

AVICENNA ON KNOWLEDGE

Submitted by Mohd Khairul Anam Bin Che Mentri to the University of Exeter
as a thesis for the degree of
Doctor of Philosophy in Arab and Islamic Studies
In June 2017

This thesis is available for Library use on the understanding that it is copyright material and that no quotation from the thesis may be published without proper acknowledgement.

I certify that all material in this thesis which is not my own work has been identified and that no material has previously been submitted and approved for the award of a degree by this or any other University.

Abstract

This thesis presents the first scholarly attempt to provide a systematic study—by way of rational reconstruction—of Avicenna’s philosophical analysis of knowledge. The analysis is centred on the well-known but ill-researched epistemic notions of apprehension (*taṣawwur*) and judgement (*taṣdīq*) that Avicenna consistently claims to be the necessary and sufficient conditions for anyone to be regarded as having knowledge. The study, however, begins with an account of Avicenna’s philosophical programme and its primary philosophical assumption, namely, his metaphysical realism. I argue that this assumption is the most fundamental principle from which emerge all strands of his thought and by which all his philosophical views are unified into a single philosophical system. Thus, I argue that it is with a clear view of his metaphysical realism and the broader philosophical programme which grows out of it that we can make fully sense of Avicenna’s philosophical analysis of knowledge and his epistemology in general. Bearing this in mind, I proceed with a systematic and rational reconstruction of Avicenna’s epistemic concepts of apprehension and judgement and followed then by his conception of truth (*al-haq*), which is implicit in his epistemic notion of judgement. Given that for Avicenna, as we shall see, it is only *true* judgement that can be counted as knowledge. Furthermore, a truly realist philosophical account of

knowledge, or epistemology in general, must make a contact with psychology. I provide therefore an account of Avicenna's psychological explanations of all the mental processes that involved in knowing. This includes his account of epistemic faculties—such as consciousness, sense perception, mind, and reason—and all the kinds of knowledge that these faculties yield to human beings. With the completion of my attempt at a systematic and rational reconstruction of Avicenna's philosophical account of knowledge in terms of the epistemic notions of apprehension, judgement, and truth, I close the study by way of summarising his analysis of knowledge in modern form. And, lastly, I suggest that given the fact that this thesis is the first scholarly attempt at a systematic study of Avicenna's philosophical analysis of knowledge, I should like it to be seen as a prolegomenon to develop rigorous arguments for his analysis as the basis for a tenable alternative to the traditional account of knowledge.

Acknowledgements

First and foremost, I would like to express my sincere gratitude and indebtedness to my supervisor, Professor Sajjad Rizvi, who has been a constant source of support, guidance, and encouragement throughout my postgraduate research, and who has been generous with his time, advice, and insightful comments.

I owe a special word of thanks to Professor Wilfrid Hodges, for his valuable comments on the first three chapters of the thesis. My thanks also due to Dr. Paul Lettinck, for his comments on a completely different version of thesis that I had abandoned altogether at the beginning of the third year of my postgraduate research.

My fond gratitude to Alina, my soul mate and fellow PhD student, Indra Kazemi and Bayu Rezavi, my two treasures who have been the sources of my joy while working on this research.

Finally, I dedicate this work to my mother and father, and especially to my father who is battling with a fourth stage throat cancer since three years ago. Since coming back to Malaysia almost a year ago after my study funding

has ended, all my time is devoted to completing this thesis, helping my mother taking care of my father, and doing some part-time jobs to provide financial assistance to my parents and sustenance to my little family. Now that this thesis is complete I hope I will be able to spend more time with my father, till the end of his life.

Contents

Abstract	2
Acknowledgements	4
Contents	6
Note on Translations and Abbreviations	8
Introduction	10
1. The Problem	10
2. Objective of the Study	20
3. Survey of Recent Literature	22
4. On Method	31
5. On Texts and Translation	51
5. Structure and Contents of the Study	54
1 Prelude to Analysis	58
1.1 Introduction	58
1.2 Avicenna's Philosophical Programme	59
1.3 Avicenna's Metaphysical Realism	66
1.4 A Unified System of Knowledge	101
1.5 Knowledge: Apprehension and True Judgement	131
1.6 Concluding Remarks	156
2 Apprehension	158
2.1 Introduction	158
2.2 Apprehending Propositions	160
2.3 Mind—Word—World	169
2.4 Concept and Apprehension	177
2.5 Concept and Word	210
2.6 The Epistemology of Definition	217
2.7 Concluding Remarks	235

3	Judgement	237
3.1	Introduction	237
3.2	Judgement Explained	239
3.3	Judgement and Reasoning	256
3.4	Epistemological Premisses.....	277
3.5	Concluding Remarks	289
4	Truth	292
4.1	Introduction	292
4.2	Conceptions of Truth	294
4.3	Truth-bearers	299
4.4	Truth Relation	315
4.5	Truth-makers	327
4.6	Truth, Realism, and Objectivity	341
4.7	Concluding Remarks	349
5	Ways of Knowing	351
5.1	Introduction	351
5.2	Consciousness	353
5.3	Perception—Where Mind Begins	360
5.4	Perception and Reason	369
5.5	Concluding Remarks	378
6	Conclusion: Avicenna’s Analysis of Knowledge Summarised in Contemporary Form	380
	Bibliography	388

Note on Translations

Translations from Avicenna's works are mostly (but not always) taken from existing published translations, with modifications in the rendition of technical philosophical terms to suit my own purpose in the present study. All references to the translations are indicated by the title of the translated edition in the following abbreviations.

List of Abbreviations

<i>Introduction</i>	<i>Shifā`</i> , <i>al-Manṭiq</i> , <i>Madkhal</i> . Edited by I. Madkūr. Cairo: The General Egyptian Book Organisation, 1953.
<i>Interpretation</i>	<i>Shifā`</i> , <i>al-Manṭiq</i> , <i>ʿIbārā</i> . <i>Avicenna/Ibn Sīnā, Al-ʿIbārā: Avicenna's Commentary on Aristotle's De Interpretatione, Part 1 and 2</i> . Translated by Allan Bäck. Munich: Philosophia Verlag, 2013.
<i>Demonstration</i>	<i>Shifā`</i> , <i>al-Manṭiq</i> , <i>Burhān</i> . Edited by Abū Ala ʿAffīfī. Cairo: The General Egyptian Book Organisation, 1956.
<i>Soul</i>	<i>Shifā`</i> , <i>al-Ṭabīʿiyāt</i> , <i>Kitāb al-Nafs</i> . In <i>Avicenna's De Anima (Arabic Text): Being the Psychological Part of Kitāb al-Shifā`</i> . Edited by Fazlur Rahman. London: Oxford University Press, 1959.
<i>Physics</i>	<i>Shifā`</i> , <i>al-Ṭabīʿiyāt</i> , <i>as-Samāʿ al-Ṭabīʿī</i> . <i>The Physics of the Healing</i> . translated by Jon McGinnis with Arabic edition. Provo, UT: Brigham Young University Press, 2009.
<i>Metaphysics</i>	<i>Shifā`</i> , <i>Kitāb al-Ilāhīyāt</i> . <i>The Metaphysics of the Healing</i> . Translated by Michael E. Marmura with Arabic edition. Provo, UT: Brigham Young University Press, 2005.
<i>Psychology</i>	<i>Avicenna's Psychology: An English Translation of Kitāb al-Najāt, Book II, Chapter VI</i> . Translated by Fazlur Rahman. London: Geoffrey Cumberlege, 1952.

- Deliverance* *Najāt, al-Manṭiq. Avicenna's Deliverance: Logic.* Translated by Asad Q. Ahmed. Oxford: Oxford University Press, 2011.
- Rem-Log* *Ishārāt wa al-Tanbīhāt, al-Manṭiq. Ibn Sīnā Remarks and Admonitions, Part One: Logic.* Translated by Shams C. Inati. Toronto: Pontifical Institute of Mediaeval Studies, 1984.
- Rem-Phy* *Ishārāt wa al-Tanbīhāt, al-Ṭabī'iyāt. Ibn Sīnā's Remarks and Admonitions: Physics and Metaphysics.* Translated by Shams Inati. New York: Columbia University Press, 2014.
- Rem-Met* *Ishārāt wa al-Tanbīhāt, al-Ilāhīyāt. Ibn Sīnā's Remarks and Admonitions: Physics and Metaphysics.* Translated by Shams Inati. New York: Columbia University Press, 2014.
- Dan-Log* *Avicenna's Treatise on Logic: Part One of Danesh-Name Alai.* Translated by Farhang Zabeeh. The Hague: Martinus Nijhoff, 1971.
- Divisions* "Fī Aqsām al-'Ulūm al-'Aqlīyā". *Divisions of the Rational Knowledge.* In *Tis' Rasā'il fī al-Ḥikma wa al-Ṭabī'iyāt.* Edited by Ḥasan 'Āṣī, 83-94. Beirut: Dār al-Qābis, 1986.
- Discussions* *Mubāḥathāt.* Edited by M. Bīdārfār. Qum: Intishārāt-I Bīdār, 1995.
- Notes* *Ta'liqāt.* Edited by 'Abd ar-Raḥman Badawī. Qum: Markaz-I Intishārāt-I Daftar-I Tablīghāt-I Islāmī-I Ḥawzah-I 'Ilmīyah-I Qum, 2000.

Introduction

1. The Problem

The analysis of the concept of knowledge is fundamental both to the development of an adequate philosophical system and to the understanding of knowledge in general. The present study is motivated by my doubts about the traditional analysis of knowledge as justified true belief (hereafter JTB account of knowledge),¹ which is generally believed to have its origin in Plato.² As a matter of historical fact, in 1963, Edmund Gettier has decisively challenged this account by offering two counterexamples that taught us, *au*

¹ For the purpose of introduction, I cannot go into details about this conception of knowledge. I shall, however, refer to this conception again in the remainder of this section, before discussing it at length later in Chapter 1.5.

² See Plato, *Theaetetus*, 201c-210d; F. M. Cornford, *Plato's Theory of Knowledge: The Theaetetus and The Sophist of Plato, Translated with a Running Commentary* (London: Kegan Paul, 1935), 141-61; Plato, *Meno*, 98; Plato, *Meno and Other Dialogues*, trans. Robin Waterfield (Oxford: Oxford University Press, 2005), 139. For further discussion on this conception of knowledge in Plato, see, Gail Fine, "Knowledge and True Belief in the *Meno*," in *Oxford Studies in Ancient Philosophy*, Vol. XXVII, ed. David Sedley, (Oxford: Oxford University Press, 2004), 41-81; Gail Fine, "Knowledge and Logos in the *Theaetetus*," *Philosophical Review* 88 (1979): 366-97; Myles F. Burnyeat, "Socrates and the Jury: Paradoxes in Plato's Distinction between Knowledge and True Belief, Part 1" *Proceedings of the Aristotelian Society* 54 (1980): 173-91; and Alexander Nehamas, "Episteme and Logos in Plato's Later Thought," *Archiv für Geschichte der Philosophie* 66 (1979): 93-103. As a matter of fact, this is the most preferred definition of knowledge among contemporary epistemologists such as, to name only a few, William P. Alston, *Epistemic Justification* (Ithaca, NY: Cornell University Press, 1989); Roderick Chisholm, *Theory of Knowledge* (Englewood Cliffs, NJ: Prentice-Hall, 1989[1966]); Keith Lehrer, *Knowledge* (Oxford: Clarendon Press, 1974); Keith Lehrer, *Theory of Knowledge* (Boulder, CO: Westview Press, 1990); Alvin Plantinga, *Warrant and Proper Function* (Oxford: Oxford University Press, 1993); and Ernest Sosa, *Knowledge in Perspective: Selected Essays in Epistemology* (Cambridge: Cambridge University Press, 1991).

fond, that knowledge is not a justified true belief at all. Following the attack, many philosophers have, until recently, attempted to emend the standard analysis by proposing some additional conditions for justified true belief. Yet, apparently no proposal of recent decades has actually succeeded.

This makes me think that if the traditional analysis runs into difficulties, it is worthwhile therefore to try to conceive an alternative philosophical analysis of knowledge. However, for any alternative to provide a better or even more compelling analysis of knowledge, it must, I think, be historically grounded. For epistemology without history is blind. Thus we need to know the accounts of knowledge that have been developed in the post-Platonic philosophy either as an improvement or alternative to the Socratic/Platonic account. Besides that, it is no less important to know the accounts of knowledge that have so far been offered in various philosophical traditions in different historical periods so that we could have a deeper understanding of the philosophical problem of knowledge. It is with these considerations in mind that I take up the present study on a philosophical analysis of knowledge as developed by Avicenna—the greatest medieval Arabic philosopher, who is essentially a builder of a philosophical system, a man of encyclopaedic learning who makes an attempt to combine various kinds of philosophical threads, sometimes mutually consistent, and to weave them into his own philosophical system.

Avicenna has quite a comprehensive and consistent view about human knowledge. His range of concerns include the following issues: the objects of

knowledge, the perceptual and conceptual knowledge, the branches of knowledge—the theoretical and practical knowledge—and their hierarchical order, the discursive/derivative and primary/intuitive knowledge, the mental process by which we acquire knowledge, the kind of reasoning through which we gain new knowledge from the existing knowledge, the nature and relationship between knowledge and understanding (or explanation), and the aim of human pursuit of knowledge. In other words, he takes it for granted that human beings *do* have knowledge. Avicenna's main concern, therefore, is not about the possibility of knowledge. Rather, his fundamental question is this: how to work out an analysis of human knowledge which taking into account its nature, varieties, and the mental process involved in its acquisition.

This study, however, shall specifically focus on Avicenna's analysis of propositional or factual knowledge. The sort of knowledge whose paradigmatic expression in natural language-users to the effect that someone knows something or other to be the case (*S* knows that *p*)—e.g. that the earth is spherical, that there is a world independent of human mind. Avicenna's concern here is precisely with the questions: What is factual knowledge? What constitutes human knowledge? What are the necessary or sufficient conditions that must be satisfied for someone to have knowledge, to know that something is the case, or, more precisely, to know that *p*?

In the light of these questions, I would like to suggest that Avicenna's account is *descriptive* rather than *normative*. As a matter of historical fact, classical epistemology—ancient and modern—is typically descriptive. Most

philosophers, except the sceptics, concerned themselves with such problems as: “What can be known?” “How do we know?” “What is truth?” “What is the status of concepts and propositions?” While in modern philosophy the concerns reached to the problems: “What is the difference between probable and certain knowledge?” “Is there *a priori* knowledge, and what is it?” and “How are knowledge and language related?” Some of these problems, as we shall presently see, are among the central concerns in Avicenna’s analysis of knowledge. On the other hand, epistemological debates in the twentieth century Anglo-American philosophy have taken a normative turn. Most epistemological theorists concerned primarily with the problem of justification for belief where they were trying to establish a set of rules which will regulate what we should or should not believe.³ Ironically enough, epistemic justification has replaced knowledge as the primary focus of epistemology.⁴ If that is the case, then, we may wonder why is the discipline still called *epistemology*—or the *theory of knowledge*? Why not call it *doxastology*—or the *theory of beliefs*?

Questions such like these, however, are not new—in fact, they have been around for quite a while. For, as a matter of fact, not all philosophers believed that the traditional way of defining knowledge in terms of belief is satisfactory. Following Gettier’s decisive attack in 1963, which shows that the

³ Two early representative works are Bertrand Russell, *The Problems of Philosophy* (Oxford: Oxford University Press, 1997 [1912]); and A. J. Ayer, *The Problem of Knowledge* (London: Macmillan, 1956).

⁴ Among the claims that the epistemic justification is the principal focus of traditional epistemology can be found in Chisholm (1989 [1966]); Brian Skyrms, “The Explication of ‘X Knows that *p*,’” *The Journal of Philosophy* 64 (1967): 373-89; and Richard Fumerton, *Epistemology* (Oxford: Blackwell, 2009), 12.

JTB account of knowledge is rather defective,⁵ many philosophers were prompted to search for alternative accounts of knowledge. Some philosophers, like Colin Radford, developed a variety of analyses in which it is shown that knowledge does not entail justified belief.⁶ Some others, however, tried to defend the traditional definition of knowledge in terms of belief by proposing alternative strategies for analysing knowledge in a way that does not involve justification. To name only a few: Alvin Goldman (1967) proposed a “causal theory of knowledge,” in which “S knows that *p* if and only if the fact *p* is causally connected in an “appropriate” way with S’s believing *p*,” and the “appropriate” knowledge-producing causal processes include (1) perception, (2) memory, (3) a causal chain, and (4) combinations of (1)-(3); this is followed by Brian Skyrms (1967) who—incorporating Goldman’s account—proposed a *causal relevance* condition for belief; Peter Unger (1968) put forward a *non-accidental* condition for belief: “*For any sentential value of p, a man’s belief that p is an instance of knowledge only if it is not an accident that the man’s belief is true*”; and Robert Nozick (1981) proposed a *subjunctive* or “truth-tracking” account of knowledge. Unfortunately, none of these efforts to emend the traditional JTB account of knowledge have actually succeeded.⁷ In fact, they brought about further problems, or counterexamples, which seem that the traditional JTB account of knowledge is fatally defective. This has led

⁵ This is not to mention a plethora of writings by great many philosophers who were trying to emend this definition and trying to establish the connection between justification, belief, and knowledge. See fn. 2.

⁶ See, Colin Radford, “Knowledge: By Examples,” *Analysis* 27 (1966): 1-11. His essay has stirred up a debate on this topic with responds by L. Jonathan Cohen, “More About Knowing and Feeling Sure,” *Analysis* 27 (1966): 11-16; Keith Lehrer, “Belief and Knowledge,” *The Philosophical Review* 77 (1968): 491-99; David Annis, “A Note on Lehrer’s Proof That Knowledge Entails Belief,” *Analysis* 29 (1969): 207-08; D. M. Armstrong, “Does Knowledge Entail Belief?” *Proceedings of the Aristotelian Society*, 70 (1969–1970): 21-36; and Radford’s rejoinder, “Does Unwitting Knowledge Entail Unconscious Belief?” *Analysis* 30 (1970): 103-07.

⁷ This is well documented in Michael D. Roth and Leon Galis ed., *Knowing: Essays in the Analysis of Knowledge* (New York: Random House, 1970).

some other philosophers to formulate a radically different analysis of knowledge.

In 1969, W. V. O. Quine introduced a new way of doing epistemology in his essay “Epistemology Naturalized,”⁸ where he argued that epistemology should be a chapter of psychology and hence natural science. The focus of Quine’s naturalised epistemology is primarily on the problem of how knowledge is acquired (pp. 82-3), that is, with the problem of cognition. Herein lies the fatal flaw of his idea. He proposed to rebuild epistemology with the help of psychology only under the pretext for ignoring knowledge altogether with its two fundamental problems, that is its nature and extent, which lie outside the scope of psychology and *eo ipso* should be studied independently. As a matter of fact, the problem that Quine took to be the primary object of study in his naturalised epistemology is the very problem that was and is studied in the fields of cognitive psychology and cognitive science. In one positive aspect, however, his proposal marks the return of psychology to

⁸ W. V. O. Quine, *Ontological Relativity and Other Essays* (New York: Columbia University Press, 1969), Ch. 3, “Epistemology Naturalized,” 69-90. This is followed by plenty of works until recently that argue for and against the proposal. The following selection of literature begins with the works that support and followed by the ones that critical to this idea: Stephen Stich and Richard Nisbett, “Justification and the Psychology of Human Reasoning,” *Philosophy of Science* 47 (1980): 188-202; Ruth Millikan, “Naturalist Reflections on Knowledge,” *Pacific Philosophical Quarterly* 65 (1984): 315–34; Patricia S. Churchland, “Epistemology in the Age of Neuroscience,” *The Journal of Philosophy* 84 (1987): 544–53; James Maffie, “Recent Work on Naturalizing Epistemology,” *American Philosophical Quarterly* 27 (1990): 281–93; Hilary Kornblith, *Naturalizing Epistemology* (Cambridge, MA: MIT Press, 1994), *Knowledge and Its Place in Nature*, (New York: Oxford University Press, 2002), *A Naturalistic Epistemology: Selected Papers* (Oxford: Oxford University Press, 2014); Hilary Putnam, “Why Reason Can’t Be Naturalized,” *Synthese* 52 (1982): 3–23; Jaegwon Kim, “What is Naturalized Epistemology?” in *Philosophical Perspectives, Vol. 2, Epistemology*, ed. James E. Tomberlin (Atascadero, CA: Ridgeview Publishing Co., 1988), 381–406; Laurence Bonjour, “Against Naturalized Epistemology,” *Midwest Studies in Philosophy* 19 (1994): 283–300, *Epistemology: Classic Problems and Contemporary Responses* (Rowman & Littlefield Publishers, 2002).

epistemological investigation,⁹ after the two have been divorced at the end of the nineteenth century after Frege's successful demonstration that the former is irrelevant to the problems of epistemology and philosophy.¹⁰ In this regard, I would like to repeat the truism that knowledge is the outcome of mental processes. Given the fact that no outcome is detachable from its process, it is essential that epistemology should concern with the following problems: the nature of knowledge, the extent of knowledge, and the mental process by which humans acquire knowledge. The first two problems are the proper interest to epistemology, while the third problem is not only of concern to epistemology but also to psychology. These, I suggest, are the reasons why the classical epistemologists—from Aristotle to Avicenna and the early nineteenth century—have always included psychological explanations in their accounts of knowledge. To be more explicit, epistemology without psychology is inadequate. Likewise, psychology can hardly begin without reasonably precise and correct ideas of what knowledge is.

⁹ In his essay, "The Psychological Turn," *Australasian Journal of Philosophy* 60 (1982): 238-53, Hilary Kornblith suggests that epistemology has recently taken a psychological turn. But, on broader historical view, I think, his suggestion is inaccurate given the fact that psychology (or cognition) has always been one of the fundamental problems in epistemology from Aristotle to Avicenna to the nineteenth century. The right phrase, I suggest, is the *psychological return*.

¹⁰ For further discussions of the relationship between psychology and epistemology from the end of the nineteenth century to the twentieth century see, Elliott Sober, "Psychologism," *Journal for the Theory of Social Behaviour* 8 (1978): 165-91; Philip Kitcher, "The Naturalists Return," *Philosophical Review* 101 (1992): 53-114. It should also be noted that the complete separation between epistemology and psychology came after the publication of the works of Karl Popper and Hans Reichenbach, the most influential philosophers of science in the early twentieth century, where the former argued that the key problem of epistemology is to provide a logical analysis of the growth of scientific knowledge, and the latter believed that epistemology should only concern with the *context of justification* rather than the *context of discovery*. See Karl Popper, *The Logic of Scientific Discovery* (London: Routledge, 1959 [1934]), esp. Sect. 2; and Hans Reichenbach, *Experience and Prediction: An Analysis of the Foundations and the Structure of Knowledge* (Chicago: University of Chicago Press, 1938), esp. Ch. 1.

Let me now turn to the accounts of knowledge which were conceived to overturn the traditional JTB account by taking knowledge really as the primary focus and *a fortiori* the most fundamental notion in terms of which all other epistemic notions—such as belief and justification—to be defined. The first of such accounts can be found in the works of a philosopher of science, Mario Bunge, which form a part of his plan to develop a comprehensive, systematic, and scientific philosophical system encompassing semantics, epistemology, metaphysics, and ethics.¹¹ For all that contemporary epistemologists never acknowledge his epistemological views, he is the first philosopher, I reckon, to attempt at a full-fledged philosophical account of knowledge as a tenable alternative to the JTB account. For Bunge, knowledge is a product of cognitive process such as perception, inference, reasoning, and rational inquiry (1983, 61-88). Knowledge, according to him, is different from belief, and this is evident from reflection on such cases as “S knows *P* but does not believe *P*,” and “S believes *P* although she does not really know *P*”. Nor does knowledge involve belief given the facts that: we know many things in which we do not believe, e.g. ideological doctrine; some of us profess to believe “things” which we hardly know about, such as life after death; and we frequently admit that some of our beliefs are false. Thus he maintained that knowledge is not a species of belief, nor does belief a condition for knowledge. Rather, it is knowledge a condition for justified belief. For he says, “A rational person will

¹¹ In his magnum opus *Treatise on Basic Philosophy* (8 Vols. 1974-89), in which he attempted at synthesising contemporary philosophy into a single grand system, Bunge devoted three volumes to the problem of epistemology and methodology. See *Treatise on Basic Philosophy, Vol. 5, Epistemology and Methodology I: Exploring the World* (Dordrecht: Reidel, 1983); *Treatise on Basic Philosophy, Vol. 6, Epistemology and Methodology II: Understanding the World* (Dordrecht: Reidel, 1983); and *Treatise on Basic Philosophy, Vol. VII, Epistemology and Methodology III: Philosophy of Science and Technology: Part I. Formal and Physical Sciences* (Dordrecht: Reidel, 1985), *Part II. Life Science, Social Science and Technology* (Dordrecht: Reidel, 1985). For our present concern, see *Vol. 5*.

make some effort to know a proposition before believing or disbelieving it: his beliefs are special cases of his knowledge not the other way round. Consequently instead of defining knowledge as justified belief, a rational person will define justified belief in terms of knowledge” (1983, 88).

The second account can be found in a recent effort by Timothy Williamson to develop what he sees as a new, *knowledge-first* approach to epistemology.¹² Since tremendous efforts have been devoted but none has yet succeeded in providing a convincing strategy to fix the traditional JTB account of knowledge in terms of such a mixture of conditions as justification and belief, Williamson believes that it is *prima facie* evident that no such account is possible (2000, 1-33). He thinks, therefore, that the best way to provide an appealingly simple and enlightening account of knowledge is to reverse the direction of explanation predominant in traditional epistemology. Here comes the idea knowledge-first epistemology, where knowledge is taken to be the starting point from which to explain a broad range of epistemic notions (such as belief, justification, evidence, and assertion), and not as something itself to be explained. The first thing for him to do, however, is to give a precise idea of what knowledge is. So, to begin with, Williamson defines knowledge as a *factive* mental state: *S* knows *p* only if it is the case that *p*—or to put it more precisely, *S* knows *p* only if *p* is *true*. On this account, then, knowing a fact is not something that we do; rather it is a mental state

¹² Timothy Williamson, *Knowledge and Its Limits* (Oxford: Oxford University Press, 2000). For ensuing debates on his approach see, Matthias Steup and Ernest Sosa ed., *Contemporary Debates in Epistemology* (Oxford: Wiley Blackwell, 2005), esp. Part 1; Patrick Greenough and Duncan Pritchard ed., *Williamson on Knowledge* (Oxford: Oxford University Press, 2009); and Gilbert Harmann, “Reflections on Knowledge and Its Limits,” *The Philosophical Review* 111 (2002): 417-28. See also Timothy Williamson, *The Philosophy of Philosophy* (Oxford: Blackwell Publishing, 2007).

that we have entered in relation to that fact. In other words, knowledge is the end-state culminating from cognitive processes such as perception, memory, and thinking. These results, however, are counted as knowledge on the necessary condition that they are true. Otherwise they would end up in states of ignorance. Williamson argues that it is in terms of this conception of knowledge that makes it possible to analyse other central notions in epistemology. Take, for example, belief. On his account, justified belief is not a necessary condition of knowledge, and nor does knowledge a kind of belief. On the contrary, it is knowledge, and only knowledge, that justifies belief—e.g. in any possible situation in which we believe a proposition p , that belief is justified, if at all, by some other propositions which we *know* (2000, 185).

This rather brief description, synoptic even sketchy as it is, may suffice, I hope, to point out the main ideas in their accounts of knowledge. Despite the fact that their accounts were conceived independently and with different philosophical agenda, they generally share many things in common. Unlike the JTB account of knowledge, both take knowledge as a result of cognitive or mental process. In contrast to the traditional account, both deny that knowledge is a kind of belief and justified belief is a necessary condition of knowledge. On the contrary, according to them, it is knowledge that makes a belief rational and justified. Without ruling out that there are certain problems in the details of their arguments, I believe that both accounts have succeeded to escape the Gettier problem, and therefore more capable to provide satisfactory account of knowledge in post-Gettier epistemological debates. As a matter of historical fact, however, we can actually find an analysis of

knowledge proposed by Avicenna long before there is a Gettier problem that is no less compelling and enlightening and has certain similarities with that of Bunge and Williamson. And this will emerge in the chapters that follow.

2. Objectives of the Study

As a matter of fact, Avicenna never writes a special treatise in which he expounds his formal and systematic account of knowledge in the same way that has been the practice among modern philosophers such as John Locke, George Berkeley, and David Hume.¹³ Rather, as a philosopher following the Aristotelian tradition,¹⁴ his epistemological views are put forward in a group of treatises on logic, psychology, and metaphysics. The principal objective of the present study, therefore, is to provide a rational, systematic reconstruction of Avicenna's account of factual knowledge, where the rationality of the reconstruction is essentially conceived in post-Gettier epistemological debates. This requires as well that the study should concern partly with understanding what Avicenna said about factual knowledge and partly concern with whether what he said is true.¹⁵ Of course, this is no easy task. For it needs to be found out what his views and arguments really were.

¹³ See John Locke, *An Essay Concerning Human Understanding*, ed. Peter E. Nidditch (Oxford: Oxford Clarendon Press, 1987 [1690]); George Berkeley, *Principles of Human Knowledge*, ed. Howard Robinson (Oxford: Oxford University Press, 1999 [1710]); and David Hume, *An Enquiry Concerning Human Understanding*, ed. Peter Millican (Oxford: Oxford University Press, 2007 [1748]).

¹⁴ For fuller account of Avicenna's relation to the Aristotelian tradition, see Dimitri Gutas, *Avicenna and the Aristotelian Tradition: Introduction to Reading Avicenna's Philosophical Works* (Leiden-Boston: Brill, 2014 [1988]).

¹⁵ I will, however, abstain myself from giving Avicenna too hard a time by criticising what from our contemporary point of view seems to be his weak or wrong ideas since the primary concern here is to provide a systematic and rational reconstruction of his analysis of

However, in trying to really understand what his views and arguments are about, I do not pretend somehow to be stepping out of my twenty-first century skin. For it is impossible, after all, to have the sense of reading and understanding of a text for the first time, especially one written very long time ago, and in a very different culture. This has been put very nicely in an analogy by Bernard Williams, where he says that the situation is very much like “playing seventeenth-century scores on seventeenth-century instruments according to seventeenth-century practice... does not produce seventeenth-century music, since we have necessarily twentieth-century ears” (1978, xiv). Thus, this study is intended to develop some philosophical arguments where their directions are shaped and constrained by what I take to be one of the most interesting philosophical concerns of Avicenna. The arguments, however, are in twenty first century terms; and my general interests in Avicenna are those of a student of philosophy who grows up in post-Gettier epistemological debates.

Lastly, this study is conceived with the hope to make the following contributions. Firstly, and generally, it hopes to fill the lacunae in the growing literature in the history of epistemology, where the works which study the accounts of knowledge that have been developed in medieval Arabic philosophy and their significance to the epistemological debates in

knowledge. Moreover, I think, it is a good policy not to make severe attacks on the flimsy ideas of long dead philosophers who are no longer capable of defending their positions. This is particularly true in the case of Avicenna. For, he is not only incapable of defending himself, but we cannot find any single philosopher today who will take up the task of defending Avicenna’s philosophical ideas, in the same or equal way that have been done by some contemporary neo-Aristotelian philosophers.

contemporary philosophy are, at present, definitely lacking. Secondly, and particularly, to attempt to grapple in a new way with the fundamental concepts in Avicenna's analysis of knowledge by which, I hope, it could bring about a better understanding of his epistemology and its relevance to our present-day concerns with philosophical problems of knowledge.

3. Survey of Recent Literature

Since the mid-twentieth century there has been a great deal of articles, monographs, collections of essays, and some biographies, devoted to Avicenna's life and thought.¹⁶ In the past decade the scholarly interests in him kept on growing steadily—and even more seriously. From 2000s on, for example, there appeared several volumes of collection of essays consisting of dozens of new articles about Avicenna.¹⁷ One of these volumes (Reisman and al-Rahim 2003) deals with the historical context of Avicenna's thought, where the contributions are divided into three main topics: (i) the influence of classical heritage, especially the commentary tradition, on his thought and his original syntheses out of it; (ii) the historical, social, and intellectual contexts within which he found himself and reacted to; and (iii) his influence on

¹⁶ For the lists of works which appear during this period, see Jules L. Janssens, *An Annotated Bibliography on Ibn Sīnā (1970-1989): Including Arabic and Persian Publications and Turkish and Russian References* (Leuven: Leuven University Press, 1991); Hans Daiber, *Bibliography of Islamic Philosophy*, 2 Vols. (Leiden-Boston: Brill, 1999); and Charles Butterworth, "The Study of Arabic Philosophy Today," *Middle East Studies Association Bulletin* 17 (1983): 8-24.

¹⁷ See, Jules Janssens and Daniël De Smet ed., *Avicenna and His Heritage* (Leuven: Leuven University Press, 2001); Robert Wisnovsky ed., *Aspects of Avicenna* (Princeton: Markus Weiner Pub, 2001); David C. Reisman and Ahmed H. al-Rahim ed., *Before and After Avicenna: Proceedings of the First Conference of the Avicenna Study Group* (Leiden and Boston: Brill, 2003); and Jon McGinnis and David C. Reisman ed., *Interpreting Avicenna: Science and Philosophy in Medieval Islam* (Leiden & Boston: 2004); and Peter Adamson, *Interpreting Avicenna: Critical Essays* (Cambridge: Cambridge University Press, 2013).

subsequent development of Arabo-Islamic philosophical and theological thoughts. The rest of the volumes, albeit their interests in historical context, explore further into the many facets of Avicenna's philosophy that range from psychology to epistemology, metaphysics to theology, and physics to medicine.

Furthermore, since the late 1980s the literature devoted to Avicenna's philosophy has been augmented by new books by Dimitri Gutas (1988), Lenn Goodman (1992), Robert Wisnovsky (2003), Amos Bertolacci (2006), and Jon McGinnis (2010), to name only a few. We can add to the growing corpus the books and collected volumes which explore the aspects of Arabic thought in medieval Islamic civilisation where Avicenna figures prominently— such as in the volumes edited by Shahid Rahman et. al. (2008), Anna Akasoy and Wim Raven (2008), Felicitas Opwis and David C. Reisman (2012), and Jari Kaukua (2015). In addition to these works there are frequent journal articles and special issues on his philosophy—for example, the special issue on Avicenna in the eighth volume of the journal *Documenti e studi sulla tradizione filosofica medievale* (1997), in the September 2000 issue of the journal *Arabic Sciences and Philosophy*, and in the fortieth volume of the journal, *Oriens* (2012).

Given this plethora of recent studies, added to the works by earlier generations of scholars, it is reasonable to ask: why propose to do another study on Avicenna? The answer to this question is obvious from my remarks in Section 1, and to repeat: that we can find an instance of satisfactory and

illuminating analysis of knowledge in contrast to the traditional JTB account. It is sensible still to ask, again: why propose to take up a study on the problem that should have been manifested in the many studies on Avicenna's epistemology? To this question the answer though not obvious is simple. It is true that Avicenna's epistemology is a subject of particular interest to some scholars.¹⁸ His characterisation of knowledge—as (we shall shortly see) consists of *taṣawwur* and *taṣdīq*—has time and again been mentioned by those scholars but no one, as far as I know, ever explicates its meaning and importance beyond its historical and philological origins.¹⁹ Nor do they realise the philosophical significance of Avicenna's account of knowledge in contemporary epistemological debates—since their interests are particularly in the historical contexts of his life and thought.

Some of the excellent works I have referred to above, especially by Gutas and Hasse, really take Avicenna's epistemology seriously, but in

¹⁸ To mention only a few: Dimitri Gutas, "The Empiricism of Avicenna," *Oriens* 40 (2012): 391–436; Dimitri Gutas, "Imagination and Transcendental Knowledge in Avicenna," in *Arabic Theology, Arabic Philosophy: From the Many to the One: Essays in Celebration of Richard M. Frank*, ed. James E. Montgomery (Leuven: Peeters, 2006), 337–54; Dimitri Gutas, "Intellect Without Limits: The Absence of Mysticism in Avicenna," in *Intellect and Imagination in Medieval Philosophy*, ed. M. C. Pacheco and J. F. Meirinhos (Turnhout: Brepols, 2006), 351–72; Dimitri Gutas, "Intuition and Thinking: The Evolving Structure of Avicenna's Epistemology," in Wisnovsky (2001), 1–38; Dag Nikolaus Hasse, "Avicenna's Epistemological Optimism," in Adamson (2013), 109–19; Dag Nikolaus Hasse, "Avicenna on Abstraction," in Wisnovsky (2001), 39–72; Deborah L. Black, "Certitude, Justification, and the Principles of Knowledge in Avicenna's Epistemology," in Adamson (2013), 120–42; Jon McGinnis, "Avicenna's Naturalized Epistemology and Scientific Method," in *The Unity of Science in the Arabic Tradition*, ed. Shahid Rahman et al. (Springer, 2008), 129–52; Jon McGinnis, "Making Abstraction Less Abstract: The Logical, Psychological, and Metaphysical Dimensions of Avicenna's Theory of Abstraction," *Proceedings of the American Catholic Philosophical Association* 80 (2007): 169–83; and Sari Nuseibeh, "Al-'Aql al-Qudsī: Avicenna's Subjective Theory of Knowledge," *Studia Islamica* 68 (1989): 39–54.

¹⁹ See, Harry Wolfson, "The Terms *Taṣawwur* and *Taṣdīq* in Arabic Philosophy and Their Greek, Latin and Hebrew Equivalents," *The Muslim World* 33 (1943): 114–28; Miklós Maróth, "Taṣawwur and Taṣdīq," in *Knowledge and the Sciences in Medieval Philosophy*, Vol. II, ed. Simo Knuuttila, Reijo Työriñoja and Sten Ebbesen (Helsinki: Luther-Agricola Society, 1990), 265–74; and A. I. Sabra, "Avicenna on the Subject Matter of Logic," *The Journal of Philosophy* 77 (1980): 746–64.

general their focus is elsewhere. More importantly, they have a tendency to devote almost exclusively on the problems of psychology or, to put the matter precisely, on the mental processes that lead to knowledge. In fact, most of the existing works on his theory of knowledge always begin with these problems. Thus a swift glance at these and other works will give us the impression that Avicenna's epistemology is all about psychology. While his accounts of the nature of knowledge, of what can be known, of the extent of knowledge, and, especially, of factual knowledge, are crying for careful examination in the first place. Indeed, as I intimated earlier, we cannot make fully sense of his view on cognition without firstly knowing precisely his views with regard to the problems of the nature and extent of knowledge.

In point of fact, however, this exclusively psychological approach was and is predominant in contemporary studies of Avicenna's theory of knowledge. It falls into two groups, separated by decades of silence. The first group advances what is called an *emanationist* interpretation of his cognitive psychology. There are, at least, two representative works in this line of interpretation: *Prophecy in Islam: Philosophy and Orthodoxy* by Fazlur Rahman (1958);²⁰ and *Alfarabi, Avicenna, and Averroes on Intellect: Their Cosmologies, Theories of the Active Intellect, and Theories of Human Intellect* by Herbert E. Davidson (1992).²¹ Some scholars who can possibly be said to

²⁰ See also Fazlur Rahman, "Ibn Sīna," in *A History of Muslim Philosophy*, Vol. I, ed. M. M. Sharif (Weisbaden: Otto Harrassowitz, 1963), 480-506.

²¹ See also, Herbert E. Davidson, "Alfarabi and Avicenna on the Active Intellect," *Viator* 3 (1972): 109-78. For the most recent works supporting this interpretation, see Deborah L. Black, "Psychology: Soul and Intellect," in *The Cambridge Companion to Arabic Philosophy*, ed. Peter Adamson and Richard C. Taylor (Cambridge: Cambridge University Press, 2005), 308-26; and Richard C. Taylor, "Al-Fārābī and Avicenna: Two Recent Contributions," *MESA Bulletin* 39 (2005): 180-2.

belong to this group use the same interpretation to develop an image of Avicenna as a mystic. The *loci classici* of this approach are Louis Gardet's *La pensée religieuse d'Avicenne* (1951) and Henry Corbin's *Avicenna and the Visionary Recital* (1960). Corbin, for example, claimed that Avicenna's mysticism is so profound that it "Healed beneath the tissue of [his] didactic demonstrations..." (1960, 4). This is quite an enchanting image of Avicenna and it has won a handful of proponents in the study of his philosophy that it seems to them no significance whatsoever to take his account of factual knowledge into serious consideration.²² The second group, which emerged only recently and in part as a response to the former, proposes an *abstractionist* interpretation of Avicenna's account of the cognitive process that leads to knowledge. The leading proponents of this interpretation are Dimitri Gutas, Dag Hasse, Jon McGinnis, and some other emerging scholars in the field.²³ Besides working on this new interpretation, Gutas has also almost single-handedly assumed another task of shattering the prevalent mystical image of Avicenna.²⁴

²² This image has been displayed over and over again with new arguments supported by a score of historical and textual evidences. These can be found notably in, Seyyed Hossein Nasr, *An Introduction to Islamic Cosmological Doctrines* (Cambridge: Harvard University Press, 1964), Pt. 3; *Three Muslim Sages* (Harvard: Harvard University Press, 1964), Ch. 1; "Ibn Sīna's Oriental Philosophy," in *History of Islamic Philosophy, Vol. I*, ed. Seyyed Hossein Nasr and Oliver Leaman (London-New York: Routledge, 1996), 247-51. See also, Peter Heath, *Allegory and Philosophy in Avicenna* (Pennsylvania: University of Pennsylvania Press, 1992); and Nuseibeh (1989).

²³ See fn. 17.

²⁴ See Dimitri Gutas, "Avicenna's Eastern ("Oriental") Philosophy: Nature, Contents, Transmission," *Arabic Sciences and Philosophy* 10 (2000): 159-80; and "Ibn Ṭufayl on Ibn Sīnā's Eastern Philosophy," *Oriens* 34 (1994): 222-41. And for his reflection on the scholarly approaches, including the illuminationist/mystical approach, to the study of Arabic philosophy, see Dimitri Gutas, "The Study of Arabic Philosophy in the Twentieth Century: An Essay on the Historiography of Arabic Philosophy," *British Journal of Middle Eastern Studies* 29 (2002): 5-25.

Just to lay my cards on the table at the beginning: my sympathy, to some extent, is with the abstractionist rather than the emanationist interpretation; for, I think, the scholars in this group have made interesting contributions that attempt to shed new light on some of the fundamental themes of Avicenna's theory of knowledge. Hasse (2001) and McGinnis (2007), rightly in my opinion, see the importance of his account of abstraction in certain stages of human cognition, questioning the sort of categorisation of Avicenna as an emanationist that has received its most explicit formulation in the works of earlier scholars. Their works have been augmented by Gutas (2001 and 2006) in his examination of Avicenna's account of the cognitive processes involved in acquiring knowledge. And the upshot of their works is a new emerging image of Avicenna as an empiricist. In effect, then, their primary foci on his theory of knowledge are all about psychology or cognition.

The preoccupation with the psychological aspect of Avicenna's theory of knowledge, however, is not the only shortcoming of both interpretations. The real difficulty in fact lies deeper still. It lies in the fact that both have failed to grasp the most fundamental philosophical assumption based on which Avicenna develops his epistemology in general and his analysis of knowledge in particular. The assumption in question is what may be called *metaphysical realism* or, in short, *realism*. Indeed this is the cardinal assumption upon which the whole philosophical system of Avicenna is founded upon. Yet it is the failure to recognise its role and significance in his philosophical system that, I believe, has brought about the two competing interpretations of his psychology. As a matter of fact, there is no such an opposition between

intuition and abstraction in Avicenna's realist account of mental processes that lead to knowledge. On the contrary, with their ignorance of his realism those scholars—or rather historians—have done so much to distort his image and philosophy by trying so hard to impose their own ways of thinking on him. The ways of thinking which have become prevalent since the early twentieth century that view this problem in terms of the polarity between reason and sense experience or rationalism and empiricism. The fact of the matter, however, is that the great realist philosopher like Avicenna, and Aristotle long before him, can hardly claim or imply himself to be a pure emanationist/intuitionist, abstractionist, rationalist, or empiricist.

As yet, the only scholar²⁵ who realises the fact that Avicenna is a realist is McGinnis, in his “Logic and Science: The Role of Genus and Difference in Avicenna's Logic, Science and Natural Philosophy” (2007).²⁶ There are a couple of issues, however, with this illuminating and penetrative article: first, McGinnis sees Avicenna as a *scientific realist*, which, I think, seems to be slightly a misrepresentation of Avicenna both from historical and theoretical points of view; second, due to his concern in this article (with the role of genus and differentia), McGinnis only calls Avicenna as a ‘scientific’ realist but did not explore the role and significance of realism in Avicenna's epistemology, especially in his account of factual knowledge.

Furthermore, there is another notion pivotal to Avicenna's analysis of knowledge but has completely been neglected in the past hundred years of

²⁵ The best that we can find in the earlier works on Avicenna is Fazlur Rahman's (1963) mentioning *en passim* that Avicenna is a realist about perception.

²⁶ See also, McGinnis, *Avicenna*, 28.

scholarship on his philosophy and epistemology. The notion that I have in mind is his notion of *truth*. As a matter of historical fact, the problem of truth has been one of the main philosophical preoccupations among philosophers over the last hundred years given its centrality in contemporary philosophy of language, formal modal theory, and epistemology. But, within the same period, we do not find a single article devoted to Avicenna's conception of truth as if he has nothing to say about it or it has no significance whatsoever in his philosophy. The best that we can find is this: it has been touched upon superficially in an article "Al-'Aql al-Qudsī: Avicenna's Subjective Theory of Knowledge" by Sari Nuseibeh (1989), where he tries to show that Avicenna is a mystic and that all human knowledge, for Avicenna, is based on faith rather than rational inquiry. In so doing Nuseibeh undermines Avicenna's realism and his realist conception of truth. The upshot of his misrepresentation, in addition to his image of Avicenna as a mystic, is Avicenna as a subjective idealist to whom there is no factual knowledge at all and therefore the whole knowledge of this world is nothing but a fancy creation of his own mind. Until now, after more than twenty years of its publication, no one ever takes up the task of refuting this interpretation. This might be due to the following reasons: first, either no one took his work seriously; or, second, no one ever recognised Avicenna's realism and his realist conception of truth.

So, to date, we have seen a handful of books dedicated to Avicenna. To this literature we can add a growing number of articles, most of them written in the past decade, whose focus is on many aspects of his life and thought. I should add, of course, that there is a staggering number of papers

dealing with Avicenna's epistemology, but in most of these the concentration is not upon his analysis of knowledge itself. Much of this literature either assumes that Avicenna's views are obvious and thus gives a superficial treatment of his fundamental assumption and important epistemic notions in his analysis of knowledge, or simply misrepresents Avicenna in the course of arguing some theses of special interest to the authors, many of whom are not philosophers.

