (= §36); 53.13–54.2 (= §45);
English translation as in Gutas (1988), 58–59 (slightly modified). Gutas translates
this letter under the title "Letter to an Anonymous Disciple." This letter is classified
as part MII of the *Mubāḥaṯāt*, studied, dated and related to the rest of the work
by David C. Reisman (2002), 207–213, 231–233.

them after a careful study and to the extent of his ability. The same pattern of question and answer governs most of the material gathered in the *Mubāḥaṯāt*, which, in this perspective, can rightly be regarded as a "collection of philosophical questions and Avicenna's written answers."[4]

Regardless of whether they are problems (i.e., questions raised by the very nature of things), as in the Autobiography, or questions (i.e., problems posed by students), as in the letter to Bahmanyār, Avicenna's attitude towards the philosophical *masāʾil* remains the same throughout his life: he strives, as much as possible, to find a solution or an answer to them, or, in other words, to remove and eliminate them. The Socratic way of doing philosophy by raising doubts, with an "ironical" attitude and a "maieutic" purpose, is totally alien to Avicenna.

In this perspective, it is interesting to study Avicenna's treatment of a particular class of philosophical problems or questions, namely, the *aporiai* of the Aristotelian *corpus*. Aristotle's *aporiai* are a particularly challenging type of theoretical difficulties. For they are difficulties with no apparent and no immediate solution, resulting from the contrast between mutually exclusive and equally reliable arguments, or between the states of affairs expressed in these arguments. I chose Aristotle's *Metaphysics* as a test-case. One of the fourteen books of this work, book B (*Beta*), is specifically devoted to explaining the philosophical significance of, to collecting, and to discussing the *aporiai* concerning metaphysics. *Metaphysics* B, therefore, constitutes the focus of my attention. The Greek term ἀπορία, recurring fifteen times in B, is almost invariably rendered as, or by means of, the expression "ambiguous problem/question" (*Masʾala ġāmiḍa*) in the only extant Arabic translation of this book of the *Metaphysics*, the one ascribed to Usṭāṯ (ninth c.).[5]

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[4] Gutas (1988), 143. It is remarkable that in the already mentioned letter to Bahmanyār (*Mubāḥaṯāt*, 49.7), Avicenna's work *al-Ḥikma al-mašriqīya* (*Eastern Philosophy*) or *al-Mašriqīyūn* (*The Easterners*) is referred to by means of the expression *al-masāʾil al-mašriqīya* (Eastern questions); see Gutas (1988), 115–116.

[5] Usṭāṯ's translation of B (as of other books of the *Metaphysics*) is preserved in the lemmata of Averroes' *Tafsīr* (the so-called Long Commentary) of the *Metaphysics*; see Averroes, *Tafsīr mā baʿd aṭ-Ṭabīʿa* (1938–1948), 1:165–295. The only exceptions to the rendering of ἀπορία as *masʾala ġāmiḍa* are 995a30 (*nukūlu l-fahmi*, 166.1) and 999b17 (*šanāʿa*, 236.11); in the translation of ἀπορία at 1000a5 (246.14–15) the adjective *ġāmiḍa* is omitted. The expression *masʾala ġāmiḍa* recurs frequently in the translation of the verbs ἀπορῆσαι, διαπορῆσαι and προαπορεῖν throughout B.

I take Avicenna's metaphysical masterpiece, the *Ilāhīyāt* ([*Science of*] *Divine Things*) of *Kitāb aš-Šifāʾ* (*Book of the Cure*), as the fullest expression of his attitude towards the *masāʾil ġāmiḍa*, or *aporiai*, of B.[6] In the Prologue to the *Šifāʾ*, Avicenna portrays the *Ilāhīyāt* as containing "the science related to [Aristotle's] *Metaphysics*."[7] As a matter of fact, the *Ilāhīyāt* is a reworking of the *Metaphysics*, even though neither a literal commentary nor a paraphrase of it. As should be expected, the *Metaphysics* is extensively quoted in the *Ilāhīyāt* and B is one of the quoted books.[8]

Both book B itself and the philosophical tradition leading to, and deriving from, it are, on the one hand, receiving an increasing scholarly interest.[9] The reception of this book by Avicenna, on the other hand, has not yet been investigated. The distinctive traits of Avicenna's approach to book B in the *Ilāhīyāt* are three. First, Avicenna does not quote all the *aporiai* that Aristotle takes into account in B, nor

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[6] Despite its defects, the only available "critical" edition of the *Ilāhīyāt* is Avicenna, *aš-Šifāʾ: al-Ilāhīyāt* (1960a). Unless otherwise noted, all the quotations from Avicenna in the present contribution are taken from the *Ilāhīyāt*, according to pages and lines of this edition. I have checked the text of the *Ilāhīyāt* as printed in the Cairo edition (= c) against ms. Oxford, Pococke 110 (= P110), ms. Oxford, Pococke 117 (= P117), ms. Oxford, Pococke 125 (= P125), ms. Leiden, Or. 4 (= L) and the Tehran lithograph (= Ṭ). P110, P117, P125 and L are not taken into account in c, whereas Ṭ is often mistakenly reported in the apparatus (I wish to thank J. L. Janssens for having kindly put at my disposal a photostatic reproduction of Ṭ). An important witness to the Arabic text is the Latin Medieval translation (= lat), recently edited in the Avicenna Latinus series; Avicenna, *aš-Šifāʾ: al-Ilāhīyāt* (1977–1983). Among the integral translations in modern European languages, only Max Horten's German translation (Avicenna, *aš-Šifāʾ: al-Ilāhīyāt* (1960b)) is directly based on manuscripts (one of which is L). George C. Anawatī's French translation (Avicenne, *aš-Šifāʾ: al-Ilāhīyāt* (1978–1985)) relies on c, of which the translator provides a very provisional list of corrections (vol. I, 22–24). In Olga Lizzini's Italian translation (Avicenna, *aš-Šifāʾ: al-Ilāhīyāt* (2002)) c is compared with the un-critical text of the *Ilāhīyāt* provided by Ḥasanzādah al-Āmulī in Avicenna, *aš-Šifāʾ: al-Ilāhīyāt* (1997/8).

[7] *al-ʿilm al-mansūb ilá mā baʿda ṭ-ṭabīʿa* (Avicenna, *aš-Šifāʾ: al-Manṭiq, al-Madḫal* (1952), 11.11).

[8] On the reception of books A (*Alpha Meizon*) and Γ (*Gamma*), see Amos Bertolacci (1999) and (forthcoming).

[9] This is witnessed by its English translation with introduction and commentary by Arthur Madigan (Aristotle (1999)), and the comprehensive study on *aporia* in Aristotle and his Greek predecessors in The Center of Aristotelian Studies at the University of Liège (2001), and also the French translation of Averroes' commentary on B by Laurence Bauloye in Averroes, *Grand Commentaire* (Tafsir) *de la Métaphysique. Livre B* (2002).

does he quote them in a single unit of the *Ilāhīyāt*. In other words, in the *Ilāhīyāt* there is no book of *aporiai* analogous to B. Second, Avicenna never presents the *aporiai* he quotes as unsettled problems; rather, either he provides what he regards as the true doctrine concerning the issues dealt with, or he portrays the *aporiai* neutrally as useful devices to elucidate further distinctions. In other words, Avicenna "de-problematizes" the *aporiai* to which he refers. Third, Avicenna's own position with regard to the *aporiai* reflects what contemporary Aristotelian scholars take as Aristotle's solution (or lack thereof) of the *aporiai* in the books of the *Metaphysics* that follow B. Thus, Avicenna adopts Aristotle's solution to the *aporiai* he quotes, whenever Aristotle himself provides one in the remainder of the *Metaphysics*, or supplies a solution along Aristotelian lines, whenever Aristotle does not take a clear stand about the *aporia*. In other words, Avicenna's reception of the *aporiai* of B represents a relevant case of Aristotelian exegesis.

I divide my exposition into four sections. In the first (I), I provide a brief overview of *Metaphysics* B. In the second section (II), I take into account the quotations of B that can be found in the *Ilāhīyāt* and focus on one of them as an example of Avicenna's quotation technique. In the third section (III), I summarize the results of the previous section and show that Avicenna's attitude towards B fits the guidelines he posits in the Prologue to *Kitāb aš-Šifāʾ*. In the fourth section (IV), finally, I point at a possible historical antecedent of Avicenna's particular way of quoting B.

Insofar as they are a first scrutiny of the subject, the following pages aim primarily at enlightening Avicenna's *modus operandi* in his reception of book B. In other words, my main purpose is to show what Avicenna quotes of this book and how he quotes it. Doctrinal points will be taken into account only insofar as they cast light on the main object of the analysis, which is Avicenna's quotation technique.

I. *A Brief Overview of* Metaphysics *B*

Book B of Aristotle's *Metaphysics*, the third book of this work according to the Greek numeration, is a collection of theoretical unsolved problems or *aporiai*. The *aporiai* taken into account in B are metaphysical issues, for each of which Aristotle provides pros and cons, or thesis and antithesis, of equal weight.

B can be divided into three main parts. First, Aristotle clarifies the importance of an attentive scrutiny of *aporiai* in order to find correct solutions to them (B 1, 995a24–b4). Then, he briefly describes the *aporiai* he is dealing with (B 1, 995b4–996a17). Finally, he thoroughly discusses each of the *aporiai* previously described (B 2–6). There is not a precise congruence between the exposition and the discussion of the *aporiai*, both in terms of content (the *aporia* discussed at B 6, 1002b12–32 is not mentioned before) and in terms of order (the *aporia* discussed at B 2, 997a25–34 is expounded before the *aporia* discussed at B 2, 997a34–998a19). Modern scholars substantially agree in identifying in B the discussion of fifteen *aporiai*. Medieval Latin commentators had sometimes a different view of their number by taking as independent *aporiai* some issues that modern commentators regard as articulations of one and the same *aporia*.[10] As to their content, the *aporiai* of B can be divided into two basic groups: the first four, on the one hand, concern metaphysics as a science and arise from the supposed universal scope of this discipline; the remaining eleven *aporiai*, on the other hand, address specific difficulties concerning the things that metaphysics investigates, with particular regard to the principles.

In B itself Aristotle does not aim at solving the *aporiai* and he never settles the conflict between thesis and antithesis. In this respect it is right to say that "B is, on the whole, more critical than conclusive, probing difficulties but not settling them definitively."[11] Sections of the following books of the *Metaphysics*, however, can be regarded as the solutions of some of the *aporiai*.[12] Some of the *aporiai* of B are also explicitly recalled in these contexts.[13]

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[10] Both Albertus Magnus and Thomas Aquinas, for instance, regard B as dealing with a higher number of *aporiai*. According to Albertus Magnus, Aristotle describes twenty-seven *aporiai* in the second part of B; see Albertus Magnus, *Metaphysica, libri quinque priores* (1960), 107–109. From what can be inferred from Thomas Aquinas' commentary on the *Metaphysics*, the *aporiai* described by Aristotle are twenty-two; see Thomas Aquinas, *In duodecim libros Metaphysicorum expositio* (1977), 98–103.

[11] See Madigan's introduction to Aristotle (1999), xxii.

[12] In the rest of the *Metaphysics* also many *aporiai* not discussed in B are taken into account. See, for example, H 5, 1044b29, 1044b34; Λ 2, 1069b26–27; Λ 4, 1070a33; Λ 6, 1071b22; Λ 9, 1074b15–17, 1075a5.

[13] See, for instance, Γ 2, 1004a31–34.

II. *The Quotations of* Metaphysics *B in the* Ilāhīyāt

In the *Ilāhīyāt* Avicenna quotes four times *Metaphysics* B, with regard to five of the fifteen *aporiai* discussed by Aristotle in this book. A list of Avicenna's quotations and of the corresponding passages in B is provided in the following table.

Avicenna, *Ilāhīyāt*, quotations of B	Aristotle, *Metaphysics* B
(1) I.8, 54.3–5	B 2, 997a2–11 (*aporia* 2)
(2) VI.4, 281.1–4	B 3, 998a20–23, 998b9–11 (*aporia* 6)
	B 3, 998b19–21, 999a4–5 (*aporia* 7)
(3) VI.5, 298.19–299.10	B 2, 996a18–b26 (*aporia* 1)
(4) VIII.4, 344.16–345.5	B 4, 1001a9–19 (*aporia* 11)

Table 1

Avicenna quotes passages, in the order, from *aporia* 2; *aporia* 6 and *aporia* 7 (jointly); *aporia* 1; *aporia* 11.[14] All the quotations are taken from the discussion of the *aporiai* in the third part of B. Two among the quoted *aporiai* (1 and 2) belong to the first group of four *aporiai*, concerning the scientific status of metaphysics. The other three *aporiai* (6, 7 and 11) belong to the second group of eleven *aporiai* dealing with the things that metaphysics investigates. Within this second group, *aporiai* 6, 7 and 11 deal with the concepts of "being" and "one." All this suggests that Avicenna is particularly interested, on the one hand, in issues regarding metaphysics as a science, and, on the other hand, in the doctrine of the primary concepts.

As to their style, Avicenna's quotations of the *aporiai* of B are implicit or anonymous, just as for all the other books of the *Metaphysics* with the exception of α (*Alpha Elatton*) and Λ (*Lambda*).[15] They are not literal and can be subsumed under the rubric of "paraphrase." Their extent and degree of faithfulness to the original are variable.

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[14] Avicenna might refer also to *aporia* 3 (B 3, 997a25–34) in VI.5, 300.4–6; but if he does, the reference is quite vague and cannot be regarded as a quotation.

[15] The significance of the explicit quotations of books α and Λ is discussed in A. Bertolacci (2001).

The quotations occur in different places of the *Ilāhīyāt* and are spread throughout it (with a significant concentration in treatise VI).[16] This happens because Avicenna quotes the *aporiai* in contexts suiting the issues debated in the *aporiai*.

A detailed study of all the quotations of B lies outside the scope of this article. In the present section, I summarize the content of the first three quotations and analyze more closely the last one. I chose the last quotation over the previous three because it is short and relatively straightforward. Its analysis is accomplished by means of a synoptic table. In it, the text of Avicenna (on the left) is compared with Aristotle's original text (in the center) and with Usṭāṯ's translation of B (on the right).

(1) In I.8, 54.3–5, Avicenna focuses on one of the issues of *aporia* 2 (thesis: the science of the axioms and the science of substance are the same science; antithesis: they are not the same science). He finds Aristotle holding the thesis (the metaphysician investigates both substance and axioms) in Γ 3, 1005a19–b8, and hence regards the thesis as the true alternative. After quoting the passage from Γ asserting the thesis (I.8, 53.16–54.2), he introduces an objection to it (metaphysics cannot be the science of both the axioms and substance, 54.3–5) that is a reworking of an argument for the antithesis of *aporia* 2 (there cannot be any science of the axioms, B 2, 997a2–11). He then provides an answer to the objection along original lines (54.6–17). Avicenna recasts the text of B that he is quoting according to his own technical terminology, introducing into it the gnoseological categories of "concept formation" (*taṣawwur*) and "granting assent" (*taṣdīq*).

(2) In VI.4, 281.1–4, Avicenna quotes *aporia* 6 (thesis: the genera are elements and principles of things; antithesis: the first intrinsic constituents are elements and principles of things) and *aporia* 7 (thesis: the first, most universal, genera are principles of things; antithesis: the last, least universal, genera are principles of things) jointly. He is primarily concerned with *aporia* 7 and uses *aporia* 6 to fit *aporia* 7 in the overall context, which is the paraphrase of Aristotle's doctrine of "element" in *Metaphysics* Δ 3. Within this context, Avicenna takes from Δ 3 an opinion about genera as elements (281.1–2) to which

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[16] Since treatise VI deals with causality, this may be regarded as a sign of the importance of the doctrine of causality in Avicenna's *Ilāhīyāt*. On Avicenna's doctrine of causality in the *Ilāhīyāt*, see A. Bertolacci (2002a) and R. Wisnovsky (2002).

he adds: (i) the third argument for the thesis of *aporia* 6 (some of
those who regard "one" and "being" as elements take them as genera,
B 3, 998b9–11 = 281.2) and (ii) the only argument for the thesis of
aporia 7 ("one" and "being" are principles since they are the most
general things, B 3, 998b19–21 = 281.2). He subsequently criticizes
point (ii) (281.3–4). The criticism of (ii) is based on the ontology of
the *Categories*, but encompasses also part of the fourth objection against
the thesis of *aporia* 7 (what is predicated directly of the individuals
has more unity than what is not, B 3, 999a4–5 = 281.4). Avicenna,
hence, regards the thesis of *aporia* 7 as false. He also possibly regards
the thesis of *aporia* 6 as false, in so far as he links it with the thesis
of *aporia* 7.

(3) In VI.5, 298.19–299.10 at the end of his treatment of the four
causes in *Ilāhīyāt* VI, Avicenna takes into account the main issue of
aporia 1 (thesis: the study of all types of causes belongs to meta-
physics; antithesis: the study of only one type of causes belongs to
metaphysics). Avicenna regards the thesis as the right alternative
(299.3). He first quotes the second objection against the thesis (in
many objects, as in motionless things and mathematicals, not all
causes are present, B 2, 996a21–996b1 = 298.19–299.3). Along orig-
inal lines, he portrays it as insufficient to invalidate the claims of
metaphysics to investigate the four causes (299.6–10). He subsequently
shows that this objection is false (299.10–300.7) by relying on Aristotle's
doctrine in book M. Avicenna also quotes the first objection against
the thesis (causes are not contraries, B 2, 996a20–21), which he
regards as true, but not strong enough to invalidate the thesis (299.4–5).
Conclusively, Avicenna quotes the objection that Aristotle moves
against the antithesis (if the studies of each of the four causes were
independent sciences, then the science of the final cause, the science
of the formal cause and the science of the moving cause could be
regarded, each, as metaphysics, B 2, 996b1–26). He quotes this objec-
tion selectively, focusing on the final cause (300.7–8), in order to
stress the importance of the investigation of the final cause within
metaphysics (300.8–9).

(4) In *Ilāhīyāt*, VIII.4, 344.12–345.5, Avicenna refers to *aporia* 11
(B 4, 1001a4–b25), of which he quotes part (1001a9–19).

In chapter VIII.4 Avicenna describes the features of the Necessary
Existent, namely, of God, whom in chapters VIII.1–3 he has shown
to be the First Principle.

Let us observe Avicenna's quotation more in detail in Table 2.

Ilāhīyāt, VIII.4, 344.12–345.5	Aristotle's *Metaphysics* B 4, 1001a9–19	Usṭāṭ's Arabic translation of the *Metaphysics*
[1] (344.12–13) We rather say, [starting again] from the beginning, that the "necessary existent" can be understood as the necessary existent itself,[17]		
[2] (344.13) as the "one" can be understood as the one itself,[18]	cp. 1001a9–12	
[3] (344.13–14) or about it [i.e. about the "necessary existent"] it can be understood that its quiddity is, for instance, [the quiddity of] a man or [of] another substance, and that the man in question is what the necessary existent is,[19]		
[4] (344.15) as about the "one" it can be understood that it is water, or air, or a man that are one.[20]	cp. 1001a12–17	
[5] (344.16–18) You can consider and know this [distinction] from the difference [of opinions] regarding whether the principle in natural things is one or many. For some regard this principle as one [**Monists**], others as many [**Pluralists**].[21]	1001a12–19: **Antithesis. Monists** (see below) **and Pluralists** ("A similar view is expressed by those who make the elements more than one; for these also must say that being and unity are precisely all the things which they say are principles")	

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[17] *bal naqūlu min raʾsin inna wāǧiba l-wuǧūdi qad yuʿqalu nafsa wāǧibi l-wuǧūdi.*

[18] *ka-l-wāḥidi qad yuʿqalu nafsa l-wāḥidi.*

[19] *wa-qad yuʿqalu min ḏālika anna māhīyatahū hiya maṯalan insānun aw ǧawharun āḫaru min al-ǧawāhiri wa-ḏālika l-insānu huwa llaḏī huwa wāǧibu l-wuǧūdi.*

[20] *kamā annahū qad yuʿqalu min al-wāḥidi annahū māʾun aw hawāʾun aw insānun wa-huwa wāḥidun.*

[21] *wa-qad tataʾammalu fa-taʿlamu ḏālika mimmā waqiʿa fīhi l-iḫtilāfu fī anna l-mabdaʾa fī ṭ-ṭabīʿīyāti wāḥidun aw kaṯīrun fa-baʿḍuhum ǧaʿala l-mabdaʾa wāḥidan wa-baʿḍuhum ǧaʿalahū kaṯīran.*

Table 2. (*cont.*)

Ilāhīyāt, VIII.4, 344.12–345.5	Aristotle's *Metaphysics* B 4, 1001a9–19	Usṭāṯ's Arabic translation of the *Metaphysics*
[6] (345.1–2) Among these, some of those who regard it as one [**Monists1**] regard the first principle not as the essence of the "one," but as something which is one, like water, air, or fire and so on.[22]	(1001a12–17) [**Antithesis: Monists**] But the natural philosophers take a different line; e.g., Empedocles . . . says what unity is; for he would seem to say it is love . . . Others say this unity and being, of which things consist and have been made, is fire, and others say it is air.[23]	(261.4–8) As to the masters of natural science, as Ibn Duqlîs, . . . he claims . . . Others claim that this one and being (*huwīya*) are fire. Others claim that they are air. From them [i.e., fire and air] the beings are made and generated.[24]
[7] (345.3–5) Some other of these [**Monists2**] regard the principle as the essence of the "one" in so far as it is "one," not as something to which the "one" occurs. They distinguish, therefore, between a quiddity to which "one" and "existent" occur, and "one" and "existent" in so far as they are "one" and "existent."[25]	(1001a9–12) [**Thesis: Idealists**] Plato and the Pythagoreans thought being and unity were nothing else, but this was their nature, their substance just being unity and being.[26]	(261.2–4) As to Plato and the Pythagoreans, they did not claim that being and unity are anything else, but they claimed that this is their nature, as if their substance were to be one and being.[27]

Table 2

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[22] *wa-lladī ǧaʿalahū minhum wāḥidan fa-minhum man ǧaʿala l-mabdaʾa l-awwala lā dāta l-wāḥidi bal šayʾan huwa l-wāḥidu miṯla māʾin aw hawāʾin aw nārin aw ġayri dālika.*

[23] οἱ δὲ περὶ φύσεως, οἷον Ἐμπεδοκλῆς . . . λέγει . . . ἕτεροι δὲ πῦρ, οἱ δ' ἀέρα φασὶν εἶναι τὸ ἓν τοῦτο καὶ τὸ ὄν, ἐξ οὗ τὰ ὄντα εἶναί τε καὶ γεγονέναι. Greek text as in Aristotle (1924); English translation in Aristotle (1984).

[24] *wa-ammā aṣḥābu l-ʿilmi ṭ-ṭabīʿiyi miṯla bni duqlīsa fa-innahū . . . wa-yazʿumu . . . wa-āḫarūna zaʿamū anna hādā l-wāḥida wa-l-huwīyata humā nārun wa-zaʿamū ġayruhum annahū hawāʾun wa-minhu takawwanat wa-tawalladat al-huwīyātu.* On Usṭāṯ's use of the term *huwīya* to translate the Greek ὄν and his influence on Avicenna, see A. Bertolacci (2003).

[25] *wa-minhum man ǧaʿala l-mabdaʾa dāta l-wāḥidi min ḥayṯu huwa wāḥidun lā šayʾun* [sic] *ʿaraḍa lahū l-wāḥidu fa-faraqa idan bayna māhīyatin yaʿriḍu lahā l-wāḥidu wa-l-mawǧūdu wa-bayna l-wāḥidi wa-l-mawǧūdi min ḥayṯu huwa wāḥidun wa-mawǧūdun.*

[26] Πλάτων μὲν γὰρ καὶ οἱ Πυθαγόρειοι οὐχ ἕτερόν τι τὸ ὄν οὐδὲ τὸ ἓν ἀλλὰ τοῦτο αὐτῶν τὴν φύσιν εἶναι, ὡς οὔσης τῆς οὐσίας αὐτοῦ τοῦ ἑνὶ εἶναι καὶ ὄντι.