This synoptic view of the works I have mentioned may, I hope, suffice to make it obvious that there is more to be said about Avicenna's account of knowledge than what we can find in the existing literature. There are, at least, two further points that can be made in support of this judgement. First, despite the fact that Avicenna's epistemology has received much attention from scholars, none of them explores it *in extenso*. Second, their ignorance of Avicenna's metaphysical realism makes those scholars completely unaware of the fact that his epistemology is a realist epistemology. A sort of epistemology that makes contact with psychology in order to explain the mental processes involved in such knowledge we claim to have (e.g., our knowledge of particulars and universals), and to show that our pursuit of knowledge of the world presupposes ontological and epistemological realism.

4. On Method

The present study is conceived as a work in the history of philosophy rather than in the history of ideas. This statement, however, needs to be filling out: it needs to be specified in detail the methodological approach adopted in this study. Before proceeding, I should confess that my preference for this approach is influenced, especially, by the writings of Bernard Williams on past philosophers and his reflection on what distinguishes the works in the history of ideas from the ones in the history of philosophy.²⁷

So, to begin with, both approaches are distinguished in terms of their directions of attention and accordingly their products. For the history of ideas, it is an historical inquiry, and its resulting work is undeniably history. In its inquiry, a work in the history of ideas naturally looks to the following directions.

²⁷ See Bernard Williams, *Descartes: The Project of Pure Enquiry* (London-New York: Routledge, 1978); and *The Sense of the Past: Essays in the History of Philosophy* (Princeton-Oxford: Princeton University Press, 2006), esp. Ch. 17, "Descartes and the Historiography of Philosophy". For further methodological discussions on the study of past philosophy, see Mogens Lærke, Justin Smith, and Eric Schliesser ed., *Philosophy and Its History: Aims and Methods in the Study of Early Modern Philosophy* (Oxford: Oxford University Press, 2013); Tom Sorell and G. A. J. Rogers ed., *Analytic Philosophy and History of Philosophy* (Oxford: Clarendon Press, 2005); Richard Rorty, J. B. Schneewind and Quentin Skinner ed., *Philosophy in History: Essays on the Historiography of Philosophy* (Cambridge: Cambridge University Press, 1984); Yves Charles Zarka, "The Ideology of Context: Uses and Abuses of Context in the Historiography of Philosophy," in *Analytic Philosophy and History of Philosophy*, ed. Tom Sorell and G. A. J. Rogers (Oxford: Clarendon Press, 2005), 147-59; A. P. Martinich, "Philosophical History of Philosophy," *Journal of the History of Philosophy* 3 (2002): 405-07; Richard A. Watson, "What is the History of Philosophy and Why is It Important," *Journal of the History of Philosophy* 4 (2002): 525-28; Margaret J. Osler, "The History of Philosophy and the History of Philosophy: A Plea for Textual History in Context," *Journal of the History of Philosophy* 4 (2002): 529-33; Michael Frede, "History of Philosophy as a Discipline," *Journal of Philosophy* 85 (1988): 666-72; Edwin Curley, "Dialogues with the Dead," *Synthese* 67 (1986): 33-49; Paul Oskar Kristeller, "Philosophy and Its Historiography," *The Journal of Philosophy* 11 (1985): 618-25; Richard H. Popkin, "Philosophy and the History of Philosophy," *The Journal of Philosophy* 11 (1985): 625-32; Maurice Mandelbaum, "The History of Philosophy: Some Methodological Issues," *The Journal of Philosophy* 10 (1977): 561-72; Quentin Skinner, "Meaning and Understanding in the History of Ideas," *History and Theory* 8 (1969): 3-53; and Paul Oskar Kristeller, "History of Philosophy and History of Ideas," *Journal of the History of Philosophy* 11 (1964): 1-14.

On the one hand, it looks horizontally to the context of a philosopher's ideas, concentrating on the intellectual, social, cultural, and personal factors that affect the way the philosopher has thought about her subject. On the other hand, it looks backward to the philosophical heritage to which she belonged or reacted to. In other words, the direction of its attention is always to the past. And its aim here is to establish the expectations, conventions, and familiarities in order to fathom what the philosopher meant in making those assertions in that particular historical situation. So, to bring this closer to home, a study on Avicenna taking up in this approach will invite us to learn about the influences of classical Greek philosophy on his philosophy, or his response to, or contact with, philosophical currents of his time.

As for the history of philosophy, it pays greater attention to a philosopher's thought—considering its logic and merit—and tries to relate it to present problems by which it could shed more light on our own philosophical conceptions and help us to question our ways of thinking and philosophical assumptions. It also looks at the influence of her thought, if any, on the development of philosophy from her time to the present. A work in the history of philosophy, then, contains primarily philosophical arguments, and it is in part historical given the distance between the past and the present. In fact, to justify its *raison d'être*, any work in the history of philosophy should keep its identity as philosophy while, at the same time, maintaining a historical distance from the present. For, according to Williams, "It is just to this extent that it can indeed be useful, because it is just to this extent that it can help us to deploy ideas of the past in order to understand our own" (2006, 259). Again,

to bring this point home, a study on Avicenna's epistemology taking up in this approach, unlike in the history of ideas, speaks in terms of how we can develop an analysis of knowledge which takes knowledge as its primary focus and in terms of which all other epistemic notions to be explained.

Being conceived as a work in the history of philosophy the present study shall therefore concern primarily with Avicenna's views and arguments on factual knowledge as he presented them in his works. This will involve, on the one hand, an exposition of those views and arguments by way of careful reading, logical analysis, and interpretation of the texts in order to get hold of his deliberate intentions and meaning in what he says. On the other hand, it involves a rational, systematic reconstruction of those views and arguments into what I call his analysis of knowledge.²⁸ It must be noted that this is not a result of my own arbitrary presupposition. Rather the skeleton of this reconstruction is already *given* and my main task is to *piece together* some of the bones which I judge to belong to it but scattered throughout his works.

Given this particular attention I will not attempt to trace the sources or origins of all his ideas, save in a somewhat sketchy fashion, nor to provide an

²⁸ As yet I do not find a proper discussion on rational reconstruction in history of philosophy. Rudolf Carnap was the first to use the idea as a philosophical method in his *Der logische Aufbau der Welt* (1928). And it has become a prominent method in history of science after the publication of a paper by Imre Lakatos in 1971. See Imre Lakatos, "History of Science and Its Rational Reconstructions," *Boston Studies in the Philosophy of Science* 8 (1971): 91-135; reprinted in Imre Lakatos, *The Methodology of Scientific Research Programmes: Philosophical Papers Vol. 1*, ed. John Worrall and Gregory Currie (Cambridge: Cambridge University Press, 1978), Ch. 2. See also Noretta Koertge, "Rational Reconstruction," in *Essays in Memory of Imre Lakatos*, ed. Robert S. Cohen, Paul K. Feyerabend and Marx W. Wartofsky (Dordrecht: Reidel, 1976), 359-69; Alan Richardson, "Rational Reconstruction," in *The Philosophy of Science: An Encyclopedia, Vol. 2*, ed. Sahotra Sarkar and Jessica Pfeifer (London: Routledge, 2006), 681-85; Bence Nanay, "Rational Reconstruction Reconsidered," *The Monist* 93 (2010): 598-617; and Michael Beaney, "Analytic Philosophy and History of Philosophy: The Development of the Idea of Rational Reconstruction," in *The Historical Turn in Analytical Philosophy*, ed. Erich H. Reck (Basingstoke: Palgrave Macmillan, 2013), 231-60.

account of the historical, social, and personal circumstances in which Avicenna conceived them. (I will, however, occasionally provide a list of works dealing with these aspects of his ideas in the footnotes. However, this is by no means to suggest, like Lakatos did, that this historical aspect should be relegated to the footnotes).²⁹ This statement, I think, needs to be qualified. First of all I should like to make it perfectly clear that I am not suggesting that ideas are born out of vacuum. What I am concerned to assert is that it is possible for the central core of any historically influential philosophical ideas and concepts to be understood without knowing fully their historical origins. This is given to the fact that philosophical ideas as such have their own independent life and capable of surviving translation and transmission, albeit with certain nuances in meaning, into various languages of philosophical discourse that took place in different historical periods and cultures. This, I think, is evident in the case of the historical career of Aristotelian logic from his time, via al-Fārābī and Avicenna in medieval Arabic philosophy, to that of Kant in the eighteenth century and Frege in the nineteenth century. Be that as it may, in working on the thought of a philosopher we should know the following facts, namely, the philosophical tradition to which the philosopher belonged, and the range between the philosophical lexicon that his predecessors had bequeathed to him and that of his original invention.³⁰

²⁹ In his 1971 paper, Lakatos on several occasions suggested what he called external or actual history should be indicated in the footnote, for an instance: “One way to indicate discrepancies between history and its rational reconstruction is to relate the internal history *in the text*, and indicate *in the footnotes* how actual history 'misbehaved' in the light of its rational reconstruction.” Following Thomas Kuhn’s criticism he later described those passages as “a rather unsuccessful joke” (1978, 192).

³⁰ For the purpose of this study I am indebted to the works of Gutas (2014) and A.-M. Goichon, *Lexique de la Langue Philosophique D’Ibn Sīnā* (Paris: Desclée de Brouwer, 1938); Soheil Afnan, *Philosophical Terminology in Arabic and Persian* (Leiden-Boston: Brill, 1964); and Shukri B. Abed, *Aristotelian Logic and the Arabic Language in al-Farabi* (Albany: State University of New York Press, 1991).

Even though such contextual treatment is indispensable for full understanding of philosophers, it cannot be a necessary condition for grasping the central core as well as examining the logic and merit of their ideas.³¹ This point will, I hope, become clearer still if it is further developed. Let me begin with a couple of platitudes. Firstly, it is true that philosophers, throughout the history of philosophy, have been aware of the views of some of their predecessors and contemporaries, have been stimulated and influenced by them, have attempted to emend, refute or synthesise them, or have developed them in new ways. The study into this aspect of Avicenna's works, I reckon at least from the review above, has been the primary interest among intellectual historians since the early twentieth century. Having learned much from the existing literature which attempted to trace and depict Avicenna's relationship with both the classical heritage and the intellectual currents of his time, the present study, in its turn, shall only focus on the analysing, understanding, and reconstructing his analysis of knowledge as he develops it within his own complete philosophical system.

Secondly, it is equally true that a particular set of social, religious, cultural, political or economic conditions may influence the thought of philosophers. But we should be cautious not to make an ideological use of context in the study of past philosophy, in the ways that has been done in the

³¹ It must be noted that Isaiah Berlin, the great philosopher and historian of ideas, have long time ago argued this view of the matter. See Isaiah Berlin, *Vico and Herder: Two Studies in the History of Ideas* (London: Chatto and Windus, 1980), esp. Introduction.

sociology of knowledge or by Michel Foucault and his followers,³² to the extent that we deny the agency of individual philosopher in her creative response to the world she finds herself in. Furthermore, it is unreasonable to assume those conditions to have real influence on every aspect of a philosopher's thought. Rather, we should be well aware of the fact that the conditions that have influence on one aspect of her thought, or on one branch of philosophy, might not have direct influence on others. For example, Descartes and Locke might have in part developed their theory of knowledge in response to the oppressive religious, social, and political situations of their time, where both the Church and the State have the absolute power to dictate what people should think and believe.³³ This is unlikely to be the case with

³² See Steven Shapin, *A Social History of Truth: Civility and Science in Seventeenth-Century England* (Chicago: University of Chicago Press, 1994); Michel Foucault, *The Order of Things: An Archeology of the Human Sciences* (London-New York: Routledge, 2002 [1966]), *The Archeology of Knowledge* (London-New York: Routledge, 2002 [1969]). See also, Gary Gutting, "Foucault, Michel (1926–1984)," in *The Routledge Encyclopedia of Philosophy*, 10 vols., ed. Edward Craig (London and New York: Routledge, 1998), 708–13. It is also noteworthy that this ideological approach can also be found in history and sociology of science, see Robert K. Merton, "Science, Technology and Society in Seventeenth Century England," *Osiris* 4 (1938): 360–632 [reissued 1970]; Robert K. Merton, *The Sociology of Science: Theoretical and Empirical Investigations* (Chicago: Chicago University Press, 1973).

³³ Both Descartes and Locke believed that all human beings are born with equal powers of reason. Descartes, for example, opened his *Discourse on the Method*, with this passage: "Good sense is the most evenly distributed thing in the world... what this shows is that the power of judging correctly and of distinguishing the true from the false (which is what is properly called good sense or reason) is naturally equal in all men..." See René Descartes, *A Discourse on the Method*, trans. Ian Maclean (Oxford: Oxford University Press, 2006). Locke, on the other hand, insisted that people should think and know for themselves, and he dismissed the principle of innate ideas as he saw them as impositions by "Dictators of Principles" and "Teachers of unquestionable Truths," who denied the people their right to use their own "Reason and Judgment" and force them to believe and take it upon trust as an innate principle anything the authorities decided so that they "might be more easily governed..." See, John Locke, *Essay*, 100-6. See also, Nicholas Jolley, *The Light of the Soul: Theories of Ideas in Leibniz, Malebranche, and Descartes* (Oxford: Clarendon Press, 1990); Stephen Gaukroger, *Descartes: An Intellectual Biography* (Oxford: Clarendon Press, 1995); Richard Watson, *Cogito, Ergo Sum: The Life of René Descartes* (Boston: David R. Godine Pub, 2007); John Cottingham, *Cartesian Reflections: Essays on Descartes's Philosophy* (Oxford: Oxford University Press, 2008); Roger Ariew, *Descartes among the Scholastics* (Leiden-Boston: Brill, 2011); Nicholas Wolterstorff, *John Locke and the Ethics of Belief* (Cambridge: Cambridge University Press, 1996); Lee Ward, *John Locke and Modern Life* (Cambridge: Cambridge University Press, 2010); and Jonathan I. Israel, *Radical Enlightenment: Philosophy and the Making of Modernity 1650-1750* (Oxford: Oxford University Press, 2001), *Enlightenment Contested: Philosophy, Modernity, and the Emancipation of Man 1670–1752* (Oxford: Oxford University Press, 2006), *Democratic*

Avicenna. Rather, as his autobiography and other works attest, Avicenna develops his theory of knowledge and the general structure of his philosophical system particularly out of his rigorous, extensive study of the Aristotelian corpus and its commentary tradition as well as the works of some other Greek philosophers like Plato and Plotinus. Furthermore, it is also a matter of fact even today that the problems of philosophy or knowledge are not of interest to everybody. Rather they have always been the concern only of philosophers. Thus we can hardly find anything in the social or cultural context in which a philosopher live that might be directly operative in her views on knowledge beyond the epistemological debates before or during her time against which she tried to refute or from which she attempted to develop her own novel ideas.

Besides those external circumstances, I also think that it is unreasonable to take non-philosophical beliefs or attitudes of philosophers, however integral they might be in their life, to have direct influences on all aspects of their philosophy *in toto*. Or—putting the matter in another way—for a philosopher, like Avicenna, to think that we can have knowledge of the objective reality, to have views on factual knowledge, to believe in factual truth, all these have nothing to do with his being a Muslim, a Shī‘ī, a Sunnī, a Ḥanāfī, or a mystic. In fact, there are great many philosophers throughout the history of philosophy who shared the same philosophical views but have different religious beliefs or did not believe in any religion at all. So it follows

Enlightenment: Philosophy, Revolution, and Human Rights 1750–1790 (Oxford: Oxford University Press, 2011).

therefore that the best way to understand his analysis of knowledge is to find out what his primary philosophical beliefs or assumptions are.

However, I should like to make it perfectly clear that in saying all this I certainly do not mean that there are good reasons for us to be ignorant of or indifferent to the historical contexts of past philosophers and their works. Quite the contrary, I believe that we should know both their historical context and the historical origins and career of philosophical concepts that we are trying to ascribe to them. For both aspects of historical knowledge are indispensable in providing the limits for plausible—rather than possible, nonsensical, or anachronistic—interpretations of past philosophers. For instance, just because Avicenna claims that human mind and knowledge begin with sense perception that does not mean he is an empiricist or allow us to crudely categorise his view as empiricism. And just because he says, like all other philosophers in thousands of years of the history of philosophy, that human mind and cognition are subjective, that does not mean that he is a subjective idealist who believes that only mind and mental contents exist.

From these general issues in history of philosophy, let me now shift attention to another methodological issue concerning interpretation of historical texts. As is well known, what is crucial in this task is to develop critical explanations and interpretations faithful to the deliberate intentions and meanings of past philosophers and preserving the integrity of their works and arguments. My strategy to achieve such noble objective in this study is to develop an exegetical device, the core idea of which I draw on the works of a

certain analytic philosopher, notably John Searle's speech acts theory, which I take to be a refinement of some aspects of philosophy of language developed by Bertrand Russell, Ludwig Wittgenstein, and John Austin in the early twentieth century. With no intention to get involved in methodological dispute, I shall explain and justify the approach adopted in this study.

In dealing with philosophical works we must initially recognise the *motives* and *intentions* of their authors in order to understand what their meanings are. With regard to the former, it is to recognise the conditions antecedent to and contingently connected with the appearance of their works; while in the latter, it is to comprehend the content of the works as embodying certain objectives, intentions, and purposes.³⁴ If the motives of the philosophers are explicit in their works we could simply identify them and explain how they shaped the development of their thoughts and arguments. However, if they are not clearly written it then become our task to ascertain them and to substantiate our ascriptions of those motives to their works. This suggests that the best way to proceed is by looking at the internal history of a discipline or whatever external historical factors relevant to understanding of their works.³⁵ On the one hand, we can trace the philosophical currents and tradition—including the standard linguistic conventions, which govern the treatment of issues and problems as Skinner suggested (2002, 101-2)—that prompted the writing of their works. On the other hand, if they have taken an

³⁴ See John R. Searle, "Literary Theory and Its Discontents," *New Literary History* 25 (1994): 637-67; see also Quentin Skinner, *The Visions of Politics*, Vol. 1 (Cambridge: Cambridge University Press, 2002), 96-8.

³⁵ This, I suggest, is comparable to the classification of internal-external aspects in history of science. See Imre Lakatos, *Methodology*, esp. Ch. 2; see also Dudley Shapere, "External and Internal Factors in the Development of Science," *Science & Technology Studies* 4 (1986): 1-9.

extreme ahistorical approach in their works—even more extreme than Wittgenstein in his *Tractatus Logico-Philosophicus*³⁶—that we cannot get hold of their intentions and motives at all, we can then turn to the external social, cultural, religious, political, and economic forces that might have prompted their thoughts or the writing of their works. From then on, we will be able, hopefully, to recognise the intentions of the authors whether they were trying to defend or refute certain philosophical positions, to uphold or rebel against the existing tradition, and so on.

Furthermore, the motives and intentions of philosophers, if not clearly stated in the works, can be identified or inferred from the answers to the following factual questions that should always be bore constantly in mind when we are reading or interpreting philosophical works: (1) What is the question that a given philosopher is trying to answer? (2) What assumptions does this question have? (3) What is the answer that the philosopher proposes to give? (Rescher 2007, 153). Needless to say, the answers to these questions are always to be found, explicitly or implicitly, in the works themselves, for we do not expect philosophers to write gibberish. It is these questions, I think, above any thing else—above the broad social-historical context within which the philosopher worked—that can provide us with the key to fathom the meaning of her works and understanding her arguments and

³⁶ Wittgenstein is very well known for his ahistorical attitude in writing his works that he has become a fascinating historical mystery. Since his dead in 1951 historians have been trying for decades to unravel his thoughts and to understand what made him return to philosophy after abandoning it for a while after the publication of his *Tractatus*. For the latter alone, historians have advanced quite a handful of theories. The latest one came from Christopher Benfey, “Wittgenstein’s Handles,” *The New York Review of Books*, May 24, 2016, accessed May 27, 2016, <http://www.nybooks.com/daily/2016/05/24/wittgensteins-handles/>. See also Ray Monk, *Ludwig Wittgenstein: The Duty of Genius* (London: Vintage Books, 1991).

assertions. There are, however, a couple more questions, extraneous to the present study, but nevertheless of some importance for a deeper understanding of the problem she has been dealing with, namely: (4) What are the alternative answers that might have been given by other philosophers, and how does her answer stand in relation to its rivals in point of purport? (5) What are her grounds for thinking her answer to be correct or better than others, and how does it stand to its rivals in point of merit? (Rescher 2007, 153). The answers to these questions lie beyond her works, and thus should be sought in a broader philosophical context of her time.

The paramount importance of the first set of questions in understanding and interpreting the works of past philosophers is very well acknowledged among both historians of ideas and historians of philosophy, and there is nothing novel to be said about it. I would like, however, to stress a couple of points with regard to the importance of these questions to identifying the motives and intentions of philosophers by which we could grasp the meaning of their works or arguments. Firstly, it could happen sometimes that we tend to ignore them when we are trying to ascribe to past philosophers, based on their scattered or incidental remarks, one or another themes to their philosophical systems. To be sure, this is an act of wresting their sentences and appropriating *meanings* which are of our own construction in order to make them suit to our interests or ways of thinking. It is misleading, to take an example from modern philosophy, to credit Descartes for any ideas that constitute the principles of liberal democracy, although one may find in some places where he talked about something

resembling our concept of individual liberty, given the fact that he is a reclusive philosopher whose lifelong work is to find a new method in natural philosophy. It is also misleading to pluck certain passages from the writings of Avicenna and to construe them as constitutive of his political teaching,³⁷ while his primary focus is to develop a systematic theoretical knowledge of the world, and he himself believes that practical knowledge or politics is of no importance in this philosophical programme. I should note, however, that this is one of the possible interpretations, in view of the interesting literature on this aspect of Avicenna's philosophy, but it might not be the most plausible interpretation.³⁸

This brings us to my second point where it has been argued—among others, by Oliver Leaman (2003)—that we can understand the meaning of philosophical works at “face-value” and broader social-historical context is of no use when it comes to real philosophical arguments. It is true, as I argued above, that contextual understanding does not play a truly significant role in understanding the logic and merit of philosophical arguments and that it cannot substitute philosophising. But to say this does not mean that we can simply disregard the *meanings* of such works or arguments as intended by philosophers. Rather, we should always be aware of the fact that there are different *meanings of meaning*. And as a matter of fact there are, at least,

³⁷ For further critique of political interpretation on Arabic philosophy in general, see Dimitri Gutas, “The Study of Arabic Philosophy in the Twentieth Century: An Essay on the Historiography of Arabic Philosophy,” *British Journal of Middle Eastern Studies* 29 (2002): 5-25.

³⁸ On political aspect of Avicenna's philosophy, see Joseph C. Macfarland and Joshua Parens ed., *Medieval Political Philosophy: A Sourcebook* (Ithaca: Cornell University Press, 1963), esp. Chs. 6 and 7 on Avicenna's political philosophy; Miriam Galston, “Realism and Idealism in Avicenna's Political Philosophy,” *The Review of Politics* 41 (1979): 561-77; Charles E. Butterworth, “The Political Teaching of Avicenna,” *Topoi* 19 (2000): 35-44.

three types of meaning: (1) the meaning of the texts based on the words and sentences of which they consist; (2) the meaning of the texts to us (readers); and (3) the meaning of the texts as intended by the authors (Searle 1978, 1994).³⁹

For the first sense of meaning, it is possible to define a text syntactically and to take the meaning as such in terms of a set of words and sentences that form the structure of the arguments. But we will inevitably exclude its meaning since a text does not only have a *subtext* but also a *supertext*—that is, a context of utterance within which its message is formatively emplaced and on which its actual meaning essentially dependent (Rescher 2007, 27). This has been partly a problem with political interpretation of Avicenna's works. Ignoring the context of his utterance—along with its motives and intentions—some interpreters take his often-swift overview of practical knowledge as constitutive of his political views since they find such words and sentences referring to household and civil governance. For the second sense of meaning, it is equally possible to take the meaning of a text as it appears to us given the fact that an authorial intention does not determine readers' meaning. But the main concern of exegetical interpretation is with the original meaning and purport of the text. As a matter of fact, however, the practice of taking the meaning of a philosophical work in this and former senses is not uncommon among philosophers from Plato down to contemporary philosophy. In this case, philosophers pick up certain ideas of their predecessors without any consideration of their proper context of

³⁹ Cf. Skinner, *Visions*, 91-4.

utterances, and sometimes deliberately misrepresenting—or misinterpreting—them, to advance their own arguments or to support their own philosophical motives or agendas. Here, the methodological issues of meaning and interpretation in the history of philosophy are of no concerns to them. This can be traced in the works of Plato (*Theaetetus*) and Aristotle (*Nicomachean Ethics*)⁴⁰ and in the works of modern philosophers such as Bertrand Russell (*The Problem of Philosophy*) and Karl Popper (*Open Society and its Enemies, Vol. 1: The Spell of Plato*).⁴¹ And it is also perfectly evident in the history of Arabic philosophy, as has been shown by Gutas (1994) and Szpiech (2010), in the case of Ibn Tufayl's misrepresentation of Avicenna's *Eastern Philosophy* in advancing his own mystical philosophy—which has misled scholars into believing the existence of the same kind of philosophy in Avicenna from subsequent period in the medieval age to the recent times.⁴²

However, in their efforts to provide *systematic* interpretations of the works of past philosophers, scholars and professional philosophers are

⁴⁰ In his defence of Plato and Aristotle in regard to their presentations of the thoughts of earlier philosophers, Cornford writes: "It is here that a modern reader is likely to be misled. He will expect a philosopher who criticises another philosopher to feel himself bound by the historical question, what that other philosopher actually meant. But neither Plato nor Aristotle is writing the history of philosophy; rather they are philosophising and concerned only to obtain what light they can from any quarter. We can never assume, as a matter of course, that the construction they put upon the doctrines of other philosophers is faithful to historic fact." See F. M. Cornford, *Plato's Theory of Knowledge: The Theaetetus and the Sophist of Plato Translated with a Running Commentary* (London: Kegan Paul, Trench, Trubner & Co. Ltd, 1935), 31. See also, W. K. C. Guthrie, "Aristotle as a Historian of Philosophy: Some Preliminaries," *The Journal of Hellenic Studies* 77 (1957): 35-41.

⁴¹ See also Popper's interpretation of Greek thought in, Karl R. Popper, "Back to the Presocratics," *Proceedings of the Aristotelian Society* 59 (1958): 1-24; and the ensuing debates over his controversial interpretation, G. S. Kirk, "Popper on Science and the Presocratics," *Mind* 69 (1960): 318-39; Karl R. Popper, *Conjectures and Refutations*, (London: Routledge, 1963 [2007]), in Appendix: Historical conjectures and Heraclitus on change, 153-65; and G. E. R. Lloyd, "Popper versus Kirk: A Controversy in the Interpretation of Greek Science," *The British Journal for the Philosophy of Science* 18 (1967): 21-38.

⁴² For a relevant discussion on this issue of misrepresenting the ideas of past philosophers in the context of Western philosophy, see Richard A. Watson, "Shadow History in Philosophy," *Journal of the History of Philosophy*, 31 (1993): 95-109.

operating in the domain of scholarship in which the original meaning and purport of the works is of paramount issue. Thus, it is important to grasp the authorial intentions in order to understand the meaning of the works by way of asking and answering the question of what did philosophers mean by what they said in their works (Searle 1994). Meaning in this sense—as I have remarked earlier and thus to return to the point where I left off—is a product of individual intentionality.⁴³ This point, however, needs further consideration. In the first place, meaning is intentional in the sense that it depends on the ideas (knowledge, beliefs, desires, wants, etc.) that philosophers intended to express by saying what they did when they did. A quick note on Skinner's version of intentionalism is in order here. In his methodological discussion, Skinner (2002) identifies authorial intention with the prior or original intentions of authors in writing their works. This position, however, has been under heavy criticisms, especially by the New Critics, given the fact that authors often change their mind in the process of writing. In his defence of a version of weak intentionalism, Mark Bevir argues that attention should be paid to the final intentions of authors since intentions are not prior but they emerge along with utterances (2004, 70). On this view, Bevir seems to stand closer, as compared to Skinner, to the speech act theory in the tradition of Austin-Searle, which asserts that intention formation and sentence formation occur at the very same time in the act of communication, especially in the act of writing (Searle 1977). To sum up this point: meaning is intentional; and a work is an expression of intentions.

⁴³ For a detailed discussion on meaning as an intentional product see John R. Searle, *Consciousness and Language* (Cambridge: Cambridge University Press, 2002), especially Chapter 9, where he analyses the seemingly opposite traditions in speech act theory. See also, Mark Bevir, *The Logic of the History of Ideas* (Cambridge: Cambridge University Press, 2004).

In addition to this, it is also worth noting, in the light of the second set of questions above, that meaning to some extent can also be construed as a contextual outcome from the following facts. On the one hand, a performance of the act of writing is an event—among other events—that occurs in a particular historical or philosophical context. On the other hand, the meaning of this writing is dependent on the author’s intentions which, in their turn, are influenced by the historical or philosophical background in such particular context. Now a caveat is necessary here. To regard intentionality and meaning as contextual results does not mean to concede, eventually, with the contextualists like Foucault and J. G. A. Pocock,⁴⁴ and the conventionalists such as Skinner. Rather, this remark is made with different intentions and contentions in mind. On the one hand, it differs from other contextualists in the sense that it admits the fact that the meaning of philosophical works, in addition to the authorial intentions and motives as can be ascertained from the works themselves, can also be understood above all from a philosophical discourse in a particular historical context. Thus it does not see any virtue to confer prominent status to some aspects above others in such historical context, be it linguistic, socio-economic, religious or political. Again, it differs from other contextualists in the sense that it does not deny the fact that philosophers, like other human beings, are creative agents. They act and react in conformity or creatively in a given historical situation. In fact, and given their creative agency, any one or all aspects of a given historical context might or might not impinge on the thought of philosophers and influence the

⁴⁴ For Pocock’s methodological views, see J. G. A. Pocock, *Political Thought and History: Essays on Theory and Method* (Cambridge: Cambridge University Press, 2009).

way they understand the problems they discuss. To express the matter somewhat differently, just because the fact that a work was written at a particular moment in history and in a particular society it does not imply that the meaning of that work is merely an expression of that historical moment.

On the other hand, this remark differs from the conventionalists, albeit its admission of the existence of linguistic conventions in a given culture or society, in terms of its rejection of their rigid view that philosophers must follow the rules of linguistic conventions and that they determine the way philosophers expressed their intentions (Bevir 2004, 42-9). For such a view gives no room to philosophers' creative act of inventing new concepts to convey their intentions and meaning, as is always the case from the history of philosophy, although I do not deny the fact that any novel concept has its genealogy in a given language (Koselleck 2002, 30-1).⁴⁵ Furthermore, I am of the view that Skinner's method is inapplicable to the study of ancient and medieval philosophy given the fact that it is almost impossible for scholars to fully understand the linguistic conventions that govern intellectual discourses during those historical periods. For most of their linguistic artefacts are scarcely available at our disposal. This is not really a problem, however, in the study of modern and pre-modern European philosophies and politics since most of the works and documents from those periods are well preserved in the archives throughout Europe.

⁴⁵ One instance in the history of Arabic philosophy is the introduction of the concepts *taṣawwūr* and *taṣdīq* in Arabic philosophical lexicon. See Harry Wolfson, "The Terms *Taṣawwūr* and *Taṣdīq* in Arabic Philosophy and Their Greek, Latin and Hebrew Equivalents," *The Muslim World*, 33 (1943): 114-128; and Miklos Maroth, "Taṣawwūr and Taṣdīq," in *Knowledge and the Sciences in Medieval Philosophy*, Vol. 2, ed. Simo Knuuttila, Reijo Työrinoja and Sten Ebbesen (Helsinki: Luther-Agricola Society, 1990), 265-74.

From what has so far been said, it may suffice, I hope, to establish the importance and the priority of understanding the meaning of philosophical works in terms of their authorial intentions and motives. And it should also be noted here that this approach has gained quite a general acceptance among analytic philosophers, historians, and literary critics—such as Rescher (2007), Bevir (2004), Martinich (2002 & 2012), Skinner (2002), and Hirsch (1967 & 1978) to name only a few. But it is not yet employed or even recognised by most scholars in the study of Arabic philosophy.

Having said that I would like now to point out a certain advantage of taking on this approach. By understanding the meaning of philosophical works in terms of their authorial intentions it will make it easier for us to determine which problems are central and which are relatively of peripheral concerns in the mind of philosophers. This is important since it will be our guiding principle in making a plausible and coherent interpretation out of their entire oeuvre. Before going further, a caveat is needed here. To say that we should aim at the central problems of past philosophers does not mean to undermine the value of investigating some other relatively secondary philosophical concerns in their works. Quite the contrary, it is no less important to study them and to show how they fit in and being part and parcel of the entire structure of their philosophical systems. Still, we need to recognise their proper status and be careful not to mistakenly generalise them as central problems to past philosophers. A brief note on a plain psychological fact is in order at this juncture. In choosing our subject matter—and the data with regard to our

subject matter—we are always influenced, in an unexpected ways, by our own interests. Yet whatever interests we might have, be it religious, mystical or political, it is an intelligible ideal to try to prevent these, though they often steal in surreptitiously, from colouring our interpretation of the views of past philosophers to the extent that we disregard the well-established facts about them. Otherwise, we are, aware or not, getting indulged in a kind of work that Rorty calls “self-justification” (1998, 56-7), where we try to justify our own attitude towards present state of things or our interest in certain subjects. As a matter of fact, this kind of works are ubiquitous and have so long vitiated the true image of Arabic philosophy in general and of Avicenna in particular.⁴⁶

This point brings us to one last issue in this methodological consideration, namely, whether or not an objective understanding is possible. Just to put my card on the table at the beginning: I am positive about the possibility of objective understanding of past philosophical works. And I take this objectivity of historical knowledge in the sense widely held in the contemporary philosophy, that is, knowledge is objective if, and only if, it opens to criticism, testing, revision, and allows us to compare it with rival claims and thus to decide which one is the best currently available. Hermeneutical sceptics, like Gadamer and his followers, might argue that an objective understanding of past philosophical works is not possible given the fact that our own interests will inevitably influence our interpretations.⁴⁷ I have intimated earlier that it is a trivial fact that everyone is always influenced by her own interest. This interest, however, does not by any means put the

⁴⁶ For further discussion of this kind of works, see Gutas (2002).

⁴⁷ See Hans-Georg Gadamer, *Truth and Method* (London: Continuum, 2006).

principle of objectivity, as I understood it, at stake since it is only the logical content of our knowledge claim (or affirmation or denial) which will be criticised and tested, not the influences that might have led to our claim. Still, the sceptics would challenge this view and argue that we cannot have a correct knowledge of the intentions of past philosophers and of the context within which they expressed them. The fact that a given philosopher is dead a long time ago and the context in which she worked is unknown or forgotten does not, in the least, mean that her intentions are absent from her work, for she did mean such and such by her work. Moreover, we can interpret the work in the way that fits well with what is known so far about her beliefs, concerns, etc.; compare our interpretation with other interpretations; and finally determine which interpretation is the best and the most plausible. It is also possible that the most plausible interpretation that we have today would be replaced or revised in the light of future discoveries. This, again, is what I mean by objectivity in interpretation.

The foregoing methodological consideration may, I hope, suffice to indicate the guiding principles for the present study in using some philosophical works at hand, together with the understanding of their authorial intentions and awareness of their historical distance, in making a philosophically sophisticated and historically informed interpretation, and a rational reconstruction of Avicenna's analysis of knowledge.

5. On Texts and Translation

Before going further, I must renew my emphasis that the present study is motivated, above all, by philosophical problems rather than anything else. The primary concern is to provide a systematic study and rational reconstruction of Avicenna's philosophical analysis of knowledge. I do not therefore undertake a proper philological work, including textual criticism and uncovering the historical sources of the technical terms and concepts that Avicenna uses throughout his works. For this, I suppose, could divert me from my primary task of analysing, explaining, and reconstructing all the views and arguments in Avicenna's analysis of knowledge.

For the purpose of the present study, I make use both the original Arabic texts and the English translations of Avicenna's works (see Note on Translation and List of Abbreviations). However, all translations from his works that I present here are mostly, but not always, taken from existing published translations, with certain modifications which are duly noted in the footnotes. In other words, I do not take those translations for granted. Rather, I always approach them by reading and checking them against their corresponding original Arabic texts. This, in fact, is informed by my awareness of the following methodological issues.

Firstly, perfect translation of long and difficult old texts, though it is always an ideal, is very hard to get by. Indeed, translators are human, all too human, who can easily make slips when encountering the myriad of

difficulties in reading and making a faithful and accurate rendition of the texts. This is made worse by the fact that the translation of philosophy is the trickiest kind of translation.⁴⁸ For philosophical writing, especially in the pre-modern time, is famous for its intricacy and incomprehensibility. This is true in the case of Avicenna, where some of his works, like *Ishārāt*, can hardly be called lucid. My approach allows me then to identify all the problems and weaknesses (including the omissions, mistakes, and mistranslations) in the existing translations of Avicenna's works that might in some places deter our clear understanding of his thought. It should also be noted that some of the weaknesses have already been pointed out in the scholarly reviews of these translated works.⁴⁹ In addition, my reading of Avicenna's texts and my adoption of passages from existing translations for the purpose of this study are very much indebted to scholarly studies on the technical terms that Avicenna employs in his works.⁵⁰

⁴⁸ As a matter of fact, there are some other kinds of translation; for example, translation of literary works like poetry, novel, play, etc., and translation of scientific works. Translating these kinds of works is of course not an easy matter. But the difficulties that they present to translators, I reckon, is not as challenging as the philosophical works.

⁴⁹ See, for instance, Wilfrid Hodges, "Avicenna's *Deliverance: Logic* by Asad Q. Ahmed (review)," *Journal of Shi'a Islamic Studies* 6 (2013): 224-31; A. H. Johns, "Ibn Sina: *Remarks and Admonitions: Part One: Logic. Translated from the original Arabic, with an Introduction and Notes*, by Shams C. Inati (review)," *The Muslim World* 80 (1990): 280-1; Jon McGinnis, "Ibn Sina's *Remarks and Admonitions: Physics and Metaphysics. An Analysis and Annotated Translation* by Shams C. Inati (review)," *Journal of Islamic Studies* 27 (2016): 49-52; and Thérèse-Anne Druart, "Ibn Sina: *Remarks and Admonitions. Part One: Logic*, Shams C. Inati (review)," *The Middle East Journal* 39 (1985): 443.

⁵⁰ To name only a few: Robert E. Hall, "The *Wahm* in Avicenna's Psychology," in *Intellect and Imagination in Medieval Philosophy. Actes du XIe Congrès International de Philosophie Médiévale de la Société Internationale pour l'Étude de la Philosophie Médiévale (S.I.E.P.M)* (Turnhout: Brepols Publishers, 2006), 533-49; Jules L. Janssens, "Experience (*Tajriba*) in Classical Arabic Philosophy (al-Fārābī–Avicenna)," *Quaestio* 4 (2004): 45-62; Deborah L. Black, "Imagination and Estimation: Arabic Paradigms and Western Transformations," *Topoi* 19 (2000): 59-75; Deborah L. Black, "Estimation (*Wahm*) in Avicenna: The Logical and Psychological Dimensions," *Dialogue* 32 (1993): 219-58; D. B. MacDonald, "Wahm in Arabic and Its Cognates," *Journal of the Royal Asiatic Society of Great Britain and Ireland* 4 (1922): 505-21; Amos Bertolacci, "A Hidden *Hapax Legomenon* in Avicenna's Metaphysics: Considerations on the Use of *Anniyya* and *Ayyiyya* in the *Ilāhiyāt* of the *Kitāb al-Shifā'*," in *The Letter before the Spirit: The Importance of Text Editions for the Study of the Reception of Aristotle*, ed. Aafke M. I. van Oppenraay and Resianne Fontaine (Leiden: Brill, 2012), 289-

Secondly, all translation always involves interpretation.⁵¹ This statement has a couple of arguments going for it: (1) the act of translating involves a transfer of both meaning and understanding from one linguistic community to another. In the case of translating philosophical works, this is not merely a word-to-word translation but the whole philosophical phrases and arguments. (2) But, before translators can start their work they must, first of all, understand the text at hand. It is a truism, however, that a text can be understood and interpreted in many ways. This entails that translators must make their own interpretations and translate the text accordingly. But, it is also a truism that every interpretation—and thus every translation resulted from it—has its own limitations. Therefore, it is important for any serious student of philosophy to keep this in mind when dealing with translation works. She must liberate herself from what Allan Bloom called the *tyranny of the translator* (1991, xi), that is, she must rise above the limitations of the translator's

309; Jules Janssens, "The Notions of *Wāhib al-Ṣuwar* (Giver of Forms) and *Wāhib al-'Aql* (Bestower of Intelligence) in Ibn Sīnā," in *Intellect and Imagination in Medieval Philosophy. Actes du XIe Congrès International de Philosophie Médiévale de la Société Internationale pour l'Étude de la Philosophie Médiévale (S.I.E.P.M)* (Turnhout: Brepols Publishers, 2006), 551-62; Kara Richardson, "Avicenna's Conception of the Efficient Cause," *British Journal for the History of Philosophy* 21 (2013): 220-39; Robert Wisnovsky, "Notes on Avicenna's Concept of Thingness (*Shay'iyya*)," *Arabic Sciences and Philosophy* 10 (2000): 181-221; Michael E. Marmura, "Avicenna on Primary Concepts in the *Metaphysics* of his *al-Shifā'*," in *Logos Islamikos*, ed. R. M. Savory and D. A. Agius (Toronto: Pontifical Institute of Mediaeval Studies, 1984), 219-39; Michael E. Marmura, "Avicenna's Chapter on Universals in the *Eisagoge* of his *Shifā'*," in *Islam: Past Influence and Present Challenge: Studies in Honour of W. M. Watt*, ed. Alford T. Welch and Pierre Cachia (Edinburgh: Edinburgh University Press, 1979) 34-56; Saloua Chatti, "Avicenna on Possibility and Necessity" *History and Philosophy of Logic* (2014): 1-22; Allan Bäck, "Avicenna on Existence," *Journal of the History of Philosophy* 25 (1987): 351-67; Kwame Gyekye, "*The Term Istithnā' in Arabic Logic*," *Journal of the American Oriental Society* 92 (1972): 88-92; Kwame Gyekye, "The Terms 'Prima Intentio' and 'Secunda Intentio' in Arabic Logic," *Speculum* 46 (1971): 32-8; Nicholas Rescher, "Some Arabic Technical Terms of Syllogistic Logic and Their Greek Originals" *Journal of the American Oriental Society* 82 (1962): 203-4.

⁵¹ For philosophical discussions on translation see, among others, Paul Recoeur, *On Translation*, trans. Eileen Brennan (London-New York: Routledge, 2006); Jonathan Rée, "The Translation of Philosophy," *New Literary History* 3 (2001): 223-57; and Roman Ingarden, "On Translations", in *Ingardeniana III*, trans. Jolanta W. Wawrzycka, (Boston: Springer, 1991), 131-92.

interpretation in order to arrive at her own understanding of the work. This, in fact, is particularly true in the present study. If I rely solely on existing translations of Avicenna's works without my own effort to read and understand the original Arabic texts, I would not be able to propose my own original and novel rendition of some important phrases and technical terms with regard to Avicenna's analysis of knowledge. This, I hope, will become clear in the ensuing pages.

6. Structure and Contents of the Study

My general strategy in the present study is to explore the central motivations, assumptions and ideas that form Avicenna's analysis of knowledge. This strategy enables me to show that his account has a profound elucidatory force and a significant value for our understanding of the problems of knowledge. The reading offered here seeks to open up a new way of approaching a cluster of long-debated issues in Avicenna's epistemology. I believe it may provide a distinctive key for acquiring a better understanding of some of his views and of his main motivations for holding them.

This strategy, then, structures the general framework of this study. Chapter 1 serves as a prolegomenon to understanding Avicenna's analysis of knowledge, setting the stage for the discussions to follow. The four subsequent chapters analyse the main doctrines and motivations that form his account: his notion of apprehension (Chapter 2), his notion of judgement

(Chapter 3), his conception of truth (Chapter 4), and his views on the mental processes involved in knowing (Chapter 5).

So the plan of the study is as follows. In Chapter 1, I begin with an account of Avicenna's philosophical programme and its primary philosophical assumption, namely, his metaphysical realism. I take this assumption to be the most fundamental principle, the starting point for all strands of his thought and which weaves all his philosophical views into a single, unified philosophical system. Thus I argue that in order to make fully sense of Avicenna's analysis of knowledge, or epistemology, it is necessary to have a clear view of his primary philosophical assumption. To put the point as succinctly as possible: taking his metaphysics first. From this inquiry into the relationship between metaphysics and knowledge, I then turn to his proper analysis of knowledge in terms of apprehension and true judgement, where I discuss in a general way its historical aspects, its constituent notions, as well as its elucidatory force and merit in contradistinction to the JTB account of knowledge.

The discussion in Chapter 2 revolves around what Avicenna takes to be the first necessary and sufficient condition of knowledge in his analysis, namely, apprehension. Here the main focus is to analyse his account of what it is to apprehend the content of propositions. This includes an analysis of his theories of concept and content and their relation to his account of mental processes that lead to knowledge. In this discussion, it will become even clearer that Avicenna's metaphysical realism lies at the heart of his analysis of

knowledge. Some points from this chapter are brought forward to the discussion in Chapter 3, which centres on the epistemic notion of judgement—that is, the second necessary and sufficient condition of knowledge according to Avicenna's analysis. This involves quite a number of issues: for I provide here some accounts of his views on the relationship between judgement and proposition, his theory of inference or reasoning, and his concept of primary/intuitive propositions.

In Chapter 4, I discuss Avicenna's conception of truth, which is the third necessary and sufficient condition in his analysis of knowledge. The discussion focuses on some implicit metaphysical aspects of his conception of truth, namely: the truth-bearer, the truth relation, and the truth-maker. In this discussion it will become clear again how fundamental his metaphysical assumption is to his conception of truth. From this account of Avicenna's conception of truth I move on further to reconstruct his theory of objective knowledge and then rejecting the subjectivist interpretation of his account.

From this systematic and rational reconstruction of Avicenna's analysis of knowledge, I turn next in Chapter 5 to his account of epistemic faculties, where he provides the psychological explanations for all the mental processes that involved in knowing. The discussion begins with his account of mental faculties such as consciousness, sense perception, mind, and reason and all the kinds of knowledge that these faculties yield to human beings. But, as intimated earlier, this aspect of Avicenna's theory of knowledge is the subject of particular interest to many modern interpreters of Avicenna. So my main

task in this chapter is merely to pick up some important issues of interpretation in the existing literature.