[27] *fa-ammā aflāṭūnu wa-l-fīṯāġūriyūna fa-lam yazʿumū anna l-huwīyata wa-l-wāḥida šayʾun āḫaru bal zaʿamū anna hāda ṭibāʿuhumā ka-anna ǧawharahumā an yakūnā wāḥidan wa-huwīyan* [sic].

Aristotle portrays *aporia* 11 as "[t]he hardest inquiry of all, and the one most necessary for knowledge of the truth" (B 4, 1001a4–5).[28] The issue discussed in this *aporia* is whether "one" and "being" are nothing else than one and being (thesis), or have some other underlying nature, so that they are, for instance, friendship, fire or air (antithesis) (B 4, 1001a5–8). Before discussing thesis and antithesis, Aristotle mentions their advocates. The thesis is held by Plato and the Pythagoreans (B 4, 1001a9–12), the antithesis by two groups of natural philosophers: those who posit only one element of things (1001a12–17) and those who posit more than one element (1001a17–19). In sum, we have three groups of thinkers in Aristotle. For the sake of brevity, I call the first group (namely, Plato and the Pythagoreans) "Idealists," the second group (namely, the natural philosophers who posit only one main element of things) "Monists" and the third group (namely, the natural philosophers who posit more than one element) "Pluralists." The Idealists hold the thesis, namely, that "one" and "being" are nothing else than one and being; the Monists and the Pluralists hold the antithesis, namely, that "one" and "being" have some other underlying nature. After having expounded thesis and antithesis, Aristotle mentions the difficulties they entail (B 4, 1001a19–b25).

In the following books of the *Metaphysics* Aristotle shows that both the thesis and the antithesis are false and that the true doctrine regarding "one" and "being" implies that they are neither independent entities (thesis) nor mere accidents (antithesis).[29]

Avicenna quotes the doxographic part of *aporia* 11 (B 4, 1001a9–19) as a concrete example of a distinction he is making with regard to the concept of "necessary existent." The distinction Avicenna draws is between the "necessary existent" as the necessary existent as such, on the one hand, and the "necessary existent" as an essence (or quiddity) that exists necessarily, on the other. This distinction parallels a similar one that Avicenna draws elsewhere (I.6), namely, the distinction between the Necessary Existent *per se*, i.e., God, and the necessary existent in virtue of something else, i.e., the created thing that exists necessarily due to the cause that bestows existence to its essence. Avicenna reports the opinions favoring thesis and antithesis

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[28] He says something similar about *aporia* 8 (B 4, 999a24–25).
[29] See Aristotle (1999), 115–118.

as views elucidating the aforementioned distinction. The thesis (the opinion according to which "being" and "one" are nothing else than being and one) corresponds with the former alternative (the "necessary existent" is nothing else than necessary existent), whereas the antithesis (the opinion according to which "being" and "one" have an underlying subject) corresponds with the latter alternative (the "necessary existent" is an essence that exists necessarily).

Sections [1] and [3] are the two members of the distinction Avicenna is making about the "necessary existent." Sections [2] and [4] contain a first, brief, reference to the part of the *aporia* Avicenna quotes. This part is actually quoted in sections [5]–[7]. In the actual quotation Avicenna somehow reverses the order of Aristotle's text. He quotes first lines 1001a12–19 in section [5], then lines 1001a12–17 in section [6], finally lines 1001a9–12 in section [7].

From sections [2] and [4] it is immediately clear that in quoting the *aporia* Avicenna focuses on "one" more than on "being." "Being" (= "existent") is mentioned only at the very end of the quotation in section [7]. This insistence on the "one" is meant to avoid any confusion between the "necessary existent," Avicenna's topic, and "existent" (= "being"), one of the two concepts with which Aristotle is dealing.

Section [5] takes from lines 1001a12–19 the idea of a disagreement between Monists and Pluralists about the number of principles (whether they are one or many). In the following sections Avicenna pays no attention to the Pluralists' opinion and focuses instead on the Monists'. He splits the Monists into two groups, which I call respectively Monists1 and Monists2: Monists1 correspond with Aristotle's Monists and hold the antithesis (section [6]); Monists2 correspond with Aristotle's Idealists and hold the thesis (section [7]). Avicenna's interpretation of Aristotle's Idealists, namely, of Plato and the Pythagoreans, as advocates of monism is, of course, questionable. Avicenna, however, does not report the names of Aristotle's Monists (Empedocles) and of Aristotle's Idealists (Plato and the Pythagoreans) in section [6]–[7]. Remarkably, in section [7] Avicenna uses the verb *ʿaraḍa* ("to occur" in the sense of "to happen accidentally") to describe the link between "one" and "existent" and the essence which is one and existent according to Monists2.

As to Avicenna's position regarding the issue, it can only be guessed, since he neither supports nor criticizes thesis and antithesis. Insofar as thesis and antithesis are quoted to exemplify a distinction that

Avicenna regards as true in both its members (God is the Necessary Existent *per se*, created things are essences that exist necessarily), it could be assumed that he takes both thesis and antithesis as true. Still, this inference is largely a matter of speculation that only a deeper investigation into Avicenna's doctrine of unity and being could corroborate or invalidate. What is sure, though, is that in Avicenna's mind the different views of Monists1 and Monists2 are not relevant in themselves, but are only relevant as a way to clarify an important distinction regarding the concept of "necessary existent." About this latter point, his position is extremely clear.

To summarize, of *aporia* 11 (thesis: "one" and "being" are nothing else than one and being; antithesis: "one" and "being" have some other underlying nature and are, for instance, friendship, fire or air), Avicenna quotes the opinions supporting thesis and antithesis (B 4, 1001a9–19). In Aristotle's text these opinions are held respectively by Plato and the Pythagoreans (Idealists, thesis) and by Monists and Pluralists (antithesis). Avicenna derives from the *aporia* the idea of a contrast between Monists and Pluralists about the number of principles (344.16–18) and portrays two different groups of Monists as supporters of antithesis and thesis. The first group of Monists (= Monists in Aristotle, B 4, 1001a12–17) holds the antithesis (345.1–2), the second group (= Idealists in Aristotle, B 4, 1001a9–12) holds the thesis (345.3–5). In quoting these opinions, however, Avicenna's aim is not doxographical, but theoretical. He uses thesis and antithesis to exemplify a distinction concerning the concept of "necessary existent" (first alternative, the "necessary existent" is nothing else than necessary existent; second alternative, the "necessary existent" is an essence that exists necessarily, 344.12–15), which he subsequently employs in his doctrine of God as Necessary Existent.

III. *The Main Features of Avicenna's Reception of* Metaphysics *B*

On the basis of the analysis provided in section II, the main trends of Avicenna's reception of B can be summarized as follows.

(1) Avicenna is selective. He focuses on the crucial portion of B, the third, where *aporiai* are discussed and chooses five among them.
(2) He is concise. No *aporia* is quoted in full; rather, all are summarized. *Aporiai* sharing related issues, like *aporiai* 6 and 7, are quoted together.

(3) He is assertive. He never presents the *aporiai* as problems. In most cases, he embraces either the thesis (*aporiai* 1 and 2) or the antithesis (*aporiai* 6 and 7). The rejected alternatives are quoted as untenable objections to previously established doctrines (*aporia* 2), or as wrong opinions to be dismissed (*aporiai* 6 and 7), or as insufficient reasons to invalidate a certain position (*aporia* 1). In so doing, he solves the *aporiai*. If (as in *aporia* 11) he does not prefer the thesis over the antithesis, or vice versa, the unresolved conflict between them clarifies a distinction about which he takes a clear stand.

(4) He quotes the *aporiai* not in a single portion of the *Ilāhīyāt*, but in different places of the work.

Points (3) and (4) deserve particular attention. As to point (3), Avicenna's assertive reformulation of the *aporiai* is a reflex of his overall conception of metaphysics as a discipline and of Aristotle's *Metaphysics* as the canonical text on this topic. In Avicenna's view—which he inherits from a long tradition starting at least with Alexander of Aphrodisias—metaphysics is a science in the strict sense of the term, i.e., a demonstrative discipline. This implies that in Avicenna's reworking of the *Metaphysics* many of the non-demonstrative procedures employed by Aristotle, especially the dialectical ones, are, as much as possible, effaced and replaced by more rigorous methods. Now, the aporetic method displayed by Aristotle in B can be rightly regarded as an instance of dialectic, insofar as the *aporiai* of B result from a "dialogical" contrast between thesis and antithesis and are based in most cases on ἔνδοξα, i.e., on those reputable opinions that are the starting-point of dialectic.[30] Avicenna's effort to replace dialectic with demonstration in Aristotle's *Metaphysics* is the main reason why the *aporiai* of B are not presented by him in the *Ilāhīyāt* as problems.

As to point (4), the displacement of the *aporiai* of B is part of an overall recasting of the structure of Aristotle's *Metaphysics* in the *Ilāhīyāt*, inspired by the epistemology of the *Posterior Analytics*, that I have documented elsewhere.[31]

Points (3) and (4) are interconnected. Avicenna quotes the *aporiai* in different places of the *Ilāhīyāt* (point 4) just because the doctrines

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[30] See B 1, 995a24–26: "It is necessary . . . for us first to go through the issues about which one must first raise aporiae. These are *issues about which people have held different views*, as well as anything else that has been overlooked," (English translation as in Aristotle (1999), 1 (emphasis added)). For other instances of the connection between *aporiai* and *endoxa*, see Aristotle, *De anima*, A 2, 403b20–25 and *Nicomachean Ethics*, H 1, 1145b2–7.

[31] A. Bertolacci (2002b).

dealt with in those places represent the solutions of the *aporiai* (point 3), or, in any case, help to clarify them.

The aforementioned four features of Avicenna's reception of B reflect and, at the same time, throw light on the outline of the *Šifā'* that Avicenna provides in the Prologue to this work. Avicenna says there:

(1) "Our purpose in this book . . . is to set down in it the gist of . . . the Fundamental Principles contained in the philosophical science attributed to the ancients"; and he adds: "There is nothing of account to be found in the books of the ancients which we did not include in this book of ours."[32] Thus, with regard to the previous philosophical tradition, Avicenna restricts the scope of his work to the "gist of the fundamental principles" and to what is "of account."

(2) Avicenna portrays the *Šifā'* as "a straightforward compendium upon which most opinions will agree and which will help remove the veils of fanciful notions"; and later he says: "I strived in earnest to be concise and always to avoid repetition."[33]

(3) He also says: "I sought to set down in it most of the discipline, indicate in every passage where ambiguity may occur and solve it by setting forth clearly the correct answer to the extent of my ability."[34]

(4) Finally he says: ". . . if it [i.e., the amount of valuable things found in the books of the ancients and included in the present book] is not found in the place where it is customary to record it, then it will be found in another place which I thought more appropriate for it."[35]

In other words, in the Prologue to the *Šifā'* Avicenna declares his intention to write a book that would be (1) selective, (2) concise, (3) unambiguous and (4) original in structure. His quotations of B can be regarded as a concrete application of the four points of this program.

In this regard, insofar as it instantiates the basic features of the *Šifā'* as outlined in its Prologue, Avicenna's treatment of B is a prime example of his attitude towards Aristotle's *Metaphysics* in his philosophical *opus maius*.

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[32] Avicenna, *Aš-Šifā': al-Manṭiq, al-Madḫal* (1952), 9.7–9; 9.17–10, 1; English translation as in Gutas (1988), 50–51.

[33] Ibid., 9.10–11; 9.15–16. M. E. Marmura, in his review of Gutas' monograph on Avicenna (Marmura (1991)) regards the expression "straightforward compendium" as an improper rendition of the Arabic, but this concerns the adjective "straightforward" more than the substantive "compendium."

[34] Ibid., 9.12–13.

[35] Ibid., 10.1–2.

IV. *Nicholas of Damascus as a Possible Source of Avicenna*

One of the extant Greek commentaries on the *Metaphysics* whose Arabic translation is attested, though not preserved, is Syrianus' commentary on B.[36] If it ever existed, however, the Arabic translation of Syrianus' commentary on B seems to have had a very limited circulation and impact.[37]

More interesting is the case of another Greek commentator of Aristotle, Nicholas of Damascus (Nicolaus Damascenus), who lived between 64 B.C. and about 14 A.D., and wrote a compendium of Aristotle's philosophy, which is lost in Greek but extant in a Syriac abridged version and in some Arabic fragments.[38]

As we have just seen, two of the main features of Avicenna's attitude towards B are the fact of providing solutions to the *aporiai*, and the fact of dealing with the *aporiai* in scattered places of the *Ilāhīyāt* (see points 3 and 4 in section III). Now, in a passage of his *Tafsīr* of the *Metaphysics*, Averroes ascribes these same features to the aforementioned work by Nicholas of Damascus. Here is what Averroes says in his introductory remarks on B:

> But in the natural science, he [i.e., Aristotle] thought that the best [way] to impart knowledge was to put the dialectical investigation before each problem when he wanted to establish the demonstration about that single problem.
>
> As to this book [i.e., the *Metaphysics*], he deemed appropriate [i] to put beforehand the dialectical discussions concerning all the difficult problems of this discipline and to treat them separately on their own [in book B]. Then [ii] he provided the demonstrations proper to each problem in the appropriate place of the treatises of this science. . . .
>
> Nīqulāwš disagreed with the arrangement of the Wise [i.e., Aristotle] in these two respects [(i)-(ii)], and did what he [i.e., Aristotle] had done in the natural science.[39]

From this passage we can infer that Nicholas in his compendium of the *Metaphysics* dealt with the *aporiai* of B ("the dialectical investigation")

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[36] See Ibn an-Nadīm, *Kitāb al-Fihrist* (1871–1872), 1:251.31.

[37] In his summary of the *Metaphysics*, *Fī aġrāḍ al-ḥakīm fī kulli maqāla min al-Kitāb al-mawsūm bi-l-ḥurūf*, (in al-Fārābī (1890), 34.14–15), al-Fārābī mentions only the commentaries by Alexander of Aphrodisias and Themistius on Lambda among the available commentaries on the *Metaphysics*. Averroes does the same in his *Tafsīr* of the *Metaphysics* (Averroes, *Tafsīr* (1938–1948), 3:1393.4–7).

[38] Nicolaus Damascenus (1965), 11–12, 32–33.

[39] Averroes, *Tafsīr* (1938–1948), 1:167.4–10; 168.5–6.

in different places of the work ("before each problem") and connected the *aporiai* with their solution ("the demonstration about that
single problem"). Therefore, Nicholas shares with Avicenna features
(4) and (3) of the treatment of B. Since Nicholas' work is a compendium, it is obvious that he also shares feature (2), namely, conciseness. Unfortunately, the extant version of Nicholas' work does
not allow us to explore feature (1), i.e., to examine what selection
of *aporiai* (if any) he used.

   The similarities between Nicholas and Avicenna are not restricted
to B. They concern also book Δ (Delta) of the *Metaphysics*. Averroes
informs us that Nicholas dealt with the philosophical terms discussed
in Δ in different parts of his work in connection with the doctrines
to which the single terms are related.[40] This also is exactly Avicenna's
way of quoting Δ.

   As Averroes witnesses, Nicholas' work was known in the Arab
philosophical milieu. The resemblances between Nicholas' reworking
of B and Δ and Avicenna's quotations of these books are striking.
Whether Nicholas directly influenced Avicenna, or the similarities
between them are due to their adoption of the same literary genre,
namely, the compendium, remains to be ascertained.

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[40] Ibid., 2:476.3–7.

THE RELATION BETWEEN FORM AND MATTER: SOME BRIEF OBSERVATIONS ON THE 'HOMOLOGY ARGUMENT' (*ILĀHĪYĀT*, II.4) AND THE DEDUCTION OF *FLUXUS*

Olga Lizzini

My purpose here is to focus attention on the relation between form and matter that Avicenna establishes in the *Metaphysics* (*Ilāhīyāt*) of *Kitāb aš-Šifāʾ* (particularly in II.4). The Avicennan discussion not only shows the development of an Aristotelian topic, but also reveals the structure of the whole Avicennan cause-complex. It involves a very fundamental principle of the Avicennan system, namely, that of emanation or emanational fluxus (*fayḍ*). Another reason for interest is the logical structure Avicenna builds up: he uses an argument, which I propose to call the "homology argument" (*Ilāhīyāt*, II.4, 80.14–83.3), which plays an essential role not only in the relation between form and matter, but also in the relation between the soul and the body (*Kitāb an-Nafs*, V.4) and in the demonstration of the unity of the Necessary Existent (*Ilāhīyāt*, I.6).[1]

The second book of the *Metaphysics* is essential to an understanding of the form-matter relation. It deals with the definition of matter and of the material *compositum* and consequently concerns the union of form and matter in the sublunary world.

The first section or chapter of the book contains a general examination of the concept of substance and its divisions or parts (*aqsām*). Avicenna makes evident the existence of a self-subsistent substratum for accidents—which is the substance (*al-ǧawhar*)—and investigates the notion of substratum itself. He distinguishes between the subject or substratum (*mawḍūʿ*) and the receptacle (*maḥall*). The latter is not

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[1] The pagination refers to *aš-Šifāʾ: al-Ilāhīyāt* (1960a); henceforth *Ilāh.*; French translation by G. C. Anawatī in *aš-Šifāʾ: al-Ilāhīyāt* (1978–1985), henceforth, Anawatī; Latin translation in *aš-Šifāʾ: al-Ilāhīyāt* (1977–1983), henceforth, *Liber de philos. prima.*

necessarily self-subsistent and is therefore more general than the sub-
ject: a subject must always have its own self-subsistence (*qiwām*).
Finally, Avicenna enumerates all different possible kinds of substances.
He arranges them on the basis of their connection with the body
and identifies different substances: corporeal and incorporeal, mate-
rial and totally free of matter. This implies at the same time the
identification of the different degrees or ranks of existence: that of
the bodies, that of the souls and finally that of the Intellects or
Intelligences.[2]

The theme of the second section (or chapter) of the book is the
concept of body. Avicenna introduces his own concept of body, refus-
ing the traditional and common definition of the body as "that which
is long, wide and deep," i.e., that which has dimensions *per se* (the
term for "definition" here is *ta'rīf*, but later Avicenna refers to this
expression as a "description," *rasm*).[3] The basic idea in Avicenna's
concept of body is that of "corporeal form." The foundation of the
body is in the possibility of *positing* or *supposing* dimensions in it and
this possibility is the "corporeal form" or "form of corporeity." The
description or definition of the body indicates that body is the sub-
stance in which we can posit or suppose (*faraḍa*) three dimensions
(length, breadth and depth); therefore, the body is not the substance
in which these three dimensions are *in actu*. Even finiteness is some-
thing we can attribute to body, not something we necessarily have
to ascribe to it.[4]

With the doctrine of corporeal form Avicenna conveys the definition
of the body from the plane of reality, i.e., that of the *actual* dimen-
sions of a body, to the plane of potentiality or possibility. In this
sense, Avicenna speaks of the possible and hypothetical dimensions
of a body. The basic idea is essentially the hypothesis of the formal
three-dimensional status of physical reality, a three-dimensional status
that does not involve just the actual dimensions of the bodies, but
all the possible ones, and therefore the hypothetical ones too.[5] Material

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[2] See *Ilāh.* II.1, 57–60. The question of the form and matter relation and the
metaphysical and physical definition of matter are analyzed by A. D. Stone (2001)
and Amos Bertolacci (2003).

[3] See *Ilāh.*, II.2, 61–63.2.

[4] Ibid., II.2, 63.4–9; on the concept of finiteness, see II.2, 62.2–7.

[5] This concept is analyzed from another point of view by A. D. Stone (2001),
100–101: "As a generic form, it [the form of corporeity] cannot be found in reality
without further specification: i.e., there is no 'absolute body' in the external world

reality reveals itself as totally dependent on formal reality.[6] This is apparently an echo of an Aristotelian theme (for Aristotle matter does not exist apart from form and is "accidentally"—κατὰ συμ-βεβηκός—a non-being),[7] but the conceptual character that constitutes the dependence of matter on form is typically Avicennan. The material substratum (and hence the body), is nothing other than the possibility of receiving forms and consequently the possibility of having dimensions: body does not only obtain from forms its real and actual dimensions, but also its possible ones. In this sense, the possibility of having dimensions depends on the different forms the body can receive.[8]

The other important subject of *Ilāhīyāt*, II.2 is its refutation of atomism, which involves a series of arguments. Unfortunately, considerations of space prevent me from treating them here. Still, the refutation of the atomistic doctrine is significant. It legitimates the thesis of the divisibility of the body and allows Avicenna to present his own concept of matter. The body accepts the attributes of continuity and division and this leads Avicenna to posit a common substratum for these two opposing attributes. In other words, the continuum is *in* something, that is to say, *in* the first matter. Continuity is a form. In this way, Avicenna introduces his investigation of the composition of the body with its ambiguous ontological status: it is actual with regard to the form and potential with regard to the matter.[9]

(just as there is no 'absolute animal'). Such an absolute body is nevertheless conceivable. . . . It should therefore be possible to explain what substantial corporeity is in itself, without reference to the specific forms which all actual bodies must have. Avicenna's task is to give such an explanation and then to show, based on that explanation, that the partial or generic form of corporeity is conceptually inseparable from materiality: not, that is from prime matter itself (which is rather essentially formless), but from the 'need' (*ḥāǧa*) for matter."

[6] For the analysis of this Avicennan topic, see also J. Michot (1986), 57–68.

[7] See Aristotle, *Physics*, I 8, 191b13–14; I 9, 192a4–6; *De Gen. et Corr.*, I 3, 318a15 ff.

[8] See *Ilāh.*, II.2, 63; tr. Anawatī, 135; *Liber de philos. prima*, 71–72. The actual dimensions of the body do not enter into the definition of its essence: the body *per se* does not have any particular measurements, particular dimensions or particular volume. It is composed of matter which is prepared to receive different dimensions, i.e., to receive the form which determines them, and can therefore change its volume. This form is the corporeal form; other forms concern place, quality and so on. On this subject, see also A. Hyman (1977), 335–356.

[9] *Ilāh.*, II.2, 65.4–66.15. On the concept of continuity, see A. D. Stone (2001), 104–106.

The real study of the connection or relation between form and matter begins in the third section of book II. Avicenna here lays the foundation for what scholars have called "extrinsécisme radical" (Gardet) or "formalisme" (Michot). In the Avicennan system everything is supported and legitimated by form. Form gives subsistence and reality not only to the celestial world, but also to sublunary matter.[10] As I have noted, form is the principle of matter not only because it offers determinations that matter does not have, but also, and more precisely, because on account of the determinations it gives to matter, it is the principle of the reality of matter. Form gives matter its character as a concrete particular, its subsistence (*qiwām*) and its reality (*ḥaqīqa*) and this is true even on the level of intellectual representation. The possibility of conceiving matter depends on form: matter without form cannot be conceived; only the presence of a position, of an extension or measurement (*miqdār*), and therefore of a form (*ṣūra*), makes matter an object of imagination.