And, lastly, Chapter 6 concludes with a brief discussion of some theoretical and philosophical implications of the present study. This is followed by some suggestions for further studies on certain ideas and doctrines in his philosophy in general and in his analysis of knowledge in particular.

Chapter 1

Prelude to Analysis

1.1 Introduction

The purpose of this chapter is to present Avicenna's analysis of knowledge in broad strokes. In the process, I explain in a general way the motivations, doctrines, and ideas fundamental to his analysis and *a fortiori* necessary to our understanding of his epistemology and his philosophical system as a whole. Some of these fundamental ideas, however, will be touched upon with a finer brush in subsequent chapters.

The plan of this chapter is as follows. Section 2 begins with a brief account of Avicenna's philosophical programme. In Section 3, I introduce his primary philosophical presupposition, namely, his metaphysical realism, and the philosophical motivations and doctrines that emerge from it. Then, in Section 4, I turn to his presentation of a system of knowledge built upon this metaphysical doctrine. From there I move on to Section 5, where I provide an outline of his analysis of knowledge which serves as a necessary building

block in his system of knowledge. And Section 6 gives a brief summary of the whole discussion in this chapter.

1.2 Avicenna's Philosophical Programme

To have a proper understanding of Avicenna's analysis of knowledge it is necessary to know, in the first place, the philosophical programme within which his epistemological views to have significance or play their role. By philosophical programme,⁵² I mean a broad, comprehensive philosophical endeavour pertaining to the most important of human problems and concerns, based on a primary philosophical presupposition which cannot be abandoned or altered without the programme itself being abandoned altogether. (It should also be noted that one programme may be part of a still broader philosophical endeavour with regard to general human concerns.) This programme provides a framework within which other philosophical projects can be carried out on the basis of its primary presupposition, and the results of which can be put to serve its purpose. In this regard, and as a hint of what will follow in subsequent sections, I take that Avicenna's account of knowledge is intended to play a role in a certain philosophical programme.

Let me now state precisely what his philosophical programme is. The most important task in Avicenna's philosophical endeavour, as everyone well

⁵² My view of philosophical programme is indebted to Imre Lakatos (1978), and Richard Kirkham, *Theories of Truths: A Critical Introduction* (Massachusetts: MIT Press, 2001), esp. Ch. 1.

acquainted with his works should know, is to undertake anew the job of providing a systematic theoretical explanation of the structure of reality (*Introduction*, 12). As he conceives it, this theoretical explanation takes the form of understanding the nature of all the most important kinds of things which we ordinarily know to be in the world, investigating whether there are other important kinds of things in the world of which we do not really know, and examining how these various kinds of things are related to one another or, in other words, how these things generally hang together.

As a matter of historical fact, however, Avicenna is not the first to conceive such a philosophical programme. Rather, his endeavour is to bring this programme, after it has been initiated by Aristotle⁵³ and neglected in the long course of commentary tradition, into a new level of development.⁵⁴ To this end, he takes it to be one of his main philosophical tasks to analyse, corroborate, and disprove the ideas and fundamental principles of knowledge that have been developed by earlier philosophers. This is followed then by the tasks of developing new ideas and discovering new fundamental principles of some other—or new—field of philosophical knowledge and to supply the auxiliaries to those fundamental principles. To be sure, his Aristotelian philosophical summa, *The Cure*, (*Kitāb al-Shifā'*),⁵⁵ for instance, is not a mere

⁵³ Aristotle is undoubtedly the first systematic theoretician in the history of philosophy. See Jonathan Lear, *Aristotle: The Desire to Understand* (Cambridge: Cambridge University Press, 2007); Malcolm Wilson, *Aristotle's Theory of the Unity of Science* (Cambridge: Cambridge University Press, 2005); Jonathan Barnes, *Aristotle: A Very Short Introduction* (Oxford: Oxford University Press, 2000), esp. 59-63; and G. E. R. Lloyd, *Aristotle: The Growth and Structure of His Thought* (Cambridge: Cambridge University Press, 1999), esp. Ch. 5.

⁵⁴ It has been pointed out, among others, by Dimitri Gutas (2014, 364), that the long tradition of Aristotelianism is particularly concerned with commentary on Aristotle's works, and it is Avicenna who is the first to bring back this spirit of systematic theoretical explanation of the world as can be seen in his *summa philosophiae*, *The Cure*.

⁵⁵ Also known in English as *The Healing*.

paraphrasing of the corresponding works of Aristotle, but it consists of his judgements on the true doctrines of Aristotle and his own original ideas on the topics at hand. In the Prologue to *The Cure*, he says:

Our purpose in this book, which we hope that time will allow us to complete, and that success granted by God will attend us in its composition, is to set down in it the gist of the fundamental principles which we have ascertained—both the fundamental principles contained in the philosophical knowledge attributed to the ancients and based on methodical and verified theoretical analysis, and the fundamental principles discovered by [a series of] acts of comprehension cooperating in the attainment of truth which was diligently pursued for a long time until it culminated in a correct body [of such principles] which gained the agreement of most views and helped dispel the veils of fanciful notion. 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. [I also sought] to supply the corollary principles along with the fundamental ones, excluding only what I trust will be revealed to the person who is able to see what we are displaying and ascertain what we are depicting, or what escaped my memory and did not occur to my thought.

There is nothing of account to be found in the books of the ancients which we did not include in this book of ours; if it 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. To this I added some of the things which I perceived through my own reflection and whose validity I determined through my own theoretical analysis.⁵⁶

⁵⁶ The translation of this text is adopted from Gutas, *Avicenna*, 42-43.

This important philosophical task is presented in a more emphatic tone in his Introduction to *Logic of the Easterners (Maṭīq al-Mashriqīyyīn)*:

We have resolved to compile a treatise on matters about which researchers have disagreed. In it we shall neither proceed by following partisan considerations, our own fancy, customary practice, or personal habit, nor be concerned about any departure that manifests itself on our part both from what those who study the books of the Greeks are accustomed to out of unmindfulness and obtuseness, and from what our position has been understood to be in books which we compose for the common philosophasters... At the same time we acknowledge the merit of the most excellent of their predecessors [Aristotle] in being awake to that concerning which his masters and teachers were in deep sleep, in distinguishing the parts of the sciences one from the other and in classifying them better than they, in perceiving the truth in many things, in discerning sound and eminent fundamental principles in most sciences, and in disclosing to people what his compatriots who preceded him had overlooked. This is the utmost that can be accomplished by a person who is the first to try his hand at separating what lay confused and restoring what had been impaired; and it behoves his successors to gather the loose ends he left, repair any breach they find in what he constructed and supply corollaries to fundamental principles he presented. But his successors were unable to free themselves of the imperfections of what they inherited from him, and they spent their lives in efforts to understand what he accomplished best and in partisan adherence to some defective theories he originated. These people occupy themselves all their lives with what has already been done, neither finding time in which to consult their own

minds nor, had they found it, thinking it permissible to consider the statements of the ancients in need of addition, correction, or revision...

As a matter of fact, we were afflicted with a company of them—as devoid of understanding “as if they were propped-up blocks of wood” [Qur’ān 63: 4]—who consider profound theoretical analysis a heresy, and disagreement with what is widely accepted a deviation from the right path...⁵⁷

This lengthy quotation from two of his works should suffice to illustrate Avicenna’s view on some of the most important tasks that are necessary for philosophers in any given time to undertake. I would like, however, to add further comments on this. First, it shows that Avicenna is a self-conscious system builder. He starts from a rigorous study of the questions, problems, and theories embodied in the texts of philosophical tradition. Then, drawing on his understanding of the developments in this tradition, he develops his own ideas and works out a philosophical system peculiarly of his own. This, in addition to what I have argued above, makes his ideas deserve to be studied on their own merit as part and parcel of his philosophical system.

Second, it reveals Avicenna’s general conception of philosophical practice. In his light the essential characteristic of philosophy consists in critical analysis. To do philosophy, then, is to examine critically the principles and arguments employed by other philosophers; to inspect any incoherencies or defects in these principles and arguments; and to accept them only when, as the result of a critical inquiry, there is no reason for rejecting them. He

⁵⁷ The translation of this text is adopted from Gutas, *Avicenna*, 35-7.

looks down on those who cling to the doctrines of their predecessors, to the point of blind commitment and forsaking critical analysis, and calling them as pseudo-philosophers. Despite being a *philosophus autodidactus*, already in the early stage of his study Avicenna seems to get the idea that philosophy is an intellectual endeavour, with its own norms and standards, which requires its undertakers to discipline their thought with order and rigour. This sense of order and rigour can be gleaned from his *Autobiography*, where he reminisces about his early years as a young student of philosophy, when he was between ten and sixteen years old.⁵⁸ There he says:

I compiled a set of index cards for myself, and for each argument that I examined, I entered into the cards its syllogistic premisses, their internal structure, and what might follow from them. I took care of the conditions of its premisses, until I had verified the point at issue.⁵⁹

From what has so far been said, it is quite obvious that Avicenna has a clear idea of what it takes to engage in philosophical activity since the early stage of his study. Now, to return to the main point where I left off, we may wonder when did Avicenna come to have a clear idea of his own philosophical programme and the form it should take. Unlike his understanding of the significance of logical and theoretical analysis in philosophical study, his conception of his own philosophical programme—as is generally the case in

⁵⁸ For further discussion on his orderly and rigorously independent study of philosophy, see Gutas, *Avicenna*, 173, 213-14; and with regard to his practice of logical analysis in his *Book of Syllogism*, see Wilfrid Hodges, “Ibn Sīnā on Reduction ad Absurdum,” accessed February 6, 2014. wilfridhodes.co.uk.

⁵⁹ The translation is adopted from Hodges’ article above, where he blends the best features of the translations of Gohlman and Gutas. See also William E. Gohlman, *The Life of Ibn Sina: A Critical Edition and Annotated Translation* (New York: SUNY Press, 1974), 27-9; Dimitri Gutas, *Avicenna*, 16-7.

most philosophers—comes later in his philosophical development. It is plausible, I suggest, to take his encounter with Fārābī's *On the Purpose of the Metaphysics*, when he was sixteen or seventeen years old, as its turning point. In my view, this encounter is not only decisive in his understanding of the *purpose* of Aristotle's *Metaphysics*,⁶⁰ but also in his coming to a clear *conception* and *purpose* of his own philosophical programme.⁶¹ For there he finds that the purpose of philosophy is to understand the nature of things in the world and how they are connected to one another.

The philosophical programme of Avicenna as I sketched it above is remarkably metaphysical. It is metaphysical in two respects: first, it takes the aim of philosophy as a systematic intellectual endeavour to arrive at a comprehensive understanding of the structure of reality and the limit of human knowledge; and second, it takes metaphysics as the starting point of philosophical inquiry.⁶² The programme such like this is what Frank Jackson

⁶⁰ For further discussion on Avicenna's understanding of Aristotle's *Metaphysics* via Kindī and Fārābī, see Amos Bertolacci, "From al-Kindī to al-Fārābī: Avicenna's Progressive Knowledge of Aristotle's *Metaphysics* According to his Autobiography," *Arabic Sciences and Philosophy* 11 (2001): 257-95; and Gutas, *Avicenna*, Ch. 6, Sect. 1, 270-88.

⁶¹ It should be noted that prior to his study of metaphysics, Avicenna devotes his earlier years studying Quran, literature, mathematics, jurisprudence, logic, natural philosophy, and medicine by studying such works as Porphyry's *Isagoge*, Euclid's *Elements*, and Ptolemy's *Almagest*. See Gohlman, *Life*, 9-33; and Gutas, *Avicenna*, 172-9.

⁶² For further discussions of Avicenna's metaphysical doctrines, see Jon McGinnis, *Avicenna* (Oxford: Oxford University Press, 2010), esp. Chs. 6 and 7; Amos Bertolacci, *The Reception of Aristotle's Metaphysics in Avicenna's Kitāb al-Shifā': A Milestone of Western Metaphysical Thought* (Leiden-Boston: Brill, 2006); Robert Wisnovsky, *Avicenna's Metaphysics in Context* (Ithaca, New York: Cornell University Press, 2003); Lenn E. Goodman, *Avicenna* (London: Routledge, 1992), esp. Ch. 2; Stephen Menn, "Avicenna's Metaphysics," in *Interpreting Avicenna: Critical Essays*, ed. Peter Adamson (Cambridge: Cambridge University Press, 2013), 142-69; Kara Richardson, "Avicenna's Conception of the Efficient Cause," *British Journal for the History of Philosophy* 21 (2013): 220-39; Robert Wisnovsky, "Towards a History of Avicenna's Distinction between Immanent and Transcendent Causes," in *Before and After Avicenna: Proceedings of the First Conference of the Avicenna Study Group*, ed. David C. Reisman and Ahmed H. Al-Rahim (Leiden: Brill, 2003), 49-68; Sajjad Rizvi, "Process Metaphysics in Islam? Avicenna and Mullā Ṣadrā on Intensification in Being," in *Before and After Avicenna: Proceedings of the First Conference of the Avicenna Study Group*, ed. David C. Reisman and Ahmed H. Al-Rahim (Leiden: Brill, 2003), 233-48; Amos Bertolacci, "The

called *serious metaphysics*: a metaphysics which is discriminatory in its selection of the basic features of the world to be accounted for, and at the same time claiming to have a complete account of everything in the world (1998, 5). This, in fact, was and is one central aim in traditional philosophical practice (albeit relative to different philosophical traditions, and programmes). Many philosophers have indeed embraced this very same aim in developing their own philosophical programmes. Yet different philosophers have very different accounts of the structure of reality. These important differences in their accounts are undoubtedly due to the differences in what they take to be the basic features of reality, which in turn are governed by their metaphysical assumptions.

1.3 Avicenna's Metaphysical Realism

All philosophical efforts to achieve a comprehensive understanding of the fundamental structure of reality as a whole are guided by one or another metaphysical assumptions which determine their forms of inquiries and the resulted accounts. Some philosophers, like Avicenna, espouse a kind of

Doctrine of Material and Formal Causality in the *Ilāhiyyāt* of Avicenna's *Kitāb al-Shifā'*," *Quaestio* 2 (2002): 125-54; Allan Bäck, "Avicenna's Conception of the Modalities," *Vivarium* 30 (1992): 217-55; Majid Fakhry, "The Subject-Matter of Metaphysics: Aristotle and Ibn Sina (Avicenna)," in *Islamic Theology and Philosophy: Studies in Honor of George F. Hourani*, ed. Michael E. Marmura (Albany: SUNY Press, 1984), 137-47; and Michael E. Marmura, "Avicenna on Causal Priority," in *Islamic Philosophy and Mysticism*, ed. Parviz Morewedge (New York: Caravan Books, 1980), 65-83. See also the English translations of his metaphysical works, Shams Inati, *Ibn Sina's Remarks and Admonitions: Physics and Metaphysics – An Analysis and Annotated Translation* (New York: Columbia University Press, 2014); Avicenna, *The Metaphysics of the Healing*, trans. Michael E. Marmura (Provo, UT: Brigham Young University Press, 2005); and Parviz Morewedge, *The Metaphysics of Avicenna (Ibn Sīnā)* (London: Routledge & Kegan Paul, 1973).

metaphysical realism.⁶³ For light on what I mean by metaphysical realism, I quote the following definition from E. J. Lowe (2008): “Metaphysical realism is the view that most of the objects that populate the world exist independently of our thought and have their natures independently of how, if at all, we conceive of them.” To put the point precisely: it is a doctrine that things in the world exist independently of human minds. Unlike some other forms of realism (of which I shall remark briefly in a moment), Avicenna’s realism is committed to the fundamental ontological doctrines of *hylomorphism* and a robust form of *essentialism*. On the one hand, it is committed to the doctrine, developed by Aristotle, that things in the world are made up of form and matter. And on the other hand, it is committed to the doctrine—which received its clear formulation in the works of Aristotle—that there are mind-independent facts about the *essential nature* or, to use contemporary metaphysical parlance, *identity* of things in the world. In this way, Avicenna’s realism, I think, has much in common with the Aristotelian *moderate* or *immanent realism*.⁶⁴

This suggestion, as I intimated earlier, differs markedly from that of McGinnis (2007) who regards Avicenna as a scientific realist. To call Avicenna a scientific realist, I think, is misleading and even anachronistic. Since scientific realism is a new philosophical thesis which emerged during the early decades of the twentieth century as a response to logical positivism

⁶³ Of course, we cannot find anywhere in his works that Avicenna uses the terms *metaphysical realism* or *realism*. This does not mean, however, that we cannot find any ideas in his works that resemble this doctrine. Avicenna may not have the term for it but the ideas can be found in his works. It must also be noted from the outset that my ascription of our modern philosophical terms to Avicenna’s views throughout this study are done with careful historical and conceptual understanding, where I only ascribe the terms that have closest resemblances and faithful to his original views.

⁶⁴ Despite his commitment to Aristotelian *hylomorphism*, it would make us do scant justice to the minor distinctions, refinements and subtleties of Avicenna’s realism if we ascribe his position as a kind of Aristotelian moderate or immanent realism. This will become clear shortly.

in philosophy of science. The main commitment of scientific realism is on the mind-independent existence and nature of the *unobservable* entities of science such as atoms, electrons, protons, positrons, quarks, genes, etc. Scientific realists generally understood the doctrine as encompassing four central theses, namely:

(i) "Theoretical terms" in scientific theories (i.e., non-observational terms) should be thought of as putatively referring expressions; scientific theories should be interpreted "realistically".

(ii) Scientific theories, interpreted realistically, are confirmable and in fact often confirmed as approximately true by ordinary scientific evidence interpreted in accordance with ordinary methodological standards.

(iii) The historical progress of mature sciences is largely a matter of successively more accurate approximations to the truth about both observable and unobservable phenomena. Later theories typically build upon the (observational and theoretical) knowledge embodied in previous theories.

(iv) The reality which scientific theories describe is largely independent of our thoughts or theoretical commitments. (Boyd 1983).⁶⁵

On this account, then, scientific realism is particularly against many forms of scientific antirealism or instrumentalism that deny the existence of

⁶⁵ For a fuller description of scientific realism, see J. J. C. Smart, *Philosophy and Scientific Realism* (London: Routledge & Kegan Paul, 1963); Peter Smith, *Realism and the Progress of Science* (Cambridge: Cambridge University Press, 1981); Jarrett Leplin, *Scientific Realism* (Berkeley-California-London: University of California Press, 1984); Jarrett Leplin, *A Novel Defense of Scientific Realism* (Oxford: Oxford University Press, 1997); Patrick Greenough and Michael P. Lynch ed., *Truth and Realism* (Oxford: Oxford University Press, 2006); and Anjan Chakravartty, *A Metaphysics for Scientific Realism: Knowing the Unobservable* (Cambridge: Cambridge University Press, 2007); Hilary Putnam, "What is Realism?," *Proceedings of the Aristotelian Society* 76 (1975-1976): 177-94; Geoffrey Hellman, "Realist Principles," *Philosophy of Science* 50 (1983): 227-49.

unobservable entities of scientific theories. Instrumentalists believed that scientific theories are partially interpreted formal system of observation reports. Thus they are, at best, merely instruments for predicting observable phenomena by taking us from one observation statement to another.⁶⁶ Moreover, most instrumentalists maintained that theoretical terms are mostly meaningless since they do not refer to anything in the physical world. It follows therefore that theoretical statements, for the instrumentalists, do not have truth-values (Devitt 1997, 128). Glancing through some of the important works from decades of debates between the scientific realists and antirealists, it can hardly be said that it is this very issue that motivates Avicenna's realism. Furthermore, many prominent contemporary realists have vehemently rejected the ontological doctrine of essentialism, which is cardinal in his metaphysical realism, as entirely untenable.⁶⁷ This last point, I think, makes it worth digressing to give a brief account of the governing assumptions that have gained ascendancy in contemporary philosophical efforts to understand the fundamental structure of reality as a whole—with the hope (echoing Bernard Williams) this would make the familiar seem strange and, if we wish, to question our own philosophical presuppositions.

⁶⁶ For detailed discussions on the antirealist views in the philosophy of science, see Grover Maxwell, "The Ontological Status of Theoretical Entities," in *Minnesota Studies in the Philosophy of Science, Volume III: Scientific Explanation, Space and Time*, ed. Herbert Feigl and Grover Maxwell (Minneapolis: University of Minnesota, 1962), 3–27; Paul M. Churchland and Clifford A. Hooker ed., *Images of Science: Essays on Realism and Empiricism, with a Reply from Bas C. van Fraassen* (Chicago: University of Chicago Press, 1985); Bas C. van Fraassen, *The Scientific Image* (Oxford: Clarendon Press, 1980), Bas C. van Fraassen, "Putnam's Paradox: Metaphysical Realism Revamped and Evaded," *Philosophical Perspectives* 11 (1997): 17–42; and Bas C. van Fraassen, *Scientific Representation* (Oxford: Clarendon Press, 2008).

⁶⁷ To name only a few, W. V. O. Quine, *From a Logical Point of View* (New York: Harper & Row, 1963); Karl R. Popper, *Conjectures and Refutations: The Growth of Scientific Knowledge* (London-New York: Routledge, 2007 [1963]), esp. Ch. 3 (Three Views Concerning Knowledge); Nelson Goodman, *The Structure of Appearance* (Dordrecht: Springer, 1977); and Michael Devitt, *Putting Metaphysics First: Essays on Metaphysics and Epistemology* (Oxford: Oxford University Press, 2010).

Since the mid-twentieth century there is a grand metaphysical thesis that guides most—if not all—philosophical efforts to develop comprehensive accounts of the structure of reality, and is generally regarded by many philosophers in the Analytic tradition⁶⁸ to be the only serious metaphysical programme worthy of pursuit. This serious metaphysical programme goes by the name *physicalism*, which is a more sophisticated form of *materialism*—a view that all and only material things, with their properties and changes, are really exist.⁶⁹ *In nuce*, physicalism is a metaphysical programme for developing a unified system of knowledge guided by the view that everything is ultimately a manifestation of the physical aspects of existence (Poland 1994, 1). It claims that a comprehensive account of the world can be made in terms of a small set of physical properties, relations, and particulars. In this sense, it is a programme of unification of knowledge which gives physics a special

⁶⁸ I do not include the twentieth and twenty-first centuries Continental philosophical tradition given the fact that it is predominantly antirealist, and thus it is not a matter of philosophical interest to most—and again, if not all—philosophers working in this tradition to develop such accounts of the structure of natural order as did their Analytic counterparts. For detailed discussions on Analytic/Continental divide with regard to realism and systematic theoretical accounts of the universe, see Richard Sebold, *Continental Anti-Realism: A Critique* (London-New York: Rowman & Littlefield Int., 2014); James Chase and Jack Reynolds, *Analytic Versus Continental: Arguments on the Methods and Value of Philosophy* (Durham: Acumen, 2011); Lee Braver, *A Thing of This World: A History of Continental Anti-Realism* (Evanston: Northwestern University Press, 2007); and Maurizio Ferraris, *Manifesto of New Realism*, trans. Sarah De Sanctis (New York: SUNY Press, 2014).

⁶⁹ For a brief history of physicalism and materialism, see Sahotra Sarkar and Jessica Pfeifer ed., *The Philosophy of Science: An Encyclopedia* (New York-London: Routledge, 2006), 558-68. Further discussions on reductive materialism and physicalism as governing assumptions in contemporary philosophical and scientific views, see W. V. O. Quine, "On What There Is," *Review of Metaphysics* 2 (1948/1949): 21-38, reprinted in *From a Logical Point of View* (1963); Herbert Feigl, *The "Mental" and the "Physical": The Essay and a Postscript* (Minneapolis: University of Minnesota Press, 1967); Robert Kirk, "From Physical Explicability to Full Blooded Materialism," *Philosophical Quarterly* 29 (1979): 229-37; Tim Crane and D. H. Mellor, "There is No Question of Physicalism," *Mind* 99 (1990): 185-206; Jeffrey Poland, *Physicalism: The Philosophical Foundations* (Oxford: Oxford University Press, 1994); Steven Weinberg, *Dreams of a Final Theory* (New York: Vintage Books, 1994); and Frank Jackson, *From Metaphysics to Ethics: A Defence of Conceptual Analysis* (Oxford: Clarendon Press, 1998).

status and within which all aspects of the world have a place and are related to physics in certain specifiable ways (Poland 1994, 10).

Given its discrimination against things that are *non-physical*, it is hard to believe how can physicalism provide, despite its claim, a truly complete account of reality. This kind of doubt, I suppose, is not new. In fact, some philosophers since a long time ago have questioned its tenability. For example, Hilary Putnam, who regarded this view as a kind of imperialism, asks how could we explain 'rationality' in terms of elementary physical properties.⁷⁰ Is it our physical constitutions that make us rational beings? Taking into consideration the failure of psychophysical reductionism in the philosophy of mind, where physics seemed to be inadequate to provide a complete account for life and consciousness, philosophers, like Thomas Nagel, argues that physicalism as a *mere* governing metaphysical assumption in scientific research rather than a well-confirmed scientific hypothesis.⁷¹ Some other philosophers, the most notable among them D. M. Armstrong, E. J. Lowe, and Brian Ellis, develop and defend one or another versions of neo-

⁷⁰ See, Hilary Putnam, "Three Kinds of Scientific Realism," *The Philosophical Quarterly* 32 (1982): 195-200. Unlike other physicalists, Jeffrey Poland (1994, 384) believes that physicalism is not supposed to be conceived as a kind of imperialistic or monopolistic worldview. See also Richard Healey, "Physicalist Imperialism," *Proceedings of the Aristotelian Society* 79 (1978-1979): 191-211.

⁷¹ See, Thomas Nagel, *Mind and Cosmos: Why the Materialist Neo-Darwinian Conception of Nature is Almost Certainly False* (Oxford: Oxford University Press, 2012), esp. Chs. 1 and 2. Nagel proposes a certain form of natural teleology as an alternative. But most physicalists are not convinced by his proposal. For example, see the review by Simon Blackburn, "Thomas Nagel: A Philosopher Who Confesses to Finding Things Bewildering," review of *Mind and Cosmos: Why the Materialist Neo-Darwinian Conception of Nature is Almost Certainly False*, by Thomas Nagel, *New Statesman*, November 8, 2012, <http://www.newstatesman.com/culture/culture/2012/thomas-nagel-philosopher-who-confesses-finding-things-bewildering>. He even suggests that the work is a good candidate for going onto the Index of Prohibited Philosophical Books, if there were a Philosophical Vatican.

Aristotelian metaphysical realism as a basis in their programme for developing a unified system of knowledge of reality.⁷²

This last point brings us back to Avicenna, whose metaphysical realism represents a medieval Arabic refinement of Aristotelian philosophical programme for unification of knowledge. Without going into the details of his arguments, I present in what follows the fundamental ideas in his metaphysical realism.

*Particular-Universal.*⁷³ In his philosophical inquiry Avicenna is particularly interested in understanding the governing features of reality, which

⁷² I list here the most important of their works: D. M. Armstrong, *Universals and Scientific Realism: Nominalism and Realism, Vol. 1* (Cambridge: Cambridge University Press, 1978), *Universals and Scientific Realism: A Theory of Universals, Vol. 2* (Cambridge: Cambridge University Press, 1978), *A World of States of Affairs* (Cambridge: Cambridge University Press, 1997), *Sketch for a Systematic Metaphysics* (Oxford: Clarendon Press, 2010); E. J. Lowe, *Subjects of Experience* (Cambridge: Cambridge University Press, 1996), *The Possibility of Metaphysics: Substance, Identity, and Time* (Oxford: Clarendon Press, 1998), *A Survey of Metaphysics* (Oxford: Oxford University Press, 2002), *The Four-Category Ontology: A Metaphysical Foundation for Natural Science* (Oxford: Clarendon Press, 2006); Brian Ellis, *Scientific Essentialism* (Cambridge: Cambridge University Press, 2001), *The Philosophy of Nature: A Guide to the New Essentialism* (Chesham: Acumen, 2002).

⁷³ For detailed assessments of Avicenna's view with regard to the metaphysical doctrines of particular and universal, see Joep Lameer, "Avicenna on Universals: A Fragment from his Lost al-Mūjaz," *Sophia Perennis* 18 (2011): 31-56; Jon McGinnis, "Logic and Science: The Role of Genus and Difference in Avicenna's Logic, Science and Natural Philosophy," *Documenti E Studi Sulla Tradizione Filosofica Medievale* 18 (2007): 165-86; Peter Adamson, "On Knowledge of Particulars," *Proceedings of the Aristotelian Society* 105 (2005): 257-78; Michael E. Marmura, "Quiddity and Universality in Avicenna," in *Neoplatonism and Islamic Thought*, ed. Parviz Morewedge (New York: SUNY Press, 1992), 77-87, reprinted in Michael E. Marmura, *Probing in Islamic Philosophy: Studies in the Philosophies of Ibn Sina, al-Ghazali and Other Major Muslim Thinkers* (Binghamton, NY: Global Academic Publishing, 2005), 61-70; Michael E. Marmura, "Avicenna's Chapter on Universals in the *Eisagoge* of his *Shifā'*", in *Islam: Past Influence and Present Challenge: Studies in Honour of W. M. Watt*, ed. A.T. Welch and P. Cachia (Edinburgh: Edinburgh University Press, 1979), 34-56, reprinted in his *Probing*, 33-59; and Michael E. Marmura, "Avicenna's Chapter "On the Relative" in the *Metaphysics* of the *Shifā'*," in *Essays on Islamic Philosophy and Science*, ed. George F. Hourani (New York: SUNY Press, 1975), 83-99.

are constituted of the sum total of real existing things.⁷⁴ These real things have three modes of existence, as he says:

The essences of things may exist in the concrete particulars of the things, or in the apprehension [of those things] (*taṣawwur*), and so they can be considered in three aspects. [*Introduction*: 15]

On this account, then, the real things that populate the world may be categorised, at the highest level of generality, as being either concrete (material) or abstract (ideal) and as being either particular or universal. For all that this distinction is exhaustive and exclusive, the two are not completely independent, given the fact that particulars may be either concrete or abstract (as in the case of number),⁷⁵ and universals may only be abstract. Concrete entities, however, are different from abstract entities since the former exists in space and time or, at least, in time, and consequently possesses spatial-temporal properties and relations. While abstract entities exist only in human mind.

In Avicenna's light, all human beings share the same intellectual ability to know both particulars and universals, and that they are indispensable for our knowledge of reality:

⁷⁴ Avicenna's definition of the universe or the world is to be found in his *Book of Definition*, §26, §56 and §91. See the French translation by A.-M. Goichon, *Livre des définition* (Cairo: L'Institut Français d'Archéologie Orientale, 1963), 21, 41, and 54; and the English translation by Kiki Kennedy-Day, *Books of Definition in Islamic Philosophy: The Limits of Words* (London: Routledge, 2003), 104, 109, and 112.

⁷⁵ For Avicenna's discussion of numbers, see *Metaphysics*, Book III, 5. I will not pursue this discussion here since it would take me too far away from my present purpose in this chapter.

Now, all men are as good as alike in knowing the common and generic natures, whereas they are distinguished only insofar as some men know and reach the specific things and apply themselves to making differentiations, while others stop at the generic things. So, for example, some might know [only] animality, whereas others might additionally know humanity and equinity. When knowledge reaches the specific natures and what is accidental to them, inquiry stops and is not followed by the fleeting knowledge of individuals to which our souls are not at all inclined. [*Physics*: 6]

Avicenna teaches us that particulars and universals are inseparable, and must be known together. It follows therefore that both are the things that constitute our knowledge of matters of fact. However, given the natural disposition of our intellect, Avicenna believes that the best way to reach philosophical knowledge of reality is to proceed from universals to particulars, since it is easier for our reason, with the help of our senses, to grasp universals.

It is clear, then, that when we compare common and specific things and then compare them together with [what is better known to] the intellect, we find that common things are better known to the intellect. When, on the other hand, we compare them together with the order of existence and what is intended in the universal nature, we find that specific things are better known by nature. When we compare the concrete individuals with the specific things and relate both to the intellect, we find that the concrete individuals have some place of priority or posteriority in the intellect only if we include the internal sensitive faculty. In that case, then, the individuals are better known to us than universals, for individuals are impressed on

the internal sense faculty from which the intellect subsequently learns what things are shared in common and what things are not, and so extracts the natures of things common in species. When we relate them both to the nature, we find [that] the thing common in species is better known, even if its actuality begins with determinate individuals. So nature's intention concerning the existence of body is precisely that it arrives at the existence of man and what is generically similar. [Similarly,] its intention concerning the existence of the generable and corruptible particular individual is that the nature of the species exists; and when it is possible to achieve that end through a single individual whose matter is not subject to change and corruption, as, for example, the Sun, the Moon, and the like, then there is no need for another individual to belong to the species. [*Physics*: 6-7]

Although in perceiving particulars, sensation and imagination initiate the most important part of apprehending an individual, it is more like the common notion until they reach the apprehension of the individual that is absolute in every respect. An illustration of how this is would be that body is a common notion to which it belongs, qua body, to be individualized and thus become this or that body. Similarly, animal is a common notion, but more particular than body, and it belongs to it, qua animal, to be individualized and thus become this or that animal. Man is also a common notion that is more particular than animal, and it belongs to it, qua man, to be individualized and thus become this or that man. Now, if we relate these orderings to the power of perception and observe therein two kinds of order, we find that what is closer to and more like the common thing is better known. Indeed, it is impossible that one should sensibly or imaginatively perceive that this is this man unless one perceives that he is this animal and this body. [Similarly,] one would not perceive that this is this animal,

unless one perceives that it is this body, whereas if one perceives him from afar, one might perceive that he is this body without perceiving that he is this man. It is clearly obvious, therefore, that the case of sensation in this respect is similar to the case of the intellect and that what corresponds with the general is better known in itself even for sensation as well. [*Physics*: 8]

As for the relation of the parts of the composites to what is composed from them, the composite is better known according to sensation, since sensation first grasps and perceives the whole and then differentiates. When it grasps the whole, it grasps it in the most general sense (namely, that it is a body or an animal), and thereafter it differentiates it. In the intellect, however, the simple is prior to the composite, since it knows the nature of the composite only after it knows its simple components. If [the intellect] does not know [the composite's] simple components, then it really knows it through one of the accidents or genera [of the composite] without having reached the thing itself—as, for instance, if it knew it as a round or a heavy body and the like but did not know the essence of its substance. As for by nature, the composite is what is intended in most things and parts in such a way that from them, the composite comes to subsist. [*Physics*: 11]

So, from among the general and specific things and the simple and compound things, the general and simple are better known

to the intellect, whereas the specific property and composite are better known by nature. Now, just as nature begins in the way of discovery with the general and simple and from them discovers the things that are themselves differentiated according to species and themselves composite, so *likewise instruction begins with the general and simple and from them comes to know specific things and composites*. The primary aim of both, then, is reached upon acquiring specific and compound things. [*Physics*: 12] (My emphasis)

This, I hope, may suffice to substantiate my claim above that metaphysics lies at the heart of Avicenna's philosophical programme, where it is clear that his inquiry about reality is based on prior considerations of the governing features of reality, namely, the particulars and universals. These metaphysical considerations are so deep-rooted in his thought that he makes them as the starting point for all other aspects of his philosophical inquiry. In fact they are so fundamental in our understanding of his analysis of knowledge since, for Avicenna, the objects of factual knowledge include both particulars and universals. From what has been said so far, we can now, I hope, recognise the exact scope of Avicenna's metaphysical realism. Let us then take a look on how he explains what he meant by such metaphysical concepts of particulars and universals.

The best place to find Avicenna's account of particulars and universals, I reckon, is in Book V, Chapter 1 of *The Metaphysics of the Cure*. In what

follows I beg leave to quote in full the relevant passages from this book, and followed by my comments on some of the most important points in his elaboration of those concepts. At the beginning of the book, he says:

It behooves us now to discuss the universal and the particular. For this is also properly related to what we have finished [discussing]. [These are among the accidents specifically belonging to existence. We say:

The universal is spoken of in three ways: “Universal” is said of the meaning by way of its being actually predicated of many—as, for example, the human being. Universal is [also] predicated of a meaning if it is permissible for it to be predicated of many, even if it is not a condition that these should exist in actuality—as, for example, the heptagonal house. For it is a universal inasmuch as it is in its nature to be predicable of many. But it does not follow necessarily that these many must exist—nay, not even one of them. “The Universal” is [also] said of the meaning whose very conception does not prevent its being predicated of many. It is only prevented if some cause prevents it and proof indicates [such prevention]. An example of this is [the case of] the sun and the earth. For, inasmuch as these are intellectually apprehended as sun and earth, there is nothing to prevent the mind from allowing their meaning to exist in many, unless a proof or an argument makes it known that this is impossible. This, then, would be impossible because of an external cause, not by reason of its very conception.

It is possible to combine all this [in saying] that this universal is that whose very conception does not prevent its being predicated of many. The universal used in logic and what is

akin to it must be this. As for the particular that is singled out, this is [the thing] whose very conception prevents its meaning from being predicated of many, as with the essence of this Zayd to whom one points. For [the essence] cannot be imagined except as belonging to him alone. [*Metaphysics*: 148-9]

Here Avicenna gives us three meanings of universal, preferring in the end the third, which is a synthesis of the first two definitions.⁷⁶ That is, a universal is something which applicable to many things, and which can be true or false of things. In other words, universal is a repeatable or recurrent thing that can be instantiated or exemplified by many concrete particular things. As for particular, it is something that which is not capable of being predicated of many things, due to its nature as being non-repeatable and non-instantiable, for example, a particular Zayd among all humans. As a further illustration of the foregoing points, we can say that the human species is a concrete particular which consists of the total sum of all particular humans existing at any given time. Despite being *parts* of the human species, particular humans are also *instances* of the kind *human*. This kind human, or *humanity*, is an abstract universal. What makes universals differ from particulars is that the former are *instantiable* by entities which are themselves not instantiable, namely, by particulars. It follows therefore that the kind human is instantiated by many particular humans, but no particular human does or can have instances.⁷⁷

⁷⁶ Stephen Menn (2013, 155) suggests that Avicenna draws these definitions on Alexander of Aphrodisias' account of universal in *Quaestiones* I.3 and I.11.

⁷⁷ For contemporary defences of this basic ontological categories, see fn. 65.

It is clear, then, that Avicenna regards both particulars and universals as genuine entities. Historically speaking, there is nothing very startling in this view, given the fact that realism with regard to both entities used to be a global philosophical position before and during his time.⁷⁸ But, later on, this position has been under assault from many philosophical schools. Some ontologists such as the nominalists and the materialists vehemently deny the existence, and therefore the reality, of universals.⁷⁹ While some others, without undertaking any ontological commitment to them, takes the existence of universals to be only parasitic on language. Or, putting the matter precisely, universals derive their existence from the meaningfulness of words or general terms—such as horse, house, etc.—but not in things themselves.⁸⁰ These rejections are commonly grounded on the postulation that the only real

⁷⁸ It can be fairly said that metaphysical realism began to gain ascendancy among philosophers with Socrates's first formulation of it. In fact, in his *Metaphysics* (1078b), Aristotle regarded Socrates as the first philosopher to investigate the problem of universal. See also, James Warren and Frisbee Sheffield, *The Routledge Companion to Ancient Philosophy* (New York-London: Routledge, 2014); Anthony Kenny, *A New History of Western Philosophy, Vol. 1: Ancient Philosophy* (Oxford: Clarendon Press, 2004); and Christopher Shields, *The Blackwell Guide to Ancient Philosophy* (Oxford: Blackwell Pub., 2003).

⁷⁹ The nominalist attacks against universals as one of the two fundamental ontological categories began with Roscellinus and Peter Abelard at the end of eleventh century in scholastic philosophy, and since then nominalism became the predominant ontological doctrine until the revival of realism, with the works of G. E. Moore and Bertrand Russell, at the turn of the twentieth century. See, John Marenbon, *Early Medieval Philosophy (480-1150)* (London-New York: Routledge, 1988), esp. 109-10 and Ch. 12; John Marenbon, *Medieval Philosophy: An Historical and Philosophical Introduction* (London-New York: Routledge, 2007), esp. Ch. 5; Joël Biard, "Nominalism in the Later Middle Ages," in *The Cambridge History of Medieval Philosophy, Vol. 2, ed. Robert Pasnau* (Cambridge: Cambridge University Press, 2010), 661-73; Joseph W. Koterski, *An Introduction to Medieval Philosophy: Basic Concepts* (Oxford: Wiley-Blackwell, 2009); Frederick Copplestone, *A History of Philosophy, Vol. III: Late Medieval and Renaissance Philosophy* (New York: Doubleday, 1993), esp. Pt. I; Armand Maurer, *Medieval Philosophy: An Introduction* (New York: Random House, 1962), esp. Ch. 5. For contemporary works which defend nominalism, see W. V. O. Quine, *From a Logical Point of View* (New York: Harper & Row, 1963), esp. Chs. 1, 2, and 6; and David Lewis, "A World of Individuals," in *The Nature of Properties: Nominalism, Realism, and Trope Theory*, ed. Michael Tooley (New York: Garland Pub, 1999), 355-372; and Nelson Goodman and W. V. O. Quine, "Steps Toward a Constructive Nominalism," in *The Nature of Properties: Nominalism, Realism, and Trope Theory*, ed. Michael Tooley (New York: Garland Pub, 1999), 337-54.

⁸⁰ One particularly interesting defence of this nominalist position can be found in John R. Searle, *Speech Acts: An Essay in the Philosophy of Language* (Cambridge: Cambridge University Press, 2011 [1969]), particularly in Chapter 5.2, on "Nominalism and the Existence of Universals."

existents are individuals or particulars, namely, the concrete entities. It is no doubt that in our sense experience we can only encounter particulars. And that the phenomenal world seems to be composed of bare individual things devoid of properties which relate them to each other or, more generally, hang them together. If that is really the case, however, it seems that the best that we can possibly do is to draw up infinite lists of things. This will eventually render philosophy and science as nothing more but a futile dream. For both are essentially concerned with universal generalisations, namely, with general relations of things rather than the individual things themselves, and with general laws—like physical law and chemical law—rather than with the peculiarities or accidents of individual things. In fact, if that is really the case that we can only know concrete, particular entities, it follows therefore that it is impossible for human beings to be able to speak or think. For Russell (1997 [1912], 93) has argued rightly that, although universals are not given in sensation, no sentence could be formed without employing words designating universals.

For those philosophers like Avicenna, who affirm their ontological commitments to universals, their problem now is to account for the nature of universals and their relations to particulars. To put this problem precisely: Where do universals exist? Do they exist in the things that instantiate them? Or do they exist outside them as self-existing ideas? Or do they exist as ideas apprehended in human minds? Or to use the scholastic terminology, do universals exist *in re*, *ante rem*, or *post rem*? Metaphysical realists did, of course, provide their own solutions to this problem. And the solutions can be

grouped into two leading positions maintained by different philosophers throughout the history of philosophy. For the present purpose, of giving a brief historical background to this problem, it may suffice to state precisely the central ideas in both positions.

The first is *Platonic realism*, or generally called *extreme realism*. This position, as its name suggests, has its origin in Plato, who was the first to bring the problem of universals into philosophy.⁸¹ Extreme realism maintained an *ante rem* realism about universals, according to which, universals are real immaterial substances or entities, existing independently of and separable from particular or individual things. This is strictly from a metaphysical point of view. From an epistemological point of view, the extreme realists, like Plato, argued that though universals are immaterial substances that have ontological subsistence in themselves outside spatial-temporal domain, they could nevertheless be grasped directly through intellectual intuition. As a matter of historical fact, however, this position did not win general supports among philosophers. Apart from Plato's students in his Academy, it has been defended by a couple of scholastic philosophers such as Boethius and John Scotus Erigena in the Middle Age.⁸²

⁸¹ Plato's arguments on the existence and nature of universals are to be found in his works such as *Phaedo*, *Republic*, *Phaedrus*, and *Parmenides*. For scholarly studies on his metaphysical views, see Daniel Devereux, "Plato: Metaphysics," in *The Blackwell Guide to Ancient Philosophy*, ed. Christopher Shields (Oxford: Blackwell Publishing, 2003), 75-99; Terry Penner, *The Ascent From Nominalism: Some Existence Arguments in Plato's Middle Dialogues* (Dordrecht: D. Reidel Pub, 1987); and Alexander Nehamas, "Confusing Universals and Particulars in Plato's Early Dialogues," *The Review of Metaphysics* 29 (1975): 287-306.

⁸² For further introductory discussions on their views, see Maurer, *Medieval Philosophy*, Chs. 2 and 3; and John Marenbon, *Early Medieval Philosophy (480-1150)* (London-New York: Routledge, 1988), Ch. 6.

The second position is called *moderate* or *immanent realism*. Aristotle was the first to espouse this metaphysical position, out of his dissatisfaction with Platonic realism, in which he maintained an *in re* realism about universals.⁸³ Like Plato before him, Aristotle taught that universals are substances, but unlike Plato he maintained that universals do not exist *in themselves*. Rather they exist dependent upon and inseparable from individual things as their *essence* or *form*, as well as in human mind as *concepts*. To put the matter somewhat differently, the moderate realists took universals to have double existence or ontological status: on the one hand, universals, in view of their existence as forms, are the ontological constituents that, together with matter, make up the substance of individual things. This, as remarked above, is called Aristotelian hylomorphism. On the other hand, universals exist as *entia rationis*, that is, as beings in human mind or the objects of thought. Epistemologically speaking, given that universals do not have ontological subsistence in themselves, but enter into participative

⁸³ For further discussions on Aristotelian moderate or immanent realism, see D. M. Armstrong, *Universals and Scientific Realism: Nominalism and Realism, Vol. 1* (Cambridge: Cambridge University Press, 1978); Gareth B. Matthews, "Aristotelian Essentialism," *Philosophy and Phenomenological Research* 50 (1990): 251-62; E. J. Lowe, *The Possibility of Metaphysics: Substance, Identity, and Time* (Oxford: Oxford University Press, 1998), and *The Four-Category Ontology: A Metaphysical Foundation for Natural Science* (Oxford: Oxford University Press, 2006); Brian Ellis, *Scientific Essentialism* (Cambridge: Cambridge University Press, 2001); Tuomas E. Tahko ed., *Contemporary Aristotelian Metaphysics* (Cambridge: Cambridge University Press, 2012); and Paul Ricoeur, *Being, Essence and Substance in Plato and Aristotle*, trans. by D. Pellauer and J. Starkey (Cambridge: Polity Press, 2013). For Aristotle's metaphysical concepts with regard to his moderate realism, see Donald C. Williams, "On the Elements of Being," *Review of Metaphysics* 7 (1953): 3-18; Wilfrid Sellars, "Substance and Form in Aristotle," *Journal of Philosophy* 54 (1957): 688-99; Alan Code, "The Persistence of Aristotelian Matter," *Philosophical Studies* 29 (1976): 357-67; G. E. L. Owen, "Particular and General," *Proceedings of the Aristotelian Society* 79 (1978): 1-21; Montgomery Furth, *Substance, Form and Psyche: An Aristotelian Metaphysics* (Cambridge: Cambridge University Press, 1988); Kit Fine, "Aristotle on Matter," *Mind* 101 (1992): 35-57; Gail Fine, *On Ideas: Aristotle's Criticism of Plato's Theory of Forms* (Oxford: Oxford University Press, 2004); Michael V. Wedin, *Aristotle's Theory of Substance: The "Categories" and "Metaphysics" Zeta* (Oxford: Oxford University Press, 2000); Michael J. Loux, "Aristotle on Matter, Form, and Ontological Strategy," *Ancient Philosophy* 25 (2005): 81-123; Casey Perin, "Substantial Universals in Aristotle's Categories," in *Oxford Studies in Ancient Philosophy*, Vol. XXXIII, ed. David Sedley (Oxford: Oxford University Press, 2007), 125-44; and Giorgios Anagnostopoulos ed., *A Companion to Aristotle* (Oxford: Blackwell, 2009), esp. Pt. III.

ontological constitution of the individual things as their form, the moderate realists argued that universals can be apprehended through intellectual intuition by means of *abstraction*. This Aristotelian realism can be considered as one of the ancient ideas that have a long lasting influence in the history of philosophy. It used to be the received metaphysical doctrine in scholasticism until the revival of Platonic realism in the hands of Boethius and Scotus Erigena. But it recently enjoys a revival among metaphysicians in the Analytic tradition.⁸⁴

Let us turn now to Avicenna's own solution to this problem. Avicenna sees that both Platonic thesis and Aristotelian antithesis with regard to the problem of universals are inadequate.⁸⁵ From these opposite views he develops his own synthesis in which he argues that universals do exist in themselves as much as they exist inseparable from individual things and in human mind as concepts. In other words, Avicenna maintains a threefold existence of universals—an *ante rem*, *in re*, and *post rem* existence. This view is clearly expressed in the following passage:

The essences of things may exist in the concrete particulars of the things, or in the apprehension [of those things] (*taṣawwur*), and so they can be considered in three aspects. [First] it can be considered as the essence-in-itself, without being related to one of the two aspects of existence [that is, as concrete

⁸⁴ For a short list of recent literature which represent the neo-Aristotelian metaphysical realism in contemporary analytic philosophy, see fn. 79.

⁸⁵ Avicenna's criticism of Socratic and Platonic extreme realism can be found in his *Metaphysics of the Cure*, Book VII, Chapter 2, 243-44. See also Michael E. Marmura, "Avicenna's Critique of Platonists in Book VII, Chapter 2 of the *Metaphysics* of his *Healing*," in *Arabic Theology, Arabic Philosophy. From the Many to the One: Essays in Celebration of Richard M. Frank*, ed. James Montgomery (Leuven: Peeters, 2006), 35-69.

particulars or as apprehended in the mind], and whatever follows upon them, save insofar as it is such [namely, the essence considered in itself]. [Second] it can be considered insofar as it is in concrete particulars in the external reality, where certain accidents, which individualise its existing as that, follow upon it. [Third] it can be considered inasmuch as it is apprehended, in which case certain accidents, which individualise its existing as that, follow upon it, for example, being a subject and predicate, universality and particularity, as well as the essential and accidental in predication. [Introduction: 15]

His commitment to this view, and his judgement on both Platonic and Aristotelian views on universals, are further elaborated in his *Metaphysics of the Cure*. I beg leave to quote his elaboration there *in extenso*:

There is here something perceived by the senses—namely, animal or man, together with matter and accidents. This is natural man. There is [also] here something which is animal or human—viewed in itself in terms of itself, without taking with it what has mingled with it and without its having the condition that it is either general or specific, one or many, whether in actuality or also through the consideration of potency, inasmuch as it is in potency. For animal inasmuch as it is animal, and man inasmuch as it is man—that is, with respect to its definition and meaning, without any attention being paid to other matters conjoining it—is nothing but animal or human.

As for animal—in the general [sense], particular animal, animal with respect to its being considered in potency as either general or specific, animal considered as existing in the concrete or intellectually apprehended in the soul—it is animal

and a thing. But it is not animal viewed alone. It is known that, if it is animal and a thing, then “animal” is in the latter two as though a part of both. The same is the case with respect to man.

Considering animal in itself would be permissible even though it exists with another, because [it] itself with another is [still] itself. Its essence, then, belongs to itself, and its being with another is either an accidental matter that occurs to it or some necessary concomitant to its nature—as [is the case with] animality and humanity. Considered in this way, it is prior in existence to the animal, which is either particular by [reason of] its accidents or universal, existing [in the concrete] or [in the mind] in the way that the simple is prior to the complex and the part to the whole. In this [mode of] existence, it is neither genus nor species, neither individual, nor one, nor many. But, in this [mode of] existence, it is only animal and only human. [Metaphysics: 152-3]

The above passages bring out very clearly Avicenna’s view concerning the ontological status of essence/universal. Here, again, Avicenna asserts that an essence of thing may exist in three ontological realms: it may exist *ante rem*, *in re*, and *post rem*. To use Avicenna’s own example: an essence of thing, say human, may exist in itself—and this may be called *essence-in-itself*; from there it may exist as it is instantiated in concrete, particular natural human in this world and can be perceived by our sense perception together with its matter and accidents; and it may also exist in human mind as it is intellectually apprehended. In Avicenna’s light, then, *essence-in-itself*, exist prior in reality to natural human, which is either particular by virtue of its accidents or universal, both by virtue of its existing in many concrete,

particular humans and in human minds. Avicenna contends further that essence-in-itself still exists as it is in itself when being in the other two modes of existence. For its essence belongs only to itself and its being in the other modes of existence is either an accidental matter or necessary concomitant that accrues to its essence.

The existence of essence-in-itself together with its two other modes of existence—that is, in concrete particulars and in human minds—is illustrated in the following passage:

Animal, then, taken with its accidents, is the natural thing. What is taken in itself is the nature, of which it is said that its existence is prior to natural existence [in the manner of] the priority of the simple to the composite. This is [the thing] whose existence is specified as being divine existence because the cause of its existence, inasmuch as it is animal, is the providence of God, exalted be He. As regards its being with matter and accidents and this individual—even though through the providence of God, exalted be He—it is due to the particular nature. And, just as in existence animal has aspects above the one, likewise [it has them] in the mind. For there is in the mind the form of animal abstracted in the manner of abstraction which we have mentioned, and in this respect it is called intellectual form... [*Metaphysics*: 156]

What this passage does is to present in a particularly emphatic and indeed vivid form Avicenna's view of the threefold existence of essence/universal. Here, each mode of existence is given a more precise name: essence-in-itself

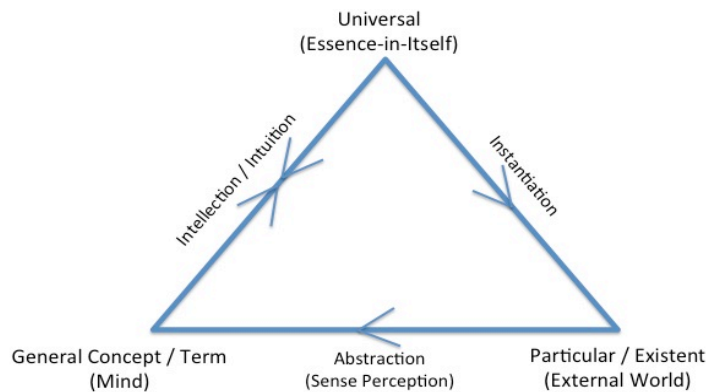
is now called *divine existence*; essence as it is instantiated in concrete thing is called *natural existence*; and essence as it is apprehended in human minds is called *intellectual form*. Metaphysically speaking, the relations between these three modes of existence is made possible by what Avicenna calls the Giver of Forms (*Wāhib al-Ṣuwar*), from which natural things receive their essences or forms that make them what they are and by which it is possible for human reason to apprehend those essences (*Metaphysics*: 334-8).⁸⁶

This account of Avicenna's threefold existence of essence/universal does not, of course, exhaust all the ideas expressed in his works, but enough has been said to show that his view is a refinement of Platonic and Aristotelian views concerning the ontological status of essence/universal. In what follows I will go on further to state what in my view is Avicenna's fundamental realist position with regard to this problem. So, to begin with, Avicenna, like Plato and Aristotle before him, maintains the objective reality of universals, which is necessarily involved in that of cognisable things in the external world, and which provide the objective ground for all mental concepts and words/general terms. But, while Plato erected on this metaphysical assumption his theory of Ideas and Aristotle his opposing theory of Essence or Form, Avicenna fuses their views into a synthetic realist theory which posits the divine existence of essence-in-itself from which come the universals as they existed inseparably in things in the external world and as they are

⁸⁶ Avicenna's views concerning the existence and the role of Giver of Forms in this world can also be found in *Physics*, 65; *Notes*, 37, 46, 47, 86, and 166, 177, 194; *Discussions*, 254 and 266. For a scholarly study on this notion see, Jules Janssens, "The Notions of *Wāhib al-Ṣuwar* (Giver of Forms) and *Wāhib al-'Aql* (Bestower of Intelligence) in Ibn Sīnā," in *Intellect and Imagination in Medieval Philosophy*, ed. M. C. Pacheco and J. F. Meirinhos (Turnhout: Brepols Publishers, 2006), 551-62.

apprehended in human minds. Thus, according to Avicenna’s metaphysical realism, universals can be understood as: firstly, objective entities instantiated in objectively existing things; secondly, subjective concepts of these entities as determined in human mind both by the objective entities themselves and the objectively existing things in which they are instantiated; and, thirdly, names or words representing both of the entities and the concepts, and applicable alike to both.

Diagram 1. Avicenna’s Threefold Existence of Universal



The postulation of the existence of essence-in-itself is very important for Avicenna’s metaphysical realism in two respects. First, it makes possible for him to avoid the danger of passing into Platonic mysticism or objective idealism, which posits the existence of separable and independent entities in a heavenly supra-sensible world that we can only hope for a mystical

illumination to be able to see them. Second, it wards off the growth of subjective tendency in Aristotelian abstractionism, where universals and concepts seem to be strictly subjective creations of human mind through the process of abstractions, and thus make them lack of any objective ground both for their existence in human minds (since there is no way to determine that the same concepts are and can be created in two different minds) and for their objective validity and significance.⁸⁷ The threat of subjectivism with regard to universals and concepts is particularly real. Since without the objective ground for universals and concepts then these questions will logically and inevitably follow: given their subjective origins is it possible to derive objective knowledge from concepts? If objective knowledge cannot be derived from subjective mental concepts, whence can it be derived? Or is there no such thing as objective knowledge at all? Even in the case of Avicenna himself, we have seen that one scholar, Sari Nuseibeh (1989), due to his ignorance of Avicenna's metaphysical realism, believed and tried to make us believe that objective knowledge is unattainable according to Avicenna's theory of knowledge.⁸⁸ To the contrary, objective knowledge is very much possible within Avicenna's metaphysical realism. It is made possible, first and foremost, by his postulation of the entity called essence-in-itself. For, according to Avicenna, it is from essence-in-itself that the universals are instantiated in objectively existing things in the external world, and from which also the identical universals are intuited by human reasons as concepts, after the rudimentary ideas of them being abstracted through our

⁸⁷ Concepts here refer to what I shall call later in Chapter 2.4 as *metaphysical concepts*. As I shall discuss later in the next chapter there are some other kinds of concepts, apart from metaphysical concepts, that involved in factual knowledge.

⁸⁸ This is not, however, a proper place to dwell on the details of his interpretation in the article. I devote some space for that in Chapter 4, Sections 2 and 3.

sense experience. To put the matter more precisely, in Avicenna's realism, essence-in-itself plays an important role of being the objective link between the universals as instantiated in the concrete existent things and the ones apprehended in our mind as concepts,⁸⁹ which then makes possible both objective knowledge of concepts and of mind-independent existing things themselves.

By maintaining that essence-in-itself provides the objective ground for our mental concepts and our knowledge of mind-independent reality, Avicenna's realism is markedly opposed, then, to some forms of anti-realism, which have their roots in medieval philosophy, under the name *conceptual nominalism* or *conceptualism*. According to this anti-realist doctrine, all our knowledge of things in the world are ultimately grounded in our own concepts—that is, our ways of thinking about those things—rather than in essence-in-itself or things-in-themselves. As pointed out earlier, concepts, according to Avicenna, are not fancy creation of human minds, but are determined by essences, as they exist both in themselves and in the existing things. And it is only in this way that our concepts play their cognitive role in mediating our grasp of the ultimate structure of mind-independent reality.

Besides that, his positing of nature-in-itself could possibly provide him with an answer to this particularly fundamental and difficult question, which most of us has to deal with, namely: what is the ground of our knowledge of the nature of reality? As a matter of historical fact, such a question did not

⁸⁹ An earlier interpretation which takes essence-in-itself to play this role, but with a different concern, can be found in Jon McGinnis (2007).

arise before or during Avicenna's time. For it is the great novel philosophical question raised by René Descartes and John Locke at the beginning of modern philosophy. However, under the predominant influence of nominalism—which believed that knowledge is originated in subject's self rather than in object—both Descartes and Locke tried to answer the question with the same starting point in different directions: the former took knowledge to be originated in the subject's mind and the latter in the subject's experience. With fundamental antipathy towards metaphysics, particularly when Logical Positivism was in the ascendant during the early decades of the twentieth century, this problem of the origin of human knowledge has been crudely presented as the opposition between rationalism and empiricism. Since then it has always been treated as a matter of a Kierkegaardian Either/Or rather than a Hegelian Both/And. Or, to put it in simpler terms, the way of thinking about it is always either reason or sense experience as the ground of our knowledge, rather than it is both reason and sense experience. This way of thinking is so widespread that even contemporary scholars of Avicenna, as I remarked earlier, are divided between intuitionist/rationalist and abstractionist/empiricist interpretations. Despite their solemn commitment to provide interpretations that represent his actual views, their own ways of thinking about this matter have prevented them from acknowledging his insistence, on numerous occasions, that: whether we are engaged in ordinary life or in the pursuit of philosophical knowledge, most of us rely on both sense experience (or abstraction) and reason (or intuition) to acquire what we regard as knowledge of mind-independent reality.⁹⁰

⁹⁰ One such occasion can be found in the psychological part of his *Book of Salvation*. For an

More importantly, Avicenna's essence-in-itself avoids his metaphysics from being driven to the many forms of subjectivism, which follows logically and inevitably from nominalism. Firstly, it avoids him from sliding into an assumption that makes most of human knowledge as explorations of the contents of our own mind or consciousness and of how things appear to us. This has been the fundamental metaphysical assumption shared by every one of the chief pre-Kantian philosophies—in Descartes, Spinoza, and Locke, to name only three—and the empiricism of the twentieth century. Secondly, by virtue of his essence-in-itself, it makes Avicenna's theory of abstract entities, such as universals and essences, is in no way a concession to idealism. That is, a metaphysical doctrine that denies the existence of concrete, material things, and argues that the ground for everything there is, including concepts, essences, and universals, is our own mind. Given that everything there is is reducible in one way or another to mind, the upshot of this doctrine then is nothing but the loosening of our intellectual grip on the reality of mind-independent world itself. And it can be found in the subjectivist idealism of Berkeley and in post-Kantian absolutist idealisms of Fichte, Schelling, and

English translation of the book, see Fazlur Rahman, *Avicenna's Psychology (An English Translation of Kitāb an-Najāt, Book II, Chapter VI with Historico-Philosophical Notes and Textual Improvements on the Cairo Edition)* (Oxford: Oxford University Press, 1952). Among his contemporary interpreters, it seems that only McGinnis (2007) who has so far got it right that both sense experience/abstraction and reason/intuition are equally indispensable as the ground of knowledge in Avicenna's theory of knowledge.

Hegel (commonly known as German Idealism),⁹¹ as well as in British Idealism.⁹²

True, all the opposing metaphysical doctrines that I presented above, albeit in their barest essential points, have their own criticisms against metaphysical realism such that of Avicenna. But to present a full account of their specific arguments and criticisms and to provide Avicennian responses to them would be futile since we might not find them in his works given the long historical gap between them and the radical differences in their philosophical concerns and methods. However strong their criticisms were, it is at least certain that his position did not lead to the conclusions that theirs have led them. That is to say, to the many forms of subjectivism which have contributed to the utter barrenness of philosophy that it became the main obstacle to the growth of scientific knowledge throughout the nineteenth century. This unfortunate relationship between philosophy and science is not an exaggeration. As a matter of historical fact, it has been one of the great concerns among philosophers at the end of the nineteenth century and at the beginning of the twentieth century. After its adoption of objective attitude, science has undergone a tremendous advancement with unprecedented discoveries of new scientific truths. While philosophy, confined itself in the dungeon of subjectivism, has achieved nothing that can be called objective philosophical truths. Given that it was incapable of providing adequate

⁹¹ Among the best works on German Idealism, see Dieter Henrich, *Between Kant and Hegel: Lectures on German Idealism*, ed. David Pacini (Cambridge, MA: Harvard University Press, 2003); Karl Ameriks, *The Cambridge Companion to German Idealism* (Cambridge: Cambridge University Press, 2000); and Terry Pinkard, *German Philosophy 1760-1860: The Legacy of Idealism* (Cambridge: Cambridge University Press, 2002).

⁹² For a general introduction to British idealism, see W. J. Mander, *British Idealism: A History* (Oxford: Oxford University Press, 2011).

explanations for the newly founded scientific procedures and theories, some philosophers attempted to reform philosophy itself in order to develop a new philosophy infused with scientific attitude, which was generally called scientific philosophy.⁹³ It must be noted, however, that scientism was not the only alternative among philosophers during that time. For there were also some philosophers who rejected scientism while defending the autonomy of philosophy as an intellectual discipline by which we can arrive at philosophical, rather than scientific, truth about reality.⁹⁴

Some contemporary scientific realists will, of course, argue that Avicenna's postulation of the objective independent existence of essence-in-itself is untenable since there is no empirical—namely, physical or material—evidence to substantiate this claim and, in fact, he never gives one. It is true that Avicenna never gives any physical or material evidence in support of this metaphysical entity. But just because we cannot find such evidence anywhere

⁹³ For the works towards scientific philosophy, see Bertrand Russell, *Our Knowledge of the External World: As a Field of Scientific Method in Philosophy* (London-New York: Routledge, 2009 [1914]), esp. Ch. 1 where he criticised the current tendencies of philosophy in his time, particularly idealism; Moritz Schlick, "Die Wende in der Philosophie," *Erkenntnis* 1 (1930): 4-11; Karl R. Popper, *The Logic of Scientific Discovery* (London-New York: Routledge, 2002 [1934]); Hans Reichenbach, *The Rise of Scientific Philosophy* (Berkeley: University of California Press, 2002 [1951]); Otto Neurath, "The Scientific Conception of the World: The Vienna Circle," in *Empiricism and Sociology* (Dordrecht & Boston: D. Reidel Publishing Company, 1973), 299-318. For historical accounts of this reform attempt, see for example, C. D. Broad, "Wittgenstein and the Vienna Circle," *Mind* 71 (1962): 251; Brian McGuinness, "Wittgenstein and the Vienna Circle," *Synthese* 64 (1985): 351-8; Thomas E. Uebel, "Writing a Revolution: On the Production and Early Reception of the Vienna Circle's Manifesto," *Perspectives on Science* 16 (2008): 70-102; and Malachi H. Hacothen, *Karl Popper, The Formative Years 1902-1945: Politics and Philosophy in Interwar Vienna* (Cambridge: Cambridge University Press, 2000).

⁹⁴ The most influential works in this direction are G. E. Moore, *Philosophical Studies* (Routledge & Kegan Paul Ltd, 1970 [1922]); G. E. Moore, *Some Main Problems of Philosophy* (London: George Allen & Unwin Ltd, 1953); Ludwig Wittgenstein, *Tractatus Logico-Philosophicus* (London-New York: Routledge, 2001 [1922]); and Gilbert Ryle, *The Concept of Mind* (London-New York: Routledge, 2009 [1949]). For historical accounts of this debate, see Avrum Stroll, *Twentieth-Century Analytic Philosophy* (New York: Columbia University Press, 2000); and Hans-Johann Glock, *What is Analytic Philosophy* (Cambridge: Cambridge University Press, 2008).

in his works it does not necessarily mean that his metaphysical doctrine is untenable. For it has been showed, notably by Hilary Putnam, that not all entities or properties in this world are physical (or material).⁹⁵ In fact, according to Putnam, too much insistence on physical or material reductionism would turn scientific realism into nothing but a scientific imperialism. Even worse, it will even force us to deny the property, or the nature, of *reason* or *rationality* shared by all human beings. Given the fact that the nature of reason or rationality cannot be proved based on human biological and physical constitutions. And given the fact that it cannot be defined or explained in biological or physical terms.

A defence such like this, of course, will never make those scientific realists with a physicalist or materialist demeanour to drop their beliefs and to concede with Avicenna. Nevertheless, I would like to argue further that Avicenna's essence-in-itself plays a particularly significant role to secure a truly realist status for his metaphysical doctrine. Let me take this matter a bit further. In traditional debate under the banner realism vs. idealism, the crucial point that is typically stressed for a metaphysical position to be regarded as realist or idealist is its view on the issue of independence/dependence of mind.⁹⁶ Thus for a metaphysical position to be compatible with a realist status

⁹⁵ See, Hilary Putnam, "Three Kinds of Scientific Realism," *The Philosophical Quarterly* 32 (1982): 195-200. Though he is famous for forever changing his mind, Putnam was consistent in his rejection of physicalism and materialism. The consistency can be found in his works such as, *Realism and Reason: Philosophical Papers, Vol. 3* (Cambridge: Cambridge University Press, 1983), esp. Ch. 13 "Why Reason Can't be Naturalized"; *Realism with a Human Face* (Cambridge, MA: Harvard University Press, 1992) esp. Ch. 7 "Why is a Philosopher"; and *Renewing Philosophy* (Cambridge, MA: Harvard University Press, 1992), esp. Ch. 4 "Materialism and Relativism".

⁹⁶ For further discussion of the issue of independence/dependence of mind in realism-idealism debate, see Michael Devitt, *Realism and Truth* (Princeton: Princeton University

it should maintain that knowledge and the structures of the external world are causally and ontologically independent from human mind and cognition. And it is an idealist position if it maintains the opposite view. As an illustration to the foregoing points, let us take a brief look at Kantian phenomenalism. According to Kant, our knowledge of physical world is based solely on its appearance as we perceived it (*phenomena*), but nothing can be known about non-phenomenal things or what he called *noumena*, things-in-themselves. At first glance, it seems that Kant's view constitutes a form of physicalism. But although Kant did not deny any reality to the physical world, he insisted that our knowledge and the structures of the physical world itself are somehow mental in nature, that is, they depend on the cognitive activities and capacities of the human mind. It is in this way that Kantian phenomenalism is generally regarded to constitute a form of idealism, or precisely, a subjective idealism. To return to Avicenna, however, by positing essence-in-itself (about which, according to Kant, little or nothing can be known) it makes possible for him to argue convincingly that entities such like physical substances, essences, and universals are in no way depending on the cognitive structure of human minds for being what they are, for their essential characters, and for their constitutions.

In the foregoing discussion, I endeavoured, in a somewhat cursory and preliminary manner, to provide a philosophical and historical overview of Avicenna's metaphysical realism, which serves as a framework presupposition for his philosophical programme. Many important points that I

Press, 1997); and Michael Devitt, "Aberrations of the Realism Debate," *Philosophical Studies: An International Journal for Philosophy in the Analytic Tradition* 61 (1991): 43-63.

made with regard to some central aspects of his realism cry out for detailed accounts. But that would be an enormous task which goes far beyond the ambit of this section. Now, let us recall then what has already been said about Avicenna's metaphysical realism. Avicenna begins his philosophical wonder with a metaphysical presupposition (about *what, ultimately, there is*) which asserts that there are real existent things. This constitutes what I take to be his basic realism. From this initial metaphysical wonderment it follows logically what might be called his *ontological realism*: that there exist an external reality in itself and by itself that is totally independent of our cognitive structures and activities, and of our representations of how it is. Or to put it more precisely, the world exists independently of the knowing subject. (It should be noted that 'Knower independent' here is an ontological category rather than an epistemic category.) These two metaphysical principles, as I argued above, serve as the background framework for his comprehensive philosophical inquiry to making sense of the whole reality—or what I described earlier as his *philosophical programme*. Now I would like to call attention to two other principles—implicit in the preceding discussion—that follow logically from Avicenna's metaphysical presupposition. These principles, I suggest, constitute the essential components of his integral metaphysical realism as a comprehensive philosophical system.

The first principle is *epistemological realism*—that is, to know is to know reality or the real thing as it is, and that we can and, under proper conditions, in fact do have such knowledge. The problem of realism—like any other comprehensive philosophical systems such as idealism and

phenomenalism—is at one and the same time metaphysical and epistemological. Since it does not only concern the *known objects* but also the *knowing subject*. In short, it concerns the subject-object relation. Along these lines, we can therefore draw a basic distinction between ontological realism, which concerns claims about what there is (about what, say, universals are) does not in any way depend on our knowledge of it, and epistemological realism, which concerns claims about cognition and its objects (about how universals can be known). It should be noted, however, that it is not necessary to draw a sharp line between ontological realism and epistemological realism. For, as a matter of fact, ontological issues cannot be discussed in an epistemological vacuum. This point can be illustrated as follows. Our metaphysical views about what universals are will always entail the epistemic considerations of how such universals can be known. Furthermore, the metaphysical views about what we are looking in our quests for the ultimate structure of reality are bound to affect our epistemic views about how to look at it. To put the matter in another way, metaphysical views are closely related to the problem of the ways of knowing, which constitutes one of our fundamental epistemological problems.⁹⁷

On this view, therefore, Avicenna's metaphysical realism necessitates that his epistemology should be a realist epistemology, since it is only in this way that his epistemology will be able to serve its purpose within his comprehensive philosophical programme. Besides that, his epistemological realism is also evident from the fact that it employs cognitive psychology in

⁹⁷ The problem of the ways of knowing in Avicenna's philosophical system will be the subject matter of Chapter 5.

order to elucidate the cognitive processes involved in our knowledge of such real existent things as particulars and universals (as well as in our knowledge of everyday matters), and by which also it makes possible to show that philosophical exploration of reality presupposes ontological and epistemological realism.⁹⁸ There is another important point about his epistemological realism that needs to be pointed out here. Given that his ontological realism takes the existence of real things to be independent of our knowledge of them, it implies that his epistemology should adopt a realist view in which such knowledge is regarded as objective and hence not relative to a particular mind, knower or perspective. On this epistemological realist view, then, the fact that the knowledge claims—and even the words or terms in which they are stated—are the subjective creations of the human mind, it does not follow that the reality represented by these claims is a construction of human mind. This last point leads us to another constituent realist principle in Avicenna’s philosophical system, namely, *semantic realism*.

Given that Avicenna’s epistemological realism maintains that the real external reality is in no way a construction of human mind, it logically brings forth a semantic theory which contains a theory of reference that allows us to find out what words, utterances, and propositions refer to, and adopt a concept of factual truth.⁹⁹ This is what I call Avicenna’s semantic realism.¹⁰⁰ It

⁹⁸ My presentation of Avicenna’s cognitive psychology with regard to our knowledge of real things can be found in Chapter 5.

⁹⁹ An account of Avicenna’s realist conceptions of semantics and (factual) truth is presented in Chapter 4.

¹⁰⁰ For a contemporary debate on semantic realism, see Mario Bunge, *Chasing Reality: Strife over Realism* (Toronto: Toronto University Press, 2006), esp. 257-62; Michael Devitt, *Realism and Truth* (Princeton: Princeton University Press, 1997); Alexander Miller, “The Significance of Semantic Realism,” *Synthese* 136 (2003): 191-217; and Scott A. Shalkowski, “Semantic Realism,” *The Review of Metaphysics* 48 (1995): 511-38.

is realist in the sense that his semantic theory maintains, as we shall see later in Chapter 4, that propositions—by which we express our judgements—refer to some aspects of reality or about facts; and that some propositions are factually true—while others are false—are determined by the reality or the facts themselves. In this way, *inter alia*, his semantics is logically faithful to his metaphysical realism, which maintains the subject-object dichotomy.

In the present section I have presented a rather brief account of Avicenna's metaphysical realism including all the constituent components, which logically follow from it, in his comprehensive philosophical system. In the next section I shall go on to present a system of knowledge which, according to Avicenna, can be built upon this metaphysical realism.

1.4 A Unified System of Knowledge

In the preceding section, I endeavoured to show that Avicenna's metaphysical realism is a philosophical programme that accords special privilege to hylomorphism—the view that everything is a manifestation of the formal and material aspects of existence. In this section, I shall try to make explicit that this programme is directed towards development of a unified system of knowledge within which all aspects of reality have their proper place.

But before proceeding further, a terminological note is in order. For I need to justify my ascription of the term *unified knowledge* rather than *unitary*

knowledge (or *unity of knowledge*) as ascribed by some Muslim scholars to Avicenna or Muslim philosophers in general.¹⁰¹ It should, to begin with, be noted first and foremost that the idea of the unity of knowledge as those Muslim scholars understood it is particularly different from that of advocated by the logical positivists in the philosophy of science. Under their slogan 'unity of science without metaphysics,' and as exemplified in their project of the *Encyclopedia of Unified Science*,¹⁰² the positivists ideal of the unity of science is grounded in the doctrine of physicalist reductionism, where they believe that the whole of sciences or knowledge are to be unified by reducing them all ultimately to physics. On this view, then, the structure of science or knowledge is seen to be monolithic and amalgamated completely in the science of physics.¹⁰³

¹⁰¹ The chief exponents of this idea are S. H. Nasr and his disciples and followers. I shall list here some of the works by his disciples and followers, and the lists of Nasr's principal works shall follow later. Osman Bakar, *Classification of Knowledge in Islam: A Study in Islamic Philosophies of Science* (Kuala Lumpur: Institute for Policy Research, 1992); Osman Bakar, *Tawhid and Science: Essays on the History and Philosophy of Islamic Science* (Penang, Malaysia: Secretariat for Islamic Philosophy and Science, 1991); Muhammad Suheyl Umar, "From the Niche of Prophecy: Nasr's Position on Islamic Philosophy within the Islamic Tradition in Excerpts and Commentary," in *The Philosophy of Seyyed Hossein Nasr* (The Library of Living Philosophers: Volume XXVIII), ed. Lewis E. Hahn et al. (La Salle, Illinois: Open Court, 2001), 89-131; Ibrahim Kalin, "The Sacred versus the Secular: Nasr on Science," in *The Philosophy of Seyyed Hossein Nasr* (The Library of Living Philosophers: Volume XXVIII), ed. Lewis E. Hahn et al. (La Salle, Illinois: Open Court, 2001), 445-62; and Zailan Moris, "The Essential Relation Between Revelation and Philosophy in Islam and Its Importance in Understanding the Nature and History of Islamic Philosophy," in *The Philosophy of Seyyed Hossein Nasr* (The Library of Living Philosophers: Volume XXVIII), ed. Lewis E. Hahn et al. (La Salle, Illinois: Open Court, 2001), 619-31.

¹⁰² See, Otto Neurath, Rudolf Carnap, and Charles W. Morris, eds., *Foundations of the Unity of Science: Toward an International Encyclopedia of Unified Science* (Chicago: Chicago University Press, 1969); Otto Neurath, Rudolf Carnap, and Charles W. Morris, eds., *International Encyclopedia of Unified Science*, vols. 1 and 2, *Foundations of the Unity of Science* (Chicago: University of Chicago Press, 1938-70); Otto Neurath, *Unified Science* (Dordrecht: D. Reidel Pub. Co., 1987); Otto Neurath, *Philosophical Papers 1913-1946* (Dordrecht: D. Reidel Pub. Co., 1983); Paul Oppenheim and Hilary Putnam, "The Unity of Science as a Working Hypothesis," in *Minnesota Studies in the Philosophy of Science, Vol. 2*, eds. Herbert Feigl et al. (Minneapolis, MN: Minnesota University Press, 1958), 3-36; and Herbert Feigl, "Physicalism, Unity of Science and the Foundations of Psychology," in *The Philosophy of Rudolf Carnap* (The Library of Living Philosophers: Volume XI), ed. Paul Arthur Schilpp (La Salle, Illinois: Open Court, 1963), 227-67.

¹⁰³ It should also be noted that there is a growing criticisms among philosophers in the Analytic tradition against this physicalist reductionist theory of the unity of science. The most

As a response in part to logical positivism and to modern science as a whole, some Muslim scholars have advanced a different idea of the unity of science. The idea, however, did not have its basis, as we would expect, on metaphysics *vis-à-vis* the anti-metaphysical thesis of the positivists.¹⁰⁴ Rather, using some medieval Muslim philosophers as their archetypes, the idea is grounded on their belief in what can be described as *theological reductionism*.¹⁰⁵ What I mean by theological reductionism here can be illustrated by the view frequently stated by a leading proponent of Islamic science, Seyyed Hossein Nasr. Nasr believes that the knowledge and sciences as cultivated in the Muslim world come into being from Islamic revelation, the essence of which is the principle of unity (*al-tawḥīd*).¹⁰⁶ This

powerful among them, see Jerry Fodor, "Special Sciences (Or: The Disunity of Science as a Working Hypothesis)," *Synthese* 28 (1974): 97-115; Geoffrey Hellman and Frank Thompson, "Physicalism: Ontology, Determination, and Reduction," *The Journal of Philosophy* 72 (1975): 551-64; Richard Healey, "Physicalist Imperialism," *Proceedings of the Aristotelian Society* 79 (1978-1979): 191-211; John Dupré, "The Disunity of Science," *Mind* 92 (1983): 321-46; John Dupré, *The Disorder of Things: Metaphysical Foundations of the Disunity of Science* (Cambridge, MA: Harvard University Press, 1993); John Dupré, "Metaphysical Disorder and Scientific Disunity," in *The Disunity of Science: Boundaries, Contexts and Power*, ed. Peter Galison and David Stump (Stanford: Stanford University Press, 1996), 101-17; Peter Galison and David Stump ed., *The Disunity of Science: Boundaries, Contexts and Power* (Stanford: Stanford University Press, 1996); and Ian Hacking, "The Disunities of Science," in *The Disunity of Science: Boundaries, Contexts and Power*, eds. Peter Galison and David Stump (Stanford: Stanford University Press, 1996), 37-74.

¹⁰⁴ Despite their anti-metaphysical bent, the positivist thesis is, I think, still a metaphysical thesis. Since to argue that everything is physical is one of the kinds of metaphysics.

¹⁰⁵ For an interpretation of medieval natural philosophy based on theological reductionism, see Robert French and Andrew Cunningham, *Before Science: The Invention of the Friar's Natural Philosophy* (Aldershot: Ashgate Publishing, 1996). This interpretation has been challenged in Edward Grant, "God, Science, and Natural Philosophy in the Late Middle Ages," in *Between Demonstration and Imagination. Essays in the History of Science and Philosophy Presented to John D. North*, eds. Lodi Nauta and Arjo Vanderjagt (Leiden: Brill, 1999), 243-67. This is followed by a special issue devoted to an exchange of arguments between Andrew Cunningham and Edward Grant in the journal *Early Science and Medicine* 5 (2000), see Andrew Cunningham, "The Identity of Natural Philosophy: A Response to Edward Grant," *Early Science and Medicine* 5 (2000): 259-78; Edward Grant, "God and Natural Philosophy: The Late Middle Ages and Sir Isaac Newton," *Early Science and Medicine* 5 (2000): 279-98; and Andrew Cunningham, "A Last Word," *Early Science and Medicine* 5 (2000): 299-300.

¹⁰⁶ See, Seyyed Hossen Nasr, *An Introduction to Islamic Cosmological Doctrines: Conceptions of Nature and Methods Used for Its Study by Ikhwān al-Ṣafā', al-Bīrūnī, and Ibn Sīnā* (Cambridge, MA: Harvard University Press, 1964), 1-2, 4, 275; Seyyed Hossein Nasr,

principle of the unity of God underlies the unity of the whole world given that this principle is the single source from which the world and all its contents come into existence. For Nasr, then, working within the matrix of Islamic revelation and imbued with the spirit of the Quran, the ultimate goal of Muslim philosophers and scientists is to uncover this underlying unity and to demonstrate the unity of all things that exist.¹⁰⁷ Thus Nasr insists that we cannot have a full—or at best only superficial and incomplete—understanding of the essence of the philosophies and sciences developed by them without understanding this cardinal principle of Islam, namely, the unity of God.¹⁰⁸

It is impossible to undertake here any exhaustive and detailed critical analysis of Nasr's theological reductionism. But even in the absence of such an analysis it is no doubt that his belief cannot stand in the face of historical facts. Most importantly, it is particularly doubtful that the philosophy and sciences that are claimed to have their origin in the Islamic revelation (and in the Quran) only developed almost two hundred years after the death of Prophet Muhammad. It makes us wonder why they took such a long time to emerge out of the Muslim minds? We cannot find any answer to this question unless we take into account the well-established historical facts that the springs of reason, of philosophy and sciences, in Muslim society/civilisation

Islamic Science: An Illustrated Study (Kent: World of Islam Festival Publishing Company Ltd., 1976), 4; and Seyyed Hossein Nasr, *Science and Civilization in Islam* (Chicago: ABC International Group, Inc., 2001), 21-22, 25.

¹⁰⁷ See, Nasr, *Introduction*, 3-4; Seyyed Hossein Nasr, *Three Muslim Sages: Avicenna, Suhrawardī, Ibn 'Arabī* (Delmar, NY: Caravan Books, 1997), 51; Nasr, *Science*, 22, 25.

¹⁰⁸ See, Nasr, *Science*, 22. In fact, theological reductionism has always been the fundamental belief in Nasr's view of knowledge and the sciences as he presented them in all his writings. See Seyyed Hossein Nasr, *Islamic Philosophy from Its Origin to the Present: Philosophy in the Land of Prophecy* (New York: SUNY Press, 2006); Seyyed Hossein Nasr, *The Need for a Sacred Science* (Surrey: Curzon Press Ltd., 1993); and Seyyed Hossein Nasr, *Knowledge and the Sacred* (New York: SUNY Press, 1989).

only took place after the translation of Greek and other philosophical and scientific works.¹⁰⁹ (And some of the works are translated and taught for purely pragmatic and worldly purposes.) In fact, most of the works by Muslim philosophers and scientists are written based on the philosophical and scientific systems and frameworks bequeathed to them by the ancients. Moreover, if it is true that Islamic philosophy and sciences grow out of the bosom of Islamic revelation and the Quran how could we explain the facts that philosophical and scientific research have not been a priority in the Ottoman empire,¹¹⁰ and that the great majority of Ottoman Muslims were illiterate and that there was little industry can be found in the Ottoman empire during the nineteenth to early twentieth century?¹¹¹ Moreover, with their belief in the unity of God and the Quran at their disposal we do not find any serious effort to develop a system of knowledge worthy of the name with new theories, developments, and discoveries in Muslim countries today. Nor can we find it developed by that group of Muslim scholars after they have won a handful of disciples and millions of readers and followers both in the West and in the Muslim countries.

¹⁰⁹ See, Richard Walzer, *Greek into Arabic: Essays on Islamic Philosophy* (Cambridge, MA: Harvard University Press, 1962); Majid Fakhry, *A History of Islamic Philosophy* (New York: Columbia University Press, 1970), esp. Introduction and Ch. 1. For the best scholarly work to date on the translation movement in the Abbasid period, with lists of ancient philosophical and scientific works translated into Arabic, see Dimitri Gutas, *Greek Thought, Arabic Culture. The Graeco-Arabic Translation Movement in Baghdad and Early Abbasid Society (2nd–4th/8th–10th Centuries)* (London-New York: Routledge, 1998). As a matter of historical fact, this translation movement has reached its peak by the time of the first Arabic/Muslim philosopher, al-Kindī. See, Peter Adamson, *Al-Kindī* (Oxford: Oxford University Press, 2007), 5.

¹¹⁰ Roshdi Rashed, "The End Matters," *Islam and Science* 1 (2003): 153-60.

¹¹¹ On Muslim illiteracies and economic situations in the Ottoman Empire during the eighteenth and nineteenth centuries, see Andrew Mango, *From the Sultan to Atatürk: Turkey* (London: Haus Publishing, 2009); Suraiya N. Faroqi, *The Cambridge History of Turkey, Vol. 3, The Later Ottoman Empire, 1603–1839* (Cambridge: Cambridge University Press, 2006); and Reşat Kasaba, *The Cambridge History of Turkey, Vol. 4, Turkey in the Modern World* (Cambridge: Cambridge University Press, 2008).

In my view, therefore, the successive emergence of philosophers, scientists, and thinkers throughout the long history of humanity only proves the perennial truth of Aristotle's remarks in his *Metaphysics* that, "human being by nature desires to know" (A1 980a21). To know, or to understand, the world and their place in it is the nature of all human beings, no matter they believe in the unity of God, in any one religion, or not at all. This, I believe, is true long before there exists Islam in human history and even today. For the problem of understanding the world and ourselves as part of it and our knowledge of it is always the problem in which *all thinking women/men* are interested, regardless whether they are an agnostic like Russell, practising Jews like Hilary Putnam and Martha Nussbaum, or a wine drinking Muslim like Avicenna. Moreover, the practice of philosophising and scientific inquiry on this exalted plane of theological and religious beliefs would end up with the abandonment of the pursuit itself—given the fact that believers will never give up their theological or religious beliefs.¹¹² In fact, as we shall see in a moment, Avicenna relegates theology or religion to what he calls practical philosophy, which concerns only with guiding human actions in this world and that it has no contribution in our understanding the broad structure of reality. Moreover, he particularly opposes the practice of mixing up the problem of God and His Nature and Attributes with investigations in natural philosophy.¹¹³ Avicenna's argument in this regard is so important to show that the theological

¹¹² One of the many instances of the triumph of theology over philosophy can be found in the Shaykhh's rejection of some fundamental philosophical doctrines of Suhrawardi. See, Mehdi Amin Razavi, *Suhrawardi and the School of Illumination* (London-New York: Routledge, 2013 [1997]), esp. Ch. 5.

¹¹³ According to McGinnis, this is Avicenna's criticism against Aristotle and his followers who discussed the deity in natural philosophy which has led them to error. See, Avicenna, *The Metaphysics of the Healing, Vol. 1*, trans. Jon McGinnis (Provo, Utah: Brigham Young University Press, 2009), 17, fn. 6.

reductionist thesis goes against his philosophical motive and intention that I must quote the relevant passages *in extenso*:

The efficient principle common to all in the first sense (if natural things have an efficient principle in this sense) would not be part of the natural order, since everything that is part of the natural order is subsequent to this principle, and it is related to all of them as their principle [precisely] because they are part of the natural order. So, if that principle were part of the natural order, then either it would be a principle of itself, which is absurd, or something else would be the first efficient principle, which is a contradiction. Consequently, the natural philosopher has no business discussing [such an efficient principle], since it has nothing to do with the natural philosophy. Also, if there is such a thing, it may be a principle of things that are part of the natural order as well as things that are not part of the natural order, in which case its causality will be of a more general existence than [both] the causality of what specifically causes natural things and the things that are specifically related to natural things. [*Physics*: 17]¹¹⁴

In point of fact, Avicenna insists that not only the efficient cause but also the Giver of Forms (*wāhib al-ṣuwār*)—which Davidson and Janssens¹¹⁵ identified it as the Active/Agent Intellect which is the lowest of the higher Intellect which govern the sublunary world from which emanate the matter in the sublunar

¹¹⁴ This quotation is from McGinnis's translation of Avicenna's *Physics of the Healing*. I replace McGinnis use of the words *science of physics* with *natural philosophy* to suit my own purpose here.

¹¹⁵ For scholarly discussions on Avicenna's Giver of Forms see, Herbert Davison, *Alfarabi, Avicenna, and Averroes on Intellect*, 74-94; and Jules Janssens, "The Notions of *Wāhib al-Ṣuwār* (Giver of Forms) and *Wāhib al-'Aql* (Bestower of Intelligence) in Ibn Sīnā," in *Intellect et imagination dans la Philosophie Médiévale/ Intellect and Imagination in Medieval Philosophy*, Vol. 1, eds. M. C. Pacheco and J. F. Meirinhos (Turnhout: Brepols Publishers, 2006), 551-62.

world and the natural forms in matter (including the souls of plants, animals, and human beings) and which actualises the human intellect—lies beyond the purview of natural philosophy and hence not the subject of investigation to natural philosophers. Consider the following argument:

The principle of motion is either what prepares or what completes. What prepares is that which makes the matter suitable, like what moves semen during the preparatory states; whereas what completes is that which gives the form. It would seem that the Giver of that form by which the natural species subsist is outside of the natural order, and it does not fall to the natural philosopher to investigate that, beyond positing that there is that which prepares and there is a Giver of Form. Without doubt, what prepares is a principle of motion, as is what completes, because it is what in fact brings about the emergence from potency to act. [*Physics*: 65]¹¹⁶

Similar points are developed and expressed more emphatically in Book I.1-4 of *Metaphysics of the Cure*, where he argues that the problem of God is the subject matter properly belongs only to the philosophical discipline designated as the *divine knowledge*, the first philosophy, or metaphysics, and not to any other disciplines like natural philosophy, political philosophy, and moral philosophy:

This is because the subject matter of every science is something whose existence is admitted in that science, the only thing investigated being its states... The existence of

¹¹⁶ For Avicenna's elaboration on the existence and the role of Giver of Forms in this world see, *Metaphysics*, Book IX.5; *Notes*, 37, 46, 47, 86, and 166, 177, 194; *Discussions*, 254 and 266.