Avicenna develops his conception of the body—and the fundamental idea of the dependence of matter on form—through a series of dialectical arguments, where his preferred method of argumentation is that of the Greek διαίρεσις, i.e., the Platonic method of division. Many of these arguments—e.g., the one concerning clay (*madara*, see *Ilāhīyāt*, II.3, 7)—appear frequently in Avicenna.[11] I shall not analyze these arguments in detail since their aim is essentially to defend the Avicennan theory from possible objections, but instead shall pass at once to an examination of section 4, one of the most interesting texts on the form-matter relation.[12]

The investigation in II.4 arises from the apparent circularity in which the form-matter relation seems to be caught up. As a matter of fact, the statement of the absolute dependence of matter on form— as demonstrated by the arguments in II.2 and II.3—allows Avicenna

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[10] These two terms present different aspects of the same idea. With "extrincésisme," Gardet (and Gilson) intended to point out the principle on which the form itself depends, the *dator formarum*, a principle which is external to the sublunary world. See L. Gardet (1951b); E. Gilson (1962); by "formalisme," Michot, who also mentioned Avicennan "hylémorphisme," recognizes form as the principle of matter; see J. Michot (1986), 68–87.

[11] See *Kitāb al-Hidāya* (1974), 236–237; *Kitāb al-Išārāt wa-t-tanbīhāt* (1958–1959/ 1377–1379 A.H.), 2: 89–100; French translation by A.-M. Goichon in *Kitāb al-Išārāt wa-t-tanbīhāt* (1951), 262–263; henceforth Goichon.

[12] On this passage see also Amos Bertolacci (2003), 132–134.

to erect the "extrinsécisme" or "formalisme" I mentioned before, but at the same time poses the problem of the definition of the relation between the two metaphysical principles. If matter cannot be conceived or represented without form, does it mean that matter and form have no legitimacy apart from the legitimacy of their relation (ʿalāqat al-muḍāf; habitudo relationis)?[13] This question—and also the solution Avicenna offers—reveals a typical characteristic of Avicennan thought: the interpenetration between logical, or noetic, order and ontological order. The apparent correlation between the existence of matter and the existence of form is explained by Avicenna through their notions: since it is possible to intend some forms without conceiving matter, the hypothesis of their correlation has to be denied.[14]

Hence, if in II.3 the absolute dependence of matter on form was demonstrated by starting from the impossibility of conceiving matter without a form (to think of matter means to give it a position, an extension, some dimensions and so on),[15] then the possibility of conceiving *more than a form* (kaṯīr min aṣ-ṣuwar al-ǧismānīya) as independent of matter reveals now that matter and form are not two correlatives; for correlation concerns the quiddity of things, but it is possible to conceive the quiddity of form apart from matter.[16] The quidditative independence of matter and form allows Avicenna to define both principles as substances, in conformity with the Aristotelian teaching.[17] Yet at this point the problem of their relation still has no solution and it is precisely to find one that Avicenna uses what I have called the "homology argument."

In establishing the connection (ʿalāqa) between form and matter, the choice is apparently between two possibilities. The first one is to conceive the form-matter relation as equivalent to the known relation

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[13] See the beginning of *Ilāh.*, II.4, 80.4–6.

[14] *Ilāh.*, I.4, 80.4–10. If there is any correlation, as Avicenna states, it does not concern form and matter, but the form and the particular preparation (or "aptitude," istiʿdād) which matter has with regards to it. The relation between preparation and form, however, is nothing but a consequent of matter and is not a central aspect of the form-matter relation (see *Ilāh.*, II.4, 80.11–13; *Liber de philos. prima*, 93; tr., Anawatī, I, 147).

[15] See, *Ilāh.* II.3, 72.4–75.2 and 75.3–77.10. On the same passages, also see A. D. Stone (2001), 106–113.

[16] Matter depends on form, but form does not depend on matter (even though form "needs" matter since it inheres in it).

[17] On the discussion of matter as "substance," see Aristotle, *Metaphysics*, VII(Z) 3, 1029a1–20.

between cause and effect. The second consists in thinking of the two principles (the two things) as equivalents or homologous in existence (*mutakāfiʾ* or *mukāfiʾ*; in Latin the term is sometimes rendered by *coaequalia*).[18] "Homology in existence" is a hypothetical status of two (or more) things that exist together simultaneously neither of which is the cause or the effect of the other (*ʿalāqatu amrayni mutakāfiʾayi l-wuǧūdi laysa aḥaduhumā ʿillatan wa-lā maʿlūlan li-l-āḫar*).[19]

The solution that Avicenna finds at the end of his analysis is the first one: form is the cause—or more precisely a "part of the cause"— of the subsistence of matter; it is a medium or mediator between the principle—the giver of forms—and matter, the "last effect" (the "last [thing] caused").[20] Therefore, the relation between form and matter reproduces the hierarchy that, according to Avicenna, is typical of causality in general, a hierarchy Avicenna describes in *Ilāhīyāt*, VIII and IX with respect to the celestial world.[21] Still, even if the connection of form and matter corresponds with the relation of causality, the second kind of relation, that of "homology"—and the consequent argument—requires, as I have suggested, particular attention.

As we have seen, the relation between two—or more—homologous things can be defined as a hypothetical relation where none of the elements is the cause of the (or an) other, but where none of the elements exists without the other(s). In this context Avicenna

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[18] For *mukāfiʾ* (in other passages *mutakāfiʾ*) the Latin has "compar," "coaequale" or "comitans"; see the "Lexiques" of *Liber de philos. prima*; Anawatī, 113, has "équivalente"; Horten, in *al-Ilāhīyāt* (1960b) has "gleichgeordnet," but in footnote 1, 61, he explains Avicenna's argument, saying: "steht nicht in reziprokem Verhältnisse zu einem anderen"; A. Hyman (1983), 241, has: "co-equal." The terme *mukāfiʾ* was not considered in A. M. Goichon (1938). The root of the verb is *k-f-ʾ*; the form *takāfaʾa* means "to be equal, equivalent"; Michot translates it as "homologue," which corresponds with the English "homologous"; see *Al-Mabdaʾ wa-l-maʿād* (1994). The word seems not to be a technical term, neither in theology nor in philosophy, but the hypothesis of two homologous things in existence could be referred to the causal doctrine of *Kalām*. In fact, in *Kalām* where the unique cause is divine action, everything is "homologous" to everything, i.e., everything can exist simultaneously to any other thing but without any causal relationship. This hypothesis was suggested by M. Marmura (1984), 185–187.

[19] *Ilāh.*, II.4, 81; *Liber de philos. prima*, 93; tr. Anawatī., I, 147–148.

[20] Ibid., 87.13–88.4.

[21] In the typical causal hierarchy (see for example, *Ilāh.*, VIII.1, 327.11–328.15) we find a cause (*ʿilla*), a medium (*mutawassiṭ*) and an effect (*maʿlūl*). The causal relation or connection between form and matter, however, is peculiar because the cause, i.e., form, "needs" matter since it inheres in it; see *Ilāh.*, II.2, 68.11ff.; also see R. Wisnovsky (2003).

introduces the notion of removal (*raf ʿ; remotio*),[22] i.e., "end," "anni-hilation" or "negation," on which the argument turns.[23] With this notion Avicenna can again propose the alternative already contained in the idea of origin. There are only two cases in which the anni-hilation or removal of two things appears to be simultaneous: (1) when a thing is the cause of another thing and, theoretically, (2) when a thing is "homologous" in existence (*mutakāfiʾā l-wuǧūd*) to the other, being, so to speak, simply "coincident" with it.

Avicenna illustrates the idea of removal or annihilation of a thing with regard to the cause-effect relation in a passage from *Ilāhīyāt*, IV.1.[24] The passage contains a premise that Avicenna has not yet expressed in book II, but that supports—as is clear from *Ilāhīyāt*, VI and VIII—his whole conception of causality. The premise is that real or true causes exist *with* (*maʿa*) their effects and are therefore simultaneous with them.[25] The first and most evident consequence of this premise in the Avicennan system is, of course, the concep-tion of the eternity of the world. If true causes exist *with* their effects, the Principle—the Necessary Existent—can only exist together with what it causes, i.e., with the world. That is true not only with regards to the origin (the world cannot be "created" *after* a "temporal void"), but also with regards to the impossibility of the end of the world in the future.[26]

If we accept the thesis that true causes exist together with their effects, we must admit that the moment of the annihilation or removal of the cause corresponds with the moment of the end (or the removal) of the effect. Given this premise, if we return to the initial question, i.e., to the form-matter relation, it is clear that if form is the cause of matter, the end of form must determine the end of matter. On the contrary, if form and matter are only two homologues, their end will occur simultaneously without any reason to think that either of

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[22] The verb *rafaʿa*—from which the *maṣdar rafʿ*—means first "to elevate" and then "to remove."

[23] *Ilāh.*, II.4, 81.4–82.9.

[24] Ibid., IV.1, 169.3–8.

[25] Ibid., VIII.1, 327.11; *Liber de philos. prima*, 376. See also *Ilāh.*, VI.2 and 3 where Avicenna states that true causes (*al-ḥaqīqa*) exist with their effects; for the idea of the simultaneous existence of cause and effect; see also *Ilāh.*, VI.1, 265; *Liber de philos. prima*, 301.

[26] Compare this to the idea of a *conservans*; see, e.g., *Hidāya*, 284; also see Avicenna, *Kitāb at-Taʿlīqāt* (1973), 45–46.

the two things is the cause of the other and thus both must depend on a "third thing" (*šay' ṯāliṯ*).[27]

In the homology argument, three hypotheses are enumerated: the removal of one of the two things (1) could involve the removal of a third thing; (2) could be the consequence of the end or removal of a third thing; and (3) could be explained without any third thing. In other words, the relation of two homologous elements can be explained by resorting to a third thing which is the effect of one of the two or by resorting to a third thing that is the cause of one of the two or, finally, without resorting to a third element.[28]

Avicenna discusses the third hypothesis first and demonstrates its inconsistency. As the two elements under consideration (form and matter) are *per se* "not necessary," they must imply a cause. At the same time, since they cannot be conceived as interdependent, they must imply the necessity of a third thing external to the binary relationship which originally defined them.[29]

For the second hypothesis, according to which the two elements depend on a third thing, it must be explained why "the essence of each of the two depends on the fact that the essence of the other is its companion."[30] Since interdependence must be rejected (it is not possible to conceive each of the two as the proximal cause of the other), there is no choice but to consider one of the two elements as a medium or mediator between the hypothesized third thing and the other element of the relation. At any rate, as Avicenna himself observes, even the third hypothesis, according to which the end or removal of the two things would imply the removal of a third thing, clearly puts the two things once again into a cause and effect relationship: the removal of one of the two could determine the removal of a third thing which would explain the removal of the other of the two. Thus, all three things would be causally related.

The argument is interesting for two reasons. First of all, with this argument Avicenna deduces the necessity of a superior cause and thus—as I suggested—lays the foundation for his emanational theory starting from the lowest level of his system. If two things cannot be interdependent (i.e., each being the cause of the other) and cannot

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[27] *Ilāh.*, II.4, 81.3–8.
[28] Ibid., 81.11–15.
[29] Ibid., 81.15–82.9.
[30] Ibid., 82.10–17.

be uncaused (for two uncaused beings would be two "necessary exis-
tents," whereas the necessity of existence can only be one),[31] it is
clear that even the case of two things which exist together, one being
the cause of the other, leads us perforce to posit a "third thing" as
the cause of both. The connection between the two things has to
be redefined in terms of causality. In fact, what Avicenna calls in a
generic way in *Ilāhīyāt*, II.4 "a third thing" (*šayʾ ṯāliṯ*) is immediately
identifiable with the intellectual principle, superordinate to matter
and form, namely, *wāhib aṣ-ṣuwar* or the *dator formarum*, the giver of
forms.[32]

Hence, the causal process of *fayḍ* (*fluxus* or emanation) that Avicenna
deduces in *Ilāhīyāt* VIII and IX from the highest level of his system,
i.e., starting from a first and unique cause, is here deduced from the
lowest level of the Avicennan system, the level of matter and form.
In other words, Avicenna demonstrates the doctrine of *fayḍ* not only
by means of the arguments of the superabundance of the First Prin-
ciple, the position of the First Principle "above what is complete"
or "above perfection" (*fawqa t-tamām*) and the doctrine of the tri-
adic intellection of the divine Intelligences,[33] but also by using the
argument of the form-matter relation. Indeed, in this argument there
are sufficient premises to legitimate the vertical causality of emana-
tional fluxus.[34]

Secondly, since the hypothesis of a homologous existence for two
things must be rejected, it becomes possible to define the nature of
the causal relation between form and matter. With this argument
Avicenna demonstrates that form and matter cannot be conceived
as connected in an equal relationship; rather, the relation is that of
cause (form) to effect (matter). The homology argument leads us to
indicate one thing as medium or mediator—and the other as effect;
however, only later in section II.4 does Avicenna demonstrate that
form is the cause and matter, being only a receiver, the effect.[35] This

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[31] The homology argument demonstrates the unity of the Necessary Existent; see
Ilāh., I.6 and I.7.
[32] Avicenna calls a "third thing" what is clearly the *dator formarum* at *Ilāh.*, II.4;
also see *Ilāh.*, II.4, 87.
[33] See *Ilāh.*, VIII.4; VIII.6; and IX.4.
[34] On the terms of the "horizontal" and "vertical" causality, see L. Goodman
(1992).
[35] See *Ilāh.*, 83.4–85.12.

relationship is of great importance for the emanational doctrine. We here find the same chain of causality (cause-medium-effect) that provides the framework of the emanational process as theorized by Avicenna in *Ilāhīyāt*, VIII.1. Form is the cause of matter only *in a certain way* (or only *partly*).[36] Form and matter are cause and effect, but they are at the same time both effects of the Principle, the giver of forms: form is caused by the same intelligence from which flows matter simultaneously with matter and in order to be conjoined with matter.[37]

Finally it is worth mentioning the other two applications of the argument, i.e., concerning the soul and body relationship and the demonstration of the unity of the Necessary Existent.

With regard to the connection between the soul and the body the relevant passages are in *Kitāb an-Nafs*, V.4 where Avicenna states that body and soul cannot be conceived as two relative things. They can not be conceived as two "homologues" in essence,[38] nor can they be conceived as two "homologues" in existence. The relation between two things must always imply a cause-effect connection. Soul is anterior to body as regards essence, but they both come from a "third thing," the *dator formarum*.[39]

Avicenna uses the idea of corruption (*fasād*) or removal also with respect to the soul and the body, but what is particularly noteworthy is the distinction between essence and existence, which seems essential to the argument. If soul and body (and form and matter) are distinguished in essence, they, nonetheless, are united in existence.[40]

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[36] On form as a "medium" and as a "part of the cause" of matter, see *Ilāh.*, VI.1, 259.2–8; IX.4, 405.5–7; 409.19–20; and IX.5, 412.1ff.

[37] See *Ilāh.*, VI.1, 259.2–8.

[38] In *Kitāb an-Nafs*, V.4, homology is "habere esse simul"; see *aš-Šifāʾ: Kitāb an-Nafs* (1968–1972), 2:113–114; henceforth, *Av. Lat., De an.* On this subject, see also Thérèse-Anne Druart (2000), 267 who translates *mukāfiʾ* as "co-dependence (mutual and equal)."

[39] *Av. Lat., De an.*, V.4, 117–118. In the same terms, but this is only an example, the argument is also in *Kitāb al-Hidāya*, 224–225. Soul, Avicenna states, is anterior to body or is indifferent to the separation from it, being exactly the same soul once separated from the body. Soul does not have a substantial connection with body (soul is not relative nor homologous in essence to it). With regards to its substance, soul is equally connected and not connected with body, but it sustains and governs body. For that reason the corruption of body does not imply the corruption of something substantial for the soul, but only the cessation of an accident.

[40] See also *Av. Lat., De an.*, V.3, 108; V.4, 115–116; Ibn Sīnā, *al-Išārāt*, 2: 153; tr. Goichon, 271–272.

As regards the Necessary Existent, the argument is more complex in structure. In the first book of his *Metaphysics*, when he discusses the hypothesis of the existence of two necessary existents (in order to reject it), Avicenna explores their relation. Two necessary existents cannot be "homologues" because their association or coincidence would imply a cause superior to both, which would deny the status of necessary existent to each of the two supposed necessary existents. The aim here is to demonstrate the unity of the Principle, i.e., the Necessary Existent. Therefore, after a first general statement about the impossibility of homology for the Necessary Existent,[41] Avicenna expounds his argument against the existence of more than one necessary existent in detail.[42]

The arguments are conceived according to a pattern which is typical of Avicennan dialectic. What is really remarkable, though, is that here the subject of the argument is more properly the relationship between two existents rather than the relationship between two hypothetical "necessary existents." Avicenna's argument is a kind of elaboration of all possible relations between things. This elaboration allows him not only to deny that two necessary existents could both be necessary *per se*, but also—as I hope that I have shown in the case of form and matter—to lay the foundations of his emanational theory. In other words, according to Avicenna the relation between two things can be of only two kinds: either one is the cause of the other or both are caused by a third element.

In this manner, Avicenna legitimates the causality of the *fluxus* of forms. To explain the existence of two apparently correlated elements we always need a third cause, superior to both: the soul is "created" by *fluxus* together with the body; form is "created" in matter; and the Necessary Existent, to be really necessary, cannot be associated with another necessary being for this association would inevitably require the superposition of another cause.

Hence, the homology argument can be regarded as a classic Avicennan argument. It represents a kind of "via negativa" of causality. It explains how relations between things *are not*, but exactly for this reason it provides the theoretical basis for understanding how relations between things *are*.

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[41] *Ilāh.*, I.6, 37.12–14.
[42] Ibid., I.6, 39.17–42.7.

THE HERITAGE OF AVICENNA

THE THREE PROPERTIES OF PROPHETHOOD IN CERTAIN WORKS OF AVICENNA AND AL-ĠAZĀLĪ*

M. Afifi al-Akiti

This paper takes as its starting point my work on a chapter concerning the so-called "three properties of prophethood" in a supposedly pseudepigraphal work of al-Ġazālī, *Maʿāriǧ al-Quds*.[1] That chapter follows closely the thirteenth and fourteenth chapters of Avicenna's *Aḥwāl an-Nafs* (in fact it appears at first sight to be a verbatim copy of Avicenna).[2] The parallels between the *Maʿāriǧ* and its Avicennan sources are so striking as to have led scholars such as Watt and his student Lazarus-Yafeh to question the traditional attribution of the *Maʿāriǧ* to al-Ġazālī.[3] A more detailed examination of the sources, however, reveals that the case is less straightforward and more interesting.[4]

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[1] Al-Ġazālī, *Maʿāriǧ al-quds fī madāriǧ maʿrifat an-nafs* (1927a), 150–167.

[2] Avicenna, *Aḥwāl an-nafs: Risāla fī n-Nafs wa-baqāʾihā wa-maʿādihā* (1952), 114–126.

[3] W. Montgomery Watt (1952), 30; Hava Lazarus-Yafeh (1975), 280 (Lazarus-Yafeh's thesis is the first and the most important philological study on al-Ġazālī to date); also A. S. Tritton (1959), 353; and Georges Vajda (1972). It should be noted that Watt considered the *Maʿāriǧ* to be among the spurious or at least dubious works of al-Ġazālī without examining the actual *Maʿāriǧ* text. It appears that he based his judgment solely on a list of the *Maʿāriǧ* chapters provided by Miguel Asín Palacios (1934–1941), 4:121–4 (Asín Palacios himself did not doubt the authenticity of the *Maʿāriǧ*). As well as earlier scholars, such as Asín Palacios, A. J. Wensinck (1940) and F. Rahman (1958), uncritically accepted the *Maʿāriǧ* as a work of al-Ġazālī; two later scholars have raised doubts regarding the alleged spuriousness of al-Ġazālī's *Maʿāriǧ*: Binyamin Abrahamov (1991), who offered some philosophical and historical justification; and Jules Janssens (1993), who looked at the text closely and produced a useful survey of correspondences (1) Avicennan, (2) Ghazalian and (3) unidentified elements of the *Maʿāriǧ*. This article considerably extends the base of discussion and weighs against the former group and in favor of the general view of the latter.

[4] The results of my findings, which include a list of the textual divergences and a translation of this chapter, are forthcoming in the *Journal of Islamic Studies*. Some textual divergences of the *Maʿāriǧ* from the *Aḥwāl* are noted below.

The three properties of prophethood are a well-known feature of many of Avicenna's works.[5] They are the following (the order used in this study is that of the *Aḥwāl/Maʿāriǧ*):

(1) The first property, which is related to the imaginative faculty;
(2) the second property, which is related to the intellect (and involves discussions of *ḥads*, "insight" or "intuition");
(3) the third property, which is related to the human soul as a whole (that is, to the *muḥarrika* or motive faculty, while the first two relate to two varieties of the *mudrika* or perceptive faculty).

The "three properties of prophethood" are not explicitly named in the works of Avicenna, except in *al-Mabdaʾ wa-l-maʿād*. Sometimes the topic is treated partially, as in *an-Naǧāt*, or is distributed over separate sections, as in *aš-Šifāʾ*, *al-Ḥikma al-mašriqīya*,[6] *al-Hidāya* and *al-Išārāt wa-t-tanbīhāt*; and the order in which the three properties are treated varies. By contrast, al-Ġazālī regularly speaks of the "three properties," or at least says that they are three.

According to Avicenna, none of these properties is exclusive to prophets. Any human being can be born with, or acquire, each of the powers concerned to varying degrees. Avicenna tells us in the *Aḥwāl* that a powerful prophet must therefore have perfection in all three properties.[7] He will share the perfection of the second property with the accomplished philosopher, from whom he is distinguished by the perfection of the first property. Having perfection in the first property (an example given by Avicenna is natural diviners) results in having knowledge of the *ġayb*, by being in touch with the celestial souls.[8] Having perfection in the second property results in having no

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[5] Here is a selection of the most important secondary literature concerning Avicenna's theory of prophethood: Rahman (1958), 30–91; Louis Gardet (1951b), 109–141; Abdelali Elamrani-Jamal (1984), 125–142; Jean [Yahya] R. Michot (1986), especially 118–153; Herbert A. Davidson (1992), 116–123.

[6] Note that there is confusion over the title of this work. I follow Gutas in calling the work *al-Hikma al-mašriqīya*; see Dimitri Gutas (2000a), 166–7.

[7] Avicenna, *Aḥwāl*, 125.4–7 and 126.1–4 (*faṣl* XIV). See also the translation below. A less powerful prophet should at least have perfection in the first two properties (*Aḥwāl*, 125.8 and 126.5).

[8] By *ġayb* (which literally means "unknown" or "unseen"), Avicenna means particular events beyond the reach of present sensation. This meaning becomes clear in the context of Avicenna's discussions concerning the first property.

need for a human teacher and in fact becoming a genius and an excellent teacher of other people. Having perfection in the third property results in having the ability to perform miraculous acts in this world, as in the case of saints (or, as Avicenna tells us in the *Išārāt*, such a performer could be a malicious sorcerer).[9]

Hasse's recent account of Avicenna's theory of prophethood arrives at a number of questionable conclusions: "In fact, Avicenna himself does not mention conditions which have to come together in one prophet. Instead he speaks of different kinds (*ḍarb* [pl., *ḍurūb*]) of prophethood, each having different properties (*ḥawāṣṣ*). In only one passage does he explicitly address the topic of combining two kinds of prophethood in one person, in *De anima* [i.e., *Šifāʾ*], V, 6 . . . It seems improbable that a prophet could at the same time have visions through a strong imaginative faculty, produce rain through his strong will, and hit easily upon middle terms of syllogisms through his strong intellect. One might still say that they were thought to be necessary properties of prophets who would produce actions at different times, but this does not seem to be what Avicenna thought."[10]

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[9] Avicenna, *Kitāb al-Išārāt wa-t-tanbīhāt* (1892), 220.18–19 (*namaṭ* X, *faṣl* 28). In the parallel part of the *Maʿāriǧ*, we find an interesting textual emendation from this very passage in the *Išārāt*: if he is a prophet, he will consequently use this property to prove his prophethood (*Maʿāriǧ*, 165.12–13). Diagram 1 shows the possible different combinations arising from the three prophetic properties.

[10] Dag Nikolaus Hasse (2000), 156–157. Hasse goes on to say: "For the only example he gives of someone with a very powerful soul is himself [Avicenna]—not only in his autobiography, but also in the *Dānešnāme*—because of his skill in hitting on middle terms. He does not report, however, that he had visions or that he provoked rain or a fertile season" (ibid., 157). Avicenna's denial of these latter powers is natural enough since he himself does not claim to be a prophet. Hasse's conclusions appear to be based, in part, on his misunderstanding of two different issues: on the one hand, Avicenna's well-known reference to possessing the second property of prophethood and, on the other hand, the properties of prophethood themselves, a doctrine which was formulated, after all, by Avicenna in order to provide a scientific or natural account of prophethood. Also unwarranted is Hasse's question whether the three properties are "different conditions for prophets or different kinds or levels of prophecy" (ibid., 155–156). This line of questioning can be traced back to Elamrani-Jamal (1984), 127. Hasse's and Elamrani's accounts of the three properties are almost exclusively based on the *Šifāʾ*. Hasse even suggests at one point that Thomas Aquinas' *De Veritate*, which he quotes, may be the source for the "conditions thesis" by Gardet and thus van Riet and Verbeke; Hasse (2000), 156, n. 432; cf. Gardet (1951b), 121–122; Avicenna, *aš-Šifāʾ: aṭ-Ṭabīʿiyāt, an-Nafs* (1968–1972), 2: 70*–71*, esp. n. 260 (for Verbeke) and 153, n. 17 (for van Riet).

This is clearly contradicted by the *Mabda'* and the *Aḥwāl*:

> The prophetic faculty has three properties. Sometimes they are com-
> bined in one person; sometimes they are not, but [occur] separately.[11]
>
> The best sort of human being is he who is granted perfection [1]
> with respect to insight pertaining to the theoretical faculty, so that he
> is in no need of any human teacher and [2] with respect to his div-
> ination pertaining to practical [matters] so that he witnesses the world
> of the [celestial] soul including the states of [this] world and holds firm
> to [these states] while awake . . . [3] His psychical faculty will have the
> capacity of affecting the world of nature. Next [in rank] is the one
> who has the first two properties but not the third . . . The first absolute
> leader and true king who himself deserves to rule is the first among
> the several [combinations of properties] mentioned [above]: If he relates
> his soul to the intelligible world, it is as though he connects with it
> all at once; if he relates his soul to the world of [celestial] soul, it is
> as though he is among the inhabitants of that world; if he relates his
> soul to the world of nature, he will effect in it whatever he wishes.[12]

Hasse's misunderstanding of Avicenna's three properties of prophet-
hood would appear to result from reading too much into the use of
the word *ḍarb* (found in the interrelated texts of the *Šifā'*, *Naǧāt* and
Mašriqīya)[13] and from ignoring other works by Avicenna, especially
the *Mabda'* and the *Aḥwāl* (which is crucial for his topic). Among the
works that Hasse consults (the *Šifā'*, and the three to which he makes
occasional reference, the *Mašriqīya*, the *Išārāt* and *Dānišnāmah-yi 'Alā'ī*),
he regards the *Šifā'* as "particularly important because it is the only
text (apart from the *Mašriqīya*) which distinguishes and describes three

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[11] Avicenna, *al-Mabda' wa-l-ma'ād* (1984), 116.1–2 (*maqāla* III, *faṣl* 16): *wa-l-qūwatu
n-nabawīyatu lahā ḫawāṣṣu ṯalāṯatun qad taǧtami'u fī insānin wāḥidin wa-qad lā taǧtami'u
bal tatafarraqu*. A critical edition and French translation of the *Mabda'* is being pre-
pared by Yahya Michot.

[12] Avicenna, *Aḥwāl*, 125.4–8, 125.13–126.4 (*faṣl* XIV; with my emendations of
Ahwānī's text underlined): *fa-afḍalu n-naw'i l-bašarī man* ūtiya [Ahwānī: ūfiya] *l-kamāla
fī ḥadsi l-qūwati n-nazarīyati ḥattā istaġná 'ani l-mu'allimi l-bašarī aṣlān wa-fī kahānatihī
l-'amalīyati ḥattā yušāhida l-'ālama n-nafsānīya bi-mā fīhi min aḥwāli l-'ālami wa-yastaṯbitahā
fī l-yaqzati . . . wa-yakūnu li-qūwatihī n-nafsānīyati an tu'aṯṯira fī 'ālami ṭ-ṭabī'ati ṯumma llaḏī
lahū l-amrāni l-awwalāni wa-laysa lahū l-amru ṯ-ṯāliṯu . . . fa-r-ra'īsu l-awwalu l-muṭlaqu wa-
l-maliku l-ḥaqīqī llaḏī yastaḥiqqu [Ahwānī: yastawǧibu] bi-ḏātihī an yamlika huwa l-awwalu
min al-'iddati l-maḏkūrati llaḏī in nasaba nafsahū ilá 'ālami l-'aqli wuǧida ka'annahū mut-
taṣilun bihī duf'atan wa-in nasaba nafsahū ilá 'ālami n-nafsi wuǧida ka'annahū min sukkāni
ḏālika l-'ālami wa-in nasaba nafsahū ilá 'ālami ṭ-ṭabī'ati kāna fa''ālān fīhi mā yašā'u*.

[13] Note that the *De Anima* section of the *Mašriqīya* appears to be a copy of the
Šifā' with minor changes, mostly stylistic, as noted by Gutas (2000a), 172–177.

different kinds (or levels or conditions—this will be investigated below) of prophecy."[14] Not only is Hasse's claim wrong, but also his list should have included the two works he already had access to, the Physics of the *Dānišnāmah* (where the three properties are discussed side by side) and the *Išārāt*. Here, then, is a list of passages describing the three properties:[15]

	First Property (Imagination)	Second Property (Intellect)	Third Property (Soul/Motive)
Aḥwāl (ed. al-Ahwānī)	114–121 (XIII)	122.1–123.9 (XIV)	123.10–125.3 (XIV)
Dānišnāmah [Physics] (ed. Miškāt)	145.4–146.4	141.10–145.3	139.5–141.9
Hidāya [Metaphysics] (ed. ʿAbduh)	295.1–297.7 (III.5)	293.1–294.3 (III.5)	288.3–291.4 (III.4)
Išārāt [Physics and Metaphysics] (ed. Forget)	209.13–219.2 (X.7–X.24)	125.16–127.18 (III.10–III.12)	219.3–222.5 (X.25–X.31)
Mabdaʾ [Physics] (ed. Nūrānī)	117.7–120.13 (III.17–III.19)	115.19–117.6 (III.16)	120.14–121.13 (III.20)
Mašriqīya [Physics] (MS Ayasofya 2403)	fol. 108a	fols. 128b–129a	fols. 115b–116a
Naǧāt [Physics] (ed. Dānišpažūh)		339.1–341.9 (VI.5)	
Šifāʾ [Physics] (ed. Raḥmān)	173.9–174.2 (IV.2)	248.9–250.4 (V.6)	200.11–201.9 (IV.4)

The parallel passages in the *Šifāʾ* and the *Mašriqīya*, as well as the *Šifāʾ* and the *Naǧāt*, are almost exact copies of each other. Although each of the three properties is discussed separately in the Physics of

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[14] Hasse (2000), 154. Parentheses are Hasse's.

[15] Throughout this study, figures in parentheses (whether Roman or Arabic) after the page and line references, indicate the book (*maqāla*) and/or chapter (*faṣl*) division found in the Arabic texts, whether laid out by the author or added later. Apart from the ones already mentioned, the editions or manuscript used are: Avicenna, *Dānišnāmah-yi ʿAlāʾī*, (1952); idem, *Kitāb al-Hidāya* (1974); idem, *Kitāb al-Ḥikma al-mašriqīya*, MS Ayasofya 2403, fols. 1a–133b; idem, *an-Naǧāt min al-ġaraq fī baḥr aḍ-ḍalālāt* (1985); idem, *Kitāb aš-Šifāʾ: aṭ-Ṭabīʿiyāt, an-Nafs* (1959).

the *Šifāʾ* (and therefore one would not expect them to be identified
as the "three properties"), there is a mention of the "three properties"
in the Metaphysics of the *Šifāʾ*.[16] It is interesting to note that the
Physics of the *Naǧāt* lacks the first and third properties; still, the same
passage from the Metaphysics of the *Šifāʾ* is in the *Naǧāt*. (Could this
fact help to determine whether it was written before or after the
Šifāʾ?) In the *Hidāya*, the second property, discussed there as (1) *ḥads*,
and the first property (divided into (2) *ruʾyā* (vision) and (3) *waḥy* (rev-
elation)—all found in *maqāla* III, *faṣl* 5—are specified as the "three
ṭabaqāt of prophethood";[17] the third property (i.e., that relating to
miracles and the soul as a whole) is discussed separately, albeit in
the preceding chapter, in *maqāla* III, *faṣl* 4. In the Metaphysics of
the *Išārāt*, the first and third properties are discussed, one after the
other, while the second property is discussed separately in the Physics
and there is no mention of their being "the three properties." On
the other hand, the three properties are discussed side by side in the
Dānišnāmah, the *Aḥwāl* and the *Mabdaʾ*; but as we have seen, only the
Mabdaʾ calls them explicitly "the three properties of prophethood."

   Although we can say that it was Avicenna who gave the theory
of the three properties of prophethood the form in which al-Ġazālī
used it, we can see the background of Avicenna's first property
already in al-Fārābī.[18] Al-Fārābī says, for example, that the highest
rank that man can achieve is gained by virtue of an exceptionally
powerful imaginative faculty and that this is needed for prophet-

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[16] Avicenna, *aš-Šifāʾ: al-Ilāhīyāt* (1960a), X.1, 2:435.14–15: "The best of these
[i.e., humans] is he who is disposed to the degree of prophethood, and who has
among his psychical faculties, three properties that we have mentioned": *wa-afḍalu
hāʾulāʾi huwa l-mustaʿiddu li-martabati n-nubūwati wa-huwa lladī fī quwāhu n-nafsānīyati
ḥaṣāʾiṣu ṯalāṯun ḏakarnāhā*. This passage is also found in the Metaphysics of the *Naǧāt*,
699.12–13 (II.37). In light of what we already know of the wholesale copying from
the *Šifāʾ* to the *Mašriqīya*—as far as the three properties are concerned—it also
seems likely that this passage would be reproduced in the (still missing) Metaphysics
of the *Mašriqīya*. Still, there is ambiguity as to whether the mention of "three prop-
erties" here refers to the ones discussed in the *Physics* (i.e., those of the imagina-
tive, intellectual and motive faculties), when the pronoun *hiya* is read in the next
sentence of the text, since examples are not given for the second and third prop-
erties there. I am inclined to think that *huwa* should be read instead (referring to
the prophet and not to the three properties); this reading is supported not only by
variants of the *Šifāʾ* but also by the text of the *Naǧāt*.
[17] Avicenna, *Hidāya*, 298.2 (III.5).
[18] The following account is taken from al-Fārābī, *al-Madīna al-fāḍila* (1985), 220–227
(IV.14).

hood. The prophet will obtain, through the emanation he receives from the Active Intellect (using Qur'anic language, he refers to the ʿaql faʿʿāl as the rūḥ amīn and the rūḥ al-quds; the holy spirit),[19] prophecy of present and future particulars (Avicenna's ġayb) and of things divine. It must be acknowledged that the strong imaginative faculty and the symbols of truth that it conveys are already there in what al-Fārābī says, stressed by him as an important part of the prophetic function. Still, al-Fārābī's formulation is nowhere near Avicenna's final formulation of the three properties. Furthermore, uncertainties arise regarding al-Fārābī's explanation of the prophet's prediction of future events, and there is nothing in the extant works of al-Fārābī that offers a philosophical explanation for the miraculous functions of prophets. Despite using al-Fārābī as his starting point, Avicenna ends with a prophet distinguished by his ʿaql qudsī (which works through ḥads). Prophethood has become most of all an intellectual phenomenon, an idea that none of his predecessors, including the Greeks, had thought of and from which nearly all of his successors benefited, including those who were not traditional students of Greek philosophy.[20]

Al-Ġazālī was most likely the first in the kalām tradition to use this Avicennan doctrine in his works. Below is a list of passages, in works ranging from popular writings like Iḥyāʾ ʿulūm ad-dīn to ones for a restricted and specialized readership like the Maḍnūn, that mention the "three properties." This list is not intended to be exhaustive, but it does want to be comprehensive in the sense of including works that those following Watt, for instance, may regard as problematic:[21]

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[19] Al-Fārābī, Kitāb as-Sīyasa al-madanīya al-mulaqqab bi-mabādiʾ al-mawǧūdāt (1964), 32.11.

[20] We can see this in the later kalām tradition, most of all with Faḫr ad-Dīn ar-Rāzī. For an example of his account of the three properties, see Faḫr ad-Dīn ar-Rāzī, al-Mabāḥiṯ al-mašriqīya fī ʿilm al-ilāhīyāt wa-ṭ-ṭabīʿīyāt (1990), 2:556.7–13 (III.4).

[21] For readers who are unfamiliar with Watt's list of spuria and dubia among works attributed to al-Ġazālī, our list includes two works which are considered problematic (in part) by him, the Miškāt and the Maʿāriǧ. Maurice Bouyges (1959) and ʿAbd ar-Raḥmān Badawī (1961), both standard bibliographies of al-Ġazālī, have rejected Watt's claims regarding the Miškāt (Bouyges/Badawī no. 52). As for the Maʿāriǧ (Bouyges/Badawī no. 76), Bouyges does not list it under spurious or even doubtful titles but "titres sur lesquels reste de l'incertitude." Badawī listed the Maʿāriǧ under works of doubtful authenticity, not, as Janssens thought, among "les spuria, voire les apocryphes," having grouped Badawī with Watt and Lazarus-Yafeh, who certainly considered the Maʿāriǧ to be spurious; Janssens (1993), 27. It is not an exaggeration to say that owing to Watt's list, Ġazālian scholarship has sometimes failed to take serious account of some of al-Ġazālī's works (such as the Miškāt,

	First Property (Imagination)	Second Property (Intellect)	Third Property (Soul/Motive)
Iḥyā' (ed. Beirut)	4:206.13–16 (XXXIV.1.2)	4:206.9–10 (XXXIV.1.2)	4:206.11–12 (XXXIV.1.2)
Ma'āriğ (ed. Kurdī)	150.16–160.10	160.11–164.2	164.3–166.5
Maḍnūn [recension β][22]	91.5–92.3 (III.1.3)	90.17–91.4 (III.1.2)	89.8–90.16 (III.1.1)
Maqāṣid [Physics] (ed. Dunyā)	383.15–22 (III.5.9)	382.7–383.14 (III.5.9)	380.20–382.6 (III.5.9)
Miškāt (ed. 'Afīfī)	74.14–76.10 (II.1)	81.4–11 (II.2)	
Munqiḏ (ed. Ṣalībā-'Ayyād)	145.12–146.17	146.18–147.15	149.12–150.9
Tahāfut [Physics] (ed. Bouyges)	272.8–11	272.12–274.2	274.3–275.11

It is much more difficult to trace the three properties in al-Ġazālī's works other than the *Ma'āriğ, Maqāṣid* and the *Tahāfut*, because al-Ġazālī there replaces Avicenna's technical vocabulary with his own, and they are in effect written independently of Avicenna's actual texts. So in one version of the *Maḍnūn*, for example, al-Ġazālī calls the three properties miracles that belong to the *ḫayālī* (imaginational), *'aqlī* (intellectual) and *ḥissī* (sensible), respectively. There, the order

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Mīzān al-'amal and *Mi'rāğ as-sālikīn*). Not surprisingly, this has resulted in gaps in our understanding of al-Ġazālī's intellectual legacy. The editions used here are: al-Ġazālī, *Iḥyā' 'ulūm ad-dīn* (1991); idem, *Muqaddimat Tahāfut al-falāsifa al-musammāt maqāṣid al-falāsifa* (1961); idem, *Miškāt al-anwār* (1964); idem, *al-Munqiḏ min aḍ-ḍalāl wa-l-muwaṣṣil ilá ḏi l-'izza wa-l-ğalāl* (1981); idem, *Tahafot al-Falasifat* (1927b).

   [22] There is more than one extant version of the work titled "*al-Maḍnūn bihī 'alá ğayr ahlihī*" (also known as *al-Maḍnūn al-kabīr*). The different recensions of this work do not include *al-Maḍnūn aṣ-ṣaġīr* (considered by Watt to be spurious, and also known as, among other names, *an-Nafḫ wa-t-taswiya* or the more common but clearly late title, *al-Ağwiba al-Ġazālīya fī l-masā'il al-uḫrawīya*), which also occurred in more than one version. Uncertainties regarding their titles are a result of the complex nature of the way in which these works circulated in the middle ages. I am currently working on the structure and transmission of al-Ġazālī's *Maḍnūnī* works. For the sake of simplicity, I have called the version of the *Maḍnūn* used here, recension β. This is the version that is in all the popular editions of the *Maḍnūn kabīr* and is that of the first printed edition, Cairo, 1885. The edition used here is al-Ġazālī, *al-Maḍnūn bihī 'alá ğayr ahlihī* (1996).

of the properties follows the *Maqāṣid*, which, in turn follows the order of the properties of its chief source, Avicenna's Persian *Dānišnāmah*.[23] The *Tahāfut*, on the other hand, although it follows the order of the three properties in the *Maʿāriǧ* (and ultimately, the *Aḥwāl*), and makes use of Avicennan terminology, was written independently and composed entirely anew by al-Ġazālī. In the *Iḥyāʾ*, the three properties are discussed side by side in *bayān* 2 of *šaṭr* 1 of Book XXXIV; the first property, the imaginative one, however, is divided into two (in the same way that Avicenna separates *waḥy* and *ruʾyā* in the *Hidāya*). The *Iḥyāʾ* also discusses the three properties separately in places scattered through the work.[24] The *Miškāt* explicitly mentions that there are "three properties of prophethood," despite the absence of any discussion of the third property in that work.[25]

The most interesting occurrence has to be the one in the *Munqiḏ*. There the text is written in a way that assumes that the reader is already familiar with the three properties. The order of appearance of the three properties follows the *Aḥwāl/Maʿāriǧ*. Here, as in *Maḍnūn* β, the three properties have been "naturalized" (to use Sabra's term) so completely as to have changed beyond recognition.[26] Only after

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[23] Thanks to the careful study by Janssens, we now know that the *Maqāṣid* is a slightly "interpretative" translation of the *Dānišnāmah*; Jules Janssens (1986). Here, the *Maqāṣid* text has undergone careful editing by al-Ġazālī, and it does incorporate some new elements and make some conspicuous omissions from its exemplar; the chief one is Avicenna's reference to himself as a genius (made famous in Dimitri Gutas (1988), 21, n. 6). The difference between the two texts is significant. A critical textual study should be carried out to compare the Persian text of the *Dānišnāmah* and the *Maqāṣid* Arabus in order to chart the differences between them.

[24] Here is a selection of examples: *Iḥyāʾ*, 1:97.20–4 (I.6), 1:105.1–10 (I.7)—partly translated below, 2:319.7–14 (XVIII.2.2), 4:187.26–27 (XXXIII.2.7). The following are some of the terms used to describe the first property: *ruʾyā, waḥy, mušāhada*; and the second property: *ilhām, nūr an-nubūwa, ġayr taʿallum*.

[25] The statement appears at the end of the discussion of the first property (called here "the waking revelation," *al-waḥy fī l-yaqẓa*): "I suppose that the relationship of [the waking revelation] to [the prophetic properties] is that of one to three, since it has become clear to us that the parts of the prophetic properties are limited to three kinds and this is one of the three," *Miškāt*, 76.8–10 (II.1): *wa-azunnu anna nisbatahū ilayhā* [ʿAfīfī: *ilayhi*] *nisbatu l-wāḥidi ilá ṯ-ṯalāṯati fa-inna [llaḏī] inkašafa lanā min al-ḫawāṣṣi n-nabawīyati yanḥaṣiru šuʿabuhā fī ṯalāṯati aǧnāsin wa-hāḏā wāḥidun min tilka l-aǧnāsi ṯ-ṯalāṯati.* In many ways, the absence of the third property from this work does suggest that this property (which was at the heart of the traditional *kalām* argument for prophethood) is less important than the other two. The suggestion that it is less important may be supported by the evidence in the *Munqiḏ* (see below).

[26] The words "appropriate" and "naturalize" are used throughout this study, following Sabra (1987), 225–43. He offers an interesting but paradoxical explanation

careful reading can one detect them in the background. Avicenna's
al-muḥtāǧa ilá t-taʿbīr (that which needs interpretation) is now *kiswa*
(clothed); *ittiṣāl* is now *nūr* (light), and the *zawāl al-māniʿ* (removal of
impediment) is now *wa-tanfatiḥu fīhi ʿaynun uḫra* (another eye is opened).
Still, whenever Avicenna uses Qurʾanic or other Islamic religious
terms such as *nubūwa, ilhām, ġayb, malakūt, ǧabarūt* and *fiṭra*, al-Ġazālī
leaves them alone, whether in the *Munqid* or elsewhere. Interestingly,
the term "property" (*ḫāṣṣīya*) has the same form here as it does in the
Maʿāriǧ and the *Tahāfut* but not in the *Mabdaʾ* (where it is *ḫāṣṣa*), the
purported source for the term, or anywhere else in the Avicennan
corpus. Yet the "three properties" are unmistakably in the *Munqid*.
The first property, to do with perfect imagination, is now called the
state of *nawm* (literally, "sleep"; but here "dream" or even "trance")
where such parts of the *ġayb* as future events may become known.
The second property, to do with perfect *ḥads*, is now called *ilhām
ilāhī wa-tawfīq* (divine inspiration and help), where no human teacher
is needed.[27] In fact, al-Ġazālī goes on to make a bold—and what

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of the evolution of Greek philosophy and science in medieval Islam. Based on his
thesis, the decline of philosophy/science in medieval Islam is not in the context of
conflict or opposition, but to be seen in the context of partial harmonization and
acceptance.