God—exalted be His greatness—cannot be admitted as the subject matter of this science; rather, it is [something] sought in it. This is because, if this were not the case, then [God's existence] would have to be either admitted in this science but searched for in another, or else admitted in this science but not searched for in another. Both alternatives are false. For it cannot be sought in another science, since the other sciences are either moral, political, natural, mathematical, or logical. None of the philosophical sciences lies outside this division. There is [absolutely] nothing in them wherein the proof of God—exalted be His greatness—is investigated. [Indeed,] this is impossible... it thus remains that the investigation [of God's existence belongs] only in this science (metaphysics).
[*Metaphysics*: 3-4]

We will presently show you that the inquiry concerning His existence can only [reside] in this science, since it has become clear to you from the state of this science that it investigates [the things] that are basically separable from matter. You have glimpsed in the natural philosophy that God is neither a body nor the power of a body, but that He is one—free in every respect from matter and form admixture with motion. Hence, the inquiry concerning Him must belong to this science. What you have glimpsed regarding this in the natural philosophy was foreign to the natural philosophy—[something] used in them that does not belong to them. By this, however, it was intended to hasten for man the knowledge of the existence of the First Principle, so that the desire to acquire the other sciences would take hold of him, and [to hasten] his being drawn to the level [of mastering these sciences] so as to reach true knowledge of Him. [*Metaphysics*: 4]

But no science except this one [metaphysics] includes discussion of the ultimate causes. [*Metaphysics*: 6]

Hence, we must inescapably indicate the subject matter of this science so that the purpose that lies in this science becomes evident to us. We thus say:

The subject matter of natural philosophy¹¹⁷ [as we have seen] was body, [but] not by way of its being an existent, nor by way of its being substance, nor by way of its being composed of its two principles ([by which] I mean matter and form), but by way of its being subject to motion and rest. The sciences that fall under natural philosophy are farther away from this; the same is the case with the moral philosophy... [*Metaphysics*: 7]

Concerning the order [in which] this science [is studied], it should be learned after natural philosophy and mathematics. As regards the natural [philosophy], this is because many of the things admitted in this knowledge are among the things made evident in the natural philosophy—as [for example] generation and corruption, change, place, time, the connection of every moved thing by a mover, the termination of [all] moved things with a first mover, and other than these. As for the mathematics, this is because the ultimate aim in this [metaphysical] knowledge—namely, knowledge of God’s governance, knowledge of the spiritual angels, and their ranks, and knowledge of the order of the arrangement of the spheres—can only be arrived at through astronomy; and astronomy is only arrived at through arithmetic and geometry... [*Metaphysics*: 14-15]

¹¹⁷ With regard to the philosophical study of human soul, which is a part of natural philosophy, Avicenna says: “Our discussion here, however, concerns the soul only inasmuch as it is a soul, and that only inasmuch as it is associated with this matter. So we should not discuss the return of the soul when we are discussing nature, until we move on to the discipline of philosophy [i.e., metaphysics] and there investigate the things that are separate [from matter]. The investigation in the natural philosophy, however, is restricted to what is appropriate to natural things, and they are the things that bear relation to matter and motion” (*Soul*, 238).

It is also possible that the natural philosophy and mathematics would have yielded for us [only] a demonstration of the fact, even if it did not yield for us demonstration of the reasoned fact; and that metaphysics would then yield for us a demonstration of the reasoned fact, particularly as regards the remote final causes. [*Metaphysics*: 15-16]

Avicenna's delineation of the proper subject matter and the exact boundary of philosophical disciplines in the passages from his *Metaphysics* above are clear enough that it needs no further elucidation. Let us return, then, to what I describe as Avicenna's unified system of knowledge. What I mean by unified knowledge¹¹⁸ here is the view that there are genuine divisions among branches of knowledge and that there are principles which relate all the branches to some fundamental branch. This means that in unification of knowledge there is a branch of knowledge to which all others are related in a particular way. It is in this way that I view Avicenna's metaphysical realism as a unification programme which aims at building a system of knowledge that is grounded in metaphysics and is structured in accordance with a set of principles which characterise significant unifying relations. This has been presented in part in the previous section, and will become clearer in what follows.

All the things that exist in the world, according to Avicenna, are of two categories: those that exist as they are independently of human actions and states; and those that exist dependent on human actions and states¹¹⁹—or, in

¹¹⁸ My understanding of unified knowledge is indebted to Jeffrey Poland (1994).

¹¹⁹ This fundamental distinction of features of reality can be found in *Introduction*, 12; and *Metaphysics*, 2.

contemporary philosophical parlance, the former can be called natural facts and the latter can be called human/social facts. Given this ontological fact, Avicenna divides rational knowledge into theoretical (*'ilm al-naẓariyya*) and practical (*'ilm al-'amaliyya*) which respectively correspond to those categories of existence. This category of things in turn provides an ontological basis for Avicenna's system of knowledge. It follows therefore that the ultimate task of philosophical knowledge is to explain all aspects of reality and human life including subjective, objective, physical, metaphysical, psychological, social, political, religious, etc.

The aim of theoretical knowledge, according to Avicenna, is purely cognitive. That is, to perfect the theoretical faculty of human soul through apprehension (*taṣawwur*) and true judgement (*taṣdīq*)¹²⁰ of those features of reality that exist independently of us, and thereby enable us to form opinions and beliefs about them. As for practical knowledge, it is to perfect our theoretical faculty through apprehension and true judgement of those features of reality that exist dependent of our actions and states and thereby perfecting our practical faculty by guiding our actions and activities in this world according to what is known (*Introduction*, 12; *Metaphysics*, 2). In other words, the aim of theoretical knowledge is to attain contemplative knowledge as such, whereas the aim of practical knowledge is to attain contemplative knowledge pertaining to human life and actions.

¹²⁰ The rendition of *taṣawwur* and *taṣdīq* as *apprehension* and *true judgment* shall be explained shortly in the next section.

Avicenna divides both theoretical and practical knowledge into three categories in accordance with various facets of reality. For the theoretical knowledge, it consists of: (1) natural philosophy (*'ilm al-ṭabīʿī*), which deals with existents as they are in the bodies, either they are in motion or at rest, and both in apprehension and in subsistence, and are connected to the matter of a particular species; (2) mathematics (*'ilm al-riyāzī*), which investigates existents as they are abstracted from matter in apprehension but not in subsistence; and (3) metaphysics or divine knowledge (*'ilm al-ilāhī*), which investigates into the existents as they are separable from matter in subsistence as well as in apprehension (*Introduction*, 14).¹²¹ With regard to practical knowledge, it is divided into: moral philosophy (*'ilm al-akhlāq*) through which the moral states and actions of an individual is ordered; (2) household governance (*tadbīr al-manzil*) through which the individual human affairs is organised; and (3) political philosophy or governance of the cities (*'ilm al-siyāsātadbīr al-mudun*) which is connected with the teaching of those opinions through which the common human affairs are governed (*Introduction*, 14). This classification of rational knowledge as Avicenna presents it both in *Introduction* and *Metaphysics* is quite general. His most complete and detailed exposition, however, can be found in a short treatise called *On the Divisions of Rational Knowledge*.¹²² At the beginning of the treatise he writes:

Wisdom (*ḥikma*) is divided into theoretical (abstract) and practical. The theoretical wisdom is the one whose aim is to acquire certain belief with regard to the states of existent things that exist independently of human action. Its only aim here is to

¹²¹ Cf. *Metaphysics*, 2.

¹²² *Fī Aqsām al-'Ulūm al-'Aqliyyah in Tis' Rasā'il* (1908), 104-18.

form an opinion. Examples are the knowledge of the unity of God and astronomy. The practical wisdom, on the other hand, not only aims at acquiring certain belief about existing things, but also to obtain a sound opinion about the things that exist as a result of human endeavour, with the hope to achieve goodness. The aim therefore is not merely to gain an opinion but rather to gain an opinion for the sake of action. Accordingly, the aim of theoretical wisdom is truth, and the aim of practical wisdom is the good. [*Division*: 105]

Before proceeding further, a terminological note is in order. It should be noted that Avicenna employs a different locution in this treatise *vis-à-vis* the ones that he uses in *Introduction* and *Metaphysics*. There he uses the term philosophical knowledge (*'ulūm al-falsafiyya*) while in the treatise he employs the term wisdom (*ḥikma*). Despite the different locution it does not mean that Avicenna has a completely different view of philosophical knowledge. Unlike the post-classical Muslim philosophers like Suhrawardī and Mullā Ṣadrā, the term wisdom as Avicenna understands it in this context does not have any mystical connotation.¹²³ Rather, wisdom as Avicenna—and other philosophers in classical Arabic philosophy—understands it is synonymous with philosophy (*falsafa*) or philosophical knowledge (*'ilm*) in general.¹²⁴ It is a state of human mind after it has achieved certain depth and breadth of both theoretical and

¹²³ For Suhrawardī's view on wisdom and his mystical philosophy, see Mehdi Amin Razavi, *Suhrawardī*. On Mulla Sadra's concept of wisdom in his mystical philosophy, see Sajjad H. Rizvi, *Mullā Ṣadrā and Metaphysics: Modulation of Being* (London: Routledge, 2009), 21-3, fn. 16 and 66. See also Sajjad H. Rizvi, *Mullā Ṣadrā Shīrāzī: His Life and Works and the Sources for Safavid Philosophy* (Oxford: Oxford University Press, 2007).

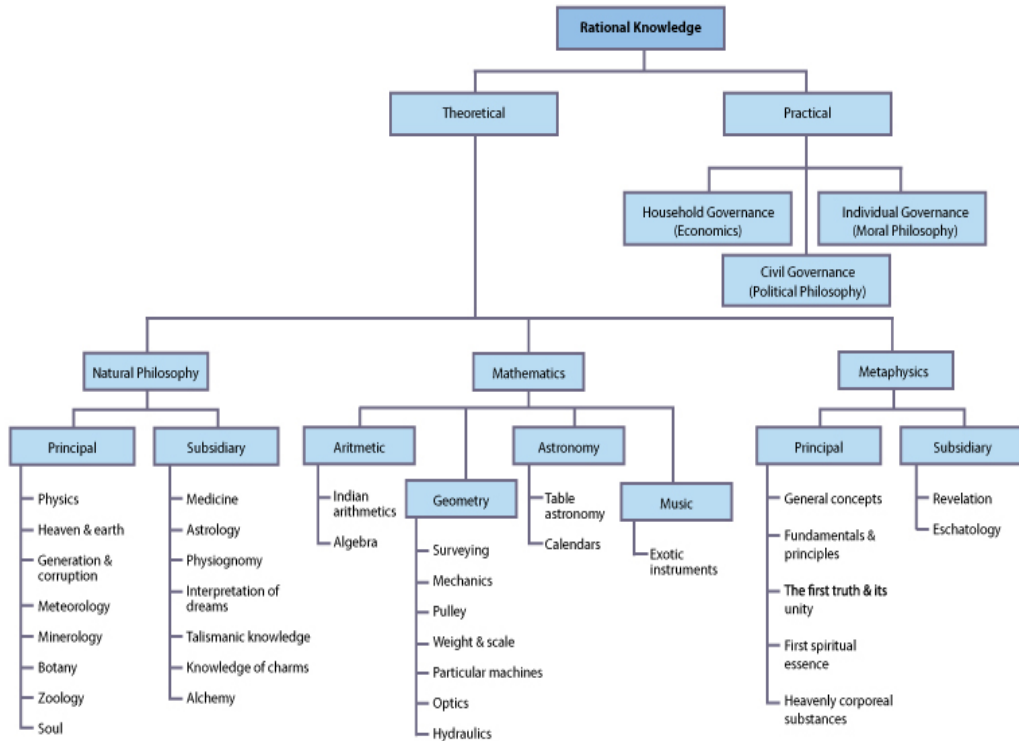
¹²⁴ For a discussion on Avicenna's concepts of knowledge (*dānish*), philosophical knowledge (*'ilm*) and wisdom (*ḥikma*), see Parviz Morewedge, *The Metaphysica of Avicenna (Ibn Sīnā)* (London: Routledge & Kegan Paul, 1973), 213-19. For the concept of wisdom as understood by classical Arabic philosophers, see Jean Jolivet, "L'idée de la sagesse et sa fonction dans la philosophie des 4^e et 5^e siècles," *Arabic Sciences and philosophy* 1 (1991): 31-65; and Franz Rosenthal, *Knowledge Triumphant: The Concept of Knowledge in Medieval Islam* (Leiden-Boston: Brill, 2007), esp. Ch. 2.5 on "Wisdom and Knowledge".

practical knowledge by which all its purely cognitive and non-cognitive needs and wants are satisfied—and in this sense it corresponds to Aristotle’s concept of intellectual virtue or *aretai dianoetikai*.¹²⁵

Having described the primary classification of knowledge and the aim of each knowledge Avicenna proceeds to present the tripartite division of both theoretical and practical knowledge as follows:

¹²⁵ See, Robert C. Bartlett and Susan D. Collins eds., *Aristotle’s Nicomachean Ethics* (Chicago: University of Chicago Press, 2011), Book VI.

Diagram 2. Avicenna's Classification of Rational Knowledge



It should be noted, however, that this division of knowledge is not Avicenna's original idea, but it is inherited from Aristotle via al-Kindī and Fārābī.¹²⁶ It should also be noted that this classification does not imply a compartmentalisation of knowledge into different, unrelated disciplines as has been practiced or understood in contemporary institutions of learning. Quite

¹²⁶ See Alfred L. Ivry, *Al-Kindī's Metaphysics: A Translation of Ya'qūb ibn Ishāq al-Kindī's Treatise "On First Philosophy"* (New York: SUNY Press, 1974), 55; George N. Atiyeh, *Al-Kindī: The Philosopher of the Arabs* (Islamic Research Institute: Islamabad, 1967); Michael E. Marmura, "Avicenna on the Division of the Sciences in the Isagoge of His *Shifā'*," *Journal for the History of Arabic Science* 2 (1980): 239-51; and 'Uthmān Amīn, *Iḥṣā' al-'Ulūm li al-Fārābī* (Cairo: Dār al-Fikr al-'Arabī, 1949), the partial translations of which can be found in Fauzi M. Najjar, trans., "Alfarabi, *The Enumeration of the Sciences*," in *Medieval Political Philosophy: A Sourcebook*, ed. Ralph Lerner and Muhsin Mahdi (New York: The Free Press of Glencoe, 1963), 24-30; and Charles E. Butterworth, *Alfarabi. The Political Writings: Selected Aphorisms and Other Texts* (Ithaca: Cornell University Press, 2001), 76-84.

the contrary, the classification serves, on the one hand, as a structure in which all the autonomous intellectual disciplines are related in a unified system. On the other hand, it represents the whole gamut of human experience and knowledge up to that particular point in history, and that human beings, especially philosophers, have the intellectual capacity to understand the many facets of reality—natural and human—and *ipso facto* develop a systematic and unified theoretical explanations of the world and their life as part of it.

I shall now begin to explain Avicenna's classification of theoretical knowledge, as he presents it in the *Divisions*. Here, theoretical knowledge are divided into a hierarchical order, with natural philosophy occupies the lower order, followed by mathematics as the intermediate, and metaphysics at the highest order. The three branches of knowledge are respectively subdivided into principal and subsidiary disciplines. According to Avicenna, the principal discipline of theoretical knowledge can be known through demonstrative reasoning and thus yields certain knowledge. It is not the case, however, with the subsidiary disciplines. For they are generally acquired through guesswork, inference or continuous practice and thus the knowledge they yield are more or less conjectural and uncertain. Let us now proceed with his general account of natural philosophy: this philosophical discipline deals with things and their states, definitions and existence as they are related to physical matter and motion, such as the celestial bodies, the four elements, motion and rest, change and transformation, generation and corruption, and many other physical states and configurations (*Divisions*, 106).

Then Avicenna subdivides the natural philosophy into eight major disciplines and seven subsidiary disciplines. For the major discipline it consists of: (1) physics (*kiyān*), which investigates the general facets of the natural world such as matter, form, motion, nature, human being, finity, infinity, movers and the first movers; (2) heaven and earth (*samā' wa-l-'alām*), which inquires into the bodily constituents of heavens and earth, including the nature, the motion, and the place of the four elements in the world; (3) generation and corruption (*kawn wa-l-fasād*), which examines the states of generation, corruption, production, rupture, decomposition, and alteration in general, and it also explains the number of primary bodies which receive these states, and the divine subtlety and art in connecting the earth with heaven as well as in perpetuating various kinds of corruptions through the two celestial motions in opposite directions; (4) meteorology (*āthār al-'ulwiyyah*), which looks into the states consisting of the four elements in their mixture, and undergoing rarefaction and condensation—and it also involves the study of the phenomena of luminous meteors or stars, clouds, rain, thunder, lightning, earthquakes, oceans and mountains; (5) mineralogy (*ma'ādin*), which studies minerals and their earthly constitution and composition; (6) botany (*nabāt*), which examines the plants; (7) zoology (*ḥayawān*), which studies animals and their nature; and (8) soul, perception and objects of perception (*nafs wa-l-ḥiss wa-l-maḥsūs*), which probes into the power of human soul which is the source of spiritual substance in human being (*Divisions*, 106-10).

The subsidiary subjects in natural philosophy are as follow: (1) medicine (*ṭibb*), which examines the principles of human body and its states and conditions which will result in the knowledge of a healthy body as well as of a sick body, and by means of this knowledge we may prevent the body from getting sick, and preserve the health of the body; (2) astrology (*aḥkām al-nujūm*), which concerns with celestial bodies that would enable us to indicate an analogy between the states of stars and that of the kings, kingdoms, countries, birth and problems; (3) physiognomy (*firāsa*), which looks into the states and conditions of a particular human being through her behaviours and actions; (4) interpretation of dreams (*ta'bir*), which is a study of dream interpretation through the imaginative art that can be attained from the spiritual world; (5) talismanic knowledge (*ṭalismāt*), which explores the mixing of the celestial power with the power of some earthly matters such as that it gives rise to some extraordinary actions; (6) knowledge of charm (*nīrnjiyyāt*), which deals with the mixture between the powers of the earthly matters so that extraordinary things are produced from them; (7) alchemy (*kīmiyya*), a study of the composition of some minerals in order to know their constituents, so that they can be properly mixed in order to produce gold and silver (*Divisions*, 110-11).

Let us turn now to the second branch of theoretical knowledge, namely mathematics. Avicenna defines mathematical knowledge as a study involving things whose existence is related to matter, but their definitions are abstracted from matter and motion, such as the square, the circle, the sphere, the cone, numbers and many other mathematical constructions that are apprehended

independently of matter. This knowledge is divided into four principal topics with their different numbers of subsidiary topics. The first is arithmetic, which is a study of numbers, their kinds, and the relationships between different kinds of numbers. It is subdivided into two sub-topics: Indian arithmetic (*'amal al-jam' wa-l-tafrīq al-hind*) and algebra (*jabr wa-l-muqābala*). The second principal topic is geometry, which is a study of lines and figures, as well as their measurements and relationships. It consists of seven sub-topics as can be seen in the diagram above. The third principal topic in mathematical knowledge is astronomy. It is an investigation into the heavenly bodies in terms of their positions, figures, and relationships. It also looks into the measurements of the motions of the celestial bodies, including their positions and rotations. Avicenna divides astronomy into two sub-topics: table astronomy (*'amal al-zījāt*) and calendars (*taqāwīm*). The last division of mathematical knowledge is music, which deals with the states of musical notes, tones and melodies in terms of their similarities and differences; and its sub-topic is exotic instruments (*ālāt al-'ajība wa-l-gharība*) (*Divisions*, 111-12).

The highest order of theoretical knowledge is metaphysics, which Avicenna defines as an investigation of the things whose existence and definitions are totally devoid of matter and motion. The subject matters of metaphysics are essences and attributes such as quiddity, unity, multiplicity, cause, effect, particular, universal and many other metaphysical entities (*Divisions*, 106). Avicenna divides metaphysics into five principal topics and two subsidiary topics. The principal topics are such as: (1) general concepts (*ma'rifa al-ma'ānī al-'amma*) which probes into the general meanings for all

existents in terms of quiddity, unity, plurality, similarity, difference, contradiction, potentiality, actuality, cause and effect; (2) fundamentals and principles (*uṣūl wa-l-mabādī*), which is an inquiry into the first principles and fundamentals (namely, hypotheses) of such knowledge as natural philosophy, mathematics and logic, as well as arguments concerning these principles and fundamentals; (3) the First Truth and its unity (*ithbāt al-ḥaq al-awwal wa tawḥīdihī*), which probes into the affirmation of the first truth and unity, concerning the proof of the unity, the lordship, the impossibility of the existence of partnership at His level of existence, and His being necessary in its essence from which the existence of other things must proceed; this topic also looks into His attributes, how these attributes are necessary in Him as well as the proper use of terms to indicate His attributes such as Oneness, Existence, Eternal, Knowledgeable, Omnipotent; and finally it also deals with the problem that the attributes mistakenly create the notion of plurality in Him, and the fact that nothing must endanger the unity of His existence and His real essence; (4) first spiritual essence (*ithbāt al-jawāhir al-ūlā al-rūḥāniyya*), is a study of the affirmation of the first spiritual substances in terms of their plurality, degrees, independence as well as connection to the universal completion, and this is the level of the angels of Cherubim; then comes the affirmation of the second spiritual bodies, which in their totality and degrees are not the same with the first spiritual bodies, and they are the intermediary angels in the heavens whose roles are to be the carriers of the throne, the administrators of nature and the custodians of the production of the world of generation and corruption; and (5) heavenly corporeal substances (*jawāhir al-jasmāniyya al-samāwiyya*), which investigates the process of facilitating the

motions of the earthly and heavenly bodies, performed by another class of spiritual bodies who work on the motion of bodies; while another group of spiritual bodies carry out the commands of God concerning the relationship between the earth and heaven (*Divisions*, 112-13). The subsidiary topics in metaphysics consist of the inquiries concerning the phenomena of revelation (*wahy*) and the problem of eschatology (*ma'ād*). There is another couple of important points about metaphysics in Avicenna's unified system of knowledge which need to be made, but which I shall set them aside for now and return to them again at the end of this section. For I want to turn first to his account of practical knowledge.

This kind of intellectual knowledge concerns with the governance of human being in such affairs that involve her own individual life and that with others. Again, Avicenna divides practical knowledge into three branches, namely: the knowledge of individual governance (moral); the knowledge of household governance (economics); and the knowledge of civil governance (politics). Moral philosophy deals with personal life of an individual human being, and through which she may know the noble ways of conducting her life and behaviour so that she can attain happiness both in this world and the hereafter. All the topics in moral philosophy, according to Avicenna, have been discussed in Aristotle's *Nicomachean Ethics*. As for economics, it helps a person to know the right way to govern her domestic affairs that will lead to a well-ordered life and thus brings happiness in her life. This has been much discussed in the works of Avicenna's predecessors such as in Bryson's *On the Governance of the Household*. And lastly, political philosophy, by which a

person knows both the good and the bad kinds of political authorities or governments; and through which also the person can know how to preserve this political association, the reasons of its failure and transformation. Most of the topics in political philosophy, for Avicenna, have been thoroughly discussed by both Plato and Aristotle in their political writings (*Divisions*, 107-8). Besides that, some topics in political philosophy deal with the existence of prophecy and the divine law (*sharī'a*) which is important for human beings in their existence and preservation both in this life and the afterlife. And this brief discussion of political philosophy ends Avicenna's classification of knowledge.

At this point, we may wonder where does logic, which Avicenna regards as one of the most important subjects in philosophical knowledge, belong in this structure of knowledge. As a matter of fact, Avicenna did discuss the place of logic in this treatise. But, the most plausible reason for the exclusion of logic from this classification is that he regards logic as the canon of thought and thus underpinning all forms of philosophical reasoning.¹²⁷ We could also say that logic is a meta-science or second-order discipline by which we can regulate and verify the forms of reasoning, arguments and knowledge claims in the first-order disciplines.¹²⁸ In the *Divisions*, Avicenna divides logic into nine branches which correspond to all forms of thought, reasoning and language: (1) a branch which explains divisions of terms (*alfāz*) and concepts (*ma'ānī*) of the singulars (*mufrada*); (2)

¹²⁷ For Avicenna's discussion on the role of logic in reasoning and philosophical thought, see *Deliverance*, 4-5, *Rem-Log*, 47-8.

¹²⁸ Wilfrid Hodges and Jon McGinnis also argued to this effect. See Wilfrid Hodges, "Ibn Sīnā on Reduction ad Absurdum," and Jon McGinnis, "Avicenna's Naturalized Epistemology and Scientific Method," in *The Unity of Science in the Arabic Tradition: Science, Logic, Epistemology and Their Interactions*, eds. Shahid Rahman, Tony Street and Hassan Tahiri (Springer: Berlin, 2008), 129-52.

a branch which elaborates on the meanings of the singulars in general for all kinds of existence, either by means of attaining them in the real existence or by means of constructing them in the intellect; (3) a branch which elucidates in an affirmative and a negative manner of the composition of the singulars from which arises an assertive proposition that necessarily leads to either true or false statement; (4) a branch which explicates the composition of the propositions that lead to the evidence producing knowledge with regards to the unknown; and this is called syllogism; (5) a branch which accounts for the condition of syllogisms, which are composed of propositions that necessarily lead to certain knowledge; (6) a branch which explains the definition of syllogism that are useful in addressing people based on their understanding and knowledge; it also deals with the proof of everything concerning arguments, regardless of whether it aims at praising or at degrading, and it also investigates the proof in debates and giving advice; (7) dialectic, a branch which discusses the fallacies that occur in proof, evidence, indication and comparison or metaphor, and it involves methods of minimising the fallacies, examining them thoroughly, and recognising their instances; (8) rhetoric, a branch which elaborates on the methods of giving beneficial metaphorical public address by way of consultation, winning the feelings and emotions of others, praising, degrading, taking advantage, sympathising, declining, convincing, minimising, and exaggerating arguments, facing blame, composing statements, as well as stories and oral presentation; (9) poetic, a branch which examines the poetical statements and how they can become an art, and it also deals with the shortcomings and weaknesses of poetry (*Divisions*, 116-17).

This classification could, I hope, help us in recognising the scope of intellectual knowledge that existed during Avicenna's lifetime. His classification, however, does not concern with the limitations of individual human mind to understand various intellectual disciplines throughout the span of her life. Rather his concerns lay instead in the forms that human theoretical and practical understanding takes, and the need to provide systematic, theoretical explanations of the various aspects of reality and human life. Thus, a true philosopher, for Avicenna, should be able at least to examine and provide philosophical accounts of all forms of human understanding and actions. Needless to say, some of the subjects included in this classification are no longer being considered to belong to rational discipline or even philosophical; and at the same time some new disciplines have been added into the classification of knowledge which we are familiar with today.

There is another important point with regard to Avicenna's unified system of knowledge that needs to be mentioned here. It is the discrepancy between his exposition of theoretical and practical knowledge. The latter received only a swift treatment without being given detailed accounts of its subsidiary topics. In point of fact, this has been quite customary in all his major works. There is only one reason for this meagre treatment of practical knowledge in Avicenna's philosophical oeuvres. And it can be found in a passage of his *Metaphysics of the Cure*, where he says: "As for music and the particular division of mathematics and the moral and political [philosophies], these constitute benefits that are not necessary for metaphysics"

(*Metaphysics*, 15).¹²⁹ Indeed, this shows that Avicenna takes a more radical and dismissive attitude towards practical knowledge as compared to his predecessors, especially Aristotle, that in the voluminous work such as *The Cure* no more than thirty pages are devoted to practical knowledge at the end of his *Metaphysics*—and that is in so far as the issues discussed there are somewhat pertinent to certain aspects of metaphysics. As a matter of fact, Avicenna does not provide any reasons for this inclusion. From the arrangement of *The Cure* it is obvious that there is nowhere such a discussion can find its proper place and thus makes its inclusion here is merely provisional.¹³⁰ This is apparent also from Avicenna's philosophical motive and intention as manifested throughout his works that all his intellectual energy has been solely invested in his programme of developing a systematic theoretical knowledge of the broad structure of reality as it exists independently of human choice and action in which metaphysics, as a philosophical discipline, plays a fundamental role as the unifying branch which relate all branches of knowledge. This point therefore brings us back to metaphysical foundation of Avicenna's unified system of knowledge.

¹²⁹ As I remarked a moment ago with regard to Nasr's theological reductionism, theology and religion contribute nothing to metaphysics which, as I shall explain shortly, is integral in Avicenna's unified system of knowledge.

¹³⁰ See Book X of his *Metaphysics*. Charles E. Butterworth, who regards Avicenna as one of the three great political philosophers within the medieval Islamic tradition, argued that this inclusion is "neither provisional nor merely due to his not having written a separate treatise on these subjects." And that, according to him, it is "the expositions of the natural sciences and of what comes after natural science contribute to the practical teaching set forth here." see, Charles E. Butterworth, "The Political Teaching of Avicenna," *Topoi* 19 (2000): 35-44. This interpretation, I think, is contrary to Avicenna's own belief that the aim of theoretical knowledge is purely cognitive and it yields benefits that are purely cognitive, as he says: "Hence the aim of theoretical philosophy is to acquire a purely cognitive knowledge which is in no way related to practical action whereas the aim of practical philosophy is to attain a cognitive knowledge pertaining to action. Theoretical knowledge has therefore the greater claim to be purely cognitive" (*Introduction*: 12).

As remarked earlier, Avicenna's philosophical concern is theoretical and, as such, is aimed first and foremost at the exposition of theoretical truth at every facet of reality through various intellectual and philosophical investigations which correspond to their respective ontological categories. All those discovered truths are then verified through a metaphysical inquiry, as he puts it in the following words:

What adheres necessarily to this philosophical knowledge [therefore] is that it is necessarily divided into parts. Some of these will investigate the ultimate causes, for these are the causes of every caused existent with respect to its existence. [This philosophical knowledge] will [also] investigate the First Cause, from which emanates every caused existent inasmuch as it is a caused existent, not only inasmuch as it is an existent in motion or [only inasmuch as it is] quantified. Some [of the parts of this philosophical knowledge] will investigate the accidental occurrences to the existent, and some [will investigate] the principles of the particular knowledge. And because the principles of each knowledge that is more particular are things searched after in the higher knowledge—as, for example, the principles of medicine [found] in natural [philosophy] and of surveying [found] in geometry—it will so occur in this knowledge that the principles of the particular branches of knowledge that investigate the states of the particular existents are clarified therein. [*Metaphysics*: 11]

This is elaborated further in the next few pages of the work, where Avicenna speaks of the benefit of metaphysics as a philosophical knowledge:

However, when one looks in the introduction of [philosophical] books for [a statement about] the benefit of the philosophical knowledge, [one discovers] that the intention is not directed to such a meaning but, rather, to the assistance [each philosophical knowledge] renders the other, so that the benefit of any one knowledge becomes an idea through which one arrives at the validation of another knowledge.

If “benefit” is [used] in this [second] sense, then it can either be spoken of in an absolute sense or be spoken of in a specific manner. As regards the absolute [sense], it consists in the beneficial being conducive to the validation of another knowledge of whatever [level]. As regards the specific [sense], it consists in the beneficial being conducive to the [validation] of a [knowledge] higher than it. [This higher knowledge] acts as the purpose for [the lower knowledge], since [the latter] acts for its sake, the converse not being the case.

Hence, if we take “benefit” in the absolute sense, then this [metaphysical] knowledge does have a benefit. If [however] we take “benefit” in the special sense, then this philosophical knowledge is above being of use to another philosophical knowledge; rather, the rest of the particular knowledge are of use to it.

Benefit, in the specific [sense], is close to the rendering of service, whereas the benefit attained by the lower from the nobler does not resemble the rendering of service. [For] you know that the servant benefits the one served and that the one served also benefits the servant (I mean, when “benefit” is taken in the absolute [sense]), where the species and specific aspect of each benefit constitute a species that is other [than the rest]. Hence, the benefit of this science—the manner in which we have shown—is to bestow certainty on the principles

of the particular knowledge and to validate the quiddity of the things they share in common, even when [the latter] are not principles. This, then, is the benefit of the leader to the subordinate and of the one served to the servant, since the relation of this philosophical knowledge to the particular knowledge is that of the thing which is the object of knowledge in this philosophical knowledge to the things that are the object of knowledge in those particular knowledge. For just as [the former] is a principle for validating the knowledge of these [latter particular knowledge]. [*Metaphysics*: 13-14]

In Avicenna's light, then, metaphysics grounds and unifies the whole system of knowledge.¹³¹ To repeat: metaphysics, for Avicenna, is a rigorous and rational philosophical inquiry. It seeks to discover natural kinds and the laws that govern them. Particular disciplines of knowledge only deal with, and in

¹³¹ This view of the relations between autonomous discipline of knowledge and metaphysics as the unifying branch is reaffirmed in a chapter of the logic part of his *Book of Salvation*, where he explains the ways in which cooperation between all the branches of intellectual knowledge may be possible:

Cooperation among sciences entails taking a problem from one science as a premise in another. The science in which [the proposition] is the problem aids the science in which [it occurs as] a premise. This happens in three ways.

The first of them is [when] one of the two sciences is inferior to the other, so that the lower science acquires its principles from the higher [one]. [An example is the reception of premises] the science of music from arithmetic, by medicine from physics and by all the sciences from First Philosophy.

Or the two sciences share the subject matter, as physics and astronomy [share] the body of the universe. For one of them, such as physics, investigates the substance of the subject matter and the other, such as astronomy, investigates its accidents. The investigator of the substance of the subject matter supplies principles to his counterpart, such as the physicist, who supplies to the astronomer [the principle] that celestial motion must be circular.

Or the two sciences share the genus [of the subject matter]. [However,] one of them investigates a simpler species, such as arithmetic, and the other a more composite species, such as geometry. The investigator of that which is simpler supplies his counterpart principles, just as arithmetic does for geometry. [Examples are found] in Euclid's Tenth [Book of the *Elements*]. [*Deliverance*: 109]

fact confine their attention to, some aspects of all the existing things as they are. For instance, natural philosophy only deals with things and their states in terms of their physical matter and motion, and philosophical psychology, as a subsidiary subject in natural philosophy, only investigates the power of human soul which is the source of spiritual substance in human being.¹³² On the contrary, metaphysics probes into everything—in terms of their essence, unity, plurality, cause and so on—and seeks to develop a unified theory of everything. The natural kinds investigated by metaphysics are called categories; and that everything that exists in the world falls within one of its categories. This does not mean, however, that metaphysics alone constitutes the total explanatory system of knowledge. Or—to put the matter somewhat differently—that metaphysics subsumes all other branches of knowledge that ultimately knowledge does not consists of any other branches other than metaphysics. Rather, quite the contrary, metaphysics seeks knowledge of all things, not all knowledge of things. There are in fact myriad of non-principle details in particular knowledge that lie outside the concerns of metaphysical inquiry. But there is, of course, nothing that lies outside metaphysical categories, since the categories are the highest genera or natural kinds.¹³³ In Avicenna's system of knowledge, then, metaphysics is the branch to which all others are related in a particular way. And the way in which all the particular knowledge related to metaphysics consists in that it verifies the principles, hypotheses, and the truths of particular knowledge and thus confers certainty on them (*Metaphysics*: 15).¹³⁴

¹³² See *Metaphysics*, 2; and *Divisions*, 106-10.

¹³³ See the discussion at the beginning of this section above.

¹³⁴ See also, *Divisions*, 106; Amos Bertolacci, *Reception*, 267.

This may suffice, I hope, to substantiate my claim about Avicenna's unified system of knowledge. It is a system build upon some metaphysical realist principles and is yet again unified by a certain inquiry in metaphysics. Now, let us turn to a general observation of his analysis of factual knowledge, which plays a fundamental role as the building block in his greater system of knowledge.

1.5 Knowledge: Apprehension and True Judgement

There is a long philosophical tradition, which is believed to have its origin in Plato¹³⁵ but actually received its precise formulation in Bertrand Russell, that seeks to analyse knowledge as justified true belief (JTB). According to JTB account of knowledge if we are to know that a given proposition is true, we must believe that the proposition is true, and justified in believing that it is true. In more formal terms,

S knows that *P* *IFF*:

- (i) *P* is true,
- (ii) *S* believes that *P*, and
- (iii) *S* is justified in believing that *P*.

On this account, then, there are three necessary and sufficient conditions of knowledge, namely: (1) truth, (2) belief, and (3) justification. Consensus is rare in philosophy. But from the early twentieth century, philosophers—at

¹³⁵ See fn. 2.

least, in the Analytic tradition—almost universally agreed that knowledge is merely a special kind of true belief and that the three necessary conditions must be satisfied in order for a person to know something. In 1963, however, Edmund Gettier published an excellent three-page article “Is Justified True Belief Knowledge?”¹³⁶ in which he offered counterexamples showing that this account is completely untenable. One of Gettier counterexamples runs as follows:

Suppose that Smith and Jones have applied for a certain job. And suppose that Smith has strong evidence for the following conjunctive proposition:

(d) Jones is the man who will get the job, and Jones has ten coins in his pocket.

Smith's evidence for (d) might be that the president of the company assured him that Jones would in the end be selected, and that he, Smith, had counted the coins in Jones's pocket ten minutes ago. Proposition (d) entails:

(e) The man who will get the job has ten coins in his pocket.

Let us suppose that Smith sees the entailment from (d) to (e), and accepts (e) on the grounds of (d), for which he has strong

¹³⁶ It must be noted, however, that it was Russell himself who is the first to provide counterexamples to this traditional analysis of knowledge, but unfortunately went unnoticed. See Bertrand Russell, *The Problems of Philosophy*, 131-2, where he gave the cases in which (1) true belief is not knowledge when it is deduced from a false belief, and (2) true belief is not knowledge when it is deduced by a fallacious process of reasoning, even if the premisses from which it is deduced are true. Criticisms against this justificationist attitude in science can be found, especially, in the works of Karl Popper.

evidence. In this case, Smith is clearly justified in believing that (e) is true.

But imagine, further, that unknown to Smith, he himself, not Jones, will get the job. And, also, unknown to Smith, he himself has ten coins in his pocket. Proposition (e) is then true, though proposition (d), from which Smith inferred (e), is false. In our example, then, all of the following are true: (i) (e) is true, (ii) Smith believes that (e) is true, and (iii) Smith is justified in believing that (e) is true. But it is equally clear that Smith does not know that (e) is true; for (e) is true in virtue of the number of coins in Smith's pocket, while Smith does not know how many coins are in Smith's pocket, and bases his belief in (e) on a count of the coins in Jones's pocket, whom he falsely believes to be the man who will get the job.

By this counterexample Gettier intended to show that we could have a justified true belief and yet still lack knowledge of what we believe given the fact that our belief's being true is just a matter of luck. It follows therefore that justified true belief is an insufficient condition of knowledge. This shattering counterexample, as I remarked earlier, brought about what is now known as the 'Gettier problem' which has generated a vast literature seeking to solve the problem—but, until recently, to no avail. Three years after Gettier's devastating objection, Colin Radford renewed the attack with his criticism on the belief condition of the traditional JTB analysis of knowledge. Radford presented a putative counterexample which, too long to be quoted here in full, in essence shows that there can be knowledge without belief and *a fortiori* the belief condition can be dropped altogether in our analysis of knowledge.¹³⁷

¹³⁷ For Radford's counterexample and the debate it engendered see fn. 6 above.

Although some philosophers like Armstrong would argue that Radford's case is not decisive enough to be used as a test of a philosophical analysis, it seems to me that the belief analysis of knowledge itself is unbelievable, for it flies in the face of common sense. It can be refuted by many cases of people who believe in something they do not know and do not believe in what they know. For example, there are many people who profess their belief in Ash'arism but know next to nothing about his Islamic theological teaching and there are many non-Muslim scholars who know very well about his teaching but do not believe in Asha'arism. The belief analysis of knowledge is also refuted by the fact that many beliefs simply do not qualify as knowledge as they are evidently false. Some Muslims and Christians in the twenty-first century, for instance, still believe that the earth is flat. This argument, though a little swift, may suffice to show that neither knowledge is a kind of belief and nor belief is a necessary, sufficient condition of knowledge.

As a matter of historical fact, Avicenna is certainly a philosopher who concerns himself with the task of analysing the concept of knowledge. But the kind of counterexamples proposed by Gettier and Radford can hardly pose any difficulty for his analysis of knowledge. For his analysis does not take belief and justification to be conceptually prior to knowledge that it is to be defined in terms of belief and justification. Rather, as we shall see later, in the light of his analysis, knowledge is a necessary condition of justified belief—or even disbelief or suspension of belief. Furthermore, in the light of his analysis, justified belief is to be defined in terms of knowledge, for it is only knowledge that can justify a belief which is not itself a knowledge. To put the point

precisely: Avicenna's analysis of knowledge adopts a different set of necessary and sufficient conditions of knowledge. And I shall, to start with, give a brief sketch of his analysis here before taking up further discussion of each condition in a systematic way.

Avicenna defines knowledge in terms of apprehension (*taṣawwur*) and [true] judgement (*taṣdīq*). As a matter of fact, we may find this definition of knowledge at the outset of all his logical treatises:

All primary/immediate knowledge (*ma'rifa*) and discursive/derivative knowledge¹³⁸ is either apprehension or judgement. Apprehension is knowledge that comes first and is acquired by means of definition (*ḥadd*) and whatever is like it. An example is our apprehension of the quiddity of man. Judgement comes about only by means of syllogism (*qiyās*) and whatever is like it. An example is our judgement that the universe (*al-kull*) has a single source (*mabda'*). Definition and syllogism are two tools by means of which one acquires the objects of knowledge (*ma'lūmāt*) that are at first unknown and then become known by means of reasoning (*rawiya*)... Both the syllogism and the definition are constructed and composed of intelligible concepts in keeping with a determined mode of composition. Each one has a matter (*mādda*) from which it is composed and a form (*ṣūra*) whereby its composition is completed. And just it is not proper to build a house or a chair from any arbitrary matter whatever nor to complete their construction from their respective matters in any arbitrary form—rather everything has its specific matter and a specific and exact form—likewise every object of knowledge, known by

¹³⁸ The reasons for rendering of *ma'rifa* and *'ilm* as *primary/immediate knowledge* and *discursive/derivative knowledge* in this passage shall become clear shortly.

means of reasoning, has its specific matter and form whereby one comes to its verification. And just as corruption in the building of a house may occur on account of the matter even if the form is correct or on account of the form even if the matter is sound (or on both their accounts together), likewise corruption in reasoning may occur on account of the matter even if the form is correct and on account of the form even if the matter is sound (or on both their accounts together).
[*Deliverance*: 3-4]¹³⁹

Knowledge whether acquired through discursive reasoning, or available (*ḥāṣīlan*) without being acquired through discursive reasoning—is of two kinds: one is judgement and the other is apprehension. Discursive knowledge of the kind of judgement can be acquired through syllogism. And discursive knowledge of the kind of apprehension can be acquired through definition.
[*Demonstration*: 51]

Thing can be known in two ways. The first is apprehension. That when the name of the thing is uttered, its meaning (*ma'nā*) becomes present in the mind, without there being true or false. As someone says: “Man” or “Do this!” If you understand the meaning of what has been said, it means that you have apprehended it. The second is apprehension accompanied with judgement. Such as when someone says, for instance: “Every whiteness is an accident,” you do not only apprehend the meaning of this statement, but also you judged it to be so. However, if you doubt whether it is to be so or not, then you must have apprehended what is said, for you cannot doubt what you do not apprehend or understand, and thus you do not judge it to be true yet. For every judgement presupposes apprehension, the converse is not true. The

¹³⁹ This rendition is adopted from *Deliverance* with certain modifications for my present purpose.

apprehension that you have gained in this sense is that the form of this sentence and what it is composed of, such as 'whiteness' and 'accident', have been produced in the mind. True judgement only obtains when there occurs in the mind a relation (*nisba*) of this sentence to the things themselves as being correspond to them; and what brings about denial is the opposite of that. [*Introduction*: 17]

The unknown corresponds to the known. Thus just as a thing may be known as a simple apprehension, such as our knowledge of the meaning of the word 'triangle', so it may be known as an apprehension accompanied with judgement, such as our knowledge that the angles of every triangle are equal to two right angles. So also a thing may be known through apprehension, so that its meaning is not apprehended until one learns such [other] concepts, as the 'binominal', 'the disconnected' and others. Or it may be unknown as a judgement, such as the square on the diagonal is equal to the squares of the sides of the right angle which it subtends. Thus our path of inquiry concerning knowledge and related studies is either directed towards an apprehension sought for realisation or directed towards a judgement sought for realisation. [*Rem-Log*: 49]¹⁴⁰

I shall give a brief account of the origins and historical career of these epistemic notions. Before that, however, there is one terminological issue deserving of note. I have been all along rendering the term *'ilm* as knowledge without giving any explanation.¹⁴¹ Before it gets too late, this is the best place, I think, to note a few reasons for that rendition. It is obvious that my rendition

¹⁴⁰ This rendition is adopted from Shams Inati's translation of Avicenna's *Ishārāt* with certain modifications to suit my present purpose.

¹⁴¹ This is except the rendition in the passage from *Deliverance*, 3, above, of which I shall explain in a moment.

is different from the one preferred by many contemporary scholars, where they usually render the term as *scientific knowledge*, or simply, *science*.¹⁴² To the best of my knowledge, I do not find any one of them who cares to provide adequate grounds—historical or textual—for such rendition. Perhaps they simply follow the prevalent practice among the Aristotelian scholars to render Aristotle’s *epistēmē* as scientific knowledge.¹⁴³ However, for the purpose of the present study, I shall only provide a brief explanation for my rendition of the term. Firstly, I render the term *‘ilm* as *knowledge* when it is obvious that Avicenna is speaking about it in the sense of *propositional* or *factual knowledge* as in the above passages. Secondly, in some places I render the term as *philosophical* or *demonstrative knowledge* since it seems to me to be more faithful to Avicenna’s intention when he speaks of philosophy in general, and natural philosophy and metaphysics in particular, given the fact that all these rational inquiries employ demonstrative reasoning. As a matter of historical fact, scientific knowledge, in its present philosophical sense, had not yet emerged during Avicenna’s time and *ipso facto* it is not a part of his linguistic and conceptual repertoire. As also a matter of historical fact, the

¹⁴² This can be found in most, if not all, scholarly works on Avicenna’s epistemology and translations of Avicenna’s philosophical and logical works as cited above. There is no need, then, to list them again here.

¹⁴³ This is a traditional rendition of Aristotle’s *epistēmē* among twentieth century Aristotelian scholars. To name only a few proponents: W. D. Ross, *Aristotle’s Prior and Posterior Analytics* (Oxford: Clarendon Press, 1949); Jonathan Barnes, “Aristotle’s Theory of Demonstration,” *Phronesis* 14 (1969): 123-152; and Jaakko Hintikka, “On the ingredients of an Aristotelian science,” *Nous* 6 (1972): 55-69. Some other scholars, however, render the term as understanding, but still this rendition, I think, does not really capture Aristotle’s concept of demonstrative knowledge. For the leading proponents of this rendition see Myles Burnyeat, “Aristotle on Understanding Knowledge,” in *Aristotle on Science: ‘The Posterior Analytics’* (Proceedings of the Eighth Symposium Aristotelicum), ed. Enrico Berti (Padua, 1981), 97-139; and Aryeh L. Kosman, “Understanding, Explanation, and Insight in the *Posterior Analytics*,” in *Exegesis and Argument: Studies in Greek Philosophy Presented to Gregory Vlastos*, ed. Edward N. Lee, Alexander P. D. Mourelatos & Richard Rorty (Assen: Van Gorcum, 1973), 374-92. A better interpretation, I suggest, can be found in the following works: Michael Ferejohn, *The Origins of Aristotelian Science* (New Haven-London: Yale University Press, 1991); and Orna Harari, *Knowledge and Demonstration: Aristotle’s Posterior Analytics* (Dordrecht: Kluwer Academic Publishers, 2004).

term has its origin in the nineteenth century scientific and philosophical discourses. Thus, it cannot be found in the works of earlier modern philosophers such as Descartes or even in the works of eighteenth century philosophers such as Immanuel Kant.¹⁴⁴

Returning to the main point, however, let us see the historical origins of Avicenna's epistemic terms, apprehension and judgement. As a matter of fact, contemporary scholars have different views with regard to the origins of these notions: the Stoic epistemic terms of *phantasia* and *sunkatathesis* as proposed by Harry Wolfson (1943) and Ibrahim Madkour (1952); the neo-Platonic logic (*tabula Porphyriana*) as suggested by Miklos Maróth (1990); Aristotle's *De Interpretatione* I 16a9 ff., as A. I. Sabra (1980) understood them; and Aristotle's *Posterior Analytics* I.1 71a 1-2 and 11-13 as proposed by Miriam Galston (1973) and Joep Lameer (1994; 2006).¹⁴⁵ It seems to me that the argument advanced by Sabra and Lameer are more convincing given the close parallel between those passages of Aristotle and that of Avicenna. Besides their different views with regard to their historical origins, contemporary scholars have also proposed varying renditions of both terms. To list only a few, the terms are respectively translated as: simple apprehension and judgement, by Harry Wolfson (1943); concept and assent by Maróth (1990); conception and belief by Sabra (1980) and Lameer (2006); conception and assent by Shams C. Inati (1984) and Asad Q. Ahmed (2011);

¹⁴⁴ See, Immanuel Kant, *Metaphysical Foundations of Natural Science*, trans. Michael Friedman (Cambridge: Cambridge University Press, 2004), esp. translator's Introduction.

¹⁴⁵ This is to name only a few scholarly works that seek to trace the origins of these notions. For a detailed analysis of the works investigating the origins of both notions in Arabic philosophy, see Joep Lameer, *Conception and Belief in Šadr al-Dīn Shīrāzī* (Ca. 1571-1635) (Tehran: Iranian Institute of Philosophy, 2006), esp. Ch. 1.

conceptualization and truth making by McGinnis (2007); conceptual representation and judgement by Riccardo Strobino (2010); and forming concept and acknowledging the truth of a proposition by Gutas (2012). For my part, however, I prefer the present renditions of the notions for three reasons. First, they correspond to the distinction commonly used by logicians up to the end of the nineteenth century.¹⁴⁶ Second, as a matter of historical fact, both apprehension and judgement were traditionally regarded as the most essential epistemic notions that some prominent modern and contemporary philosophers like Descartes, Locke, Moore, and Russell adopted them in their accounts of knowledge until both being replaced by the JTB analysis of knowledge.¹⁴⁷ Lastly, I add the adjective 'true' in some places of my rendition of *taṣdīq* since, for Avicenna, human thought begins with apprehension and proceeds to judgement; and a judgement is regarded as a piece of knowledge if and only if it is true. In other words, only true judgements that deserve to be called knowledge. In this way, then, the renditions make it clear at the outset that there are three necessary and sufficient conditions of knowledge in Avicenna's analysis, namely: apprehension, judgement, and truth.

¹⁴⁶ This has been pointed out earlier in Wolfson (1943). One of the last logicians who used this distinction is a nineteenth century English logician William Stanley Jevons. See his work, *Elementary Lessons in Logic: Deductive and Inductive* (London: Macmillan and CO., 1888).

¹⁴⁷ Descartes' use of the term judgement can be found in his *Meditations on the First Philosophy*, trans. George Heffernan (Notre Dame: Notre Dame University Press, 2003); for Locke's theory of judgement see Essay IV of his *An Essay Concerning Human Understanding*, ed. Peter E. Nidditch (Oxford: Oxford Clarendon Press, 1987 [1690]). On the notion of apprehension in Moore's analysis of knowledge see his *Some Main Problems of Philosophy*, esp. Chs. III, XIV and XV. For the notions of apprehension and judgement in Russell's analysis of knowledge before he turned his focus to the notion of belief and other secondary notions, see Bertrand Russell, *The Problem of Philosophy*; Bertrand Russell, *Theory of Knowledge: The 1913 Manuscript* (London: Routledge, 1984); David Pears, "The Relation between Wittgenstein's Picture Theory of Propositions and Russell's Theories of Judgment," *The Philosophical Review* 86 (1977): 177-96.

There is another point, however, worth mentioning. The terms apprehension and judgement as can be found in the works of the philosophers mentioned above are originally Aristotelian. But, at the same time, we cannot find, as far as I can ascertain, any work by Anglo-American Aristotelian scholars in the early decades of the twentieth century that provide a systematic analysis of Aristotle's conception of knowledge, *vis-à-vis* the JTB account which is believed to have its origin in Plato, as if he has nothing to offer with regard to this problem. There are at least two reasons, I suggest, for the absence of this topic in the literature. First, with the emergence of philosophy of science as a distinct philosophical discipline around the turn of the twentieth century, most of the Aristotelian scholars at that time—which were the first generation of scholars in the twentieth century revival of Aristotelian scholarship led by the Oxford scholars such as W. D. Ross, G. R. G. Mure, and others—try to develop an image of Aristotle as the father of philosophy of science. Aristotle's philosophical works, especially the *Posterior Analytics*, were traditionally presented as the first elaborate theory of the structure of science and *a fortiori* all his philosophical problems are viewed in the light of twentieth century philosophy of science.¹⁴⁸ To clinch my point, Aristotle's word *epistēmē*, as I remarked a moment ago, is traditionally rendered as scientific knowledge rather than in its original context as knowledge or philosophical/demonstrative knowledge.¹⁴⁹ It is only recently that younger generation of scholars begin to turn their attention to the original

¹⁴⁸ See, fn. 135. See also, Allan Gotthelf and John G. Lennox eds., *Philosophical Issues in Aristotle's Biology* (Cambridge: Cambridge University Press, 1987).

¹⁴⁹ See G. R. G. Mure's rendition of *epistēmē* in his *The Works of Aristotle translated into English* (Oxford: Oxford University Press, 1928). Subsequent Aristotelian scholars, in general, adopt this rendition. As I remarked earlier, the same attitude can also be found in contemporary study of Avicenna.

context of Aristotle's theory of demonstration and his account of knowledge.¹⁵⁰

On the other hand, historical studies on the problem of knowledge were left in the hand of Platonic scholars who—under the influence of Gilbert Ryle and, if not directly, Bertrand Russell—believed that it is one of the big philosophical problems that Plato were trying to answer. There is an anecdote told by Myles Burnyeat in his essay in honour of Jonathan Barnes:¹⁵¹

Once upon a time in the Anglo-Saxon world there was a great debate among students of Plato. Did he, or did he not, become clear about the distinction between knowledge *that*, knowledge *how*, and knowledge by *acquaintance*? The time—as Jonathan Barnes will remember, and others will know by testimony, reading or hearsay—was the '50s, '60s, and early '70s of the last century: the twentieth century of the Christian era.

There was a reason why the debate occurred then, not earlier, and scarcely since. The reason was Gilbert Ryle, whose influence on the study of ancient philosophy in Anglophone countries was deeper and more long-lasting than his influence on philosophy at large... Rather, the measure of Ryle's influence is the extent to which the *agenda for discussion* in Anglophone Platonic scholarship was for some considerable time set by his work. It is certainly due to him that high on the agenda in the '50s, '60s, and early '70s of the twentieth century was the 'epistemic troika', as I shall call it, of knowledge that, knowledge how, and knowledge by acquaintance. At the same time, in the same years, the very same topic was central to mainstream epistemology.

¹⁵⁰ See, for example, Orna Harari, *Knowledge*, and Miira Tuominen, *Apprehension and Argument: Ancient Theories of Starting Points of Knowledge* (Dordrecht: Springer, 2007).

¹⁵¹ See, Myles F. Burnyeat, "Episteme," in *Episteme, etc. Essays in Honour of Jonathan Barnes*, ed. Benjamin Morrison and Katerina Ierodiakonou (Oxford: Oxford University Press, 2011), 1-32.

The epistemic troika can be viewed as a codification of two contrasts that Ryle originally exploited in quite different contexts. The first of these, the contrast between knowledge by acquaintance and knowing that, derived from Bertrand Russell and was important to Ryle in his reflections on Russell and on Wittgenstein's *Tractatus*. It features importantly in Ryle's seminal paper "'Plato's Parmenides,'" published in *Mind* (1939), and in the famous unpublished paper on Socrates' dream in the *Theaetetus*, read to an amazingly distinguished audience of classicists and philosophers at the Oxford Philological Society on 15 February 1952.

This, I hope, should suffice to explain why Aristotle's account of knowledge has not received much attention in the study of ancient philosophy in general, and the history of epistemology in particular. Coming back to our main concern, however: the analysis of knowledge in terms of apprehension and true judgement, which is generally regarded to begin with Fārābī,¹⁵² has been one of the controversial subjects in the history of post-Avicennian Arabic philosophy. The controversy has been generated by a version of Avicenna's definition of knowledge as he puts it in *Introduction* and *Pointers* (also known as *Remarks*), viz., apprehension accompanied with judgement. This has brought about at least three groups of philosophers with different interpretations of the true nature and relation between both epistemic notions. The first group of philosophers understood the phrase to mean that apprehension is conceptually prior to judgement as Fārābī and Avicenna

¹⁵² Lameer suggested that Fārābī might not be the first Arabic philosopher to introduce the terms in Arabic philosophical lexicon, but unfortunately he was not able to identify the person who did introduce them. See Joep Lameer, *Al-Fārābī*, 273 and 276; and *Conception and Belief*, Ch. 2.

themselves understood it; the second group took apprehension to be constitutive of judgement, such as a twelfth century Arabic philosopher, Fakhr al-Dīn al-Rāzī, in his commentary on Avicenna's *Pointers*; and lastly, the philosophers who understood judgement to be a kind of judgement in the sense of *ḥukm*, like a twelfth century philosopher, Suhrawardī, in his *Kitāb al-Talwīḥāt (The Book of Intimations)* and a thirteenth century philosopher, Naṣīr al-Dīn al-Ṭūsī, in his commentary of Avicenna's *Pointers*.¹⁵³ The debate has culminated in the work of a sixteenth/seventeenth century philosopher Mullā Ṣadrā who examined the views of his predecessors and accommodated certain aspects of them in his own understanding of both notions.¹⁵⁴ This rough sketch, of course, does not exhaust all the ideas expressed in the debate, but it may suffice to show that Avicenna's epistemic notions of apprehension and judgement were fraught with problems of interpretation for almost five hundred years. Given this fact, then, it will not be futile to attempt at another interpretation of the notions in Avicenna's analysis of knowledge. The discussion in the present section, however, shall only provide a general sketch of both notions, while detailed discussions on their epistemic, psychological and logical aspects will follow in the subsequent chapters.

¹⁵³ For a more detailed account of this controversy see Lameer's *Conception and Belief in Sadr al-Dīn Shīrāzī*, esp. Ch. 4.

¹⁵⁴ I cannot ascertain whether or not the analysis of knowledge in terms of apprehension and true judgement receives any rigorous, critical examination in the post-Sadrīan Perso/Iranian Islamic philosophy. But it seems to me that the theory has been widely received, especially in its Ṣadrīan garb, by most contemporary Shiite/Iranian philosophers. See for example Muhammad Bāqir as-Ṣadr, *Our Philosophy*, trans. Shams C. Inati (London-New York: Muhammadi Trust, 1987); Seyyed Muhammad Husayn Ṭabāṭabā'ī, *The Elements of Islamic Metaphysics*, trans. Sayyid 'Alī Qūlī Qarā'ī (London: ICAS Press, 2003); and Mesbah Yazdi, *Philosophical Instructions: An Introduction to Contemporary Islamic Philosophy* (Binghamton, NY: Institute of Global Cultural Studies, 1999).

To begin with, I have arranged Avicenna's definition of knowledge as can be found in his major works in the manner that ostensibly represents a change of view in his analysis. But that is not actually the case. For these seemingly different views neither imply the change nor the development of his thought given the fact that the *Salvation* (namely, *Deliverance*) and the *Demonstration* were written later than the *Introduction*, though both are dated earlier than the *Pointers*.¹⁵⁵ Nor does it mean that Avicenna is uncertain or self-contradicting himself about the real nature and relationship of both notions in his analysis of knowledge.¹⁵⁶ On the contrary, there are no substantive differences in both definitions, except the difference in the use of expression, in which the latter makes it clear the conceptual relation between apprehension and judgement—as I shall dwell on them further shortly.

At the risk of stating the obvious, it still bears repeating that according to traditional JTB account, knowledge is analysed in terms of belief, in which knowledge is regarded as a species of belief—or, to put it more precisely, belief is constitutive of knowledge. It follows then that this account takes belief to be conceptually prior to knowledge in the order of philosophical explanation. But it is abundantly clear that Avicenna's analysis of knowledge takes an entirely different route. For belief does not appear at all in the order of explanation. In Avicenna's analysis, knowledge consists of apprehension and true judgement. By definition, apprehension involves understanding the meaning of a word or a certain set of words that form a proposition or a set of propositions that form a process of reasoning—like our apprehension of the

¹⁵⁵ For the date of composition of Avicenna's works, see Dimitri Gutas, *Avicenna*, Ch. 2.

¹⁵⁶ On this point I beg to differ with Lameer's analysis that this different views indicate the ambivalent in Avicenna's use of the notion. See, *Conception and Belief*, 94.

words *man* (*Deliverance*, 3) and *triangle* (*Rem-Log*, 49). As for judgement, it is a mental process in which things are judged to be related as they are in fact related, and it is expressed by a proposition—for instance, when we perceive something, say, the colour of grass, which is a complex fact, and then proceed to make the judgement, “the grass is green,” or to use Avicenna’s own examples, our judgements that “the universe has a single source” (*Deliverance*, 3), and “every whiteness is an accident” (*Introduction*, 17). The judgement or proposition, by which it is expressed, is true if and only if the relation between the judgement/proposition and the fact it stated is obtained. In other words, the judgement/proposition is true if it corresponds to the fact. And this is what constitutes knowledge. Again, as we shall see later in Chapter 3, besides understanding the meaning of a proposition and ascertaining what it stated to be really the case, we may do two different things: we may believe it or we may disbelieve it. In other words, besides apprehending and judging it to be true, we can also have towards the proposition the psychological attitudes like assent, belief, denial, and disbelief. In this way, then, Avicenna does not take belief or assertion in the same way as the theory of propositional attitude. This theory puts an emphasis on the psychological state in which a subject stands to a proposition. On the contrary, Avicenna regards proposition as a hypothetical entity, which might or might not be counted as knowledge depending whether it is true or false upon a certain condition—that is, there occurs in the mind a relation of the proposition to the things themselves as being corresponded to them. So, when our mind is presented with a proposition, there usually occurs certain mental operations in virtue of which our minds understand its meaning or the fact stated by the

proposition. At this point, our minds can just take the proposition to be merely its object of apprehension, or doubt it without judging it to be true or false. Or else it can immediately proceed to make a judgement whether it is true or false. If it is true it can be regarded as knowledge. And only then we can have an attitude either to belief or disbelief it. This attitude, however, does not make any difference to knowledge or to the fact that the proposition being true or false. For it is knowledge that makes a belief justified or rational.

There is another important point in Avicenna's definition of knowledge as he presents it in the quoted passage from *Demonstration* above that needs to be briefly explicated here. In that passage Avicenna says that knowledge can either be acquired through discursive reasoning or available (*ḥāṣil*) without being acquired through reasoning. Wilfrid Hodges (2009) has examined this passage in the light of Avicenna's theory of logical analysis. In his interpretation, Hodges suggests that, on the one hand, a word/concept becomes available to us if it is made determinate and well defined through definition. On the other hand, a true judgement is available when we elucidate the composition of a proposition and the meaning of the words in it and then we come to recognise that it is true. In this way, therefore, knowledge whether or not acquired through reasoning can be something already available to us. This interpretation is undoubtedly true. In what follows, however, I shall augment his interpretation by attempting at another interpretation of the passage.

The passage, to start with, should be read together with the passage from *Deliverance*, where he says, “All primary/immediate knowledge (*maʿrifa*) and discursive/derivative knowledge (*ʿilm*) is either apprehension or judgement...” (*Deliverance*: 3). I take it that in both passages Avicenna is saying that, at the most general level, there are two kinds of knowledge: one involves discursive reasoning and the other does not. For the sake of clarity, I would like to suggest that the kind of knowledge that does not involve discursive reasoning might be called as *primary/immediate knowledge* and the one that does as *discursive/derivative knowledge*. (In order to avoid verbiage, I shall refer to them simply as *primary* and *derivative knowledge*). The grounds for this suggestion will become clear in the ensuing discussion.

In the light of both passages quoted above, we may infer that primary knowledge does not involve reasoning from one concept or judgement to another such as in forming definition and syllogism. Rather, it is basically primary in the sense that the knowledge is immediate without anything intervening between a knowing mind and the object of knowledge (i.e., the object of apprehension and judgement). Primary knowledge is, therefore, a direct relation in which a mind, in principle, can stand to anything whatever, of which it is aware. As we shall see further in Chapters 2, 3, and 5, if something *P* in the world has come to the direct awareness of a person *S*, it can be said that *S* knows of *P*, in the sense that *S* apprehends *P* and *S* makes a true judgement about *P*. Then, *S* can derive some other judgements from this primary judgement by inference or syllogistic reasoning.

This suggested general division of knowledge into primary and derivative can be substantiated further in the light of Avicenna's subdivision of concepts/apprehensions and judgements into primary (*awwaliy*) and derivative (*muktasib*).¹⁵⁷ As we shall see, what I call primary knowledge consists of primary concepts/apprehensions and derivative knowledge consists of derivative concepts/apprehensions and judgements. Thus, Avicenna writes:

Every judgement and apprehension is acquired either by means of some investigation or it exists in a primary way. Judgement is acquired by means of syllogisms and other things resembling them that we have mentioned. Apprehension is acquired by means of definition and other things resembling it that we will mention below.

A syllogism has parts that one makes a judgement about it and others that are apprehended. A definition has parts that are [only] apprehended. But this does not proceed *ad infinitum*, in such a way that knowledge is obtained from these parts due to their acquisition from other parts, this being their nature *ad infinitum*. Rather, things reach a limit with judgements and apprehensions that have no intermediaries. [*Deliverance*: 87-88]

In another work, Avicenna writes:

We say: The concepts of “the existent,” “the thing,” and “the necessary” are impressed in the soul in a primary way. This

¹⁵⁷ This subdivision of concepts and judgements into primary and derivative in Arabic philosophy, including Avicenna, has been briefly treated in Wolfson (1943).

impression does not require better known things to bring it about. This is similar to what obtains in the category of judgement, where there are primary principles found to be true in themselves, causing [in turn] assent to the truths of other [propositions]. If the expression denoting them does not occur to the mind or is not understood, then it would be impossible to know whatever is known through them.

Similarly, in conceptual matters, there are things which are principles for apprehension that are apprehended in themselves. If one desires to indicate them, [such indication] would not, in reality, constitute making an unknown thing known but would merely consist in drawing attention to them or bringing them to mind through the use of a name or a sign which, in itself, may be less known than [the principles] but which, for some cause or circumstance, happens to be more obvious in its signification.

If every apprehension were to require that [another] apprehension should precede it, then [such a] state of affairs would lead either to an infinite regress or to circularity.

The things that have the highest claim to be apprehended in themselves are those common to all matters—as, for example, “the existent,” “the one thing”, and others. For this reason, none of these things can be shown or proof totally devoid of circularity or by the exposition of better known things. Hence, whoever attempts to place in them something as a [defining] constituent falters... [*Metaphysics*: 22-3]

In all these passages, Avicenna provides us with some details about the difference and relation between both kinds of concepts/apprehensions and judgements. The difference between concepts and judgement of primary kind

and that of derivative kind lies on the fact that the former is *apprehended or judged without the process of reasoning* while the latter can be *obtained only by the process of reasoning—that is, through definition and inference*. The relation between primary and derivative concepts is that the former are *immediate and non-derivable from any other concepts/apprehensions*, whereas the latter are *mediate and derivable and cannot be apprehended without apprehending the former*. As for the relation between primary and derivative judgements, the former are *immediate and not preceded by other judgements upon which they are derivable*, while the latter are *mediate and derivable from the former*.

On this account, then, our primary knowledge is the source of all our derivative knowledge. As we shall see later in Chapter 2 and 3, primary knowledge is of two sorts: some of it are pure perceptual knowledge, which gives us the knowledge of the existence and properties of things that we perceived; and some are purely intellectual knowledge, which gives us knowledge of essences of things and universals as well as the connections between universals from which we can draw inferences from the particular facts given in our perceptual knowledge. It follows therefore that our knowledge always depends upon some pure perceptual knowledge and some pure intellectual knowledge. In this way, then, derivative knowledge, in Avicenna's system of knowledge, is what is validly inferred from primary knowledge.

It must also be noted, however, that for Avicenna derivative knowledge does not only depend upon primary knowledge alone. For, as we shall see here and further later in Chapters 2 and 3, it is a system of interconnected concepts/words and true judgements/propositions. It is in fact the product of accumulated body of cognitions made up by various mental operations such as perceptions, apprehensions, judgements, and reasoning, and through which one word and proposition is linked to another by composition and inference. In this way, then, derivative knowledge is acquired from previously known or existing concepts/words and true judgements. To illustrate this point: we cannot apprehend the meaning of a thing or word without knowing some other words pertinent in understanding it; and, in the same way, we cannot make a judgement about a proposition unless we apprehend the fact it presented and know beforehand some other true propositions/judgements related to it (*Rem-Log*, 1). Avicenna illustrates this point even more clearly in the following passages:

An example of apprehension is this: if we do not know what 'man' means, and someone tells us that man is an animal who talks, we first have to know the meaning of 'animal' and 'talking', and we must have apprehended these things before we can learn something we did not know before about man.

An example of a true judgement acquired by the Intellect is this: if we do not know the meaning of 'the world was created,' and someone tells us that the world possesses colour, and whatever possesses colour is created; then, and only then, can we know what we did not know before about the world. [*Dan-Log*: 14]

In this order of explanation, it seems that derivative knowledge is a causal chain between apprehensions and true judgements. Our knowledge or apprehension of one concept may give rise to our knowledge of other concepts. Our knowledge of these concepts may, upon certain condition, enable us to form a judgement and apprehending the meaning of a proposition, which expresses a judgement. From this judgement we may then pass to some other new judgements. As a matter of fact, Avicenna provides a clear formulation of his conception of derivative knowledge in his account of prior, existing knowledge, where he says:

All intellectual teaching and learning are acquired through prior knowledge. Since apprehension and true judgement that arises from them (*viz.*, from teaching and learning) came from a word that has already been heard of or understood before, and that must be known first, and it must be known, in whichever way it occurs, but considering that it is a knowledge that is sought after, if it is not actual, it is potential. [*Demonstration: 57*]¹⁵⁸

Thus, it is obvious that prior knowledge provides the structure of Avicenna's system of derivative knowledge. For any acquisition of new knowledge presupposes prior, existing knowledge. This view of a system of derivative knowledge consists of a web of interconnected concepts and propositions and which increases through myriad processes of inferences from the existing knowledge is not a distinctive character of Avicenna's conception of knowledge alone. As a matter of fact, it can be found adopted by many

¹⁵⁸ Avicenna maintains this view in some other works such as *Introduction*, 17; and *Dan-Log*, 14. As a matter of fact, this passage corresponds to Aristotle's *Posterior Analytics* I.1 71a1-2.

philosophers in the history of epistemology. In contemporary debates on epistemology, this conception of knowledge is generally known by the name *epistemic priority theory*—which means that one kind of knowledge being prior to another. This theory, however, has become a subject of criticism by some contemporary philosophers. Barry Stroud, a leading contemporary critic of the theory, pointed out recently that this conception has a kind of elusive claim to explain our knowledge of thing based on our prior knowledge that does not entail or involve the knowledge we are trying to explain.¹⁵⁹ In this way, then, we are trying to explain knowledge of something only on the basis of knowledge of some others. This will inevitably make scepticism true, since how on that only basis that we have it is possible for us to know the world around us. Avicenna's conception, I think, can easily avert this kind of criticism against epistemic priority theory. First, it is true that we can know whatever is hitherto unknown on the basis of what is known prior to knowing it. There is, however, a caveat here. Thus, Avicenna argues:

But it is not the case that whatever is known can be a ground for knowing what is unknown. Because for everything that is known there is a proper class of known things that can be used for knowing the unknown. [*Dan-Log*: 14]

I take it that in this passage Avicenna is contending that not all our knowledge is derivable from our existing knowledge. For each item of knowledge have its

¹⁵⁹ See Barry Stroud, *Understanding Human Knowledge* (Oxford: Oxford University Press, 2000), 104-6. In recent debates, this theory is the main target of anti-foundationalist epistemology as can be found in Laurence Bonjour, *The Structure of Empirical Knowledge* (Cambridge, MA: Harvard University Press, 1985); Matthias Steup and Ernest Sosa ed., *Contemporary Debates in Epistemology* (Oxford: Blackwell Publishing, 2005), esp. Pt. 2. It should be noted, however, Avicenna's theory of knowledge is neither justificationist nor foundationalist. This will become evident in Chapters 3 and 4.

own principles and ways of knowing it. Moreover, human beings are equipped with epistemic faculties by which we can acquire new knowledge of things in the world. And it is from this primary or initial knowledge of those things that we can derive further knowledge about them through the process of inference.

Before concluding this chapter, I would like to renew my emphasis that this study is about Avicenna's analysis of propositional knowledge: namely, knowledge that something is the case or knowledge of matters of fact. At this juncture, it should also be noted that this is not the only kind of knowledge in Avicenna's philosophical system. For there is another kind of knowledge that he calls *knowledge of reasoned fact*. It is the kind of knowledge that aspires to go beyond *description of fact* and provides us with *explanatory understanding* of why things are the way they are (*Demonstration*, 79). In Avicenna's own terms, this knowledge is called *philosophical* or *demonstrative knowledge*. It is the kind of knowledge that we seek especially in metaphysics and other philosophical disciplines such as natural philosophy. In order to acquire such kind of knowledge these disciplines employ a special kind of reasoning which begins with premisses that are certain or necessary and from which comes a conclusion that not only such and such is the case, but that such and such cannot not be the case (*Demonstration*, 78). This form of reasoning is called *demonstration propter quid* (*burhān lima*) and it gives us "the cause with regard to both such and such is the case and why such and such is the case" (*Demonstration*, 79). To put the matter more precisely, our philosophical explanation is supposed to uncover the causal structure of the world from the observed regularities of natural phenomena. As I remarked earlier, we do

already have factual knowledge of these phenomena, such as there is a lunar eclipse. But in order to fulfil our epistemic need of theoretical understanding, we should be able to give causal explanations of the lunar eclipse. From the point of view of an explanatory realist like Avicenna, our explanation is true if it represents this causal relation correctly, just in the same way as our judgement or a proposition is true if it correctly represents the fact it stated. Avicenna's explanatory knowledge is, however, a subject well beyond the ambit of this study. For, to repeat, it concerns only with his analysis of factual knowledge.

1.6 Concluding Remarks

In this chapter I undertook a detour to provide a descriptive account of Avicenna's philosophical programme. The programme which makes him the first philosopher in the Aristotelian tradition that gives a new life into Aristotle's programme of developing a systematic theoretical understanding of reality. I have argued that the programme is rested upon his doctrine of metaphysical realism. This primary philosophical assumption is of cardinal importance in his philosophy for it is the principle from which all strands of his thought emerged and by which all his philosophical ideas are unified into a single philosophical system. On several occasions, I have showed that it is due to neglecting this fundamental doctrine that makes some historians failed to make fully sense of Avicenna's philosophical system in general, and his epistemology in particular.

I have pointed out that in Avicenna's realist philosophical system, ontology and epistemology, though distinguishable, are inseparable. For anyone who admits that things that populate the world exist independently of our thought and have essences-in-themselves knows that both sense experience and reason are indispensable to human cognition. In short: beginning where Avicenna begins can really help us see clearly what Avicenna takes to be the ground of human knowledge. Then all the knowledge that human beings can acquire with the help of both reason and sense experience can be brought together in a unified system in which metaphysics serves as its unifying principle.

From this inquiry into the relationship between metaphysics and knowledge in Avicenna's philosophical system, I turn then to his analysis of knowledge which serves as the building block in his structure of knowledge. I proposed my own rendition of his epistemic notions, *taṣawwur* and *taṣdīq*, as apprehension and [true] judgement. It is only in this way that we can clearly see that Avicenna has his own philosophical explanation of knowledge in which knowledge is analysed in terms of three notions *viz.*, apprehension, judgement, and truth. On this analysis, then, the three conditions must be satisfied in order for a person to know something. Each necessary condition, however, requires an entire chapter of its own in which its logical and conceptual merits can be explicated further. The next chapter, then, shall begin with the first necessary and sufficient condition of knowledge in Avicenna's analysis, i.e., apprehension.

Chapter 2

Apprehension

2.1 Introduction

In the previous chapter, I remarked briefly that Avicenna analyses knowledge in terms of apprehension and true judgement. This analysis not only takes apprehension to come before judgement in the order of philosophical explanation, but also there is an important distinction between apprehension and judgement. On this account, then, apprehension is a state of mind from which judgement are wholly absent. However, judgement cannot take place without there being apprehension in the first place. For apprehension is an element of, or is presupposed in, every judgement. In this way, then, apprehension can itself be explained without introducing judgement.

However, it still bears repeating that the term *apprehension* is my rendition of Avicenna's epistemic notion of *taşawwur*. This notion can be found throughout his works where he speaks of what [factual or propositional] knowledge is. As has been pointed out earlier in Chapter 1.5, Avicennan

scholars have proposed different views with regard to the historical origins of the notion. Wolfson (1943) and Madkour (1952) argued that it has its origin in the Stoic epistemic term of *phantasia*. Maróth (1990) showed that it is originated in neo-Platonic logic. Some others, like Sabra (1980), suggested that the notion is derived from Aristotle's *De Interpretatione* I 16a9 ff. And yet some others, such as Galston (1973) and Lameer (2006), argued that it has its origin in some passages of Aristotle's *Posterior Analytics*. I have argued earlier that the suggestions made by Sabra and Lameer are more plausible given the fact that there are close parallel between those passages of Aristotle and that of Avicenna. As for its equivalent English translation, I have also pointed out in Chapter 1.5 that there are varying renditions of the notion *taṣawwur* that can be found in modern studies on Avicenna, such as: concept [Maróth (1990)], conception [Sabra (1980); Inati (1984); Lameer (2006); Ahmed (2011)], conceptualization [McGinnis (2007)], conceptual representation [Strobino (2010)], and forming concept [Gutas (2012)]. Despite the fact that some of the renditions are inaccurate, misleading, or even incorrect, it seems—at least to me—that most, if not all, scholars are perplexed in making sense of this epistemic notion in Avicenna's analysis of knowledge. My purpose in the present chapter, therefore, is to consider what does Avicenna mean by this first necessary and sufficient condition of knowledge in his analysis.

The plan of this chapter is as follows. In Section 2, I explicate what does Avicenna mean when he speaks of apprehension in his analysis of propositional knowledge. Section 3 examines further Avicenna's epistemic

notion of apprehension and its relation to language and meaning in terms of the three fundamental relations of *mind-word-world*. In Section 4, I turn to Avicenna's theory of concept which, according to him, makes it possible for us not even to apprehend proposition but also to form judgements about things in the world. This is followed, in Section 5, by an analysis of Avicenna's account of the relationship between concept and language, without which it is impossible for human minds to employ concepts in its cognitive processes—including apprehension. This leads to a further analysis, in Section 6, of Avicenna's theory of real definition by which a word/concept received its precise meaning and reference and therefore plays a significant epistemic role in our apprehension. In Section 7, I conclude with some remarks on the epistemic priority of apprehension in Avicenna's analysis of knowledge.

2.2 Apprehending Propositions

In the light of the extensive quotations from his logical treatises in Section 5 of the previous chapter, what Avicenna means by apprehension in his analysis of knowledge can be illuminated in the following terms. When we hear spoken words or sentences, or see these words or sentences written or printed, something occurs in our mind in addition to the hearing or seeing of the words, which may be called *understanding of their meaning*. This understanding of the meaning of spoken, written, or printed words or propositions, which occurs without even thinking about it when we actually hear or read them, is what Avicenna meant by apprehension. Namely, apprehending the meaning of

words or a certain set of words which form propositions.¹⁶⁰ The same apprehension of propositions also occurs in the case where we neither hear nor see any words which express them, but we have before our minds the words or sentences which would express them. Avicenna's view, then, with regard to apprehending propositions can be put simply as follows. Just as we apprehend propositions, when we hear or see certain words spoken or written, of which we understand the meaning, we also apprehend them in exactly the same sense when they present before our minds, without hearing or seeing any words which express them.

When Avicenna speaks of apprehending propositions in either case, he is speaking of a state of mind from which both affirmation and negation are wholly absent. For there is no true and false in apprehension, but is simply understanding the meaning of the words present before our minds as they are. In other words, there is no dualism of true and false objects of apprehension. Furthermore, apprehension is the most fundamental mental process in propositional knowledge given the fact that we cannot ascertain its truth or falsity, affirm, negate, believe, disbelieve, or doubt a proposition without apprehending its meaning. The first necessary and sufficient condition of propositional knowledge, therefore, is apprehension. This is all that we should understand when Avicenna speaks of apprehension as the first epistemic notion or condition in his analysis of knowledge.

¹⁶⁰ There is no urgent need, I reckon, to explain at this stage what does Avicenna really mean by proposition. However, it will be explained later in its proper place in Chapters 3 and 4.

Our understanding of the notion will become deeper still if we wonder further how, according to Avicenna, it is possible for human beings to be able to apprehend the meaning of the words that form a proposition. Or—to put the question precisely—what are the epistemic relations or mental operations that involved in apprehending a proposition? To answer a question such like this, I need to digress briefly to explore another kind of apprehension that Avicenna speaks of in his writings, which is pertinent to our understanding of the notion. It is what may be called, *perceptual apprehension*—or apprehending particular objects in the external world. As a matter of fact, perceptual apprehension represents an early stage in the development of human cognition that makes apprehending propositions and therefore knowledge possible. In this way, Avicenna’s notion of apprehension involves not only epistemology but also psychology, and as we shall see shortly even language and semantics. In what follows I shall take the psychological aspect of apprehension into account only insofar as it bears directly on the epistemic notion of apprehending propositions so that it would not take me too far away from my main concern in this chapter.

So, to start with, perceptual apprehension¹⁶¹ is the grasping a form (*ṣūrā*)—or in contemporary philosophical term, *percept*—of an object in the mind. When an object in the external world presents before us, it causes our sensation which in turn causes some mental operations to occur in us by which we apprehend the form of the object, and that it is by virtue of these mental operations that we know of the object. In other words, the mere

¹⁶¹ A detailed psychological account of this mental process can be found in Chapter 5, Section 3.

presence of the object before us does not make us know the object; but what makes us know it is its form, or percept, that we apprehended in our mind. Such a form, of course, is in some respects analogous to the object perceived. And very often, over and above apprehending the object, we may make a judgement about what we have apprehended in our mind and express them with a set of words in the form of proposition. And, again, upon hearing the proposition a hearer may apprehend the meaning of those words which express them. Now, what makes it possible for us to express or communicate our judgements about the things that we apprehended in the world and to understand the meaning of such expression is, no doubt, by virtue of our ability to use and comprehend words and language. It is, in fact, with observations concerning this matter that Avicenna opens his work, *Book of Interpretation (Kitāb al-ʿIbāra)*. The observations he makes there are so important to our understanding of the interconnections between his notion of apprehension, language, and objects—or mind, word, and the world—that I beg leave to quote the relevant passages *in extenso*:

Truly human being has been granted a perceptive power on which the forms of external objects are inscribed and from which they are brought into the soul. Then there is inscribed on them a second, fixed inscription, even though it is hidden from perception. Then after that there may be inscribed in the soul objects appearing in the mode that the perception produces... So objects have existence in individuals, and they have existence in the soul in which they come to be impressed. Because human nature is in need of conversation due to its being in want of cooperation and society, it proceeds to invent something by which that is attained. It is not more insignificant from its being an

action, nor is it more insignificant from its using sound. The sound especially is not fixed or lasting or packed together. So, along with its insignificance, there is in it the utility of the existence of signs of it, along with the utility of its extinction, since there is no need for its signification after the disappearance of the need of it—or it has been thought afterwards by its signification. So nature is inclined to use sound, and it is made to suit by the Creator through the instruments of the segmentation of the letters and their combining together, so that by them there be signified the impression in the soul.

Then there occurs a second requirement, for signs of the third person of (things) existent in time or (ones) in the future beginning as signs when [they] are learned, either [1] so that what is learned in the future is added to it and then the human welfare or judgement is completed by collaboration. Most of the arts perfected by the succession of thoughts and the discoveries of their rules and the imitation by the modern of the ancient through obtaining it progressively—or [2] so that those coming later (can) benefit by it. If there is no need for anything to be added on to it and then completing it, then there is need of another type of signs different from speech. Then written figures are created. All of it is with divine guidance and divine inspiration. So what arises by sound signifies what is in the soul, namely, what are called impressions (*āthār*). Those in the soul signify objects and are called concepts (*ma‘ānin*), that is, the meanings (*maqāṣid*) for the soul, just as impressions in comparison to expressions also are concepts. The written (ones) signify the (verbal) expressions since the composition of expressions is paralleled by them, and that is picked for convenience, even though it concerns their creation insofar as the expressions are not paralleled by them, and its parts are a means...

Whether the expression be an inspired and revealed object whose teaching from almighty God is primary, or whether nature has proceeded in specifying a concept by a sound more appropriate for it, just as the sand grouse (*qaṭan*) is called 'sand grouse' through its sound, or people have met and made a convention, or an instance of this has come before and then is transformed little by little into something else where it is not noticed, or some of the expressions occur in one way, and others in another—still they are signified by convention. I mean, it is not necessary for a single human to make some expression to be reserved for some concept, nor does the nature of human beings bring them to it. Rather (those human beings) following or contemporary with them have made a convention on that, and kept it up, inasmuch as, if we imagined that it happened to the first [human] the imagination to use, instead of the expression that she did use, another one, [be it] inherited or invented, which she invented and taught to the second [human] so that her use about it would be judged to be like her judgement about the former [expression], and so that, if there were a first teacher, human beings would come to know these expressions. Still they arrive at it from God Almighty, through an imposition from him or in some other way, however you like. Still it is possible for the object in being signified by them [these expressions] to be (signified) differently from what He would wind up with if He made an imposition, where the utility is this one.

So the acquaintance [with things] persists through the significations of expressions by reason of a [mutual] consent of speakers that is not necessary so that, even though we impose it in virtue of the first teacher necessarily from God or in some other way, still it is conventional in virtue of (their) collaboration. So the reception [of the conventional signification] of the second (human) from the first is inasmuch as the first one has said to her: Such is meant by such—or she performs an action providing

an instance of the institution [of the name], and the like. Then the second and the third (human) agree with her on it without being required that they appoint that expression for that concept and that they appoint the same expression for the same concept inseparably (and) necessarily. Rather it will have been possible for the instance of that instruction from the first teacher to them to occur to another expression. On account of that it is possible for the significations of expressions to be different.

Further, it has been possible also for written (expressions) to be significative of impressions, so that a definite written (expression) is made for every impression in the soul, for instance, (one) written (expression) for motion, and another for rest, and another for the sky, and another for the earth, and likewise for every (other) thing. If the affair were carried out in that (way), still human being would long to preserve signs of what is in the soul (as) (verbal) expressions and to preserve them (in) drawings. It is made easy for the first one either by the practice of education or by arduous study. When she is forced a second time to preserve a written (expression) for this attribute, it is like the case of her who is forced to learn a language from the start. So the lesser [task] in that finds her proceeding to the first letters, few in number, and then imposing figures for them. Then she has preserved them without needing what has preceded her memory. When they are preserved, the composition of letters (in the) expression parallels their composition (in) number. For this reason writing is significative primarily of (verbal) expressions. That is also a signification by way of agreement and convention.

[Interpretation: 25-9]

In these passages Avicenna argues that apprehension of external objects is by way of acquaintance (that is, perception) through which their forms are impressed in our mind. This apprehension persists through the use of words

or concepts¹⁶² by which we express or describe the things in the world that we have apprehended. Then someone else may apprehend the meaning of the set of words that we use to express our judgements about the things—provided, of course, that she is able to read and understand the language to which the words belong. Now, what I take to be the basic problem for Avicenna in these passages is how to explain our ability to use words (or concepts) to express our judgements or thoughts, and to apprehend other people’s judgements or thoughts, about things in the world? According to Avicenna, human linguistic ability has a divine origin, where God designs us with natural ability to develop a language by using a system of signs in the form of articulate sounds, that is, words.¹⁶³ Despite the fact that our linguistic ability is natural, words are not innate in our mind. Rather, on Avicenna’s account, words are non-natural system of signs that we invent to signify the things in the world that we apprehended in our mind for the purpose of expressing or communicating our judgements about such things—in his own words, “Because human nature is in need of conversation due to its being in want of cooperation and society, it proceeds to invent something by which that is attained...” (*Interpretation*, 25).

¹⁶² In *Interpretation*, as in all his other works on logic, metaphysics and natural philosophy, Avicenna employs two terms, namely *ma‘ānī* (concepts) and *alfāz* (words or utterances), with regard to linguistic signs. See, *Interpretation*, Chs. 2 and 3, and his discussions on single and compound utterances in *Deliverance*, 5-6, and *Rem-Log*, 51-52. See also *Interpretation*, 25, fn. 42. As I shall explore it further later, concepts are employed primarily in the discourse on cognitive psychology, philosophy/metaphysics, and logic. In any case, concepts are abstract mental entities, or intelligibles (*mā‘qūlāt*), with or without corresponding linguistic or verbal expressions which represent a particular abstract entity in human minds. Given that concepts are somehow dependent on linguistic expression in their representations we have to turn our attention first on spoken and written words as ordinarily used in a natural language and instituted through custom and convention. I shall say more about Avicenna’s theory of concepts and their relationship with words and apprehension in Section 4.

¹⁶³ Here Avicenna takes for granted that human linguistic ability has a divine origin. Therefore the scientific study of the structure of human minds that makes it possible for human beings to develop and learn languages lies beyond his concerns.

Now, we may wonder how it is possible for words to signify the things in the world that we apprehended in our mind? That is, how do words acquire semantic properties like reference and meaning? Avicenna's answer to this question is that words acquire such semantic properties by virtue of being used by human beings to express and communicate about things in the world that they apprehended. To put it another way, words come to have their meaning or to refer to things in the world by being made to represent our judgements or thoughts about those things by way of custom or convention. Avicenna makes it absolutely clear that no matter how words are originated—be it in human nature, inspiration or revelation—still they are signified by way of convention. He maintains that the relation between spoken and written words, as is the relation between spoken words and the mind, are also conventional. On his account, then, language is a system of representation which is essentially *public*, in the sense that it excludes both private and personal meanings and interpretations of linguistic signs used in it. Seen in this light, language exists independently of particular speaker/hearer, in the sense that it is accessible in common to all members of a speech community. In other words, spoken or written words have significance for speakers/hearers because they are members of a speech community. Furthermore, the things that words signify in the mind of different speakers/hearers within the same speech community can be established by way of teaching or passing on the language from one person to another, like from parents to their children. Suppose that when an adult draw a child's attention to one thing, perhaps by pointing to it, and utters the appropriate word, say, 'bird'. In this case, then, both adult and child apprehend—through

their sense perception—the form of the thing, and the child comes to associate the word ‘bird’ with the form she apprehended in perceiving that thing. In this regard, Avicenna says,

The meaning of the signification of the expression is that, when the sound of a name is inscribed upon the imagination, a meaning is inscribed upon the soul. Then the soul discovers that this concept/word has this sound. Then, whenever perception brings it to the soul, the attention is on its meaning.
[*Interpretation*: 29]

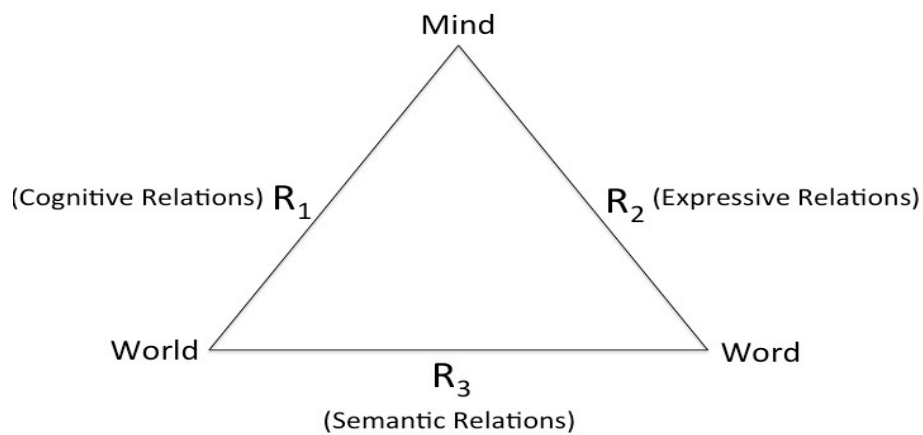
This is how, according to Avicenna, we are able to describe or communicate the form of the things that we apprehended and understand the meaning of the words by which we expressed them.