[27] This is cleverly buried in the text of the *Munqid*. Al-Ġazālī is forcing his read-
ers to use their *ḥads* to see that the real meanings of *ilhām* and *tawfīq* here have
shifted from the standard meaning to something more sophisticated. If readers are
still stuck with some sort of "impediment," and in need of "light," then the fol-
lowing textual proof from the *Iḥyāʾ* should help "open the other eye" to "taste" the
truth: "How can the variation of the inborn disposition be denied, when, without
it, mankind would not be different in understanding knowledge, nor would they be
divided into [1] the stupid who do not understand anything except after much effort
from the teacher; or [2] the intelligent who understand through the slightest hint
and suggestion; or [3] the perfect in whose soul the realities of things arise with-
out being taught, just as God (Exalted is He!) has said: 'whose oil almost illumi-
nates, even though the fire has never touched it, light upon light.' This is similar
to the prophets (upon whom be peace), since obscure things are made clear to them
in their innermost selves without being taught or told, and that is expressed by [the
word] 'inspiration.'" *Iḥyāʾ*, 1:105.2–6 (I.7): *wa-kayfa yunkaru tafāwutu l-ġarīzati wa-law
lāhu la-mā iḫtalafa n-nāsu fī fahmi l-ʿulūmi wa-la-mā inqasamū ilá balīdin lā yafhamu bi-
t-tafhīmi illā baʿda taʿabin ṭawīlin min al-muʿallimi wa-ilá ḏakīyin yafhamu bi-adná ramzin
wa-išāratin wa-ilá kāmilin tanbaʿiṭu min nafsihī ḥaqāʾiqu l-umūri bi-dūni t-taʿallumi* [Beirut:
t-taʿlīmi] *ka-mā qāla taʿālá yakādu zaytuhā yuḍīʾu wa-law lam tamsashu nārun nūrun ʿalá
nūrin wa-ḏālika miṯlu l-anbiyāʾi ʿalayhimi s-salāmu iḏ yattaḍiḥu la-hum fī bawāṭinihim umūrun
ġāmiḍatun min ġayri taʿallumin wa-samāʿin wa-yuʿabbaru ʿan ḏālika bi-l-ilhāmi*. This is with-
out doubt Avicenna's second property. The source for the word *ġarīza* (inborn dis-
position) is *ṭaqāba* from the *Maʿāriǧ*: "That inborn disposition is not the same in
everybody," *Maʿāriǧ*, 161.8–9: *wa-tilka ṯ-ṯaqābatu ġayru mutašābihatin fī l-ǧamīʿi. Ġarīza*

was then a non-*kalāmic*—statement by suggesting that these two properties are indeed to be counted alongside the traditionally accepted prophetic miracles (i.e., the third property). The connections with *Maḍnūn* β, the *Iḥyāʾ*, the *Tahāfut* and the *Maqāṣid* are obvious. As we have seen, in *Maḍnūn* β the three properties are discussed in terms of miracles of the imaginational, intellectual and sensible type. In one place in the *Iḥyāʾ*, al-Ġazālī produces a long list of the prophetic miracles, which, when read carefully, is seen to incorporate the three properties.[28] Even in the *Tahāfut* and the *Maqāṣid*, where the three properties have not undergone a complete name-change and the Avicennan counterparts remain mostly intact, the three properties are referred to as miracles.[29] Al-Ġazālī calls his chapter in the *Maqāṣid*, "Concerning the Causes of Miracles and Prodigies" and lists in it the three properties.[30] The following sentences from the *Maqāṣid* (which are not found in the *Dānišnāmah*), not only reinforce the Avicennan-Ghazalian connection, but also give us a sense that we are now definitely in 'Ġazālī-land': "Whoever has had uncovered for him all these intelligibles in a short time without being taught is said to be a prophet or a saint; and that [i.e., the uncovering] is called a prodigy or a prophetic miracle."[31] As for the occurrence of the third property (i.e., concerning conventional miracles) in the *Munqiḏ*, it is used negatively by al-Ġazālī in criticizing those who seek certainty about the prophetic office by looking for miracles

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and *taqāba* are used synonymously with the Qur'anic term, *fiṭra*. All three terms share the basic sense of the Arabic *šaqq* (to split). The *Maʿāriǧ* in turn was originally relying on the *Išārāt*, 127.14.–15 (III.12). Note, however, that the *Išārāt* has *taqāfa* (intelligence), not *taqāba*. Either this was a simple scribal error in all of Forget's manuscripts, or the text of the *Maʿāriǧ* is here corrupt, or else al-Ġazālī had "improved" the text of the *Išārāt*.

[28] *Iḥyāʾ*, 2: 414.23–419.10 (XX.13); see, especially, the beginning of the list.

[29] When al-Ġazālī introduces the three properties in the *Tahāfut*, he says the following: "The philosophers have not affirmed extraordinary miracles except in only three things," *Tahāfut*, 272.6–7: *wa-lam yuṯbit al-falāsifatu min al-muʿǧizāti l-ḫāriqati li-l-ʿādāti illā fī ṯalāṯati umūrin*.

[30] *Maqāṣid*, 380.18 (III.5.9): *fī uṣūli l-muʿǧizāti wa-l-karāmāti*. By contrast, in the Persian title, the singular, *aṣl* is used (*Dānišnāmah*, 139.5). So there, strictly speaking, Avicenna did not call the two other properties "miracles." This is another case of small, but significant, textual emendation by al-Ġazālī.

[31] *Maqāṣid*, 383.6–8 (III.5.9): *wa-man inkašafat lahū hāḏihī l-maʿqūlātu kulluhā fī zamānin qaṣīrin min ġayri taʿallumin fa-yuqālu innahū nabīyun aw walīyun wa-yusammā ḏālika karāmatan aw muʿǧizatan li-n-nabī*. I have translated *walīy* conventionally, and for lack of a better term, by 'saint' (without taking account of the dissimilarities between the Muslim *walīy* and saints in other religions).

while neglecting other prophetic properties and powers.[32] The point
is that all three properties are there in the *Munqiḏ*. As usual, al-
Ġazālī does not use strict philosophical terminology (nor does he
seem to have been bothered by his lack of accuracy, which suggests
that his priorities lie elsewhere).

Finally, then, let us turn to the *Maʿāriǧ*. There is more than one
source for the *Maʿāriǧ*, but the most important are *fuṣūl* thirteen and
fourteen of Avicenna's *Aḥwāl*. The transfer of the three properties
from the *Aḥwāl* to the *Maʿāriǧ* is a fascinating example of the common
medieval practice of borrowing entire passages. There are, however,
some important textual divergences between the *Maʿāriǧ* and the
Aḥwāl. They show that the borrowing, or more appropriately (to use
another of Sabra's terms) the "appropriation" involved careful adap-
tation by the "appropriator." The first divergence concerns the first
property, where perfection is said to be prevented if there is some
sort of *māniʿ* (impediment). The prophet is distinguished from the
rest of humanity by not having anything preventing his perfection
in the first property. The prophet then receives the forms that, owing
to the strong prophetic power of imagination, are transformed into
images of wonderful forms heard or seen (*ṣuwar ʿaǧība masmūʿa wa-
mubṣara*). This is the famous Farabian-Avicennan "symbolic revelation."
Here one would expect al-Ġazālī, if he were the author of the *Maʿāriǧ*,
to take issue with the *Aḥwāl*. (Remember that, in the *Tahāfut*, al-
Ġazālī accuses the *falāsifa* of denying the literal truth of the Qur'an.)[33]
It turns out that the author of the *Maʿāriǧ* did insert a completely
new paragraph insisting that these "wonderful forms heard or seen"
are not mere images but are in fact authentic. He goes on to add
a uniquely Ghazalian concern: "Notice too how they [the wonder-
ful forms] were so true that not one of the deniers of prophethood
denied them."[34] From this, it is clear that the author of the *Maʿāriǧ*
is quite willing to accept the Islamized Farabian-Avicennan concep-
tion of symbolic revelation, provided that one allows one further step

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[32] There is no doubt that here al-Ġazālī was referring to the traditional *kalām*
proof for prophethood, the argument from miracles. It is perhaps not a coincidence
that in his *kalām* work, *al-Iqtiṣād fī l-iʿtiqād*, a fine illustration of the *mutakallim*'s exer-
cise on miracles is rehearsed (or should we say preserved). Al-Ġazālī, *al-Iqtiṣād fī
l-iʿtiqād* (1962), 195–201 (III.7), 202–210 (IV.1.1–2).

[33] A good example of this accusation is in the discussion concerning miracles:
al-Ġazālī, *Tahāfut*, discussion seventeen, especially 289–290.

[34] *Maʿāriǧ*, 156.11: *wa-kayfa ṣadaqat bi-ḥayṯu lam yunkirhā aḥadun min munkirī n-nubūwa.*

towards what became the religious synthesis of later ʿulamāʾ, namely, the imposition of a vivid and concrete existence for the eternal word of God itself. The difference is important for authors like al-Ġazālī. If Qurʾanic statements are mere parables, they might be taken as giving licence to disobey the divine commandments, whereas for al-Ġazālī divine commandments must always be obeyed to the letter. We only need to recall the case of al-Ġazālī's mulling over Avicenna's merrymaking and wine drinking in the *Munqiḏ*![35] Ironically, all of this "Islamization" was only made possible by Avicenna, who successfully adapted *falsafa* to the Islamic milieu in the first place.

Departing from the norm, al-Ġazālī in the *Tahāfut* refrains from criticizing the *falāsifa* about *ḥads* in intellection. This is where we find the second divergence. Interestingly enough, the author of the *Maʿāriǧ* does not modify Avicenna's second property either, except to add part of the Qurʾanic "verse of light" as an emphasis. The nature of this Qurʾanic "verse of light" is itself philosophically acceptable enough for Avicenna to have used the verse in his comments on *ḥads* and the second prophetic property.[36] Not surprisingly the author of the *Maʿāriǧ* inserts the verse into the main passages on the second property that are taken from his chief source, the *Aḥwāl* (here, the *Aḥwāl* is in turn a copy or source of the *Šifāʾ*/*Mašriqīya*/*Naǧāt*, which do not themselves mention this verse): "So knowledge comes to him from the start as if it were not left to his choice, 'whose oil almost illuminates'—the light of primordial nature—'even though the

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[35] *Munqiḏ*, 156.9–157.5.

[36] The phrase used by Avicenna to illustrate the second property is a fragment of the long "verse of light," chapter 24, verse 35: "whose oil almost illuminates, even though the fire has never touched it": *yakādu zaytuhā yuḍīʾu wa-law lam tamsashu nārun*. The clearest example of Avicenna's use of this verse as an illustration of the perfect prophetic intellect is *Mabdaʾ*, 117.5–6 (III.16). By contrast, the most obscure example (and the one most unlikely to be our source) has to be that in *Iṯbāt an-nubūwāt* (Avicenna, *Risāla fī Iṯbāt an-nubūwāt* (1968), 52.1). Despite its title, the *Iṯbāt* appears to be out of place insofar as this study is concerned, since I cannot locate our Avicennan topic anywhere in this work. There are two further works making use of this Qurʾanic verse that are possible, if unlikely sources, the *Išārāt* and *an-Nukat wa-l-fawāʾid*; Avicenna, *Išārāt*, 126.11–12 (III.10) and idem, *an-Nukat wa-l-fawāʾid* (1956), 163.4. (Yahya Michot kindly brought the latter work to my attention.) It should be noted here that the philosophical interpretations of the "verse of light" in the *Išārāt* and the *Nukat* are almost identical (except for the three grades of *ḥads* in the *Nukat* and only two in the *Išārāt*). I have decided not to take the *Nukat* into account in the present study, since I do not yet have access to the complete text (MS Feyzullah 1217).

fire'—of discursive thought—'has never touched it.'"[37] The intro-
duction of the "verse of light" (most probably from the *Išārāt* or the
Mabda') is another good example of the originality of the *Ma'āriǧ*
when using its sources. It appears as if the author is concerned not
to miss the opportunity to mention the scriptural version of the sec-
ond property when the main text on which he has been relying to
compose the chapter makes no mention of the Qur'anic material.
The careful editing shows the author to be someone familiar with
the *falsafa* tradition on the one hand and traditional Muslim reli-
gious sensibility on the other. For Avicenna and the author of the
Ma'āriǧ, using this verse to illustrate the reality of the Active Intellect
and of intellectual emanation is notable, since here they are in effect
using a product of that conjunction to comment on the very process
by which that product has been produced.

   The final example of textual divergence between the *Ma'āriǧ* and
its source occurs in the middle of the discussion of the third property,
which concerns the production of miraculous acts. The *Aḥwāl* passage
reads: "Rather, when they [the Prophets] wish to do so, they produce
in the matter of the world that which has been conceived in their
soul through [natural] causes."[38] The word *asbāb* (causes) is omitted
in the *Ma'āriǧ* and the author makes subtle changes to the reading:
"Rather, when they wish to do so, they produce in the matter of
the world whatever they conceive in their soul."[39] The *Aḥwāl* is more
restrictive, saying that human souls can affect the natural world start-
ing from whatever they want, but that production of miraculous acts
is circumscribed by "causes." This suggests some kind of natural
boundary. The reading in the *Ma'āriǧ*, on the other hand, is more
open, not specifying any restriction on what can be imagined. The
Aḥwāl is saying that the production of a "miraculous" act can occur

[37] Al-Ġazālī, *Ma'āriǧ*, 162.9–10: *fa-yaḥṣulu lahū l-'ulūmu ibtidā'an ka-annahū lā yuḥallá*
[Kurdī: *mā tuḥallá/mā tuḥallī*] *ilá iḥtiyārihī yakādu zaytuhā [Kurdī: ḏaytuhā] yuḍī'u ḍaw'a
l-fiṭrati wa-law lam tamsashu nāru l-fikra*. The use of *ibtidā'* here is telling, since it is a
kalāmī term used in discussions concerning whether prophethood is something with
which one is born (*ibtidā'*) or something which has to be acquired (*ǧazā'* or *ṯawāb*).
(The Mu'tazilites held the latter position, while the Ash'arites, including al-Ġazālī,
held the former.) See for example, al-Aš'arī, *Kitāb Maqālāt al-Islāmīyīn wa-iḥtilāf al-
muṣallīn* (1963), 448.8–10 and 227.6–8.
[38] *Aḥwāl*, 124.13 (XIV): *bal iḏā šā'at aḥdaṯat fī māddati l-'ālami mā yataṣawwaru bi-
asbābin fī nafsihā*.
[39] *Ma'āriǧ*, 165.4–5: *bal iḏā šā'at aḥdaṯat fī māddati l-'ālami mā tataṣawwaruhū fī
nafsihā*.

only within the framework of natural causes: the difference is therefore not only momentous, but fundamental, in shedding light on the religious colouring of our authors here. Again, the parallel with the *Tahāfut* is striking, since there al-Ġazālī criticizes Avicenna's third property as being too limited.[40] Here, the author has edited his source's text whenever the *Tahāfut* criticizes an idea, while doing nothing when the *Tahāfut* is silent. This textual divergence, although minuscule in size, is by far the greatest departure yet of the *Ma'āriǧ* from the *Aḥwāl*, from Avicenna, and indeed from *falsafa* as a whole. It reveals an author with an Ash'arite background and sensibilities.

The two chapters of the *Aḥwāl* from which the *Ma'āriǧ* appropriates the three properties, turn out to be (as is now known through the work of Yahya Michot) "original" portions of the *Aḥwāl*, since they do not have any direct textual correspondences with the *Šifā'* or the *Naǧāt* (or the *Mašriqīya*) as the other chapters of the *Aḥwāl* do.[41] Still, the word *ḫāṣṣīya* itself does not appear in the *Aḥwāl*, nor is there any suggestion of the properties being three in number. Instead, the only source for the "three properties of prophethood" is in the *Mabda'*, and that solely in the use of the term *ḫāṣṣa*.[42] What is interesting is that the author of the *Ma'āriǧ* used, and indeed copied closely *en bloc*, the "three properties" of the *Aḥwāl* and went a step further by labeling them the "three properties of prophethood." We

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[40] "We do not deny anything from what they have mentioned [concerning miracles] and that this belongs to the prophets. We deny only their restricting [this miracle] and their declaring impossible the changing of the staff into a serpent, the reviving of the dead, and the like." *Tahāfut*, 275.12–276.1: *wa-naḥnu lā nunkiru šay'an mimmā ḏakarūhu wa-inna ḏālika mimmā yakūnu li-l-anbiyā'i wa-innamā nunkiru iqtiṣārahum 'alayhi wa-man'ahum qalba l-'aṣā ṭu'bānan wa-iḥyā'a l-mawtá wa-ġayrahū.* Note that al-Ġazālī calls the third property in the *Tahāfut* the *qūwa nafsīya 'amalīya* (practical faculty of the soul).

[41] Jean [Yahya] R. Michot (1985), 532–4. Michot has provided a useful table of correspondences between the *Aḥwāl* and the *Šifā'*/*Naǧāt*, listing the independent portions of the *Aḥwāl*. He, however, does not make it clear that "original" here simply means that the composition of those independent parts is not based directly on the *Šifā'* and/or *Naǧāt*, but that the "original" parts of the *Aḥwāl* may have counterparts in the *Šifā'* and *Naǧāt*.

[42] A further possible source is the *Šifā'* (see above n. 16); however the *Mabda'* is the most likely source, especially since it provides the only model for the use of the word *tābi'a* in the *Ma'āriǧ*. *Mabda'*, 116.3 (III.16): "The first property follows the intellectual faculty": *fa-l-ḫāṣṣatu l-wāḥidatu tābi'atun li-l-qūwati l-'aqlīyati*; in the *Ma'āriǧ*, 150.14–15: "The second [property] follows the faculty of theoretical intellect": *wa-ṯ-ṯāniyatu tābi'atun li-qūwati l-'aqli n-naẓarīyi*. Again, this construction is absent in the *Aḥwāl*.

already know that one of the possible sources for the use of the Qur'anic verse of light in the *Ma'āriǧ* is the *Mabda'*. What is obvious here is the precise knowledge of the different works of Avicenna demonstrated by the author of the *Ma'āriǧ*—the *Aḥwāl*, the *Išārāt* and now the *Mabda'*. Why, then, did al-Ġazālī not use the text of the *Mabda'* instead of the *Aḥwāl*? More importantly, why did Avicenna not speak of the "three properties" in the *Aḥwāl*, given that they are all already there side by side in the "original" portions of the *Aḥwāl*? (Could this provide additional evidence for the relative chronology of Avicenna's works?)

The *Maqāṣid*, relying on the *Dānišnāmah*, does not differ greatly from the *Ma'āriǧ* which relies on the *Aḥwāl*. The editing styles of the two works are very similar. Even if, unlike the *Maqāṣid*, the *Ma'āriǧ* cannot be called an "interpretative" translation, since the *Aḥwāl* is in Arabic, it can perhaps be called an "interpretative" adaptation. What is relevant here is that the *Maqāṣid* appropriated the "three properties" despite the absence of that label from the *Dānišnāmah*. Al-Ġazālī must have considered the label, "three properties," too important to omit. Possibly he recognized it as an important element of Avicenna's own mature theory of prophethood that had not been included in the *Dānišnāmah*. If not, why did he go to the trouble to revise the text so as to adapt the original *Dānišnāmah* to incorporate the label "three properties"? Once more, questions arising from this Ghazalian-Avicennan interplay may lead to a better understanding of Avicenna's works.

Another important point is that the three properties of the *Aḥwāl/ Ma'āriǧ* are somewhat different from those of the *Mabda'*.[43] In the *Aḥwāl* and the *Ma'āriǧ* the practical intellect is mentioned together with the imaginative faculty in connection with the first property, and the theoretical intellect is explicitly specified in connection with the second property, where the *Mabda'* speaks only of the "intellectual

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[43] There are other interesting differences between the passages on prophethood in the *Aḥwāl/Ma'āriǧ* and the *Mabda'*. One is that the term *fanṭāsiyā/banṭāsiyā* is employed consistently throughout the *Aḥwāl/Ma'āriǧ*, where the *Mabda'* uses the alternative term *ḥiss muštarak/ḥāssa muštaraka*. In fact, the *Mabda'* does make use of *fanṭāsiyā* (three times), but that is in the chapter on the animal soul: *Mabda'*, 93–96 (III.3). Secondly, only the *Mabda'* mentions the Active Intellect in relation to the first property of prophethood (the one relating to imagination), but not *qua* cause; in the *Aḥwāl/Ma'āriǧ* it is not mentioned until the second property (the one relating to intellect) is discussed, and there *qua* cause.

faculty". In addition, the *Maqāṣid* inserts *naẓarī* (theoretical), where the *Dānišnāmah*, like the *Mabda'*, leaves "the intellect" unspecified. The fact that the *Maqāṣid*, like all of Avicenna's texts except the *Aḥwāl*, does not mention the practical intellect in this connection creates a problem if we want to regard the authors of the *Maqāṣid* and the *Ma'āriǧ* to be the same man. Why did al-Ġazālī not use the "three properties" of the *Aḥwāl* in the *Maqāṣid*, but followed instead the *Dānišnāmah*? Did al-Ġazālī not have a copy of the *Aḥwāl* beside him when he wrote the *Maqāṣid*?

One major difference between the "three properties" of the *Aḥwāl*/*Ma'āriǧ* and the *Mabda'* could make the theoretical gap unbridgeable. The problem arises in the metaphysical discussion of the first property in the *Aḥwāl*/*Ma'āriǧ* from a passage where the practical intellect is said to receive particular forms from the "highest psychical substances."[44] As the reference can hardly be to the Active Intellect, it must be to the celestial souls. The central chapters in the *Šifā'* say no more that that, but merely that the imagination receives particulars, while the intellect receives universals. Nor does the *Mabda'* say more than that the imaginative faculty is involved in this property of prophethood, not, as in the *Aḥwāl*, the imaginative faculty *and* the practical intellect. In fact, the *Mabda'* here contradicts the *Aḥwāl*: "This conjunction is with respect to the estimative and imaginative [faculties] and [occurs] by using the two of them with regard to particular things. As for intellectual conjunction, that is another matter; and our discussion [here] does not concern it."[45]

Important questions are produced by this problem, because it means that either what the *Aḥwāl* says about the practical intellect is inconsistent with Avicenna's theoretical psychology elsewhere, or that it was not written by Avicenna himself. The latter assumption seems implausible because the *Aḥwāl* is almost universally accepted as an authentic work of Avicenna's.[46] So we shall either have to doubt the authenticity of certain "original" portions of the *Aḥwāl* or

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[44] *ǧawāhir 'ālīya nafsānīya*; Avicenna, *Aḥwāl*, 117.5–6 (XIII) = al-Ġazālī, *Ma'āriǧ*, 153.19–154.1.

[45] Avicenna, *Mabda'*, 117.20–21 (III.17): *wa-hāḏā l-ittiṣālu huwa min ǧihati l-wahmi wa-l-ḫayāli wa-bi-isti'mālihimā fī l-umūri l-ǧuz'īyati wa-ammā l-ittiṣālu l-'aqlīyu fa-ḏālika šay'un āḫaru wa-laysa kalāmunā fīhi.*

[46] As far as I know, Davidson is the only scholar to have doubted the usual attribution of the *Aḥwāl* to Avicenna; Davidson (1992), 122, n. 183.

assume that Avicenna changed his mind and modified his teachings on this issue.[47] We see that the *Mabdaʾ* and the *Aḥwāl*, however close in their discussions and concerns, are also far apart. Are we to say that, the *Aḥwāl* being a late work, the three properties have been revised? Clearly, more careful philological and philosophical study of both texts is required to untangle this snarl.

While the three properties of al-Ġazālī are exceptionally close to those of Avicenna, they are nonetheless not quite the same. This, I think, is where consideration of the *Maʿāriǧ* is crucial, for the work shows the differences at their irreducible minimum. It is far closer to Avicenna than any other Ghazalian text in terms of sheer word-by-word appropriation. (The text next closest to the Avicennan corpus is the *Maqāṣid*, which, for all its carefully executed "interpretative" translation of Persian into Arabic, is freer than parts of the *Maʿāriǧ*.) Still, the *Maʿāriǧ* is far from mere plagiarism, for as we have seen, there are some carefully edited portions of the text which make subtle, but crucial, departures from Avicenna. So could the *Maʿāriǧ* play the part of a corrected blueprint of Avicennan psychology to which al-Ġazālī and his students (the specialists or "those who are fit for it") have access?[48] One is tempted to speculate that the text may have originated as al-Ġazālī's personal workbook or a "teaching aid" designated to summarize the important psychological doctrines of *falsafa*, especially those inspired by Avicenna's *De Anima* (and including the "corrected" ones).

It seems clear that whoever wrote the *Maʿāriǧ* must have been thoroughly familiar with the writings of Avicenna. His easy reliance on the works of Avicenna and the various crucial changes he makes

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[47] Michot has argued for the latter alternative (without anticipating the possibility of the former), although he thinks that the unique involvement of the practical intellect in the *Aḥwāl* can be accommodated within the general framework of Avicenna's theoretical psychology; Michot (1986), 122–125. This will certainly add meat to the controversy over the dating of the *Aḥwāl*. Michot has suggested a late date for the *Aḥwāl* on the grounds that the "original" portions are not found in the *Šifāʾ* (yet as I have shown, the theoretical counterpart is still there, barring the issue of the practical intellect); ibid., 6–7, esp. n. 29. Gutas, on the other hand, has argued for an early date of the *Aḥwāl*, placing it in 1014 (before the composition of the *Šifāʾ*), the year after the composition of the *Mabdaʾ*; Gutas (1988), 99–100, 112–3, 172, and 145.