2.3 Mind–Word–World

I have presented above general features of Avicenna’s account of language, especially in its relation to apprehension. In order to understand his account properly, however, we need to look further at the three fundamental elements and the distinct, but interconnected, levels of relations holding between them in Avicenna’s account of language—though Avicenna himself does not chart these relations in any detail in his works. The three fundamental elements in Avicenna’s account of language should be obvious by now. And, to repeat, they are: words—as expressed in spoken or written signs; mind; and objects in the world—as they exist independently of human mind. The crucial relations

that hold between these elements are: the relations between the mind and objects in the world (mind-to-world); the relations between the mind and words (mind-to-word); and lastly, the relations between words and objects in the world (word-to-world). These relations may be illustrated in the following diagram:

Diagram 3. Three Fundamental Relations of Mind-Word-World



Relations of types R₁ (mind-to-world), R₂ (mind-to-word), and R₃ (word-to-world) may be called, respectively, cognitive relations, expressive relations, and semantic relations. Before looking in some detail at these relations, it must be noted that Avicenna never works out any detailed explication of these relations in a single work. What I termed as cognitive relations, for instance, has been treated in more detail in *The Soul, Psychology, and Demonstration*. The expressive and the semantic relations, however, only received rudimentary treatments in *Interpretation* and pointed out in some other logical

treatises such as *The Logic of the Pointers* and *The Logic of the Salvation and Demonstration*—despite his own contention that philosophical account of language is not a subject of concern in logic.¹⁶⁴ This, I think, is due to the fact that language has never been one of the main philosophical problems for Avicenna—in fact, he does not count it as one of the theoretical disciplines in his system of knowledge, but merely a branch of logic (see Diagram 2). Seen in this light, what he offers in his works, then, is a general account of language—such as words, expressions, meanings, and reference—which serves its purpose within his broader philosophical programme or as it is pertinent to his main philosophical problems, like the problem of factual knowledge, or more to the point, the role of language in apprehension. Avicenna cannot be said, therefore, to have a proper philosophical theory of language, in any thing like the modern sense.¹⁶⁵ In fact, to say that Avicenna and even his ancient predecessors, such as Plato and Aristotle,¹⁶⁶ have

¹⁶⁴ Avicenna's views on the relation between language and logic are to be found, among others, in *Rem-Log*, 48; *Introduction*, 22-3; and *Categories*, 1-8. For a preliminary discussion on the philosophy of language in Arabic philosophy, including Avicenna, see Peter Adamson and Alexander Key, "Philosophy of Language in the Medieval Arabic Tradition," in *Linguistic Content: New Essays on the History of Philosophy of Language*, ed. Margaret Cameron and Robert J. Stainton (Oxford: Oxford University Press, 2015), 74-99; and Sabra (1980).

¹⁶⁵ For contemporary philosophical theories of language, see John R. Searle, *Speech Acts: An Essay in the Philosophy of Language* (Cambridge: Cambridge University Press, 2011 [1969]); John R. Searle ed., *The Philosophy of Language* (Oxford: Oxford University Press, 1971); John R. Searle, *Expression and Meaning: Studies in the Theory of Speech Acts* (Cambridge: Cambridge University Press, 1999 [1979]); Saul A. Kripke, *Naming and Necessity* (Cambridge, MA: Harvard University Press, 2001 [1972]); R. M. Sainsbury, *Departing from Frege: Essays in the Philosophy of Language* (London-New York: Routledge, 2002); Michael Devitt, *Ignorance of Language* (Oxford: Clarendon Press, 2006); Scott Soames, *What is Meaning* (Princeton: Princeton University Press, 2010); Colin McGinn, *Philosophy of Language: The Classics Explained* (Cambridge, MA: MIT Press, 2015); and Savas L. Tsohatzidis, *John Searle's Philosophy of Language: Force, Meaning and Mind* (Cambridge: Cambridge University Press, 2007).

¹⁶⁶ For studies on the ancient, especially Platonic and Aristotelian, accounts of language, see Deborah K. W. Modrak, *Aristotle's Theory of Language and Meaning* (Cambridge: Cambridge University Press, 2001); J. L. Ackrill, *Essays on Plato and Aristotle* (Oxford: Oxford University Press, 1997), esp. Ch. 2, "Language and Reality in Plato's Cratylus"; Malcolm Schofield, "The Dénouement of the Cratylus," in *Language and Logos: Studies in Ancient Greek Philosophy Presented to G. E. L. Owen*, ed. Malcolm Schofield and Martha Craven Nussbaum (Cambridge: Cambridge University Press, 1982), 61-81; Bernard Williams, "Cratylus' Theory

developed a philosophy of language would be misleading or, at worst, anachronistic. For, as a matter of historical fact, philosophy of language—in the sense that contemporary philosophers understood it as a rigorous and systematic study of the nature of language which concerned primarily with the analysis of the interconnections between three distinct kinds of relations holding between the mind, word, and the world—has its beginning in the work of the German philosopher and mathematician, Gottlob Frege, and then only came to occupy central stage as one of the main problems of philosophy in the twentieth century with the works of influential philosophers of language like Russell, Wittgenstein, Quine, Austin, and Strawson (Searle 1971, 1-2).¹⁶⁷

Coming back now to the three fundamental relations introduced earlier. The relation R_1 (mind-to-world) may be called cognitive relations, that is, the relations of resemblance that obtains between the mental state and things in the world through the mind's apprehension of their forms. The relation R_2

of Names and its Refutation,” in *Language and Logos: Studies in Ancient Greek Philosophy Presented to G. E. L. Owen*, ed. Malcolm Schofield and Martha Craven Nussbaum (Cambridge: Cambridge University Press, 1982), 83-93; Julia Annas, “Knowledge and Language: the *Theaetetus* and the *Cratylus*,” in *Language and Logos: Studies in Ancient Greek Philosophy Presented to G. E. L. Owen*, ed. Malcolm Schofield and Martha Craven Nussbaum (Cambridge: Cambridge University Press, 1982), 95-114; T. H. Irwin, “Aristotle’s Concept of Signification,” in *Language and Logos: Studies in Ancient Greek Philosophy Presented to G. E. L. Owen*, ed. Malcolm Schofield and Martha Craven Nussbaum (Cambridge: Cambridge University Press, 1982), 241-66.

¹⁶⁷ For the most important works of these leading philosophers of language see, Peter Geach and Max Black ed., *Translations from the Philosophical Writings of Gottlob Frege* (Oxford: Basil Blackwell, 1960); Bertrand Russell, “On Denoting,” *Mind* 14 (1905): 479-93; Bertrand Russell, *An Inquiry into Meaning and Truth* (London-New York: Routledge, 1995 [1940]), Bertrand Russell, *Human Knowledge: Its Scope and Limits* (London-New York: Routledge, 2009 [1948]), esp. Pt. II “Language”; Ludwig Wittgenstein, *Tractatus Logico-Philosophicus*, trans. D. F. Pears and B. F. McGuinness (London-New York: Routledge, 2001 [1922]), Ludwig Wittgenstein, *Philosophical Investigations*, trans. G. E. M. Anscombe, P. M. S. Hacker, and Joachim Schulte (Oxford: Blackwell, 2009 [1953]); W. V. O. Quine, *From a Logical Point of View* (New York: Harper & Row, 1953); John L. Austin, *How to Do Things with Words* (Oxford: Clarendon Press, 1962 [1955]), John L. Austin, *Philosophical Papers* (Oxford: Clarendon Press, 1961); P. F. Strawson, “On Referring,” *Mind* 59 (1950): 320-44; P. F. Strawson, *Logico-Linguistic Papers* (London: Methuen, 1971); P. F. Strawson, *Entity and Identity* (Oxford: Oxford University Press, 1997); and P. F. Strawson, *Philosophical Writings* (Oxford: Oxford University Press, 2011).

(mind-to-word) may be called expressive relations, namely, the relations between words and the mental state they signify. And relation R_3 (word-to-world) may be called semantic relations, that is, the relations between words and the things that ground their signification. In *Interpretation*, Avicenna makes it clear that cognitive (mind-to-world) relations are natural and non-conventional and are identical to all human beings, while expressive (mind-to-word) and semantic (word-to-world) relations are apparently non-natural and in some broad sense customary and conventional. As I remarked a moment ago, these three types of relations are different from each other and yet intimately interconnected. In the light of the lengthy quotation above, it is the interconnection between these distinct levels of relations that explain the phenomenon of language as a system of representation by means of linguistic signs.

Unlike modern philosophers of language, however, Avicenna does not concern much to elaborate on the issue of relationships of priority and dependence amongst these three fundamental types of relations.¹⁶⁸ In what follows, I shall elucidate his basic stand on this issue as can be gleaned from the lengthy quotation above. It seems to me, to begin with, that Avicenna takes each type of relations to be important in our understanding of the relationships between language, thought, and the world. There he takes cognitive relations to come first in these relationships, where human minds, as I remarked earlier, apprehend the form, which is causally related to the thing perceived. Just as the thing in the external world has certain properties, the

¹⁶⁸ For an overview of the problem of priority and dependence between these crucial relations in modern philosophy of language, see Simon Blackburn, *Spreading the Word: Groundings in the Philosophy of Language* (Oxford: Clarendon Press, 1984), especially Pts. I and II.

form in our mind as its resemblance shares these properties too. Now, upon apprehending the form of a thing we can thereby form a judgement as to what those properties are and then express or communicate the judgement to others. This ability to make judgement and to express our thought is obviously entailed the type of relations, which we call expressive (mind-to-word) relations, that confer upon linguistic signs (such as words and concepts) a power to convey our judgements or thoughts about things in the world to others.

Still words cannot serve their purpose as a vehicle for expression of judgement or thought even after being instituted through linguistic convention. In fact, words are nothing but a mere string of insignificant, meaningless signs or noises. What makes this string of signs or noises to be able to serve its purpose is that it must be meaningful. And what makes words to have distinctive meaning they do is that they have been made to stand for things in the world. In other words, linguistic expressions have the meaning they do in terms of their having been instituted to stand for things. What they mean, then, is what they stand for. This is what we call *semantic relations*.¹⁶⁹ That is, the word-to-world relations that confer upon linguistic sign such properties as reference and meaning through conventional association with things and facts in the world.

In Avicenna's account of language it is clear that semantic (word-to-world) relations are dependent on the combination of cognitive (mind-to-world)

¹⁶⁹ For a detailed and illuminating comparison between Avicenna's semantics and Frege's, see Wilfrid Hodges, "Ibn Sina, Frege and the Grammar of Meanings," *Al-Mukhātabāt* 5 (2013): 29-60.

and expressive (mind-to-word) relations. But, on the other hand, it is semantic relations that explain the significance of all linguistic signs in terms of their having been conventionally associated one-to-one with things or states of affairs in the world, and thus explain our ability to apprehend the meaning of a proposition by virtue of our knowing what the proposition's component words refer to. This point can be illustrated further as follows. By virtue of apprehending things in the world, we stand in various cognitive relations with things and facts in the world. For instance, we may make judgements about those things. Then, we use words to express our judgements or thoughts about things in the world. And, finally, words and sentences themselves stand in semantic relations to such things and facts as they refer to or denote or mean this or that thing or fact in the world. In this way, words or sentences mirror the things or states of affairs they describe, and that is how they get to mean those things. A word, for instance, may refer to a thing, or a sentence may describe a state of affairs in the world. On Avicenna's account, then, meaning is necessarily objective, in the sense that it excludes private or subjective understanding of it, and thus common to all members of a linguistic community. In fact, it is in virtue of the objectivity of meaning that language serves its purpose as a vehicle for expression of judgement and thought about things or states of affairs in the world, and that enable a hearer to apprehend the meaning of a proposition and what its component words refer to. Otherwise, if there is nothing objective about meaning and language, it follows that expressions of judgement, thought, knowledge, and communication are nothing but a mere illusion.

There is, however, another important point about Avicenna's account of language that needs emphasis. From what has so far been said about semantic relations in Avicenna's account of language, it is obvious that he takes words to denote things and facts in the world and that the meaning of words is determined by the things and facts themselves.¹⁷⁰ That is to say, by making things and facts as the only referents, Avicenna then takes the meaning of words to be ultimately dependent upon their relation to the things and facts themselves. As a matter of fact, the view such like this is called *semantic realism*.

This view, I reckon, is essential to Avicenna's account of language from the fact that he regards language as a suitable vehicle for describing the world, where its suitability depends on the fact that it must get it right about the world. Or—to put it another way—it must be capable of referring to things in the world in an appropriate way as they really are. It is on this assumption that Avicenna, I suggest, develops his account of meaning in terms of correspondence or relation between words and things or facts in the world which enables human beings to use words to express their judgements about things in the world. I would like to suggest further that with this assumption as the basis of his account of language, Avicenna's semantic realism is meant to serve his epistemological realism—the view that the world can be known as it is—which in its turn serves his most fundamental doctrine of metaphysical realism, that is, the view that the things in the world exist independently of our

¹⁷⁰ Does Avicenna's account of meaning has something in common with that of a contemporary neo-Aristotelian philosopher, Hilary Putnam, who says that "meanings just ain't in the head!"? (See, Hilary Putnam, "The Meaning of "Meaning"," *Minnesota Studies in the Philosophy of Science* 7 (1975): 131-93). This, I think, is an interesting subject worth of exploration in some other papers or studies.

mind and have their natures ontologically independent of our apprehension, perception, and judgement of them.

Avicenna's account of language and meaning and its relevance to his epistemological and metaphysical realism have also a direct relation to his theory of concept. Namely, his view of the kinds of concepts and the psychological account of how human beings derive concepts from the forms of particular things and facts we apprehended, which are necessary for our apprehension, judgement, and description of things in the world. As we shall also see shortly, these concepts, according to Avicenna, are represented by words, which serve as their verbal or linguistic expressions. Given that our present concern is epistemological rather than psychological, I shall begin the discussion in the next section with those aspects of his theory of concept that bear directly on his epistemic notion of apprehending proposition. This is followed, then, by a brief remarks about the psychological aspect of the theory, where Avicenna explains the mental capacities and the natural cognitive processes that taking place in all human minds through which emerge the concepts of things in external reality.

2.4 Concept and Apprehension

Our focus, in the previous two sections, was on Avicenna's account of the role of words and their meaning in our ability to apprehend propositions. In this section, as promised earlier, I turn to his account of concepts which,

according to him, make it possible for us to form judgements about things in the world and to apprehend propositions with regard to matters of facts.

Propositional knowledge or thought, for Avicenna, certainly involves the deployment of concepts. In his own words: “Thought is a certain movement of the soul among concepts” (*Rem-Phy*, 103). Our judgement that “humans are wise” (*Dan-Log*, 15), for instance, consists of concepts such as *human* and *wise*. Some concepts, however, are composed of simpler concepts. For example, ‘human’ may be understood as ‘rational animal’. In this case, then, the concept *human* is comprised of singular or simple concepts *rational* and *animal*. Now, we need to be fully aware what does Avicenna mean when he speaks of concepts in his works. This, however, seems to be quite difficult since Avicenna himself never provides us with an elaborate account of concept including the different types of concepts that we frequently deployed in thinking about things in the world. What needs to be done, then, is to look closely at his rather brief and scattered remarks and piece them together here.

So, to begin with, concepts are universal, abstract ideas or entities derived from particular perceptual forms apprehended in our mind. Harking back Avicenna’s remarks at the beginning of *Interpretation*:

Truly human being has been granted a perceptive power on which the forms of external objects are inscribed and from which they are brought into the soul. Then there is inscribed on them a second, fixed inscription, even though it is hidden from perception. [*Interpretation*: 25]

The relationship between both types of forms is further elucidated in another work, where Avicenna says:

Likewise knowledge and the intelligible universal form emerged in the soul little by little out of the particular perceptual form. When they are brought together the soul derives from them the universal form and then emits it. [*Demonstration*: 332]

And in yet another work, he maintains:

A thing may be either: [1] Sensible when observed. [2] After that, it may be imagined when absent, such that its form is represented internally. This is exemplified in Zayd, whom you see and, then, if he is absent, you imagine him. Or [3] it may be intelligible, such as when you form from Zayd the concept of human being that is also applicable to others. [*Rem-Phy*: 98]

In both passages, as in many places of his works, these entities are also called *intelligible forms* (*ṣūratān ma‘qūlā*) or simply *intelligibles* (*ma‘qūlā*). For example, he says: “There is an intelligible form (*ṣūratān ma‘qūlatan*) corresponding to its existent form” (*Demonstration*: 86); “Form may even be said of the intelligibles that are separate from matter” (*Physics*: 70); and “...the intelligible forms are acquired from external forms” (*Rem-Met*: 172). Avicenna then divides these intelligible concepts into two fundamental categories, namely, the *primary intelligible concepts* (or simply, *primary*

concepts) and the *secondary intelligible concepts* (or simply, *derivative concepts*),¹⁷¹ as he writes:

The subject matter of logic, as you have known, was the secondary intelligible concepts (*al-ma'ānī al-ma'qūlat al-thānīyah*) that depend on the primary intelligible concepts (*al-ma'ānī al-ma'qūlat al-ūlā*) with respect to the manner by which one arrives through them from what is known to what is unknown—not [however] with respect to their being intelligible[s], having [that] intellectual existence that either is not at all attached to matter or attached to noncorporeal matter. [*Metaphysics*: 7]

It is unfortunate that Avicenna does not bother to elucidate further the distinction between both types of concepts.¹⁷² Since his primary concern in this passage is obviously with the subject matter of logic. It is apparent, however, that Avicenna takes *logical concepts*—that is, the concepts employed in logic such as subject, predicate, etc.—to be the kind of concepts that he calls secondary intelligible concepts, or what I termed earlier as derivative concepts. But it is important to note that logical concepts are not the only kind of concepts that Avicenna speaks of in his writings. From the perusal of his works we can in fact find that the word *concept* is used in many

¹⁷¹ An earlier preliminary discussion on both categories of concepts can be found in Shukri B. Abed, “Avicenna: iii. Logic,” in *Encyclopaedia Iranica*, Vol. 3.1, ed. Ehsan Yarshater (New York: Columbia University Press, 1987), 70-3. See also A. I. Sabra, “Avicenna on the Subject Matter of Logic,” *The Journal of Philosophy* 77 (1980): 746-64.

¹⁷² It must be noted that Avicenna also uses the terms primary and secondary intelligibles to refer to epistemological premisses, as he says: “Sometimes it is a relation of possible potentiality, namely, when it is in the state of material potentiality [i.e., the material intellect] with the primary intelligibles from which and by which it acquires the secondary intelligibles. By the primary intelligibles I mean the primary premisses to which assent is given, not through any process of acquisition, nor even the one who assenting to them being aware that it might be possible for him to abstain from assenting to them at any time, just as we believe that the whole is greater than the part and that things which are equal to one thing are equal to one another” (*Soul*, 34). This, of course, can hardly shed light on the passage in the *Metaphysics* above. The terms should be understood, then, in terms of the primary (*awwaliy*) and derivative (*muktasib*) judgements as I suggested in Chapter 1.5 above.

particularly different senses. In what follows I shall identify all the important senses of concepts that Avicenna has in mind when he speaks of them and try to determine their relationships and where do they belong to in his fundamental categories of concepts.

The first sense of concepts that Avicenna uses in his works, I suggest, may be called *cognitive concepts*. That is, the abstract, general ideas derived from the particular forms of external things apprehended in the mind. In other words, cognitive concepts are generalised forms of particulars:

Firstly, from these particulars the soul abstracts single universals by abstracting their concepts from their matters, material attachments and accidents by considering the common elements¹⁷³ and differences, and by distinguishing the essential from the accidental. From this the soul gets the fundamental concepts by using the faculties of imagination and estimation.
[*Psychology*: 55]

In the light of this passage, cognitive concepts are derived from groups of particulars through the processes of abstraction and generalisation. That is to say, from a group of particular forms, human minds then derived a general notion (or in Avicenna's own word, *single universal*) by abstracting the elements common to the particulars. Avicenna's formal account of this process of concept formation is as follows:

¹⁷³ Or resemblances.

We say that apprehending the intelligibles by means of the senses is precisely in one way: that the sense perception grasps the perceptual forms and delivers them to the form retentive faculty (*khayāliya*),¹⁷⁴ and those forms become subjected to the action of our theoretical intellect. It is there [the form retentive faculty] the many perceptual forms grasped from the actual humans that the intellect finds muddled up with material accidents. For example, it finds Zayd having a particular colour, appearance, shape of limbs, and it finds ‘Amr having other such particular things. It thus turns to these material accidents and extracts them, as if it was peeling away those material accidents and setting them aside until it arrives at the concept common to all individual forms perceived by the sense without difference, and thereby acquiring knowledge about it and apprehending it. [Demonstration: 222]

This passage provides a clear account of the natural mental processes from which general cognitive concepts emerge in human minds. In a paraphrase it might run as follows. In forming general concepts human mind brings together the common properties or resemblances that it found in particular forms apprehended through sense perception. In doing so the mind needs firstly to compare and separate those particular forms into groups. It is from here that the common elements found in each group are abstracted and formed into a general concept. For example, there are firstly two or more individual forms in

¹⁷⁴ That is, the faculty in human brains which preserves the perceptual forms or images that the faculty of common sense (*banṭāsiyā* or *sensus communis*) receives from the sensory organs. See *Soul*, 44 and *Psychology*, 31. Rahman renders the term as ‘faculty of representation’ while McGinnis translates it as ‘imagery faculty’. See Jon McGinnis and David C. Reisman, *Classical Arabic Philosophy: An Anthology of Sources* (Indianapolis-Cambridge: Hackett Pub., 2007), 182. See also Deborah Black’s “Avicenna. Selections on the Cogitative Faculty,” where she translates the term as imaginative faculty, <http://individual.utoronto.ca/dblack/translations.html>. I propose my own rendition of the term since it seems to me that the existing renditions do not sufficiently represent Avicenna’s own explanation of the nature and the function of such faculty.

the mind, say Zayd and ‘Amr; and secondly, the common element, humanity, in which they are alike. It is, then, on this common element that the general cognitive concept, *human*, is derived. And then we take this concept to be representing the group as a whole and as applicable to any individual within it—like the concept *human* is applicable to an infinite number of individual humans.

For instance, when we say, *human*. For it is a concept in the soul, and this concept corresponds in a similar way to Zayd, ‘Amr and Khālid, since each of them is a human. [*Introduction*: 26]

A thing... may be intelligible, such as when you form from Zayd the concept of human being that is also applicable to others. [*Rem-Phy*: 98]

This point is elucidated further in some other places of his works. For instance, Avicenna writes:

As to those existents which are present in matter, either because their existence is material or because they are by accident material, this faculty completely abstracts them both from matter and from their material attachments in every respect and perceives them in pure abstraction. Thus in the case of ‘man’ which is predicated of many, this faculty takes the unitary nature of the many, divests it of all material quantity, quality, place, and position, and abstracts it from all these in such a way that it can be attributed to all men. [*Psychology*: 40]

There is also in the mind the form of animal with respect to what corresponds in the mind (in terms of one specific definition) to

many concrete instances. As such, the one form would be related in the mind to a plurality. In this respect it is a universal, being an idea in the mind whose relation to whatever animal you take does not differ. In other words, whichever [of these instances you take] whose representation is brought to the imagination in any state—the mind thereafter abstracting its pure concept from accidents—then this very form is realised as a result of abstracting *animality* from any particular image, taken either from an external existent or from something that plays the role of an external existent—even if it itself does not exist externally but [is something] the imagination invents. [*Metaphysics*: 156]

It is given to the fact that it is found in many instances that cognitive concept is also called general concept. The concept may be as abstract as mental being or as concrete as any particular existent thing. But as long as it can be said to be applicable to more than one case it is, therefore, a general concept. There are many concepts that fall within this class, such as human, animal, mountain, star, chair, table, book, etc. In point of fact, without these concepts both our ordinary language and intellectual discourse are certainly impossible, since it is unlikely that any single sentence can be made without deploying one or another general cognitive concepts. Furthermore, I would like to suggest that this kind of concepts belonged to what Avicenna calls as primary concepts. Given the fact that they are directly and primarily derived from the particular forms (or percepts) in human minds and corresponding to the objective things in the world. It must also be noted that, in contemporary philosophical parlance, the concepts of this kind may be called *empirical*

concepts—that is, concepts that are derived from, or originated in, our perceptions and memories of individual things.¹⁷⁵

There is another kind of concepts that we can plausibly regard to belong to primary concepts—albeit Avicenna himself never explicitly tells us where do they belong to in his fundamental category of concepts. These concepts, I suggest, may be called *metaphysical concepts*. Given the fact that they encapsulate the ideas which are the adequate copies of the *essence* of things¹⁷⁶ derived directly and primarily from their particular forms in human mind. They are the concepts such as rational, mind, soul, life, matter etc.¹⁷⁷ Avicenna speaks about these metaphysical concepts in many places of his works from which we can learn about their nature and by which I can substantiate my suggestion that they fall within the category of primary concepts. According to Avicenna, essences are the entities that make things as they are and actualise their existence in external reality. Thus, he writes:

What is meant by essence is the perfection of the reality of a thing by which it is what it is, and by which it becomes actual.
[*Demonstration: 52*]

Every body has a nature, form, matter, and accidents. Its nature, again, is the power that gives rise to its producing motion and change, which are from [the body] itself, as well as its being at

¹⁷⁵ I have suggested earlier in Chapter 1.5, our primary concepts/knowledge are of two sorts: purely perceptual/empirical and purely intellectual. The latter will become clear when we turn to what I call *metaphysical concepts* in a moment.

¹⁷⁶ With regard to this ideas, Avicenna says: “Similarly, if there were separable forms and separable mathematical entities, then our knowledge of them would be [the influence] that occurs to us from them; they themselves would not come to exist for us, transferred to us. we have shown the falsity of this in [several] places. Rather, what exists for us from them are the influences that inevitably imitate them. [*Metaphysics: 110*]

¹⁷⁷ For other concepts that belong to this category, see Avicenna’s *Metaphysics*, Book V.

rest and stable. Its form is its essence by which it is what it is, while its matter is the thing bearing its essence. [*Physics*: 45]

Taking a cue from the second passage above, essence is also known as *form*. In the light of Avicenna's metaphysical realism (see Chapter 1.2), essence/form is the primitive substance which provides the existential ground for all things. This is very much what Avicenna himself says in talking about form and essence:

The form may be said of the essence—which, when it occurs in the matter, makes a species subsist—as well as being said of the species itself... Form might be said of every disposition, however it might be, as well as being said of any thing, whether a substance or an accident, that is separate in the species (for this is said of the highest genus). Form may even be said of the intelligibles that are separate from matter. The form taken as one of the principles is relative to what is composed of it and the matter—namely, that it is a part of it that necessitates its being actual in its instance, whereas the matter is a part that does not necessitate its being actual (for the existence of the matter is not sufficient for the actual generation of something, but only for something's potential generation). So the thing is not what it is through the matter; rather, it is through the existence of the form that something becomes actual. [*Physics*: 70]

This passage also reminds us to his Aristotelian doctrine of hylomorphism, which regards individual substances as the combinations of form and matter, with each substance being constituted by a particular matter embodying, or

only organised by, a certain form.¹⁷⁸ The form of a substance is its essence whereby it is what it is, while its matter is the thing bearing its essence (*Metaphysics*, 45-8). From a thing's essence come, by necessity, certain features of the substance, which are its properties. Among the properties of the substance there are some contingent determinate features that constitute its accidents. Form or essence remains constant and immutable, while matter and accidents are subject to change and corruptible. Accordingly, it is only by virtue of the essences of things that we can obtain knowledge about reality. But essences themselves are of two kinds:

Existing things are of two categories: essences intelligible in existence and essences perceptible in existence. Essences intelligible in existence are those that have neither matter nor any concomitance of matter. They are intelligible in themselves because no mental operation is needed to make them intelligible, and because they are in no way perceptible. Essences perceptible in existence are those that are not in themselves intelligible but rather perceptible. But the intellect makes them such that they become intelligible, because it abstracts their nature from the material concomitance. [*Demonstration*: 221-2]¹⁷⁹

Essences, according to Avicenna, may be purely intelligible by virtue of their existence completely independent of matter and its concomitance. In this case, they are non-perceptible but can be apprehended directly by human minds,

¹⁷⁸ For example, substance that is separable but not wholly independent of matter is like the *human soul*, whereas substance that is totally free from matter is such like the *intellect* (*Metaphysics*, 48).

¹⁷⁹ Elsewhere he writes, "We say that the soul thinks by apprehending into itself the intelligible forms as abstracted from matter. The form is abstracted either by the intellect's abstraction of it or by virtue of the form being in itself abstracted from matter, in which case the soul is spared the trouble of abstracting it" (*Soul*, 239).

just like we apprehend the intellect (*Metaphysics*, 48). There is another kind of essences that are not at first intelligible but perceptible by virtue of their presence in matter. In this case, they can only be apprehended by human minds through what Avicenna calls the process of abstraction, just like we apprehend human soul (*Metaphysics*, 48). This line of argument also shows that Avicenna is a realist enough to acknowledge that somehow it is the objects of knowledge themselves that determine the way by which we acquire knowledge of essences. If essences exist in purely intelligible states they can be apprehended directly by human intellect. If they exist in material things and hidden behind the particularity of the corporeal form under which they appear, as is the case in most, if not all, existent things in the world, they can only be known through some mental operations which enable human mind to apprehend them. Avicenna's formal account of these operations is as follows:

It is probable that all perception is but the abstraction by the percipient subject of the form of the perceived object in some manner. If, then, it is a perception of some material object, it consists in somehow abstracting its form from its matter. But the kinds of abstraction are different and its grades various. This is because, owing to matter, the material form is subject to certain states and conditions which do not belong to it qua form. So sometimes the abstraction of the form is effected with all or some of these attachments, and sometimes it is complete in that the form is abstracted not only from matter but also from the accidents it possesses. For example, the form or quiddity of man is a nature in which all the individuals of the species share equally... [*Psychology*: 38]

Know that the intelligible concept may be derived from the existing thing, as happens when, by astronomical observation and sensation, we ourselves apprehend from the celestial sphere its intelligible form. [*Metaphysics*: 291]

On Avicenna's account, therefore, the essence of things apprehended by human intellect is derived from their perceptual forms in the mind by way of abstraction¹⁸⁰ and some other operations of the mind itself—like observations and sensation. In doing so, the mind leaves out the accidental aspects or the particular characteristics of the things and then singles out the distinct element representing the real essence or natural constitution that made what they are and from which all their qualities flow. This essence, according to Avicenna, exists in its entirety in every individual member of the species.¹⁸¹ And it can be derived directly from the existing thing itself. Taken as concept, the essence refers to the objective entity apprehended in the mind and that exists in the concrete particular things in the external reality—for instance, Avicenna says that a concept is “an intelligible form (in the mind) corresponding to its existent form (*Demonstration*, 86). The concept *rational*, for instance, refers to every single human because there is no human we can

¹⁸⁰ For Avicenna's detailed account of the levels of abstraction that involved in deriving intelligible forms or essences from the sensible ones, see *Psychology*, 38-40, and *Soul*, Books II.2 and V.5. Avicenna's theory of abstraction has particularly been the subject of interest in recent scholarly studies. The most notable among them, see Dag N. Hasse, “Avicenna's Epistemological Optimism,” in *Interpreting Avicenna: Critical Essays*, ed. Peter Adamson (Cambridge: Cambridge University Press, 2013), 109-19; Cristina D'Ancona, “Degrees of Abstraction in Avicenna: How to Combine Aristotle's *De Anima* and the *Enneads*,” in *Theories of Perception in Medieval and Early Modern Philosophy*, ed. Simo Knuuttila and Pekka Kärkkäinen (Dordrecht: Springer, 2008), 47-71; Jon McGinnis, “Making Abstraction less Abstract: The Logical, Psychological and Metaphysical Dimensions of Avicenna's Theory of Abstraction,” *Proceedings of the American Catholic Philosophical Association* 80 (2007): 169-83; and Dag N. Hasse, “Avicenna on Abstraction,” in *Aspects of Avicenna*, ed. Robert Wisnovsky (Princeton: Markus Weiner Publishers, 2001), 39-72.

¹⁸¹ Elsewhere Avicenna writes, “An example of it is that the human form and essence is a nature by virtue of which all the individuals of the species are without doubt equally common” (*Soul*, 58).

find in the world that is not rational. It also refers to the idea in our thought given that rationality is part of the essence of human beings and that we cannot think of human beings without thinking of their being rational. This, I hope, may suffice to substantiate my suggestion that metaphysical concepts, like cognitive concepts, belong to primary concepts. But, unlike cognitive concepts, some metaphysical concepts, especially those that are perceptible in existent things, may be called empirical concepts and others, those that exist independently of matter and its concomitance, are not. And we may call these concepts as transcendental (or *transempirical*) concepts—that is, concepts that are not originated in, or derived from, perceptual forms in human mind.

There is another kind of concepts which can be aptly called *philosophical* or *intellectual*¹⁸² concepts. These concepts designate the attributes of things in the world including their states, relationships, and manners of existence. They are such concepts as existence, thing, principle, causality, relations, unity, multiplicity, priority, posteriority, particular, universal, potential, actual, etc. Needless to say, these concepts are ubiquitous throughout Avicenna's philosophical and metaphysical works. Despite the fact that Avicenna himself does not provide any clear remarks about their place in his category of concepts, philosophical concepts, I suggest, can be plausibly regarded to belong to primary concepts. This suggestion has, at least, a couple of arguments going for it. First, most philosophical concepts are derived from the forms of things in human mind and the manners of their

¹⁸² At one place in his *Metaphysics* (p. 123), Avicenna refers to this kind of concepts as *intellectual ideas*.

existence in external reality. And, secondly, they designate the properties of the external things though, unlike the metaphysical concepts, they refer to the accidental aspects of those things. In other words, they designate the accidents of things rather than the essence of things. These arguments, of course, need to be substantiated. The best textual evidence for that purpose, I reckon, can be found in Avicenna's formal account of the subject matter of metaphysics, arguing that philosophical concepts are one of the things investigated in metaphysics (as a philosophical discipline):

(1) It is thus evident that all these [subjects] fall under science that is engaged with [those things] whose subsistence is not connected with sensibles. It is impossible to posit for them a common subject matter other than the existent of which *they would all constitute the states and accidental circumstances*. For some of them are substances, some are quantities, and some are other categories. *No ascertainable meaning can be common to all of them other than the true meaning of existence.* [Metaphysics: 9] (My emphasis)

(2) Similarly, *one may also find matters that must be defined and ascertained in the soul, being common to [all] the sciences, where not any one of the sciences undertakes discussion thereof—for example, the one inasmuch as it is one, the numerous inasmuch as it is numerous, the agreeing, the different, the contrary, and others. Some [of the sciences] only use them; other will only take their definitions without discussion the mode of their existence. These are not accidental circumstances proper to anything pertaining to the subjects of these particular sciences; nor are they among the things whose [mode of] existence is anything other than the existence of attributes for entities; nor [again] are they among the attributes shared by all*

things so that each one of [these attributes] would be common to everything. Moreover, [the subject matter of metaphysics] cannot be specifically confined to any one category, nor can it be the attributes of any one thing except the existent inasmuch as it is an existent. [*Metaphysics*: 9] (My emphasis)

(3) It is thus clear to you from this totality [of what has been said] that the existent inasmuch as it is an existent is something common to all these things and that it must be made the subject matter of this art for the reasons we have stated. And, moreover, because it is above the need either for its quiddity to be learned or for itself to be established so as to require another science to undertake to clarify [such] a state of affairs therein ([this]) because of the impossibility of establishing the subject matter of a science and ascertaining its quiddity in the very science that has that subject), [it thus needs] only the admission of its existence and quiddity. The primary subject matter of this science is, hence, the existent inasmuch as it is an existent; and *the things sought after in [this science] are those that accompany [the existent], inasmuch as it is an existent, unconditionally.* [*Metaphysics*: 9-10] (My emphasis)

(4) *Some of these things belong to [the existent] as though they were species—as, for example, substance, quantity, and quality.* For, in undergoing such a division, the existent does not require, [as is] required by substance, [a] prior division into many divisions, where it must [for example] be divided into human and not human. *Some of these are akin to proper accidents, such as the one and the many, the potential and the actual, the universal and the particular, and the possible and the necessary.* For the, existent, in accepting these accidents and in being prepared for them, does not need to become specified as natural, mathematical, moral, or some other thing. [*Metaphysics*: 10] (My emphasis)

(5) If, in this science, one investigates that which is not prior to matter, what is being investigated therein is only idea, that idea not requiring matter for its existence. *But the things investigated in [this science] are of four parts: [(1)] Some of these are basically devoid of matter and that which attaches to matter. [(2)] Some are mixed with matter, but [this] is the admixture of the cause that gives subsistence and is prior; it is not matter that renders it subsistent. [(3)] Some may be found with or without matter—for example, causality and unity. What these share in common, insofar as they are [the things] they are [in themselves], consists in their not needing matter for their realization. This group also shares in not being material in existence in the sense that it does not derive its existence from matter. [(4)] Some are material things—as, for example, motion and rest. What is investigated in this science, however, is not their state in matter, but only the mode of existence that belongs to them.* Thus, if this last division is taken with the others, they would all have in common the fact that the mode of investigation pertaining to them is in the direction of an idea whose existence does not subsist in matter. [*Metaphysics*: 12]

There are some general characteristics of philosophical concepts that we can draw from these passages: (a) they are derived from the accidental rather than the essential aspects of existence *qua* existence—as can be seen in passages (1), (3), and (4); (b) they designate the accidental attribute of things in the world such as their states, relationships, and mode of existence—as can be found in passages (2) and (5); (c) they are in use in many branches of philosophical knowledge, but they are not proper accidents of any subsidiary discipline of knowledge (see Diagram 2)—as he argued in passage (2). On this account, then, philosophical concepts are different from metaphysical

concepts in the sense that they are derived from the accidental aspect of things. On the other hand, they are different from cognitive concepts, which are the generalised forms of particulars and which designate some individual things or some class of objects, in the sense that they designate the accidental attribute of things rather than the accidental aspects of things as such. But, like the other two concepts, they belong, I maintain, to primary concepts given the fact that they are derived from the things in the world themselves, or at least from their accidental conditions, states and mode of existence. To illustrate this point, we may take, for instance, Avicenna's account of the concept of motion, where he says:

So, if by motion one means the continuous thing intellectually understood to belong to that which undergoes motion, [stretching] from start to end, then what is being moved simply does not have that while it is between the starting and end points. Quite to the contrary, supposedly it has occurred in some way only when what is moved is at the end point; but this continuous intelligible thing has ceased to exist there, and so how can it have some real determinate existence? The fact is that this thing is not really something that itself subsists in concrete particulars. It leaves an impression on the imagery faculty only because its form subsists in the mind by reason of the moved thing's relation to two places: the place from which it departs, and the place at which it arrives. Alternatively, it might leave an impression on the imagery faculty because the form of what is moved, which occurs at a certain place and has a certain proximity and remoteness to bodies, has been imprinted upon it; and thereafter, by [the moving thing's] occurring at a different place and having a different proximity and remoteness, it is sensibly perceived that another form has followed [the first]; and so one becomes aware

of two forms together as a single form belonging to motion. [Motion so understood], however, does not determinately subsist in reality as it does in the mind, since it does not determinately exist at the two limits together, and the state that is between the two has no subsistent existence. [*Physics*: 112]

In a paraphrase this account might run as follows: a thing as a substance and its movement as an accident exist in the world. Apart from the thing and its movement, however, there is no third entity called motion. But still there is in reality what we call motion when we perceive the thing moves from one place to another. In this way, even though motion has no real determinate existence in the world and does not subsist in concrete particular things, the concept is derived from the accidental conditions and states of the things and the manner in which they exist, and the things themselves are then qualified with such concept. Now, we may wonder how do we acquire these concepts? This, indeed, is an important psychological or cognitive question. And Avicenna's answer to it can be gleaned from the following passages:

Thus the existent, the thing, the cause, the principle, the universal, the particular, the limit and such things are all beyond the objects of sense perception. But even the essences of species, like the essence of human being, are not in any way preserved in form retentive faculty and are not represented in our estimative faculty. Rather they are obtained by our intellect. The same applies for every universal essence of the species of sensible things as well as intelligible things... [*Demonstration*: 65]

And in another work, where he discusses the concept of relation:

Regarding [the supposition] that if relation has existence then it would be an accident, this undoubtedly the case, since this is something not apprehended intellectually by itself but always apprehended of one thing in terms of another thing. For there is never a relation which is not an accidental occurrence...
[*Metaphysics*: 116]

As for [the question of] the temporally prior and posterior—one being non-existent and so forth—[the answer is that] priority and posteriority are both relations between existence when it is intellectually apprehended and the intelligible that does not derive from proper existence. Know this.

For a thing in itself is only prior in terms of something existing with it. This type of priority and posteriority exists for both terms [of the relation] in the mind. For, when the form of what is prior and the form of what is posterior are presented to the mind, the soul apprehends this comparison as existing between existents within it, since this comparison obtains between two existents in the mind. Before this, however, a thing in itself cannot be prior; for how could it be prior to nothing existing? Hence, whatever among related things is of this order, their relation to each other is in the mind only, having no subsisting idea in existence with respect to this priority and posteriority. Indeed, this priority and posteriority is, in reality, one of the intellectual ideas, one of the relationships imposed by the mind, and one of the aspects that occurs to things when the mind compares them and refers to them. [*Metaphysics*: 122-23]

Two important points at least emerge from these passages. First, philosophical concepts are not derived from the perceptual forms in the mind (that is, in the retentive and estimative faculties) as such. But they emerge out

of the *intellectual reflections* on the accidental attribute of things in the external world, including their accidental occurrence and states and their manner of existence. Second, given the fact that they have no determinate existence and do not subsist in existent things human minds always apprehend them with some other things with which they accidentally occur rather than by themselves *per se*. To give my own example, the concept of cause with regard to fire as a substance and heat as its accident, where what we do really perceive are fire and heat and there is no entity perceived which may be called causality. But in reality fire is the cause of heat. Despite the fact that causality has no determinate existence and imperceptible, the concept of causality emerges in our mind, however, from intellectual reflections on certain empirical phenomena or the accidental states of things in external reality—for example, the state of a metal after its being exposed to fire—and that the phenomena themselves are then described by or qualified with such concept.

On this account, then, the way in which philosophical concepts are derived is different from that of cognitive and metaphysical concepts. The former are derived from intellectual reflections on the accidental states and attributes of existent things as they were represented in human mind. Whereas the latter are derived from the perceptual forms of existent things themselves as they were represented in human mind. There is another important point about philosophical concepts which, I think, needs to be mentioned here. Some philosophical concepts may be regarded as empirical concepts given the fact that they are partly derived from our reflections on the

perceptual experience of the states of things in the world, like the concepts of cause and relations. For example, in the discussion of the concept of relation in Book III.10 of *Metaphysics of the Cure*, Avicenna argues that some relation exists in concrete things and it can be [intellectually] apprehended of one thing in terms of another, as he says:

The relative is that whose quiddity is predicated only with respect to another. Thus, anything among concrete things that happens to be such that its quiddity is predicated with respect to another belongs to the relative. But among concrete things there are many things that have this description. Hence, the relative in concrete things exists. [*Metaphysics*: 120]

But there are some philosophical concepts which may be regarded to belong to transcendental concepts by virtue of they're being derived from intellectual reflections as such without any reliance on perceptual experience whatsoever, like the concepts of unity, multiplicity, existent, species, etc.¹⁸³ In discussing the concepts of multiplicity and unity, for example, Avicenna argues:

It seems, however, that multiplicity is better known to our act of imagining; unity, better known to our intellects. It seems that unity and multiplicity are among the things that we conceived a priori. However, we imagine multiplicity first, whereas we apprehend unity intellectually, without a [prior] intellectual principle for its apprehension. But, if the principle is needed at all, it would be imaginative. Our defining multiplicity in terms of unity would, then, be an intellectual definition. Here, unity is taken as conceived in

¹⁸³ For Avicenna's explanation of the way in which we apprehend the concepts of existent, see *Metaphysics*, 22, and of species, *Demonstration*, 63.

itself and as one of the first principles of conception. [On the other hand,] our explaining unity in terms of multiplicity would be a directing attention wherein the imaginative course is used to hint at an intelligible [which] we [already] have but which we do not conceive to be present in the mind. [*Metaphysics*: 80]

Avicenna's argument in this passage shows that philosophical concepts of the transcendental kind are the results of a creative process in our minds. It consists in the emergence of new concepts that were imperceptible in the external world. It must be noted, however, that these concepts are not entirely isolated from the concepts of the empirical kind. For some transcendental concepts may be derived from empirical ones—from cognitive concepts and from metaphysical and philosophical concepts of the empirical kind. So from the concept, say of human soul, we may derive the concept of species, namely, the human species—as Avicenna says, “We say that human souls are of the same species...” (*Psychology*, 56). Moreover, despite the fact that they may be empirical or transcendental, philosophical concepts, just like the cognitive and metaphysical ones, refer to and describe the things in the external reality—as, for example, Avicenna asserts, “As for species, it is the nature realised both in external existence and in the mind” (*Metaphysics*, 174).

What has been said so far in reconstructing Avicenna's account of primary intelligible concepts, in my view, seems to point to the fact that Avicenna takes a realist view about concept formation. Avicenna argues persistently that it is really the special ability of human minds to derive universal intelligible concepts—as he says, for instance, “Of the distinctive features of human beings what is particularly distinctive is to apprehend

universal concepts completely abstracted of all matter...”¹⁸⁴ Psychologically speaking, this in fact involved the creative powers of both sense perception and the mind—or rather the intellect—to derive concepts from the objects of human experiences. Avicenna’s psychological account of this creative mental-intellectual process is as follows:

We say that the animal faculties assist the rational soul in various ways, one of them being that sensation brings to it particulars from which result four intellectual processes. Firstly, from these particulars the soul abstracts single universals by abstracting their concepts from their matters, material attachments and accidents by considering the common factors and differences, and by distinguishing the essential from the accidental. From this the soul gets the fundamental concepts by using the faculties of imagination and estimation...