[48] The *Maʿāriǧ* is to be counted among what I consider to be al-Ġazālī's *Maḍnūnī* works. There is an explicit reference to *al-Maḍnūn bihā ʿalá ġayr ahlihā* (to be withheld from those who are not fit for it) in both the opening and closing passages, *Maʿāriǧ*, 4.11–12 and 210.5.

point to an experienced student of Avicenna who knows when to add and what to subtract. This student, whether directly or through books, must have been a master in his knowledge of Avicennan texts, and it is natural to infer, although more evidence is needed here, that the student in question had a profound understanding of the mature views of Avicenna. Watt's criteria clearly need revising.[49] Things have become more complicated than Watt would have us believe: works attributed to al-Ġazālī cannot be regarded as spurious or even dubious on account of Avicennan influence or on account of being less than entirely consistent with each other. Al-Ġazālī's treatment of the three properties of prophethood, whether in the *Munqiḏ, Tahāfut, Maqāṣid, Miškāt* or *Maḍnūn*, bears out the exalted position which Avicennan psychology occupied in his works. There is nothing here to stop us from accepting that the *Maʿāriǧ* was indeed written by al-Ġazālī.

The characteristic style of al-Ġazālī in his popular works, where his thought is wrapped in religious and Sufi language, might mislead those reading the *Munqiḏ,* for example, into thinking that it contains only his own ideas. Instead of using appropriated technical terms from *falsafa,* al-Ġazālī expresses his thought in his own terms and, one might say, in a "public-oriented" way; in other words, his terms have been naturalized. Similarly, his logical writings conceal their philosophical sources by using different vocabulary. He does this by employing the terms used by religious scholars to which he now gives new meanings.[50] The replacement of terms does not change the actual meaning. That, I believe, is a method deliberately developed and used by al-Ġazālī—a procedure defended in what deserves to be appreciated as an important maxim of his: "There is no need to quibble about terms, once the meaning is understood."[51] Ibn Taymīya, al-Ġazālī's severest critic, is not entirely unfair in depicting al-Ġazālī's

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[49] See footnote 3 for a discussion of Watt's criteria.

[50] For example, the logical parts of *Qisṭās al-mustaqīm* contains al-Ġazālī's summary of Aristotelian logic summarized in five *mawāzīn* or "balances." The first three are Aristotle's three forms of the categorical syllogism and the remaining two are the conjunctive and the disjunctive syllogism; al-Ġazālī, *al-Qisṭās al-mustaqīm* (1959), 47–71 (II–VI). The non-specialist, who reads the work, will think that it is an original composition by al-Ġazālī.

[51] Al-Ġazālī, *Iqtiṣād,* 92.6–7 (II.1): *wa-lā mušāḥḥata fī l-asāmī baʿda fahmi l-maʿānī.* This maxim also appears, variously worded, in the *Iḥyāʾ,* 1:227 (IV.7): *fa-lā mušāḥḥata fī l-alfāẓ baʿda fahmi l-maqāṣid,* and 2:124 (XIV.2.3): *wa-iḏā ʿurifa l-maʿná fa-lā mušāḥḥata fī l-asāmī.*

method as an act of *talbīs* (cloaking): "Whenever al-Ġazālī speaks of the knowledge of the Sufis, he is like someone who takes an enemy of the Muslims and cloaks him in the garments of the Muslims."[52] It would appear that al-Ġazālī masked, or to use Ibn Taymīya's term "cloaked," the philosophical notions he appropriated in order to remain "politically correct," lest he be mistaken for a convert to *falsafa*. This might even be the case. Indeed, it is largely on the grounds of philosophical or crypto-philosophical content that contemporary scholars such as Watt, who could not reconcile the *faylasūf* and the *mutakallim* in al-Ġazālī, to have denied the authenticity of the *Maʿāriǧ* and regarded any Avicennan-inspired Ghazalian works as *spuria* or *dubia*. Drawing on Avicenna, and possibly other writers in the Greek philosophical tradition, was not something al-Ġazālī saw fit to advertise, at least not to the general public. We saw that the plain, if slightly adapted, borrowing of the three properties of prophethood in the *Maʿāriǧ* was largely rephrased in the *Munqiḏ* and that the already carefully edited "bare" source in the one work was elegantly restated at many points in the other. Was al-Ġazālī trying to avoid a scandal that might jeopardize his project of rationalizing the religious sciences through the *iǧmāʿ* (consensus) of the Muslims? Was he something of an academic show-off? Was he simply convinced of the compatibility between the demands of reason and of scripture? Did thinkers after Avicenna find themselves left with little new to say and were therefore reduced to recycling his ideas or even resorting to *talbīs*? As none of these possibilities can be ruled out completely, the matter may never be resolved.

Avicenna's laborious project, started by al-Fārābī, of adapting Greek philosophy to an Islamic context, was taken further by al-Ġazālī, who not only appropriated the Islamicized Aristotelian and Neoplatonic elements of Avicenna, but also "cloaked" them in "Muslim" terms. A good example is al-Ġazālī's use of *ilhām* and *tawfīq* in describing the second property of prophethood. Al-Ġazālī succeeded in making many of the ideas he adopted acceptable to the general Muslim public. Unless the reader was among the educated and under-

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[52] Ibn Taymīya, *Maǧmūʿ fatāwá* (1980), 10:551.14–552.2: *fa-iḏā ḏakara maʿārifa ṣ-ṣūfiyati kāna bi-manzilati man aḫaḏa ʿadūwan li-l-muslimīna albasahū ṯiyāba l-muslimīna.* This passage continues a few lines later with the sarcastic observation "[al-Ġazālī's] malady is the cure, that is, the *Šifāʾ* [*The Cure*] of Avicenna in philosophy." Ibid., 10:552.4: *maraḍuhū aš-Šifāʾu yaʿnī Šifāʾa bni Sīnā fī l-falsafa.*

stood the context, he would fail to notice the correspondences with *falsafa*. Averroes had a point, after all, in his condemnation of al-Ġazālī for "popularizing" sciences that should have been confined to those "fit for them," that is to say, the specialists: "Then Abū Ḥāmid [al-Ġazālī] came and flooded the valley by [filling up] the waterway, that is to say, he made known all of philosophy to the general public."[53]

I have shown that Avicenna's three properties of prophethood appear not only in the *Maʿāriǧ*, the *Miškāt* and the *Maḍnūn*, which are among the works problematically attributed to al-Ġazālī, but also in his *Munqiḏ*, *Iḥyāʾ*, *Tahāfut* and *Maqāṣid*, all of which are works of undoubted authenticity. At the very least, that fact shows that al-Ġazālī knew this Avicennan topic and, crucially, that he knew of Avicenna's original idea of intellectual prophethood. That this new idea was appropriated and naturalized as fully as it was in the *Munqiḏ* (without of course any acknowledgement of Avicenna) shows that al-Ġazālī considered it to be a sound and important theory.

"That [al-]Ghazali's polemics dealt a death-blow to *falsafa* is an over-hasty generalisation, which sometimes still lingers on in popular text-books."[54] This observation by Pines, despite its age, still deserves special notice. Al-Ġazālī seems to have been the first in the *kalām* tradition to read Avicenna carefully and to make positive and successful use of his philosophy, especially his theoretical psychology. If so, it was al-Ġazālī who made Avicenna's *De Anima* acceptable to the religious community. If that can be confirmed, we have to face the irony that al-Ġazālī, the notorious refuter of *falsafa*, yielded to its influence in both his specialized and his popular writings. That would mean that the polemics of al-Ġazālī against the *falāsifa*, and in particular his historic clash with Avicenna, must not be taken at face value. Al-Ġazālī's relationship with Avicenna will have to be reassessed.[55] It would appear that al-Ġazālī was attacking traditional

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[53] Averroes, *al-Kašf ʿan manāhiǧ al-adilla fī ʿaqāʾid al-milla* (1998), 150.19–20 (II.9): *ṯumma ǧāʾa Abū Ḥāmidi fa-ṭamma l-wādiya ʿalá l-qarīyi wa-ḏālika annahū ṣarraḥā bi-l-ḥikmati kullihā li-l-ǧumhūri*.

[54] Shlomo Pines (1937), 80, n. 2.

[55] In 1992, Frank convincingly argued that the traditional analysis of the relationship between al-Ġazālī and Avicenna was no longer tenable; Richard M. Frank (1992). Recently, Janssens has argued that the *Tahāfut* was not essentially directed against Avicenna (or at least not the whole of Avicenna's philosophy); Jules Janssens (2001).

students of Greek philosophy, but Avicenna was no such traditional student of the Greeks (although his philosophical system was firmly grounded in the Greek tradition).[56] Less of Avicenna's version of *falsafa* was under attack than has usually been thought and, indeed, less than al-Ġazālī wanted to make it appear. I believe that the topic of the three properties of prophethood is of the great interest for those wishing to confront the different "faces" of al-Ġazālī. It raises intriguing questions and problems, about the relation between *kalām* and *falsafa* in general, and between al-Ġazālī and Avicenna in particular.[57]

In the meantime, we may accept Ibn Taymīya's perceptive remark that al-Ġazālī is to Muslims what Maimonides is to Jews, in that both "mixed the words of the prophets with those of the philosophers and interpreted the former according to the latter."[58]

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[56] The following remark by Avicenna in the *Nukat*, for example, sheds some light on his attitude towards traditional commentators: "Do not pay attention to what the glosses of foreigners have said in this context, for they are wholly pathetic!" *Nukat*, 156.7–8: *wa-lā tuʿarriǧ ʿalá mā yaqūluhū ḥašwīyu l-aʿāǧimi fī haḏā l-makāni fa-huwa ḥašafun kulluhū*. Ḥašwī does invoke "commentary," but the phrase suggests that it is here used in the first instance as a term of abuse: "vulgar mob." This can hardly refer to respected authorities like Alexander of Aphrodisias. It sounds as though he is primarily thinking of Christian commentators like Ibn aṭ-Ṭayyib, who claimed to perpetuate the tradition of pre-Islamic Alexandria.

[57] In notes 36 and 56, Yahya Michot and I assumed that the *Nukat* was by Avicenna. Evidence has now emerged thanks to further Research by Yahya Michot (Communication at the Conference on Classical Arabic Philosophy: Source and Reception, London, April 2004) that at least parts of the *Nukat* as it appears in MS Feyzullah 1217 have been written by a later author or indeed one who is working possibly after Abū l-Barakat al-Baġdadī.

[58] Ibn Taymīya, *Darʾ Taʿāruḍ al-ʿaql wa-n-naql* [= *Muwāfaqat saḥīḥ al-manqūl li-sarīḥ al-maʿqūl*] (1979–1981), 1:131.14–132.1; *yamzuǧu l-aqwāla n-nabawīyati bi-l-aqwāli l-falsafīyati wa-yataʾawwaluhā ʿalayhā*.

Appendix I

Intellect

Readers
who have to
work hard

Natural geniuses like
Avicenna

Imagination

Natural
diviners
and the like

Soul as a Whole
(Motive Faculty)

Saints or
malicious sorcerers

Less powerful
prophets

Powerful
prophets

Appendix II

AL-FĀRĀBĪ
1. Strong Imagination (by symbolising intelligibles)
2. Strong intellect (by conjunction with the Active Intellect)

AVICENNA

AŠ-ŠIFĀʾ (full) (separately)

AN-NAǦĀT (partial)*
*Only the intellect appears

AL-MABDAʾ (full) (together) (no name)
1. Intellect*
2. Imagination
3. Soul
* The Qurʾanic 'verse of light' appears.

AL-IŠĀRĀT (full) (separately)

DĀNIŠNĀMAH (full)* (separately)
*but specifies the 3 *tabaqats* of prophethood as (the property of the soul appears elsewhere):
1. *Ḥads*
2. *Raʾya*
3. *Waḥy*

DĀNIŠNĀMAH (full) (together) (no name)
1. Soul
2. Intellect
3. Imagination

AḤWĀL AN-NAFS (full) (together) (no name)
1. Imagination + Practical Intellect
2. Theoretical Intellect
3. Soul

TAHĀFUT (text is written independently)
1. Imagination
2. Theoretical Intellect
3. Soul*
* "Practical faculty of the soul."

MAŠRIǦ (text adapted from more than one source)
1. Imagination + Practical Intellect
2. Theoretical Intellect
3. Soul

AL-MUNQIḎ (text is original)
1. Imagination (*naẓm*)
2. Intellect (*ilhām* + *tawfīq*)
3. Soul (*muʿǧiza*)

MAQĀṢID (text adapted from its exemplar)*
1. Soul
2. Theoretical Intellect
3. Imagination
*with new elements added.

AL-MADNĪN (RECENSION β) (text is original)
1. Soul (miracles of the *ḥissī* type)
2. Intellect (miracles of the *ʿaqlī* type)
3. Imagination (miracles of the *ḫayālī* type)

main exemplar

only one exemplar

LEGEND

transmission of the name ....

transmission of the Qurʾanic verse ◆——▶

RESURRECTION (*MAʿĀD*) IN THE PERSIAN *ḤAYĀT AN-NUFŪS* OF ISMĀʿĪL IBN MUḤAMMAD RĪZĪ: THE AVICENNAN BACKGROUND*

Roxanne D. Marcotte

Very little is known about the author of the Persian *Ḥayāt an-nufūs*, Ismāʿīl Ibn Muḥammad ar-Rīzī (fl. ca. 679/1280).[1] He was most probably still alive and writing at the beginning of the last quarter of the seventh/thirteenth century. He dedicated *Ḥayāt an-nufūs* to the ruler of Rayy, Ātābek Yūsuf Šāh (r. 673–687/1274–1288), the son of Ālp Arslān Arġūr, and may have written the text shortly after the death of Aṯīr ad-Dīn (Mufaḍḍal ibn ʿUmar) Abhārī (d. 666/1264), whom Rīzī mentions.[2]

Rīzī first wrote a philosophical compendium titled *Risālat-i Nuṣratīya* (lost and most probably written in Persian), a short work divided into two parts (practical and theoretical philosophy) for Ātābek Yūsuf Šāh, whose interest in philosophy Rīzī extols but who was not proficient in Arabic. Rīzī was brought back to the court to write *Ḥayāt an-nufūs* following Yūsuf Šāh's increased interest after having read the compendium.[3] Rīzī wrote the work for a Persian-speaking ruler,[4] but he was equally motivated to write a Persian work, so that

[1] Rīzī, *Ḥayāt an-nufūs* (1989); henceforth *Ḥayāt*. The work was edited by M. T. Dānišpažūh, who based his edition on the eleventh/seventeenth century manuscript (no. 10204) of the Library of the University of Tehran.

[2] See Dānišpažūh's introduction, 8.

[3] *Ḥayāt*, 18.6–19.22.

[4] Ibid., 20.5–7.

anybody who had not mastered Arabic would be able to acquire knowledge and refute *a contrario* the common belief, which appears to have been widespread during his lifetime, that learning sciences could be done only in Arabic. Rīzī appears to be genuinely concerned with the propagation of philosophical ideas in the Persian speaking population, noting that some types of knowledge—viz., theology (ʿulūm-i ḥaqīqī)—do not change, either throughout time or with the use of different languages.[5]

M. T. Dānišpažūh has claimed that the theological section of *Ḥayāt an-nufūs* (304–531) follows Suhrawardī's *at-Talwīḥāt* and his *al-Mašāriʿ*.[6] This paper addresses the extent to which Dānišpažūh's claim is correct that the theology of *Ḥayāt an-nufūs* was inspired by the "Illuminationist" (*Išrāqī*) theories developed by Šihāb ad-Dīn as-Suhrawardī (d. 587/1191) and argues that on at least one important topic, *maʿād* (resurrection), Rīzī was equally, if not more, influenced by Avicenna.

Dānišpažūh is clearly correct to claim that Rīzī used a number of as-Suhrawardī's works. For example, the last part of the metaphysics of *Ḥayāt an-nufūs* consists of a Persian paraphrase of a number of pages taken from Suhrawardī's *at-Talwīḥāt*.[7] Moreover, the fact that Rīzī uses and quotes Suhrawardī's works confirms the existence of a manuscript tradition that made available Suhrawardī's works to scholars less than a century after Suhrawardī's death. During the same period, Šams ad-Din aš-Šahrazūrī (fl. 680/1282) wrote the most extensive bibliography of Suhrawardī's works,[8] while Quṭb ad-Dīn aš-Šīrāzī (d. 711/1311) wrote his commentary on Suhrawardī's *Ḥikmat al-išrāq*, a work that is almost contemporary to Šams ad-Din aš-Šahrazūrī's own commentary on the same work.[9] Unfortunately, in

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[5] Ibid., 20.8–23.

[6] See Dānišpažūh's introduction, 8.

[7] Compare Rīzī's work with the metaphysics of Suhrawardī's *at-Talwīḥāt* (1993), 1: 1–121, esp. para. 76–78; *Ḥayāt*, 533.7 (first symbol) and *at-Talwīḥāt*, 105.3ff. (*Ḥayāt an-nufūs* is missing one folio here, which may exist in one of the other two manuscripts not consulted by Dānišpažūh); *Ḥayāt*, 533.8–534.5 (fourth symbol) and *at-Talwīḥāt*, 106.6–11; *Ḥayāt*, 534.6–535.11 (fifth symbol) and *at-Talwīḥāt*, 106.12–107.4; *Ḥayāt*, 535.12–536.20 (sixth symbol) and *at-Talwīḥāt*, 107.5–108.3; *Ḥayāt*, 536.21ff. (seventh symbol) and *at-Talwīḥāt*, 108.4ff.

[8] Šahrazūrī, *Nuzhat al-arwāḥ wa-rawḍat al-afrāḥ fī taʾrīḫ al-ḥukamāʾ wa-l-falāsifa* (1976), 2: 125; *idem* (1993a).

[9] Quṭb ad-Dīn aš-Šīrāzī, *Šarḥ-i ḥikmat al-išrāq* (2001); John Walbridge (1992); Šams ad-Dīn Šahrazūrī, *Šarḥ-i ḥikmat al-išrāq* (1993b).

the absence of any biographical data, it is impossible to determine how or where Rīzī had access to as-Suhrawardī's works, or if he had access to the same manuscript tradition as the one accessed by Quṭb ad-Dīn aš-Šīrāzī and Šams ad-Dīn aš-Šahrazūrī.

Still a closer examination of Rīzī's theory of *maʿād* sheds new light on Dānišpažūh's claim of a strong Suhrawardian influence. A thorough analysis of the relationship between *Ḥayāt an-nufūs* and as-Suhrawardī's works should be exhaustive in order to confirm or dispel Dānišpažūh's claim. Although the study of one particular issue such as *maʿād* and the classification of posthumous souls cannot lead to any generalization about *Ḥayāt an-nufūs*, it still yields some unexpected results in terms of insight it provides into the composition of the work and its philosophical debts to earlier scholars. Significantly, it will become apparent that Rīzī's theory of resurrection originates in the Avicennan rather than the Suhrawardian tradition.

Suhrawardian Eschatology

To bear out my thesis we must first begin by asking what constitutes as-Suhrawardī's Illuminationist position regarding *maʿād*, and what Suhrawardian sources may have been available to Rīzī.[10] The metaphysics of Suhrawardī's *at-Talwīḥāt* and *al-Mašāriʿ* are possible sources of influence for ideas found in *Ḥayāt an-nufūs*. In the metaphysics of *al-Mašāriʿ*, Suhrawardī discusses the survival of the rational part of the soul and its posthumous felicity and adopts a distinctive epistemological perspective, tackling issues of perception and knowledge.[11] Discussions pertaining to *maʿād* are quite shorter than the ones found in *at-Talwīḥāt*, and it is doubtful that Rīzī's theory of *maʿād* is inspired by *al-Mašāriʿ*. Thus, the metaphysics of *at-Talwīḥāt* is a more likely candidate, and indeed Rīzī paraphrases long passages of *at-Talwīḥāt*, e.g., at the end of the metaphysics. In the section on "The Explanation of the Pleasures of Simple Souls" of *Ḥayāt an-nufūs* there is also a

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[10] Corbin has provided a very perceptive analysis of the inherent difficulties associated with the chronology and the classification of as-Suhrawardī's work; see Suhrawadī (1993), 1: i–xviii; also see Helmut Ritter (1937) and (1938).

[11] For the metaphysics of *al-Mašāriʿ wa-l-muṭāraḥāt*, see Suhrawadī (1993), 1: 193–506, esp. 474–506.

passage that does appear to rely on Suhrawardī's discussion of unright-eous (*fāsiq*) and evil (*šarīr*) souls.[12] One should note, though, that the passage from Suhrawardī's *at-Talwīḥāt* is introduced as an addendum to discussions that occur in Avicenna's *al-Išārāt* and Naṣīr ad-Dīn aṭ-Ṭūsī's commentary. Notwithstanding these few borrowings, *at-Talwīḥāt* does not appear to constitute the main basis of Rīzī's dis-cussion of *maʿād*. These first two works were written, according to Suhrawardī, following the methods of the Peripatetics, as an essen-tial propaedeutic to *Ḥikmat al-išrāq*.[13] Thus a more likely place to find an Illuminationist connection between Suhrawardī and Rīzī is Suhrawardī's later, more personal Illuminationist work, *Ḥikmat al-išrāq*, which Rīzī mentions.[14]

Again, though, *Ḥikmat al-išrāq* does not appear to be the primary source for Rīzī's theory of *maʿād*. First, in *Ḥikmat al-išrāq*, a distinctive photic terminology imparts uniqueness to Suhrawardī's eschatological discussions. Such terms as "darkness," "shadows," "illumination" and "reflection in mirrors" are used to describe the eschatological fate of the human soul. The following passage illustrates the typical Illuminationist feature of Suhrawardī's photic terminology, here applied to *maʿād*:

> If the commanding light shines by knowledge of realities and loves the Wellspring of light, if it is purified from the filth of barriers, then it will be freed from its fortress when it beholds the world of pure light after the death of the body. The unending illuminations of the Light of Lights will be reflected upon it with and without intermediaries. . . . The illuminations of the dominating lights will also be reflected upon it in that way, and so will be the illuminations of the infinite number of pure souls since the beginning. . . . Thus, will it experience infinite pleasure.[15]

The Suhrawardian photic terminology is resolutely and conspicu-ously absent from Rīzī's *Ḥayāt an-nufūs*.

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[12] *At-Talwīḥāt*, 82.10–3; *Ḥayāt*, 499.11–500.7.

[13] *At-Talwīḥāt*, 10.4–10. Illuminationist elements did, however, find their way into *at-Talwīḥāt* as can be seen at 70.1–78.6 and 105.1–121.6.

[14] Suhrawardī, *Hikmat al-išrāq* (1993), 2:9–260; French translation by Corbin in Suhrawardī (1986); English translation by Walbridge and Ziai in Suhrawardī (1999).

[15] Ibid., 227.1–11; tr. Walbridge and Ziai, 147. Suhrawardī presents a similar photic definition of pleasure that is absent in *Ḥayāt an-nufūs*, see Suhrawardī, ib., 225.5–9; tr. Walbridge and Ziai, 146.

A second indication that *Ḥikmat al-išrāq* was not the primary inspiration for Rīzī's theory of *maʿād* is that in *Ḥayāt an-nufūs*, Rīzī proposes an elaborate classification of souls and their respective posthumous fate, which we will consider in the sequel, that does not correspond with the one proposed by Suhrawardī; rather, both classifications appear to be derived from the Avicennan tradition. In order to provide a point of reference I will briefly outline Suhrawardī tripartite classification of the posthumous states of the soul.

Suhrawardī first identifies the souls of the very few who have been able to perfect themselves, both in practical and theoretical knowledge, the condition for the apprehension of absolute felicity.[16] Perfect souls, those of Prophets, saints, and other exceptional mystics, achieve intellectual unity (*ittiḥād*) with the world of pure light, as seen in the quotation above.[17] Suhrawardī then identifies the souls of those who have reached an intermediary stage of happiness (*as-suʿadāʾ min al-mutawassiṭīn*) and ascetics (*az-zuhhād min al-mutanazzihīn*), among whom he appears to include himself. This category of souls is reminiscent of the ascetics (*ʿārifūn mutanazzihūn*) described in Avicenna's *al-Išārāt* who are able to detach themselves from the bodily, to experience the loftiest pleasure (*laḏḏa ʿulyā*), and to access the divine world.[18] According to Suhrawardī, the souls of those who belong to this group do not ascend to pure intelligible realms, the world of pure light. These souls ascend to the world of suspended images (*yataḫallaṣūna ilá l-muṯul al-muʿallaqa*) whose locus corresponds with some of the celestial bodies (*maẓharuhā baʿḍ al-barāziḫ al-ʿulwīya*). Those who reach this intermediary stage of happiness and ascetics can existentiate images (*īǧād al-muṯul*), having the power to make present to themselves delectable food, beautiful forms and exquisite sounds that correspond with the imaginative pleasures that the souls will experience in the afterlife.[19] The last category of souls corresponds with miserable souls

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[16] See especially chapter V, section 2 and 3. This classification does not mirror the classification of individuals found in the preface of the same work, see Suhrawardī, *Ḥikmat*, 229.6–230.9, tr. Corbin, 213–4; and 11.12–12.14, tr. Corbin, 90. Amin Razavi mentions a third category, i.e, those who purified themselves to some extent (*sudad*) which is not found (!) in the passages quoted from the *Ḥikmat*; see Mehdi Amin Razavi (1997), 49.

[17] *Ḥikmat*, 228.1–8; tr. Walbridge and Ziai, 147.

[18] Avicenna, *al-Išārāt wa-t-tanbīhāt . . . maʿa šarḥ Naṣīr ad-Dīn aṭ-Ṭūsī* (1957–1960), 4:14.32.3–6; English translation by Shams Inati in *al-Išārāt* (1996), 77.

[19] *Ḥikmat*, 229.9–230.5; tr. Walbridge and Ziai, 149. In his commentary, Quṭb

(*aṣḥāb aš-šaqwa*), those of the "damned."[20] Suhrawardī writes, "Once they escape from the corporeal citadels (*ṣayāṣī barzaḫīya*) [i.e., the bodies], they will possess certain shadows of the suspended forms (*ṣuwar muʿallaqa*), in accordance with their moral qualities (*aḫlāq*)."[21] Souls other than the ones of perfect individuals can, therefore, experience in the afterlife—in the sense of seeing, feeling, smelling or hearing—the promised pleasures and pains of divine retribution. The nobler the soul's habit (*malaka*) of experiencing true happiness is in this life, the greater its happiness will be in the hereafter. The converse is true for miserable souls that suffer in proportion to their moral character and habits. Despite Suhrawardī's novel light terminology, his conception of the soul's *maʿād* and his classification of posthumous souls depend on an underlying Avicennan structure, a reminder of Suhrawardī's early adherence to the Peripatetic tradition.

Avicennan Eschatology

The importance of the Avicennan tradition as a possible source for Rīzī's theory of *maʿād* has already been noted several times. A likely Persian source is Avicenna's *Dānišnāmah-yi ʿAlāʾī*.[22] Rīzī may have been aware of the existence of the *Dānišnāmah*, but he certainly could not have used this work to elaborate his theory of *maʿād*, because the whole discussion of the soul, and more specifically of the rational soul, neither addresses the issue of the varying posthumous states of souls, nor does it allude to any type of posthumous hierarchy.[23] A more likely candidate for Rīzī's theory of *maʿād* would be Avicenna's *al-Aḍḥawīya*, the Avicennan work on resurrection *par excellence*. Avicenna's

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ad-Dīn aš-Šīrāzī distinguishes between the souls of those who have reached an intermediary stage of happiness, having achieved relative perfection in theoretical and in practical knowledge, and the souls of those who have achieved perfection in practice, but not in theoretical knowledge; see aš-Šīrāzī, *Taʿlīqāt*, included in Corbin's edition of the *Ḥikmat*, 229; Corbin's trans., 403 n. 1 and n. 2.

[20] Suhrawardī quotes two verses from the Qurʾan: 19:68 and 11:94.

[21] *Ḥikmat*, 230.6–9; tr. Walbridge and Ziai, 149.

[22] According to Dimitri Gutas, this work was written at the request of Kākūyid ʿAlāʾ ad-Dawla, when Avicenna resided in Isfahan (between 414–428/1023–1037), perhaps around 418/1027. Gutas follows Mahdavī who noted that *Dānišnāmah-yi ʿAlāʾī* shares great similarities with Avicenna's *an-Naǧāt*; see Dimitri Gutas (1998), 114.

[23] Avicenne, *Dānišnāmah* (1986; translation), 2:62–90.

classification of souls is quite detailed and shares a number of sim-
ilarities with Rīzī's classification. In fact, Rīzī relies on Avicenna's
al-Išārāt, a text that proposes a classification that is similar to the
one found in *al-Aḍḥawīya*, although less systematic.[24]

Avicenna's *al-Išārāt* was well known in philosophical circles, and
numerous commentaries, glosses, and summaries had been written
on it. One of the earliest commentaries was perhaps aš-Šahrastānī's
(d. 445/1153) polemical *Iʿtirāḍāt ʿalá kalām al-Išārāt*, to which ʿUmar
ibn Sahlān as-Sāwī (d. ca. 549/1145) eventually wrote a reply.[25] Faḫr
ad-Dīn ar-Rāzī (d. 606/1209) then wrote his famous *Šarḥ al-Išārāt*
and an abridged version of its essential theses, titled *Lubāb al-Išārāt*.[26]
Contemporaries of Rīzī also wrote commentaries on Avicenna's work.
Saʿd ibn Ḥasan ibn Hibat Allāh (Muḥammad) Ibn Kammūna al-
Isrāʿīlī (d. 676/1277) wrote a *Šarḥ al-Išārāt*.[27] Similarly, Naṣīr ad-Dīn
aṭ-Ṭūsī (672/1274) wrote a *Šarḥ al-Išārāt*,[28] as well as *Ḥall muškilāt
al-Išārāt*.[29] Although a number of these scholars knew Persian, these
works were all written in Arabic, and no Persian medieval transla-
tion of *al-Išārāt* has been recorded by Brockelmann.[30] Oddly enough,
during this period, the Syrian Christian, Barhebraeus, known as Ibn
al-ʿIbrī (d. 685/1286, in Marāġa) wrote a Syriac translation of the
work.[31] Rīzī's *Ḥayāt an-nufūs* may well be the first work in the Persian
tradition of *al-Išārāt* that did not, however, appear to share the same
popularity as its Arabic forerunner.

Rīzī's Classification of Souls

Rīzī discusses *maʿād* in the last part (VI) of the third *arte* (*fann*) of
the metaphysics, titled *Investigation into Resurrection (maʿād) and Its States*

[24] Avicenna, *al-Aḍḥawīya fī amr l-maʿād*, (1984), 152.5–153.14; *idem* (1949); *idem*
(1986), 52 n. 87. Some scholars reduce Avicenna's classification to four categories
of soul, e.g., Peter Heath (1992), 68–9; see Michot's forthcoming translation in the
Journal of Islamic Studies.
[25] Carl Brockelmann (1938–1949), 428–9 (no. 12) and Supp. I, 762–3 (no. 12).
[26] Faḫr ad-Dīn ar-Rāzī, *Lubāb al-Išārāt* (1959), 171–282; also see J. Michot (1987).
[27] Brockelmann (1938–1949), I, 768–9 (no. 21a) and Supp. I, 508 (no. 21a).
[28] Naṣīr ad-Dīn aṭ-Ṭūsī, *Šarḥ al-Išārāt* in Avicenna, *al-Išārāt* (1994).
[29] Brockelmann (1938–1949), I, 924–33 (no. 8).
[30] The earlist known Persian translation is *Tarǧamah-yi kitāb-i išārāt: qismat-i ṭabīʿyāt
va-ilāhīyāt* (1937).
[31] Brockelmann (1938–1949) I, 455 (no. 20) and 427.

of Happiness and Misery. He proceeds with his theory of *maʿād* by intro-
ducing discussions on notions of pain and pleasure, on the proper
pain and pleasure of the rational soul and on the conditions for its
attainment of the loftiest of pleasures via the perfection of both prac-
tical and theoretical faculties.[32] These various considerations on pain,
pleasure and their relationship to the rational soul determine the
type of retribution souls will receive in the afterlife. The gist of these
discussions constitutes the basis of Avicenna's own introductory remarks
to the section on *maʿād* of his *al-Išārāt* (VIII, 1–11). Rīzī then intro-
duces a sevenfold classification of souls to account for their respec-
tive posthumous happiness or misery, determined by their varying
degrees of perfection and attainment of happiness and their corre-
sponding pleasure and pain:[33]

 I. Perfect   (1)
II. Imperfect
    II.1. Imperfection through the deficiency of nature
        II.1.i. Theoretical   (2)
        II.1.ii. Practical   (3)
    II.2. Imperfect through the acquisition of something firmly estab-
        lished in the soul
        II.2.i. Theoretical   (4)
        II.2.ii. Practical   (5)
    II.3. Imperfect through the acquisition of something not firmly
        established in the soul
        II.3.i. Theoretical[34]   (6)
        II.3.ii. Practical   (7)

At the outset, Rīzī identifies the perfect souls of the very few (I) that
will experience ultimate posthumous felicity (*saʿādah*) in the form of
intellectual pleasures. They have developed both the theoretical and
the practical faculties of the rational part of their souls.[35] The major-
ity of souls, however, are (II) imperfect souls. Imperfect souls are

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[32] *Ḥayāt*, 4, 492.6–494.6.
[33] Ibid., 5, 494.16–495.2.
[34] Rīzī omits here the theoretical, although he writes that "perfection, pleasure,
and felicity of the rational soul depend on the perfection of each of the two fac-
ulties—that is, the practical and the theoretical," and adopts a two-fold division of
the rational soul; see *Ḥayāt*, 494.8–9.
[35] Ibid., 494.8–11.

divided into three basic categories, each subdivided according to their theoretical and practical faculties. Just as perfection, pleasure and felicity are achieved through the perfection of the practical and theoretical faculties of the rational soul, likewise, deficiency, pain and misery will result from an inability of souls to perfect one or both of the faculties of their rational soul.

Rīzī then presents a classification of deficient souls based on the nature of their deficiencies. A closer look at this aspect, however, reveals that Rīzī paraphrases and translates a passage from aṭ-Ṭūsī's *Šarḥ al-Išārāt* (VIII, 12). Rīzī, preferring aṭ-Ṭūsī's presentation of imperfect souls to Avicenna's, introduces aṭ-Ṭūsī's different categories and then proceeds to lay them out systematically.[36] Rīzī's dependency on aṭ-Ṭūsī's *Šarḥ al-Išārāt* is further corroborated by the translation he makes of aṭ-Ṭūsī's introductory comment on the distinction between the soul's absence of aptitude that is the result, on the one hand, of "privative" matters or, on the other hand, of "existential" matters, a distinction absent from the twelfth chapter of Avicenna's *al-Išārāt* (VIII, 12). With this distinction, aṭ-Ṭūsī attempts to account for the possession of intrinsic or extrinsic elements that determine the soul's imperfection, thus establishing a distinction between souls that are imperfect through a deficiency in their nature and souls that are imperfect through the acquisition of something that opposes their perfection. Aṭ-Ṭūsī writes: "The non-existence of [the soul's] aptitude (*'adam isti'dādihā*) is either on account of a 'privative' matter (*li-amri 'adamī*), such as the deficiency of the natural disposition of the intellect (*ka-nuqṣāni ġarīzati l-'aql*) or 'existential,' such as the existence of matters opposed to the perfections it possesses."[37] In *Ḥayāt an-nufūs*, Rīzī paraphrases aṭ-Ṭūsī in the following manner:

> The loss of perfection of the rational soul necessarily arises from the non-existence of aptitude (*'adam-i isti'dād*). And the non-existence of its aptitude is either because of a 'privative' matter (*amrī-yi 'adamī*), such that someone's intrinsic nature (*dar aṣl-i fiṭrat-i ḫūd*) was afflicted with a deficient aptitude (*nāqiṣ-i isti'dād*) or because of an 'existential' matter (*amr-i wuǧūdī*), such that matters that are opposed to perfections (*muḍādd-i kamālāt*) occurred in the soul.[38]

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[36] Ibid., 494.12–495.8; *Šarḥ al-Išārāt*, 4:28.13–29.13.
[37] *Šarḥ al-Išārāt*, 4:28.14–16.
[38] *Ḥayāt*, 494.12–16.

Rīzī who had first appeared to propose a novel explanation, different from Avicenna's *al-Išārāt*, was, in fact, relying on aṭ-Ṭūsī's commentary. I have not been able to find similar passages in Suhrawardī's works. Rīzī then continues to follow aṭ-Ṭūsī's classification of imperfect souls. The first category of imperfect souls (II.1) corresponds with souls that have a deficiency in their nature (*fiṭra*), which he also identifies as a deficiency of their natural disposition (*nuqṣān-i ġarīzah*).[39] These souls will never resurrect (*bar naḥīzad*), on account of the innate deficiency of their rational soul, whether theoretical (II.1.ii) or practical (II.1.ii), although these souls will not suffer any punishment (*ʿaḏāb*).[40] These are the souls Avicenna believed would eventually cease to suffer, for instance, where he writes, "that vice which is due to extrinsic attachments is removed after the separation, and suffering due to it does not endure."[41] In the same chapter (VIII.12), Avicenna wrote that what is from "a soul's vice, which belongs to the genus of the deficiency of preparation for the perfection that is hoped after the separation, is not imposed."[42] Rīzī strategically disregards these comments on account of their abstruse nature and chooses to follow aṭ-Ṭūsī's commentary, where he identified the deficiency of the natural disposition (*nuqṣāni l-ġarīzati*) as two-fold. Aṭ-Ṭūsī had noted that when this deficiency occurs in the two parts of the rational soul (practical and theoretical), "then it is not imposed after death," adding that, "because of it, there will be no punishment (*taʿḏīb*)."[43] Is this the absence of resurrection to which Rīzī alludes? Perhaps, but nowhere does Avicenna nor aṭ-Ṭūsī (in VIII, 12) allude to the inability of these souls to resurrect. Rīzī assumes that the innate character of their double deficiency does allow for the possibility of *maʿād*. He does, however, mention that these souls will not suffer, presumably in the hereafter, which thus raises the specter of a contradiction.

After making brief remarks about the two other major categories of imperfect souls, Rīzī introduces a discussion of simple souls (*sāda*) also found in Avicenna (VIII, 16),[44] who noted that:

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[39] Ibid., 494.17.
[40] Ibid., 490.4–6.
[41] *al-Išārāt*, 4:29.1–3; tr. Inati, 75–6.
[42] Ibid., 4:28.9–10; tr. Inati, 75.
[43] *Šarḥ al-Išārāt*, 4:29.9–10.
[44] These may be the souls that aṭ-Ṭūsī identifies as "simple" (*sāḏiǧ*); see *Šarḥ al-Išārāt*, 4:31.6–20.

> If the pure (*salīma*) souls that are left to their nature (*fiṭra*) and that have not been stiffened by interactions with the hard, earthy things hear a spiritual call (*ḏikr rūḥānī*) indicating the states after the separation, they will be overcome by a desire whose cause is not known and will be stricken by a strong love accompanied by a joy-causing pleasure.[45]

Unsatisfied with a mere translation of *al-Išārāt* or aṭ-Ṭūsī's commentary, Rīzī rephrases the implications for simple souls that an absence of awareness of their proper perfection entails. He explains that these simple souls do not possess an "imprint" (*dar ū naqš nabūd*) in them—an echo of aṭ-Ṭūsī's commentary—thus, making it impossible for them to possess any type of desire (*šawq*) to attain their proper perfection.[46] To desire one's own proper perfection, one must know what constitutes one's own proper perfection. Unaware (*āgāh nabūd*) of what constitutes their proper perfection, these souls are thus unable to be aware of that which would be in agreement with their perfection and, therefore, they do not seek to attain it. Lacking a desire for perfection, these souls cannot suffer, since pain arises out of the inability to attain what is pleasurable. Since these souls are not aware that a given thing is their proper perfection, they do not aspire to attain it. Consequently, their particular inability to attain their perfection will not cause them to suffer (*ʿaḏāb*).[47] This is true, whether it results from the deficiency of their rational soul's theoretical or practical faculties. Rīzī renders the gist of the logical implication of an absence of awareness of what constitutes one's proper perfection, following Avicenna's statement that "the vice of deficiency harms only the soul that desires perfection."[48] This discussion may constitute Rīzī's contribution to what appears to be, on the whole, a rather Avicennan theory of *maʿād*.

The second category of imperfect souls (II.2) corresponds with souls that have acquired something *firmly* established (*rāsiḫ*) in them that is opposed to their perfection. This category and the next one correspond with aṭ-Ṭūsī's classification of Avicenna's posthumous souls that possess an "existential" deficiency that opposes their perfection: "These are either *firmly* established (*rāsiḫ*) or *not firmly* established (*ġayr rāsiḫ*) [in them]."[49] Rīzī adopts aṭ-Ṭūsī's understanding

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[45] *Al-Išārāt*, 4:34.3–6; tr. Inati, 77.
[46] *Šarḥ al-Išārāt*, 4:34.11.
[47] *Ḥayāt*, 495.18–26 and 495.4–6.
[48] *Al-Išārāt*, 4:30.3–4; tr. Inati, 76.
[49] *Šarḥ al-Išārāt*, 4:28.17–9.

of what Avicenna's discussion implies in terms of classification of posthumous souls. Rīzī even translates aṭ-Ṭūsī's example of imperfect souls that have now acquired something *firmly* established in them with respect to (i) their theoretical faculty (II.2.i) and that correspond with the souls of those who suffer from compounded ignorance (*ǧahl murakkab*). He omits aṭ-Ṭūsī's remark that this compounded ignorance is something opposed to certitude (*yaqīn*) and that it creates a form (*ṣūra*) in the soul that is not separated (from the world of matter). Rīzī, however, agrees with aṭ-Ṭūsī that these souls will suffer eternally in the hereafter.[50] The example of imperfect souls that have now acquired something *firmly* established in them with respect to (ii) their practical faculty (II.2.ii) is the souls of those whose morals are not adequate on account of their strong attachment to the body.[51] These souls have acquired bad morals and habits (*aḫlāq va-malakāt-i bad*),[52] an example absent from the texts of Avicenna and aṭ-Ṭūsī. Once more, Rīzī shows himself to be, on the whole, a good translator and expositor of aṭ-Ṭūsī's *Šarḥ al-Išārāt*.

The third category of imperfect souls (II.3) is that of individuals whose souls have acquired something that is *not firmly* established in them and opposed to their perfection. This third group of imperfect souls is similarly subdivided into two groups with regards to their theoretical or practical faculties. An example of imperfect souls that have now acquired something *not firmly* established in them with respect to (i) their theoretical faculty (II.3.i) is the souls of common people (*ʿawāmm*) who hold wrong beliefs.[53] These are the souls that possess a number of qualities (*hayʾātī*) that originate in (a) bodily actions or (b) in the state of the mixture (*mizāǧ*) that belongs to the soul.[54] An example of imperfect souls that have now acquired something *not firmly* established in them with respect to (ii) their practical faculty (II.3.ii) is the souls of those whose morals are not adequate on account of an attachment to the body.[55] These souls are, in a sense, not different from the souls that have acquired something that is now firmly established in them (II.2.ii) with respect to their practical faculty. The difference lies in the intensity of the soul's attach-

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[50] *Ḥayāt*, 495.7–8; *Šarḥ al-Išārāt*, 4:29.12–3.
[51] *Ḥayāt*, 495.12.
[52] Ibid., 495.10–3.
[53] Ibid., 495.9–10.
[54] Ibid., 495.12–5.
[55] Ibid., 495.13–5.

ment to the body. These souls are affected by bad habits and bad morals.[56] The whole passage again paraphrases aṭ-Ṭūsī's commentary, where similar examples are provided.[57] In the hereafter, these souls will resurrect.[58] There are, however, varying modes of resurrection, such that some souls will resurrect sooner, others later, following their varying degrees of "rootedness" in the body.[59] What is here implied is that the greater the attachment to the body, the longer it will take for resurrection to occur. Rīzī does not, however, discuss the conditions for the elimination of the soul's material attachments in the afterlife.

Rīzī then classifies the different souls that do acknowledge the existence of their proper perfection. This knowledge is, however, not self-evident (or *a priori*) (*badīhī*), but must be acquired. He argues that souls that do not acquire any type of perfection acquire its opposite, while souls that do not acquire the opposite of perfection will necessarily either recognize some aspect of perfection or they will not. He then divides these souls into three categories.[60] Individuals belonging to any of these three categories will suffer because of their desire (*ištiyāq*) (i) for the perfection whose existence they do acknowledge and (ii) for a desire to attain that state (of perfection).[61]

Some imperfect souls, however, refuse to acknowledge the existence of their proper perfection. These are deniers of perfection (*munkirān-i kamāl*), the worst of the three. Deniers of perfection will suffer unceasing punishment (*ʿadāb*), contrary to the other two categories of imperfect souls that do acknowledge the existence of their proper perfection.[62] There are souls that acknowledge the existence of perfection, but that are preoccupied by something that prevents them from attaining (*ḥuṣūl*) that perfection; they, therefore, do not acquire (*iktisāb*) it.[63] These are distracted souls that turn away (*muʿriḍān*) from perfection, although, in the hereafter, their pain will, at one point, cease (*munqaṭiʿ*).[64] Finally, there are souls that acknowledge the

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[56] Ibid., 5, 495.10–3.
[57] *Šarḥ al-Išārāt*, 4: 29.17–30.18.
[58] *Ḥayāt*, 495.12–3.
[59] Ibid., 495.15–17.
[60] Ibid., 495.27–496.11.
[61] Ibid., 496.12–13.
[62] Ibid., 496.6–15.
[63] Ibid., 496.7–9.
[64] Ibid., 496.13–14.

existence of perfection, but which are heedless and unconcerned with
perfection. These are the negligent (*muhmilān*) souls that will not attain
any degree of perfection, on account of their laziness (*kasal*),[65] although
their pain will, at one point, cease. For Rīzī, souls that acknowledge
the existence of their proper perfection, but that have not sought
this perfection, will eventually be able to overcome their inability to
turn towards their perfection (*tā rasīdan bi-dān ḥāl*) in the afterlife.[66]

A quick look at *al-Išārāt* reveals that Avicenna uses the same dis-
tinction and identifies these souls as "ungrateful" (*ǧāḥidīn*), "negligent"
(*muhmilīn*), and "distracted" (*muʿriḍīn*).[67] Rīzī uses the term "deniers"
(*munkirān*) where Avicenna and aṭ-Ṭūsī had used "ungrateful" (*ǧāḥidīn*).
One may only speculate that the latter term might not have been
common in Persian at the time. Rīzī's threefold distinction originates
from *al-Išārāt*, where Avicenna writes:

> Know that the vice of deficiency (*raḏīlat an-nuqṣān*) harms only the soul
> that desires perfection. This desire is a consequence of the alertness
> (*tanbīh*) that is the product of acquisition (*iktisāb*). The unalert (*bulh*) are
> not touched by this suffering (*ʿaḏāb*); rather, [this suffering] belongs
> only to the ungrateful (*al-ǧāḥidūn*), to the negligent (*al-muhmilūn*), and
> the distracted (*al-muʿriḍūn*) who shy from the truth that is given to them
> with clarity. Thus, unalertness (*balāha*) is closer to salvation than is
> sharp discernment.[68]

Rīzī proceeds with the following objection. Souls that deny perfec-
tion (*munkirān*) and that have acquired the opposite of perfection *must
not* suffer any punishment (*ʿaḏāb*), because, at the time of separation
from their bodies, either (i) the false beliefs (*iʿtiqādāt-i bāṭil*) these souls
hold will be removed from the soul, in which case, they will not
suffer in the afterlife, or (ii) the false beliefs they hold will not dis-
appear, in which case, they will not be informed of their own
deficiency, having denied their own proper perfection, just as was
the case before their separation from their bodies, and so will not
suffer.[69] In both cases, the objection opens the possibility of some
sort of felicity for souls that deny their proper perfection. Again, a
comparison of Rīzī's *Ḥayāt an-nufūs* with Avicenna's *al-Išārāt* is instruc-

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[65] Ibid., 496.10–11.
[66] Ibid., 496.13.
[67] *Al-Išārāt*, 4:31.1–2; tr. Inati, 76; *Šarḥ al-Išārāt*, 4:31.19.
[68] *Al-Išārāt*, 4:30.3–31.3; tr. Inati, 76.
[69] *Ḥayāt*, 496.16–21.

tive. Ar-Rāzī presents a similar objection in his *Šarḥ al-Išārāt*, which is reported in aṭ-Ṭūsī's commentary:

> [Faḫr ad-Dīn ar-Rāzī] objected that, when souls, which possess false beliefs and are firmly convinced that they are truths, separate from the bodies, [i] it is possible that that firm conviction vanish from them, so that the disappearance of [these] false beliefs from them may equally be possible. At that moment, they become part of those who experience felicity (*ahl as-saʿāda*). And [ii] if it is impossible [that the firm conviction vanish], they do not possess an awareness (*šuʿūr*) of their deficiency, similar to [their unawareness] before death, and they, therefore, are not desiring (*muštāqa*) and suffering (*mutaʿaddiba*) [after death].[70]

Even more interesting is the refutation that aṭ-Ṭūsī provides against ar-Rāzī's objection, since it further confirms Rīzī's dependence on *al-Išārāt*.[71] Rīzī proposes the following refutation of the objection. The pleasure of "perfect"[72] souls is related to their contemplation (*mušāhada*) and attainment (*rasīdan*) of that which they know are causes of pleasure, because—following what Rīzī has mentioned earlier regarding pleasure (most of it from the first sections of *al-Išārāt*, VIII)—pleasure is "the perception (*idrāk*) and the attainment (*wuṣūl*) of the perfection of that which perceives (*mudrik*)." This being the case, every soul that possesses false beliefs and is resolute in attaining the reality (*ḥaqīqa*) of those false beliefs will inevitably be unable to attain the false beliefs it holds. The soul will always be expecting to attain them, so that its inability to obtain, and in this particular case, even false beliefs, will necessarily lead the soul to suffer eternally.[73] Rīzī's refutation consists of a paraphrase of aṭ-Ṭūsī's own refutation whose commentary goes as follows:

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[70] *Šarḥ al-Išārāt*, 4:32.8–12.

[71] Aṭ-Ṭūsī's text also elucidates an obscure sentence in Dānišpažūh's edition of *Ḥayāt an-nufūs*. The first sentence of Rīzī's account of what is, in fact, aṭ-Ṭūsī's refutation of ar-Rāzī's objection, only makes sense once an enigmatic "*kābilah*" is compared with aṭ-Ṭūsī's Arabic text. The term could be read "as simple-minded" individuals (*ablah*), but only by taking the "k" to refer to a hypothetical Arabic comparative particle, something of an aberration in a Persian text. The simplest solution is to replace this enigmatic term with the term "*kāmila*" that is found in aṭ-Ṭūsī's commentary.

[72] Here, the reading from aṭ-Ṭūsī's *Šarḥ al-Išārāt* is the correct reading; see previous footnote. Dānišpažūh's edition reads as follows: "*gūʾīm kih laddat-i nufūs-i kābilah bih mušāhadah va-rasīdan-i bi-dānčih ū dānistah buvad, az asbāb-i laddat buvad, čih dar laddat guftīm kih idrāk va-wuṣūl bih kamāl-i mudrik buvad*"; see Rīzī, *Ḥayāt*, 496.22–4.

[73] *Ḥayāt*, 496.22–497.1.

The forms of intelligibles are represented (*tatamaṯṯalu*) in perfect souls, according to what is appropriate for them. They only experience pleasure through the contemplation (*mušāhada*) of what they have acquired (*iktasabathu*); and the awareness (*wiǧdān*) of what they perceived (*adrakathu*) is according to the aspect they have perceived. It is as if they were only possessors of a perception (*ka-annahā kānat ḏawāta idrākin faqaṭ*). They, nevertheless, become the possessors of an attainment (*ḏawāta naylin*) [of this perception], and by means of those [perceptions], their taking pleasure becomes complete. But those in which the opposite of perfection is represented, believed that they were a perfection, and desired to attain that which they perceived, they inevitably will lose, after death, what they had desired [in this life]. They become frustrated and suffer (*muta'aḏḏiba*) because of the loss of what they wished to attain, and not because of the disappearance from them of their firm conviction.[74]

The opening sentence of the sixth part (*faṣl* 6) of the section on *ma'ād* titled "The Explanation of the State of the Essence of Mystics" (*ḏāt-i 'ārifān*) corresponds with a passage from Avicenna's *al-Išārāt* (VIII, 14). In this chapter, Avicenna discusses the possibility for individuals that are beyond imperfection to experience pleasure before death and the separation of the soul from the body. When these souls experience this ultimate pleasure, "they reach the world of the divine and of happiness, and the highest perfection is engraved in them; they achieve the highest pleasure."[75] Rīzī notes that individuals who attain both practical and theoretical perfection, most likely in this world, are called accomplished mystics and are the ones whose souls have separated from their bodies, all at once, being attracted by the world of the divine, in a fashion similar to Avicenna's mystics (*al-'ārifūn al-mutanazzihūn*).[76] Rīzī, however, adds the following remarks about the knowledge achieved by these mystics that seem to depart from the corresponding passage from *al-Išārāt* (VIII, 14):

Know that when the souls of accomplished mystics (*vāṣilān-i 'ārif*), i.e., that group that is perfect with regards to the theoretical faculty and with respect to the practical faculty, are, all at once, separated from the body, they are attracted to the world of the divine (*quds*), because when human beings reach "certain knowledge" (*'ilm al-yaqīn*), while the attachment of the ruling soul with the body persists, once that relation [between soul and body] disappears, they reach the stage of "expe-

[74] *Šarḥ al-Išārāt*, 4:32.13–7.
[75] *Al-Išārāt*, 4:32.4–6; tr. Inati, 77.
[76] *Ḥayāt*, 497.3–5; *al-Išārāt*, 4:32.4; tr. Inati, 77; *Šarḥ al-Išārāt*, 4:32.20–33.12.

rienced certitude" (ʿayn al-yaqīn). And "experienced certitude" means the contemplation (mušāhada) of the forms of intelligibles. And that contemplation becomes very difficult (mutaʿaḏḏir) without becoming attracted, all at once, to the world of the divine. In that state, they inevitably attain tremendous pleasure and complete delight (ibtihāǧ).[77]

Rīzī's introduction of the Qur'anic concepts of "certain knowledge" (ʿilm al-yaqīn) and "experienced certitude" (ʿayn al-yaqīn) is not, in itself, an original departure from Avicenna's text.[78] Aṭ-Ṭūsī uses the phrases in an earlier discussion in al-Išārāt (VIII, 8) on the need of experience for producing desire for pleasure or avoidance of pain:

> Knowledge of that which is to be contemplated cannot go beyond the level of contemplation (mušāhada). It is for this reason that it is said, "the report is not like the examination (muʿāyana)," the level of 'certain knowledge' (ʿilm al-yaqīn) has been achieved without the level of 'experienced certitude' (ʿayn al-yaqīn).[79]

Aṭ-Ṭūsī goes on to note that those who are able to experience such contemplation (ahl al-mušāhada) identify the attainment of intellectual pleasure as a "taste" (ḏawq), which Rīzī omits.[80] The last sentence of the passage from Ḥayāt an-nufūs cited above, although absent from Aṭ-Ṭūsī's commentary here, might in fact come from a later passage of his commentary (VIII, 14).[81]

Following this passage, we see another correspondence between Ḥayāt an-nufūs and al-Išārāt (VIII, 15). Here Avicenna discusses the possibility of experiencing pleasure, while the soul is still in the body, through both the exertion of contemplation of the world of ǧabarūt and the detachment from worldly preoccupation.[82] Rīzī stops to follow the discussion of this chapter (VIII, 15) and writes:

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[77] Ḥayāt, 497.3–10.

[78] In the Qur'an one reads: "Nay, were ye to know with certainty of mind (ʿilm al-yaqīn) [Ye would beware!] Ye shall certainly see Hell-fire. Again, ye shall see it with certainty of sight (ʿayn al-yaqīn)," (102:5–7). Oddly enough, the passage (and the following) does not allude to the third Qur'anic term that one would expect to find, especially within the Sufi tradition, "And burning in Hell-fire. Verily, this is the very truth and certainty (ḥaqq al-yaqīn)" (56:94–5); translations from Tarǧamat maʿānī l-Qurʾān al-Karīm, tr. ʿAbd Allāh Yusūf ʿAlī (Beirut: Dār al-ʿArabīya li-ṭ-Ṭibāʿa wa-n-Našr wa-t-Tawzīʿ, 1980).

[79] Šarḥ al-Išārāt, 4: 20.10–12.

[80] Ibid., 4:20.12–14.

[81] Ibid., 4:33.13–14.

[82] Ḥayāt, 497.11–4; al-Išārāt, 4:33.3–6; tr. Inati, 77. No similar discussion about the world of ǧabarūt was found in aṭ-Ṭūsī's commentary.

It is possible that complete knowledge occurs by means of the exis-
tence of a pleasure, but because they have not had a 'taste' (*dawq*) of
that pleasure, there is no desire (*šawq*) for it, just like the impotent
(*ʿanīn*) who, because he has never had a sexual union, never desired
it. Likewise, it is possible that complete knowledge occurs through the
existence of pain, but because they have not experienced pain, they
will not be cautious (*iḥtirāz*) of [such harm], just like someone who has
not been afflicted with anything, will abstain (*parhīz kardan*) from the
causes of 'certain knowledge' and be informed of 'experienced certitude.'[83]

Once more, Rīzī returns to an earlier discussion from *al-Išārāt* (VIII,
8) and starts with a paraphrase of Avicenna, who writes:

It may be that one can affirm (*iṯbāt*) a certain pleasure with certainty,
but if the notion called 'taste' (*dawq*) does not occur, it is permissible
for us not to find desire for [this pleasure]. Similarly, it may be that
one can affirm (*ṯubūt*) a certain harm with certainty, but if the notion
called 'being subject to suffering' (*muqāsāh*) does not occur, it is per-
missible not to be [highly] cautious (*iḥtirāz*) of [this harm]. An exam-
ple of the former is the state of [pleasure of] sexual union with respect
to one in the state of natural impotence (*ʿinnīn*). An example of the
latter is the state [of suffering] from fever with respect to one in the
state of not having been subject to fever (*ḥummīya*).[84]

Rīzī presents a similar idea of the relationship between knowing and
experiencing, and pleasure or pain. He provides the same example
of the impotent's lack of knowledge of what constitutes a sexual
union, because of his inability to actually have such an experience.
Avicenna's example of fever on the actual experiencing of pain is
replaced in *Ḥayāt an-nufūs* with the example of sickness or deep
anguish. On the whole, Rīzī does not depart from *al-Išārāt*, but only
provides some explanations at the end of the passage that, in fact,
may not add much to the discussion on account of their obscure
nature. He merely inserts earlier discussions to explain further the
nature of pleasure which he discussed at the beginning of the sec-
tion on *maʿād*, following Avicenna's presentation.

In the seventh part (*faṣl* 7) of the section on *maʿād* titled "The
Explanation of the Pleasure of Pure (*sādiǧ*) Souls," Rīzī once more
reverts to *al-Išārāt* and its commentary (VIII, 16 and 17). The opening

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[83] *Ḥayāt*, 497.16–22.
[84] *Al-Išārāt*, 4:19.9–20.2; tr. Inati, 73.

sentence is a paraphrase of Avicenna's opening sentence (VIII, 16),[85] but Rīzī quickly returns to a discussion of the world of the divine:

> When pure souls, which have remained close to their original nature (*fiṭrat-i aṣlī*) and in which there remains no more material matters and false beliefs, remember the world of the divine (*quds*) and the world of *malakūt*, inevitably, a desire and a state (*ḥāl*) that is near unconsciousness occurs to them, such that there is no cause for this [particular condition] and they discover a pleasure-filled blindness, and such that in that state they become stupefied. The cause of this situation is that they are [in contact] with the world of the divine; and that state is, for some, the biggest inciter to pay attention (*tavaǧǧuh*) to the world of the divine.[86]

In this passage, Rīzī proposes an explanation of pure souls in line with Avicenna's discussion that is, most probably, a paraphrase of Avicenna's earlier discussion on simple souls already quoted.[87] Rīzī then notes two divergent opinions regarding the state of simple souls after their separation from the body. Again, he reverts to aṭ-Ṭūsī's commentary, reproducing the two views on the posthumous fate of the rational part of simple souls and their enduring ability to perceive after their separation from the body. The first view holds that the faculty responsible for representation is annihilated with the annihilation of the body, a position that the thesis of the survival of the rational soul refutes.[88] The second view is that these souls continue to exist, but without suffering from the severance of the causes of their affliction, a view corroborated by a tradition (*ḫabar*) that states that "most people in heaven are simple souls (*bulh*)," a tradition that Rīzī omits.[89] On the whole, Rīzī only translates and paraphrases these two views.

Rīzī continues to follow the discussion of *al-Išārāt* with a passage on transmigration (*tanāsuḫ*). His presentation is quite short, omitting most of aṭ-Ṭūsī's analysis of the different possibilities regarding the posthumous fate of souls, whose faculty of imagination must somehow

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[85] *Ḥayāt*, 497.24–25; *al-Išārāt*, 4:34.3–4; tr. Inati, 77; *Šarḥ al-Išārāt*, 4:34.11–12.
[86] *Ḥayāt*, 497.24–498.5.
[87] What Inati translates as "they will be overcome by a desire" could well correspond with Rīzī's "a desire and the state that is near unconsciousness occurs to them"; cf. *al-Išārāt*, 4:34.3–6.
[88] *Ḥayāt*, 498.7–11; *Šarḥ al-Išārāt*, 4:36.6–9.
[89] *Ḥayāt*, 498.12–20; *Šarḥ al-Išārāt*, 4:36.10–18.

survive to allow them to experience pain and pleasure associated
with retribution. Rīzī succinctly presents the two possible conditions
that guarantee that souls continue to have posthumous representations
(discussed at length by aṭ-Ṭūsī).[90] The first possibility is that souls
can attach themselves to a "body" that may be "itself another soul."
Rīzī alludes to a traditional transmigration theory, allowing the pas-
sage of the soul from a human body to the body of other animals,
in order that the imaginative faculty may survive and play its role
in the posthumous life of the soul. This is the theory traditionally
rejected by the Islamic tradition. The second possibility is that souls
may attach themselves to "a body among the celestial bodies."[91] Aṭ-
Ṭūsī mentions, in addition to al-Išārāt, that Avicenna had alluded to
this solution in his al-Mabdāʾ wa l-maʿād, a solution Suhrawardī adopts
and develops.[92]

Rīzī then introduces a discussion of unrighteous (fāsiq) and evil
(šarīr) souls and their relationship to the world of the divine, which
does not appear to follow the rest of the chapter of al-Išārāt (VIII,
17). The discussion shares similarities with the next chapter of al-
Išārāt (VIII, 18) that also discusses (at the outset) the two sources of
evil (šarr). On the whole, though, this section of Ḥayāt an-nufūs, espe-
cially with the introduction of two questions and two answers on
behavior and bad morals, resembles discussions found in Suhrawardī's
at-Talwīḥāt and its prevalent question and answer structure.[93] Moreover,
a similar discussion in at-Talwīḥāt immediately follows Suhrawardī's
own discussion on transmigration, a possible logical addendum for
Rīzī to include in his philosophical compendium. On the whole,
Rīzī appears to be here less faithful to Suhrawardī's texts in terms
of translation. He prefers to present a clearer paraphrase, summa-
rizing the essential points, and linking ethics with eschatology.
Unfortunately, the end of the seventh part is incomplete due to a
missing folio in the manuscript used by Dānišpažūh for his edition.

At the outset of the section on maʿād, Rīzī noted that the chapter
on the "Explanation of Pleasure and Pain" contains eight parts (fuṣūl),
but the edition does not have an eighth heading. Like the ending

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[90] Ḥayāt, 498.19–26; al-Išārāt, 4:37.1–39.3; tr. Inati, 78; Šarḥ al-Išārāt, 4:35.15–40.22.

[91] Ḥayāt, 498.20–26.

[92] Al-Išārāt, 4:32.1–3; tr. Inati, 78; Šarḥ al-Išārāt, 4:36.20; Avicenna, al-Mabdāʾ wa-
l-maʿād (1984), 115.5–8; cf. at-Talwīḥāt, 90.9–19.

[93] Ḥayāt, 498.27–499.27; at-Talwīḥāt, 82.10–83.3.

of the previous part, the beginning of this part is missing, so that one can only speculate as to what constituted its beginning by reconstructing the whole based on the remaining edited text. It seems likely that the missing folio consisted of a paraphrase of the whole section on the intelligible substance of the human soul and its stages found in aṭ-Ṭūsī's *Šarḥ al-Išārāt* (VIII, 18); for the edition begins anew with the middle of the third of the five stages identified by aṭ-Ṭūsī, with Rīzī providing examples of his own.[94] That is to say that the missing folio probably contained a discussion of the first, second and the beginning of the third stage of the human soul. On the whole, Rīzī's discussion of the stages of the soul does not depart much from the content of aṭ-Ṭūsī's commentary. Rīzī does not propose a novel interpretation, but only a few explanations and examples, which are almost always taken from aṭ-Ṭūsī's text. Rīzī then concludes his discussion on *maʿād* in a manner similar to Avicenna's *al-Išārāt* with a second section on the "stations of mystics" or of true seekers of knowledge (*maqāmāt-i ʿārifān*).[95]

The Persian Philosophical Tradition

The comparison of a number of passages from the works of Rīzī, Avicenna, Faḫr ad-Dīn ar-Rāzī and Naṣīr ad-Dīn aṭ-Ṭūsī has, in fact, demonstrated that Rīzī's notion of *maʿād* in *Ḥayāt an-nufūs* depends on the Avicennan tradition and, more specifically, on *al-Išārāt* and its well-known commentaries by ar-Rāzī and aṭ-Ṭūsī. At this stage, although these partial findings regarding the theory of *maʿād* cannot be generalized to the whole *Ḥayāt an-nufūs*, they clearly show Rīzī's debt to the Avicennan tradition with regards to his theory of *maʿād*, his access to Avicenna's *al-Išārāt* and, more specifically, his access to the commentaries of ar-Rāzī and aṭ-Ṭūsī. Rīzī's theory of *maʿād* does not display much of the anticipated Illuminationist hallmark, whether in terminology or in its eschatological structure, thus dispelling Dānišpažūh's claim to an Illuminationist/Suhrawardian influence. I am confident that further comparative studies of these different works will undoubtedly yield similar results with respect to other philosophical issues included in *Ḥayāt an-nufūs*.

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[94] *Ḥayāt*, 500.12–21; *Šarḥ al-Išārāt*, 4:41.8–45.5.
[95] *Ḥayāt*, 501.8–515.2; *al-Išārāt*, 4:47.1–110.4; tr. Inati, 81–91.

At the outset of *Ḥayāt an-nufūs*, Rīzī remarks that he seeks to dis-
cuss and present the most complete Persian philosophical work.[96] His
remark may provide the clue to the composition of the work and
may account for the fact that Rīzī is satisfied with the insertion of
translated and paraphrased passages into Persian taken from a num-
ber of Arabic sources. In the section on *maʿād*, he does this with the
Arabic works of Avicenna and Suhrawardī, as well as the Arabic
commentaries of Faḫr ad-Dīn ar-Rāzī and Naṣīr ad-Dīn aṭ-Ṭūsī on
Avicenna's *al-Išārāt*. *Ḥayāt an-nufūs* may only have been intended as
a compendium of philosophical ideas, but written in Persian. This
may account for the fact that Rīzī presents a rather classical theory
of *maʿād*. It may also account for the fact that he does not appear
to be overtly concerned with originality or with the presentation of
a genuine synthesis. This is most evident in the structure of the sec-
tion on *maʿād* that does not depart significantly from the presenta-
tion of *al-Išārāt*, with the exception of his use of aṭ-Ṭūsī's earlier
discussions (VIII, 8) in a later discussion (VIII, 14 and 15).

Rīzī may not have presented an original theory of *maʿād*, but *Ḥayāt
an-nufūs* is an important work belonging to the Avicennan tradition.
Rīzī's work is most probably one of the first Persian renditions of
Avicenna's *al-Išārāt* and the accompanying commentaries of aṭ-Ṭūsī's
and ar-Rāzī's commentary. Rīzī's predilection and reliance on aṭ-
Ṭūsī's commentary should not constitute a proof that aṭ-Ṭūsī's com-
mentary was circulating independently of the original text of *al-Išārāt*;
rather, this fact may well indicate the state of the Avicennan tradi-
tion, more than two hundred years after Avicenna's death. Avicenna's
text was probably taught via the commentators. At this stage, it
appears that aṭ-Ṭūsī had become the authoritative voice of the
Avicennan tradition, at least, in some philosophical circles at the end
of the thirteenth century.

One question, however, remains unanswered: How did Rīzī come
to know of aṭ-Ṭūsī's commentary, if we assume that Rīzī flourished
about 679/1280, while aṭ-Ṭūsī died in 672/1274? Was Rīzī gravi-
tating to the same intellectual circles as aṭ-Ṭūsī? Or did Rīzī come
to have access to a copy of aṭ-Ṭūsī's *Šarḥ al-Išārāt*? If this were the
case, then it might have been a copy used by aṭ-Ṭūsī's pupils or,
perhaps, aṭ-Ṭūsī himself. It is unlikely that Rīzī read a Persian ver-

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[96] *Ḥayāt*, 19.18–21.

sion of aṭ-Ṭūsī's *Šarḥ al-Išārāt* given the proximity in time between the two authors. Moreover, nothing is known about the first Persian translation of *al-Išārāt*.[97] Further investigation into the Persian tradition of Avicenna's works—the translations, the commentaries, the paraphrases, the glosses, etc.—is needed before anyone can provide even provisionary conclusions on the state of the heritage of Avicennan philosophy in Persian. Still, in light of the present knowledge, Rīzī's *Ḥayāt an-nufūs* may represent one of the first Persian translations and paraphrases of parts—if not all, but this remains to be demonstrated—of Avicenna's *al-Išārāt* via aṭ-Ṭūsī's commentary. Rīzī might not have been an original thinker on the issue of *ma'ād*, but he certainly attempted to popularize philosophical discourse, to a large extent the Avicennan tradition, in Persian. He may not even have been a commentator in the true sense of the term, but the importance of his work as a compiler of philosophical ideas and a translator needs to be recognized.

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[97] I thank Jules Janssens for this observation. Certainly a translation could not have been done by Bābā Afḍal ad-Dīn al-Kāšānī, the most important translator of Arabic philosophical texts into Persian, since he died in 610/1213 when aṭ-Ṭūsī would have been only three years old.

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