The soul then requires the help of the body in order to acquire these principles of conception... Having acquired them it returns to itself; if, after that, any of the lower faculties happens to occupy it, this completely diverts it from its proper activity. When not so diverted it does not need the lower faculties for its special activity, except in certain matters wherein it specially needs to refer once more to the faculty of imagination for finding a new principle in addition to what had already been obtained, or for recalling an image... [*Psychology*: 54-6]

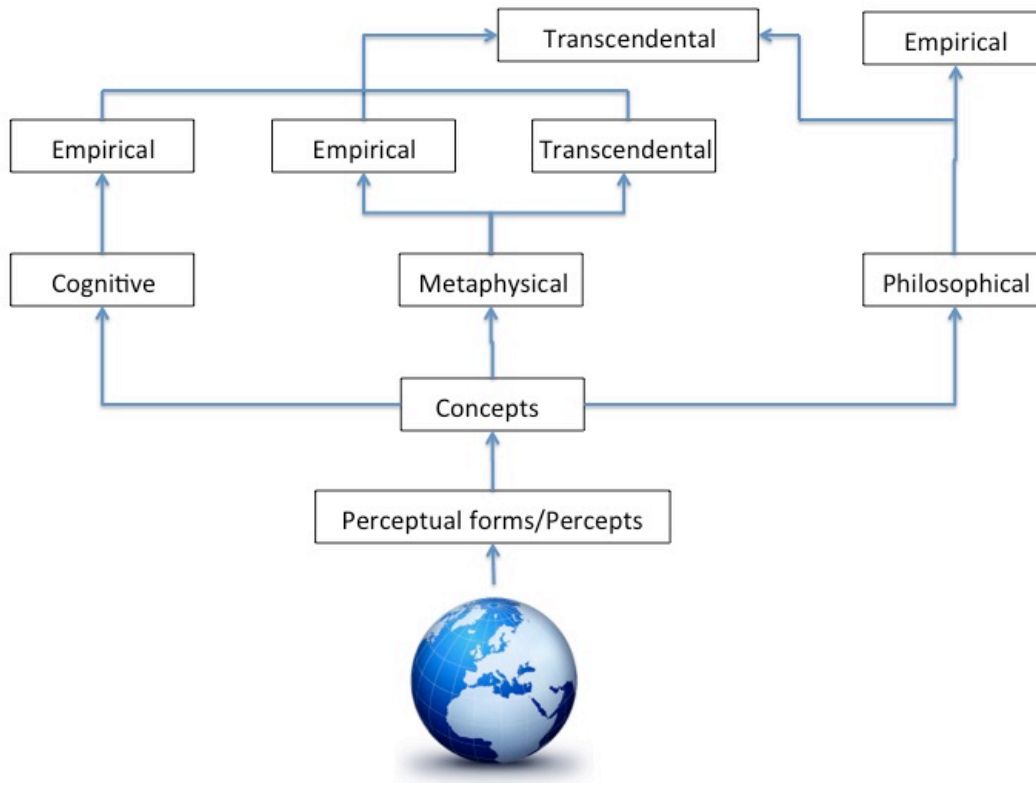
I take it that in these passages, and in what has been said so far about his theory of concept, Avicenna maintains that concept formation involved the

¹⁸⁴ In a similar vein at the beginning of Book V.11 of the *Soul*, he says “One thing about which there can be no doubt is that in the human is a thing and a certain substance that encounters the intelligibles through reception” (209).

natural operations of perception, empirical—or rather perceptual—apprehension, and transcendental apprehension as well as the mutual operations among such mental/intellectual faculties. From these operations there emerge the cognitive, metaphysical, and philosophical concepts that may in turn be divided into a more general category as the concepts of empirical and transcendental kinds. Some items of the three classes of concepts are derived from perceptual forms or percepts, while others are derived from intellectual reflection, and both can generate further concepts. In this way, then, items of these three classes are not existed in human minds in complete isolation. But they in fact form some kind of three-tiered dynamical conceptual nexus in human minds wherein each of them is related to some others and each of them can generate some other new concepts.¹⁸⁵ In other words, these three are not isolated but represent the different stages in the development of concepts in human minds—as illustrated in the diagram below:

¹⁸⁵ This is not to mention Avicenna's contention that concepts may also guide human experience or perception and action. With regard to experience/perception, our association of the concepts left and right to a particular thing, say, a square box, as can be found in Chapter VIII of *The Psychology of the Salvation*, 41-5 (the argument of which is too long to be quoted here). As for human action—which leads to the existence of new things in the world—Avicenna asserts, "Know that the intelligible concept may be derived from the existing thing, as happens when, by astronomical observation and sensation, we ourselves apprehend from the celestial sphere its intelligible form. The intelligible form, however, may not be taken from the existent, but conversely—as, for example, [when] we intellectually apprehend the form of a building which we invent and this intelligible form moves our organs until we bring about its existence. Thus, it would not have [first] existed and then we intellectually apprehend it, but [first] we intellectually apprehend it and then it existed" (*Metaphysics*, 291); and also his contention, "In short, sometimes the apprehended form may somehow be a cause for the occurrence of the form that exist in external reality. Sometimes the apprehended form may somehow be a cause for the apprehended form, that is, the latter would have occurred in the mind after it had obtained in external reality" (*Introduction*, 70); and expressed even more clearly, "It is permissible that in some manner the intelligible forms are acquired from external forms as, for example, the form of the sky is acquired from the sky. It is also permissible that the form first proceeds to the intellective power and then exists externally, as when you intellect a figure and then you make it exist" (*Rem-Met*, 171).

Diagram 4. Avicenna's realist system of concepts.



Let us now turn to derivative concepts. It has been pointed out, *en passim*, that logical concepts fall within this category. In my view, as I shall explain in due course, this is one of the kinds of concepts that belong to it.¹⁸⁶ In the passage from *Metaphysics* (p. 7) above, Avicenna argues that logical concepts, namely derivative concepts, are dependent on primary concepts. To put the matter precisely, they are inferred—or rather derived—from primary empirical, metaphysical, and philosophical concepts. This is a point

¹⁸⁶ The other kind of concepts is that which we acquire or derive from definition. This kind of concepts, however, will be dealt with in Section 6.

that Avicenna makes also in the *Introduction*, where he delineates the modes of the existence of essence:¹⁸⁷

The essences of things may exist in the concrete particulars of the things, or in the apprehension [of those things] (*taṣawwur*), and so they can be considered in three aspects. [First] it can be considered as the essence-in-itself, without being related to one of the two aspects of existence [that is, as concrete particulars or as apprehended in the mind], and whatever follows upon them, save insofar as it is such [namely, the essence considered in itself]. [Second] it can be considered insofar as it is in concrete particulars in the external reality, where certain accidents, which individualise its existing as that, follow upon it. [Third] it can be considered inasmuch as it is apprehended as a concept, in which case certain accidents, which individualise its existing as that, follow upon it, for example, being a subject and predicate, universality and particularity, as well as the essential and accidental in predication... For in things in the external reality there is no essentiality and accidentality by way of predication, no such thing as a thing's being a subject nor its being a predicate, no such thing as a premise, or syllogism, or anything of the sort. [*Introduction*: 15]

In this passage Avicenna posits that the essence of things may have three modes of existence. First, it may exist as such, as essence-in-itself, without being related to other modes of existence. Second it may exist as individuated form in concrete existent things in the external world. And lastly, it may have a mode of existence as an essential concept in human minds. However, as it exists in human minds it may also have what Avicenna calls a logical

¹⁸⁷ It is worth to remember here our discussion in Chapter 1.2 above.

existence (*wujūd mantiqī*) when our minds appropriately add to the apprehended essence certain accidental qualities, which can aptly be called logical concepts, such as subject, predicate, universality, particularity, essentiality, and accidentality. Avicenna in fact takes them to be the mental accidents that accrue to essences when they existed as concepts in human minds. To illustrate this point, take for instance, the logical concept of *universality*. After being apprehended in the mind, an essence may become a universal [logical] concept when we attach to it the logical concept of *universality* (*kullīyya*) that makes it predicable of many instances. For example, what makes the concept *human* a universal concept is not that it existed in the mind, but that it is predicable of every individual human in external reality.¹⁸⁸ It is in this way that Avicenna asserts that logical concepts, such as universality, only exist in the mind; they are not to be found in and nor are they derived from things in the external reality. Rather, they are inferred from the primary concepts, and hence they do not designate and nor do they qualify the things in external world.

The same idea of the distinction between mental and logical concepts and therefore between mental and logical existences is further developed in an important chapter of *Introduction* Book I.12,¹⁸⁹ where he explicates the nature of universal concept or genus as it existed in nature (essence/nature-

¹⁸⁸ This logical universality, according to Avicenna, has its basis in things in the world themselves. In his own words, "For the nature of human that is intellectually apprehended in the soul is the universal. Its universality, however, is not in virtue of its being in the soul but due to its relating to many individuals, existent or imagined, that are governed for it by the same governing rule" (*Metaphysics*, 159).

¹⁸⁹ For an illuminating scholarly discussion on this chapter see, Michael E. Marmura, "Avicenna's Chapter on Universals in the *Isagoge* of His *Shifā'*," in *Islam: Past Influence and Present Challenge*, ed. Alford T. Welch & Pierre Cachia (Edinburgh: Edinburgh University Press, 1979), 34-56.

in-itself), as being conceived as a concept in human mind (mental existence), and as a logical concept (logical existence):

It has been the custom in understanding these five universal concepts to say that: some are natural, some are logical, and some are mental. It is sometimes said that some are prior to multiplicity, some in multiplicity, some after multiplicity...

Animal in itself is a concept, regardless of whether it exists in external reality or apprehended in the soul... Rather, animal in itself is something apprehended in the mind as animal, and in accordance with its being apprehended as animal it is simply animal. If it is apprehended as something general, particular and the like, then it is apprehended with an idea additional to its being animal, accruing accidentally to animality. For animality does not become an individual to which one points except through the association of something that renders it [a thing] to which one points.

Similarly, in the mind it would not be as such [that is, an individual] unless the mind attaches to it a concept that makes it specific. Moreover, nothing from the outside would occur to it [so as to render it] universal [in the mind] unless there is in truth one essence that is animal, to which it has so occurred in external reality that it itself is found in many. As for [its being] in the mind, it would so happen to this conceived animal form that relations to many things are made for it. Thus that one [form] itself would then be correctly related to several things resembling it in that the mind predicates it for each of them—as to the manner of this, it belongs to a different art. This accidentally occurring thing would thus be the generality that occurs to animality. Animal with respect to this generality would be akin to a piece of wood, for example, with respect to some accident by way of shape or the

like occurring to it, and akin to the white garment in itself is one idea and white another, the two then combined so that there comes to be another meaning composed of both. In a similar way, animal in the mind is one concept, its being general or a genus is another concept, and its being a generic animal yet another concept.

They thus call the concept of generality a logical genus. This thing denotes what is predicated of many items of different species in answer to the question 'What is it?'. It does not designate something because it is animal or something else. Just like 'white', which in itself an intelligible idea, that does not require with it the apprehension that it is a garment or a piece of wood. If one of these things is apprehended with it, then something to which white attaches has been apprehended... This, then, is then the logical genus.

As for natural genus, this is animal in virtue of its being animal, which it is suitable to have the relation of generality added to what is apprehended of it. For when it comes to be in the mind as a concept, it becomes suitable to have generality to be apprehended of it. But it is not suitable for what is apprehended of Zayd, nor what is apprehended of human. Through these accidents the nature of animality in external reality differs from the nature of humanity and the nature of Zayd. For the former is such that if apprehended, it becomes suitable for a generality of this description, namely, being a genus, to be attached to it. And it has nothing else externally except in some manner this suitability for it.

Hence, the expression 'natural genus' means the natural thing suitable to become a genus when apprehended in the mind, but which in natural things is not a genus. Because, in virtue of this idea, it differs in existence from other natural things, it is not far-

fetches to give it, by reason of this idea, a special name and that such a name be derived from the name of the thing that in some manner occurs to it, namely, being a genus. As for the general concept of animal in the mind, it is that which is apprehended of the natural thing. As for the quality of being an abstract intelligible genus, in virtue of it is something established in the mind, it is also a mentally apprehended genus, but in so far as it is one of the things investigated by the logician, it is a logical genus.

Even though that which is logical has no existence save in the mind, it does not necessarily follow that what is understood by its being mental is identical with what is understood by its being logical. For the meaning understood by its being mental is other than what is understood by its being logical. This is because the apprehended meaning that is understood by its being mental, a necessary adherent and a concomitant of the meaning that is understood by its being logical, is not identical with [the latter], since the difference between the two different ways of considering them has become clear to you. [*Introduction: 65-7*]

In the first passage Avicenna points out that when philosophers speak of nature—or essence—it is traditionally considered in three different ways, namely, as it exists in nature or natural things, as it exists in human minds, and as a logical concept. It is also traditionally considered to exist: *prior to multiplicity*—that is, as it is in itself; *in multiplicity*—that is, as it exists in individuated natural things in external reality; and *after multiplicity*—that is, as it exists in human minds.

But in the subsequent passages Avicenna presents in a particularly emphatic form his own views of the matter, where he distinguishes four

different ways in which nature or essence can be considered. There is, first, *nature-in-itself of animal* or *animal-in-itself*, as it exists as such unrelated to its existence in various individual animals in external reality or as it is apprehended in human minds—that is, as it exists prior to multiplicity. Second, there is animal taken as a *natural genus*. This is animal in virtue of its being animal as it exists in individual natural things—that is to say, as it exists in multiplicity. However, this nature as it exists in concrete natural things is not a genus. For Avicenna asserts that it can be designated as a genus only after it is apprehended in human minds. And what is apprehended in the mind is apparently not the natural thing itself, but the nature of the thing as such. To put the point precisely, nature-in-itself is not a genus, but it is suitable to be designated as one when it is apprehended in the mind. This brings us to what Avicenna regards as *mental genus*. This, according to Avicenna, refers to any mental existent, namely, to any kind of concepts—the cognitive, the metaphysical, and the philosophical—as they exist in human minds. As we have seen above, the nature of animal and all other natural things as it comes to be in the mind is regarded as a universal/general concept. Again, as noted above, it is regarded as a universal concept not in virtue of its existence in the mind, but its being found in many concrete existent things in external reality. In this way, then, the mental genus, say of animal, is formed when this universal concept is attached to the nature of animal-in-itself as it is apprehended as such in the mind. In other words, the mental genus or universal concept of animal is a combination of the nature-in-itself and universality. Lastly, there is what Avicenna calls *logical genus*. In one of the passages, he provides a rather clear statement of what logical genus is. For

Avicenna, what makes a thing a logical genus is that its having *generality*. That is to say, it has the property of being able to be predicated of many items of different species in answering the question 'What?'. This thing is indeed an additional idea attached—or rather accruing accidentally—to nature-in-itself when it exists in human minds as such or as a mental concept. To illustrate this important point, the essence of animal or animal-in-itself is not a logical genus because it is purely animal. But as it becomes an existent in the mind, or simply a mental genus, it may become a universal concept when the idea of *universality* is attached to it in the mind. In fact it is this idea of universality that Avicenna calls logical genus, or rather logical concept. This idea is not a constitutive part of nature-in-itself but it is by virtue of its being a mental existent or concept that such an idea accidentally accrues to it. In other words, this idea is a mental accident, namely, the accidental mental quality inferred by human minds from a mental concept. As Avicenna puts it in a more formal account of the origin of this logical concept elsewhere:

Other examples [of products of the estimative faculty] include the predicate, logical subject, premise, and analogous things that the mind requires for intelligible matters and the relations among [such matters], none of which are in [concrete] existing things.
[*Physics*: 223]

Logical concepts, such as universality, particularity, generality, etc., are then the products of the estimative faculty. They are generated by the mind since it needs to deal with and to describe the mental concepts and the relations among them in human thought. Thus it follows that logical concepts are confined only to the world of concepts and therefore only exist in human

minds without having any reference to the existent things in external reality.¹⁹⁰

In this way, then, logical concepts are different from cognitive, metaphysical, and philosophical concepts since the latter are about and describe the things in external reality.

2.5 Concept and Word

The discussion in the preceding section concerned particularly with concept as such, that is, as it is apprehended as it is in human minds. In the present section I shall turn to concept and its corresponding verbal or linguistic expression. It must be noted therefore that this section is closely related to the discussion in Section 2 on apprehending a proposition, that is, on the relationship between apprehension and language, and to the discussion in Section 3 which centred on the three fundamental relations in Avicenna's account of language—that is, world-to-mind or cognitive relations, mind-to-word or expressive relations, and words-to-world or semantic relations.

¹⁹⁰ Elsewhere, Avicenna renews this contention when giving a metaphysical verification of the relationship between the logical concept of universality and nature-in-itself and the four ways in which nature-in-itself can be considered, as he writes: "If we then say that the universal nature exists in external things, we do not mean inasmuch as it is universal in this mode of universality; rather, we mean that the nature to which universality occurs exists in things external [to the mind]. Hence, inasmuch as it is a nature, this is one thing; and, inasmuch as it is something from which it is likely that a universal form is intellectually apprehended, this is something else. Again, inasmuch as it is intellectually apprehended in actuality in this manner, this is one thing; [but] inasmuch as it is true of it that, if it itself is associated not with this matter and accidents, but with that matter and accidents, then this is another matter. This nature exists in external things in terms of the first consideration, but there is in [this consideration] no existing universality in external things in terms of the second, third, and fourth considerations. If this consideration is taken in the sense of universality, then this nature with universality would be in concrete things. But the universality which we are discussing exists only in the soul" (*Metaphysics*, 161).

In the light of the three fundamental relations in Avicenna's account of language, our discussion in the preceding section of the kinds of concepts (except the logical concepts) that Avicenna has in mind when speaking of them only involved the first relation—namely, the world-to-mind or *cognitive relations*. At this level of relations, language is not theoretically essential. But as we turn to Avicenna's account of concept and its verbal expression the discussion shall therefore involve the other two relations, that is, mind-to-word and word-to-world or rather the expressive and semantic relations, in which language becomes theoretically central.

Some form of human thought certainly involves the deployment of concepts. But, according to Avicenna, this is not possible without language. To put it more precisely, there can be no propositional thought, judgement, and reasoning without the concepts being firstly signified by words.¹⁹¹ In Avicenna's own words,

It is especially not possible for the reasoning faculty (*rawiyya*) to arrange concepts (*ma'ānī*) without imagining the expressions

¹⁹¹ It must be noted, however, that Avicenna does not think that language is essential in all forms of thought. Since there are certain forms of thought which require no language in their operations. For example, in the rudimentary form of thought which involves the arrangement of forms in our mind into groups and in identifying their differences, that does not require language. The form of thought that requires language therefore is that which involved elaborate thought and reasoning. (See also, Chapter 5 of this study.) For modern and contemporary philosophical works which share almost the same view with Avicenna, see Bertrand Russell, *An Inquiry into Meaning and Truth* (London-New York: Routledge, 1995 [1940]); E. J. Lowe, *An Introduction to the Philosophy of Mind* (Cambridge: Cambridge University Press, 2000). Some of the most important contemporary debates on this issue, especially on the analytical priorities of mind over language and language over mind and even no priority claim, can be found in the following works: Michael Dummett, *Frege: Philosophy of Language* (London: Duckworth, 1973), which takes a language first approach; H. P. Grice, "Utterer's Meaning, Sentence-Meaning, and Word-Meaning," in *The Philosophy of Language*, ed. John R. Searle (Oxford: Oxford University Press, 1971), 54-70, which takes a mind first approach; and Donald Davidson, *Inquiries into Truth and Interpretation* (Oxford: Clarendon Press, 1991), esp. Essay 11 "Thought and Talk" (1975), which argues for a no analytic priority of both mind and language.

corresponding to them. Since reasoning is nothing more than a dialogue with oneself by means of imagined expressions.
[*Introduction: 22*]

And again:

Similarly, in conceptual matters, there are things which are principles for apprehension that apprehended in themselves. If one desires to indicate them, [such indication] would not, in reality, constitute making an unknown thing known but would merely consist in drawing attention to them or bringing them to mind through the use of a name or a sign which, in itself, may be less known than [then principles] but which, for some cause or circumstance, happens to be more obvious in its signification.

If, then, such a sign is used, the soul is awakened [to the fact] that such a meaning is being brought to mind, in [the sense] that it is the intended [meaning and] not another, without the sign in reality having given [any] knowledge of it. [*Metaphysics: 23*]

Before they can be deployed in human thoughts, and indeed make our judgements and the expression of our judgements possible, concepts need to be named. And it is in naming them that we assign certain expressions, by means of words or names, which signify those concepts.¹⁹² Again, on Avicenna's account, there are three ways in which expressions may signify concepts:

¹⁹² Earlier scholarly discussions on Avicenna's account of concept and its signifying expression, see Abed (1987) and in an essay by Inati (1984) and the introductory essays in her translation of *Rem-Log*, 13-9.

An expression signifies a concept by way of correspondence (*muṭābaqa*), in that the expression serves as a matrix for the concept, and corresponds to it, such as “triangle” signifies “figure bounded by three sides”; by way of inclusion (*taḍammun*), in that the concept [signified] is a part of the concept to which the expression corresponds, such as “triangle” signifies “figure”, thus, “triangle” signifies “figure” not by being a name for it but by being a name for the concept of which “figure” is a part; or by way of implication (*iltizām*), in that the expression signifies the concept by corresponding to it, and by having this concept necessarily accompanied by another concept as an external accompaniment and not as a part of it. Rather, [this other concept] is an inseparable accompaniment of it. This is how the expression “ceiling” signifies “wall” and “human being” signifies “a being having the capacity for the art of writing”. [*Rem-Log*: 50]¹⁹³

In my view, the most important point in this passage is signification by way of correspondence. Since this alone is pertinent to the theory of knowledge. Epistemologically speaking, signification consists precisely in associating the bare concepts of things with certain words by way of coordinating them in a one-to-one or a many-to-one correspondence. In this way, then, the nature of words consists in the fact that they are the signs of concepts and that they are nothing but merely an insignificant string of noises if they do not signify any concepts. Thus the word, or rather the name, says Avicenna, “...is not a name in its own nature. Rather it becomes a name when it is made a name. That is whenever a signification is intended for it and then it becomes significative. That makes it a name, that is, makes it significative of an attribute” (*Interpretation*, 37). Or, to put it more precisely, the nature of words or names

¹⁹³ The translation follows that of Inati with certain modifications.

presupposes the language users who wish to signify certain concepts by setting up associations or correspondences between concepts and words/names. And herein lies what is called the mind-to-word or *expressive relations*. According to Avicenna, again, these words/names are of two kinds.¹⁹⁴

Then simple expression either signifies a single concept whose apprehension in the mind permits it to be equally shared in the same degree by many things, in virtue of each of them is said to belong to it. An example is our saying: “human being.” For this expression signifies the concept in our soul, and this concept corresponds similarly to Zayd, ‘Amr, and Khālid, since each of them is a human being. The expression “spherical figure enclosed with twenty triangular surfaces,” or even the expression the Sun and the Moon, etc., all of them also signify a concept whose apprehension in the mind permits it to be shared by many things, albeit it does not actually exist, like the aforementioned sphere. Or the expression does not permit of sharing by many things by a cause extrinsic to the comprehension of the expression itself, like the Sun.

Or it signifies a concept whose apprehension in the mind does not permit it to be shared by many things, namely in the totality of its unique comprehension. Like our saying: “Zayd.” For the expression “Zayd,” albeit many things might share it, is shared only in terms of what is heard. As for its single concept, it is impossible for any other things to participate in it. Since each of the concepts is an essence attributed to it, and the essence of

¹⁹⁴ As a matter of fact, Avicenna divides expressions into simple and compound expressions. Simple expressions are then subdivided into two kinds, namely, particular simple expressions (or in contemporary parlance, singular words/terms or proper names) and universal simple expressions (or are now commonly known as general words/terms). See *Introduction*, 26, *Deliverance*, 5-6; *Rem-Log*, 51-3.

this attributed thing does not permit in the mind to be attributed to something else, except that what is meant by “Zayd” is not his essence, but one of his shared attributes. In this case, although it permits sharing in terms of what is heard, it precludes the single concept of the thing signified from being shared by many things.

The first case is called universal, and the second is called particular.

You know that some expressions belong to the expression of the first case and that some concepts belong to the concept of the first case, that is, the concept whose comprehension in the soul permits its relation to many things that correspond to it by virtue of a relation of their resemblances. [*Introduction: 26-7*]¹⁹⁵

According to Avicenna, then, all concepts of things are expressed, or rather signified, in language by words. They are either *proper names*—in Avicenna’s own locution, particular simple expression (*lafz al-mufrad al-juz’i*)—or *general words*—or universal simple expression (*lafz al-mufrad al-kulliy*). A proper name essentially signifies a particular thing of which has no plurality of instances. Therefore it can never be applied to many individuals on account of their resemblances, or even if they share a same name like Zayd, since the very purpose of proper name is to distinguish one individual from the others. The thing, of course, is named by way of convention—like in naming an island as England, an individual human being as Socrates, and a supreme being as God, etc. In this way, then, a proper name is essentially an empty noise,

¹⁹⁵ For even more clear and lucid explanations of particular and universal expressions, see *Deliverance*, 6, and *Rem-Log*, 52-3.

rather than a word, unless there is a particular thing of which it is the name. In short, the name must name a particular thing.

Except for proper names, all the words in a language are general words. They signify both the general/universal concepts of things and common attributes of things, however numerous they may be. As discussed in Section 4 above, a concept is derived from a certain class of things that have certain attributes in common. The concept is, then, being given a general name—of course, by way of convention—that belongs equally to every individual in that class of things. General name is therefore an empty sound, not a word, unless it names the concept or attribute that have been apprehended to be common to every individual in that class and to nothing else. In fact, it is impossible for a word to have a general signification without there being in the mind of the language users a concept of thing that is essentially universal/general. In other words, it is by virtue of it generally signifying every individual in a class of things that it is called a general word/name.

Furthermore, what is needed for all proper names and general words to serve their purposes is that all those who use them should attach the same meaning to them. And here comes into play *semantic relations*. In the light of our discussions of Avicenna's concept of language and its fundamental relations in Sections 2 and 3 above, words are nothing but insignificant, meaningless string of noises unless they have distinct meanings. So they have to be given distinct meaning by being conventionally associated one-to-

one with the things or states of affairs in the world. That is to say, they need to be made to stand for things in the world. In fact, what the words signify can only be apprehended by the mind of the language users if the words have distinct meaning, and be distinctly understood to *refer* to the things or states of affairs in the world. This, in other words, means that all the language users completely agree in their common meaning for the words, in terms of both the concepts that they signify and the things that they refer to.

The meaning of some words or concepts of things, however, can be precisely apprehended by means of definition composed of words of which we already know their distinct meaning. For instance, the precise meaning of the word/concept *human* can be apprehended by way of its definition as *rational animal*, of which we already know the meaning. In this way, then, our knowledge of the definition of word/concept is essential in apprehending propositions. The next section shall turn, then, to Avicenna's proper account of our knowledge of definition and its significance in apprehension.

2.6 The Epistemology of Definition

Definition, I think, is particularly important in, at least, the following two cases taken from our ordinary life. First, it may happen that we do not know the precise meaning of a word, say *mugwump*, since it is rarely used in our daily conversation, but after being told its definition we can then understand what it refers to or stand for. Second, it is possible for a word or general name to lose

its precise signification in future times due to the extinction of the thing it signified or some other reasons. Such a loss can be prevented if we have an accurate definition of the word by which the thing it signifies is distinguished from other things, as long as the name and its definition remained.

But, it must be noted that the kind of definition that Avicenna speaks of in his analysis of knowledge is not an ordinary definition. On Avicenna's account, verbal or dictionary definition that simply defines words by means of other words is not sufficient enough for this purpose. In fact, he does not even regard it as definition at all, since they are theoretically superfluous (*Metaphysics*, 186).¹⁹⁶ The kind of definition that he is talking about, then, is what can be called a *real definition* (*ḥad al-ḥaqīqīy*).¹⁹⁷ His most precise definition of the term, I think, is as follows:

The definition is a phrase signifying the quiddity of a thing. And there is no doubt that it includes all the constitutives of a thing. It is impossible for the definition not to be composed of the genus and the difference of a thing, because the common constitutives [of a thing] are its genus and [its] proper constitutive is its difference. Unless that which is common and that which is proper unite in a composite, the composite reality of a thing is not complete. And unless a thing has a composite reality, it is not possible for an expression to signify that thing's reality. For every definable is composite in concept.

¹⁹⁶ In his own words, "Nor ought we to confine definitions to lexical explanations of a name, making the If it were the case that every statement beside which a name can be imposed is a definition, then all the books of al-Jāhīz would be definitions (*Metaphysics*, 187).

¹⁹⁷ See, for instance, *Metaphysics*, 187.

It must be known that the purpose of the definition is not to give a distinction in just any manner, nor conditioned also by being one of the essentials, without further consideration; but to give a conception of the essence, as it is. [*Rem-Log*: 70]¹⁹⁸

In his view, then, a real definition of a thing, *X*, is to be understood as a proposition which tells us, in the most perspicuous manner, *what X is*. Or to put it another way, definition is a proposition that explains the essence of a thing. Let us now turn to the elements of real definition by which it can serve the purpose of specifying the thing defined. According to Avicenna,

Definition, as those engage in the art [of logic] agree, is composed of genus and differentia, each of the two being separated from each other, their sum constituting the two parts of the definition.

If we define and say, for example, “Man is a rational animal,” our intention by this is not that man is the sum of animal and rational. Rather, our intention by that is that the animal which is that animal is rational—indeed, that it is specifically the one which is rational... [*Metaphysics*: 180-1]

Before going further, it should be explained in the first place what does Avicenna mean by the terms *genus* and *differentia*. The former, according to Avicenna,

...is what is said of many things that differ with respect to their species in response to [the question] ‘What is it?’ Our statement

¹⁹⁸ See also his definitions of the term in *Demonstration*, 52; *Deliverance*, 114-6; *Dan-Log*, 18-9; and *Metaphysics*, 180-9.

‘that differ with respect to their species’ means ‘[that differ with] respect to their essential forms and realities’, although [the concept of] species, which is here brought into relation with genus, has not yet been defined.¹⁹⁹ Our statement ‘in response to [the question] ‘what is it?’ means ‘a statement about a shared, [but] not a distinguishing condition’, such as ‘animal’ which is said of man and horse...

It is necessary that when you determine the genus [of something] you do so by means of that with which no specific difference of the genus is associated; nor should you, when you determine the genus, make it revolve around the species. [*Deliverance*: 10-11]

As for differentia, Avicenna writes:

...it is an essential universal [utterance] that is said of a species [that falls] under a genus; [and it is said] in response [to the question], ‘which thing from [this genus] is it?’ An example is ‘rational’ for human; for it is thus that one responds when asked, ‘which animal is it?’ The difference between ‘the rational’ and ‘man’ is that man is an animal that has rationality, while the

¹⁹⁹ Species is defined as,

...the essential universal which is said of many things in response to [the question] ‘what is it?’ It is also said in response to [the question] ‘what is it in a shared [sense]?’ An example is ‘animal’, for it is a species of nbody and is said of man and horse in response to [the question] ‘what is it in a shared [sense]?’ Body is said of [animal] and of others also in a shared [sense] in response to [the question] ‘what is it?’

A thing may be a genus for species and a species of a genus, such as animal is of a body with a soul. For [the former] is the species [of the latter]; but of man and horse it is the genus. However, the upward hierarchical arrangement [of general] comes to end with a genus above which there is no additional genus. It is called the genus of genera (*jins al-ajnās*). [Likewise,] the downward hierarchical arrangement [of species ends with] a species below which and beyond which is no species. It is called the species of species (*naw’ al-anwā’*). It is described as ‘that which is said of a number of things in response to [the question] ‘what is it?’ as ‘man’ [is said of] Zays and ‘Amr and ‘horse’ of this and that horse. [*Deliverance*: 11]

rational is something that, though it has rationality, has not been specifically identified. Rationality is an abstracted (*mujarrad*) specific difference while rational is a compound specific difference; it is the latter that is the logical specific difference.

[*Deliverance*: 12]

In this way, then, a real definition states the kind of thing to which the defined word applies, and the specific difference marking off the kind of thing from every other kind belonging to that species. For example, suppose that someone asks us what a human being is, and this is understood as a request for a real definition of this kind of animal species. And here is the real definition of it:

Human being is a rational animal.

The given definition gives the formula which tells us as precise as possible what a human being is, and it does so by revealing both its kind and essence—that is, what it takes for there to be a human being. In this definition, then, human being is a kind of animal among other kinds of animal species, say monkey. But what marks human being off from any other kind of animal, like monkey, is its differentia or specific difference, that is, it's being *rational*. The differentia, or the property of *rational*, then, is the essence that makes what a human being is. In fact, it is only essence that allows us to distinguish one thing from the others, for it provides the most essential feature that specify the thing itself and what it is for the thing to belong to the members of one particular natural kind of thing. Thus, an essence of human being, which marks it off from any other kind of animal, is *rational*.

This means that for a definition to be a real definition it must tell us the essence of a thing defined. It cannot therefore tell us some other necessary or accidental properties extrinsic to the nature of a thing, say laughter, for it does not capture the real nature of human being and its distinguishing character from that of monkey, given the fact that monkey, like human being, laughs. Thus to characterise a human being in terms of this property is to characterise it in terms that are extrinsic to its nature as the particular kind of animal that it is. Since a human being evidently does not depend for its nature on laughter, of which it may happen to be one of its necessary properties, but it does depend for its nature on the essential property of rational, from which come all other necessary properties such as talking, laughter, etc.

Given Avicenna's account of the elements of real definition above it follows therefore that no word can be really defined if it does not stand for a genus/species. Since without a genus/species there cannot be a differentia marking off one kind of thing from other kinds of things. Given ditto, it follows therefore that not everything in the world has a real definition. Since, as a matter of fact, there are some things that are really indefinable. Among those indefinable things, according to Avicenna, are as follows:

As for accidents, there is in their definitions [something] additional to their essences. For, even though their essences are things that in no way include substance as a part belonging to them—this being the case because that whose part is substance is substance—substance is included in their definition as a part, since they are necessarily defined through substance.

As for composite things, there occurs in them the repetition of one and the same thing twice. For, since they have an accident defined through substance, it becomes incumbent to include it once again in the definition of accident, so that definition in its entirety becomes inescapably composed of the definition of substance and the definition of accident: there would thus be duality and multiplicity. [This] becomes clear if the definition of that accident is analysed in and reduced to [the components] it entails. Thus, substance would be found twice in the definition of this composite, while in the essence of [this] composite it occurs once. Hence, in this definition there is an addition to the meaning of the thing defined itself. But true definitions ought not to have additions in them. An example of this is that, if you define “snub nose,” you must be inevitably include “nose” in [the definition] and include “snub” in it, in which case you would have included in it the definition of “snub.” But “snub” is a concave nose, and you cannot take concavity by itself; for, if concavity by itself is “snub,” then a concave leg would also be “snub.’ You must, then, inescapably include “nose” in the definition of “snub.” Thus, if you have defined “snub nose,” you have included “nose” in [the definition] twice. Hence, it must either follow that the likes of these things cannot be definitions, definitions pertaining to simples only, or else that these are definitions in a different respect. [Nor] ought we to confine definitions to lexical explanations of a name, making the examples of these [real] definitions for this reason. For definition is that which indicates quiddity—this you have known. If it were the case that every statement beside which a name can be imposed is a definition, then all the books of al-Jāhīz would be definitions.

If this, then, is the case, it is evident that the definitions of these composites are definitions in some other respect.

The quiddity of every [thing that is] simple is the same as itself because there is nothing receptive of its quiddity. If there were something receptive of its quiddity, then the quiddity of that thing would not be the quiddity of the receptive thing that is realised for it. [This is] because that thing received would be its form, and its form is not that to which its definition corresponds. Nor are composites [the things] they are through form alone. For the definition belonging to composite does not consist of form alone; rather, the definition of a thing indicates all the things that render it subsistent. Thus, it also, in some respect, includes matter. It is through this that the difference between quiddity and form in composite things is known. Form is always part of the quiddity in composite things, while the form of every simple [thing] is also identical with it because there is no composition in it. In the case of composites, however, neither their forms nor their quiddities are identical with themselves. As for form, it is obvious that it is part of it. as for the quiddity, it is that by which it is what it is; and it is what it is only by virtue of the form being connected with matter, which is something additional to the meaning of form. The composite is also not this meaning but is the assemblage of form and matter. For this is what the composite is, and the quiddity is this composition. Form is thus one of the things to which composition is added. The quiddity is this very composition that combines form and matter. The unity that comes about through both is due to this one [composition].

Thus, there belongs to genus inasmuch as it is a genus a quiddity, to species inasmuch as it is species a quiddity, and to the particular singular there also belongs a quiddity by way of the concomitant accidents that render it subsistent. [Here,] it is as though, when the quiddity is said of that which pertains to genus and species and of that which pertains to the singular individual, it is said equivocally. This quiddity is not separable form that

which renders a thing what it is; otherwise, it would not be a quiddity.

There is, however, no definition of the singular in any respect whatsoever, even though the composite has some definition. This is because definition is composed of descriptive names that necessarily do not refer to anything specific. For, if it were [such a] reference, it would be sheer naming or some other indication by way of motion—a pointing at and the like—and would not include making the unknown known through description.

Since every name confined to the definition of a singular thing indicates a description and [since] description has the possibility of being applicable to many, composition not removing this possibility from it, then [it follows that], if A is a universal meaning and B, [also] a universal meaning, is added to it, it is possible that there would be some specification. But, if [this is] the specification of a universal by a universal, then that which is A and B would remain a universal, having the possibility of sharing [a common characteristic with others]. An example of this is if you define this [person as] Socrates, saying, “He is the philosopher,” there is also a sharing [with others]. If you say, “He is the religious philosopher,” there is also a sharing [with others]. If you say, “He is the religious philosopher unjustly put to death,” there is also sharing [with others]. If you say, “He is the son of so-and-so,” this [description] also has the possibility of being shared [by others]; moreover, [the latter] would be an individual whose defining would be as the defining [of Socrates]. If that individual is then known by direct reference or by an agnomen, then the matter reverts to direct reference and an agnomen ceases to be [identification] through definition. If one adds [to this] and says, “He is the one put to death in such a city on such a day,” this description, despite its individuation by an artifice,

[remains] a universal that can be said of many, unless attributed to an individual.

If that to which it is attributed is an individual among a group of individuals [belonging to] some species, there is no access to knowing it except through direct observation, and the mind will arrive at knowledge of it only through sensation. If [on the other hand] that to which it is attributed is one of the individuals of which each individual fulfils the reality of the species so that it has no similar, and if the mind apprehended that species through its [sole] individual instance, then, if the description is attributed to [such an individual], the mind will have knowledge of it. The mind will not fear any change of state resulting from the possibility of the thing's corruption, since the likes of this thing is not corrupted. But the [former] thing described [the corruptible individual] is not [something] where one has assurance of its existence and of the permanence of the description said of it. The mind sometimes may know the period of its duration, but [its description] would also not be a true definition. It is thus clear that there is no true definition of the singular. It is only known through a proper name, a direct reference, or a relation to something known through a proper name, a direct reference, or a relation to something known through a proper name or a direct reference.

Every definition is an intellectual conception where it would be true to predicate it of the thing defined. The particular is corruptible. If it becomes corrupted, it is no longer defined by its definition. Thus, the predication of definition of it would be true for one period, false in another; and, as such, the predication of definition on it would always be conjectural, unless, besides intellectual definition, there is some direct reference or observation whereby it becomes defined by its definition through such a reference. If this does not obtain, however, it is [only]

believed to have a definition. As for the thing truly defined, its definition would be a certainty. Thus, whoever undertakes to define corruptible things undertakes to render them eternal and goes astray. [*Metaphysics*: 186-9]

Obviously, these passages are too long, indeed. I shall therefore specify the things that Avicenna takes to be indefinable in all these passages. First, there is no real definition for accidental properties of things, be that simple or composite. For there will be inevitably a repetition or addition to the meaning of the thing defined—as in the case of “snub nose, if we define it as “concave nose”, we have included “nose” in the definition twice. But true definitions, according to Avicenna, ought not to have repetitions or additions of meaning in them. Second, there is no real definition of individual things. They can only be known through proper names, such as Socrates and London, or direct references, or relations to something known through proper names or direct references such as the circumstances of their personality, life, time, or place. If we do not know enough details about an individual, and if it is nearby and within the reach of our perception, it can be pointed out to our perception. And if it is not within the reach of our perception, we may be able to point to it by some descriptions which may be true and sufficient to distinguish one individual from the others. In the case of Socrates, for example, he may be described as “The religious philosopher unjustly put to death,” or “The philosopher put to death in such a city on such a day.” Though they may suffice to describe a particular individual, all these description are still general and may be attributed to many other individuals. Thus, according to Avicenna, individuals do not have any differentia which can mark off one from the others,

and therefore they are indefinable. Lastly, there is no real definition for particular things given the fact that they are corruptible. If we define them, their definitions are no longer applicable, or even true, when they become corrupted. Particular things are known then only through general names or direct references.

This view of real definition has a lengthy philosophical career. It can be traced back to Aristotle and from whom it is adopted in the works of medieval Arabic and Scholastic philosophers, in the thoughts of early modern philosophers, like Spinoza, and recently it found new expressions in the works of the twentieth and twenty-first centuries philosophers, such as Kit Fine and E. J. Lowe.²⁰⁰ This does not mean, however, that this theory enjoys general acceptance among philosophers throughout the history of philosophy. As a matter of historical fact, it has been rejected by some post-Avicennian philosophers, such as Suhrawardī, and by most modern philosophers from Berkeley and Kant to Mach and Popper.²⁰¹

²⁰⁰ See Benedict de Spinoza, *On the Improvement of the Understanding, The Ethics, Correspondence*, trans. R. H. M. Elwes (New York: Dover Pub., 1955); Kit Fine, *The Limits of Abstraction* (Oxford: Clarendon Press, 2002), esp. Ch. 1., Kit Fine, "Ontological Dependence," *Proceedings of the Aristotelian Society* 95 (1995): 269-90, and Kit Fine, "Essence and Modality," in *Philosophical Perspectives, 8: Logic and Language*, ed. James E. Tomberlin (Atascadero, CA: Ridgeview, 1994), 1-16; E. J. Lowe, "What is the Source of Our Knowledge of Modal Truths?" *Mind* 121 (2012): 919-50, E. J. Lowe, *The Four-Category Ontology: A Metaphysical Foundation for Natural Science* (Oxford: Clarendon Press, 2006), and E. J. Lowe, *A Survey of Metaphysics* (Oxford: Oxford University Press, 2002).

²⁰¹ Suhrawardī's and Popper's criticisms of Aristotelian theory of real definition will be dealt with shortly. As for Berkeley, he denies this view since he only believes in spiritual essences, and thinks that the only essential explanation of the world is God, see George Berkeley, *Principles of Human Knowledge* (Oxford: Oxford University Press, 1999 [1710]). Kant, however, accepts that there may be what we call essences, or thing-in-itself (*Ding-an-sich*), but they are entirely unknown to human beings, see Immanuel Kant, *Critique of Pure Reason*, trans. Paul Guyer and Allen W. Wood (Cambridge: Cambridge University Press, 1998), 168, 169, 272, 305-6, etc., see also Immanuel Kant, *Correspondence*, trans. Arnulf Zweig (Cambridge: Cambridge University Press, 1999), esp. in his letter to Karl Leonhard Reinhold, 12 May 1789, where he says, "But the *real* essence (the nature) of any object, that is, the primary *inner* ground of *all* that *necessary belongs* to a given thing, this is impossible for man to discover in regard to any object. For example, extension and impenetrability constitute

Let me turn first to Suhrawardī's criticism. In *Philosophy of Illumination* (*Ḥikma al-Ishrāq*), Suhrawardī rejects the Aristotelian-Avicennian concept of real definition on several grounds. Firstly, he argues that a real definition of thing based on its genus and differentia is not possible given the fact that the definition, if successful, presupposes that we already know the genus and differentia, and thus the essence of the thing defined. Otherwise, if we do not know its genus and differentia, the definition is nothing but a mere empty words. In other words, if we do know the thing we do not need its definition; and if we do not know the thing, the definition will not be able to teach us what it is (1999, 10). A possible response to this attack is not difficult to think of. A little common sense understanding of real definition is sufficient enough to help us with it. Avicenna, or even Aristotle before him, does not think that the role of definitions is to generate new knowledge; since every definition presupposes our knowledge of the thing defined. The role of definitions, in fact, is not to teach us new knowledge but to provide us with precise meaning for words or concepts of things for the purpose of better apprehensions and accurate thoughts. If a definition is to be successful in giving a word/concept, X, its precise meaning and reference, we must already be in possession of relevant knowledge of the thing, X. What is, then, the relevant knowledge that is needed for a definition to secure the precise meaning and reference? In Avicenna's view, we are required to know that X exists, and that X has certain

the whole logical essence of the concept of matter, that is, they are all that is necessarily and primitively contained in my, and everyman's, concept of matter. But to know the real essence of matter, the primary, inner, sufficient ground of *all* that *necessarily belongs* to matter, this far exceeds all human capacities. We cannot discover the essence of *water*, of *earth*, or the essence of any other empirical object...", 299-300. As for Mach, he rejects completely the existence of essence, see Ernst Mach, *Knowledge and Error: Sketches on the Psychology of Enquiry*, trans. Thomas J. McCormack (Dordrecht: D. Reidel Pub., 1976).

essential properties that make it exist as it is. This last point brings us to Suhrawardī's second criticism, that is, it is impossible for us to be certain that all the essential properties have actually been included in the definition, and it is therefore impossible for human beings to construct a real definition which yields certain knowledge of the thing (1999, 10-11). An immediate response to this issue that I can think of is that definition is not for the purpose of yielding certain knowledge, but rather a precise meaning and reference for a word/concept. As for his claim that we cannot be certain that all the essential properties have been included in a definition, I do not think that it is the case. In many, if not all, cases we can be certain that we have found the most essential property that makes a thing what it is. This argument, I think, can be best substantiated by way of example. Consider, for example, Avicenna's definition of triangle:

Triangle is a figure bounded by three sides [*Rem-Log*: 50]

This formula tells us what a triangle is, and it does so by revealing its essential property for there to be, or the generating principle for there to come into being, a triangle. This definition simply succeeds in telling us the most essential property of triangle from the fact that by apprehending its meaning we do understand what it takes for there to be a triangle²⁰² and then, with that apprehension, we can certainly make for ourselves a triangle by cutting or

²⁰² Avicenna also provides us with a non-real or non-essential definition of triangle, that is, a figure having its angles equal to two right angles. For Avicenna, this definition tells us the necessary properties that accompany the triangle in its proportions, but only after it is constituted by its three sides (*Rem-Log*, 55-56). For a real definition of circle, see Spinoza (1955, 35).

creating a figure in the prescribed fashion.²⁰³ Let us turn next to the last ground for his rejection of real definition. Suhrawardī accuses the Peripatetics—namely, Avicenna and his followers—to make it impossible for anything to be known at all since they try to define such a simple and accidental thing as colour—like whiteness, blackness, etc. (1999, 51-2). As far as Avicenna is concerned, this accusation, I think, is directed against a straw man. For we can find nowhere that Avicenna tries to define colour. In fact, it has been argued in the passages above that there is no real definition for accidental things, and colour is one of such accidents that occur to matter or things (*Metaphysics*, 105-7). It is for this reason that Avicenna does not even regard colour to be among the natural things and thus makes it obvious that it needs no real definition.²⁰⁴ Moreover, as noted above, we cannot define every species of things, of which there is no differentia or even a word to express their specific differences. For example, a red colour is of course a species of colour, but how are we to express the differentia marking off red from green? What we can only do is to point to a red or green thing and say it is red or green.

I shall now turn to the critiques of real definition and essence in contemporary philosophy. For the purpose of the present concern, I shall only pay attention to Popper's criticism of real definition and essentialism. This is given to the fact that he is one of the few contemporary philosophers who

²⁰³ As noted in the previous section, this is precisely what Avicenna means when he said that apprehension of things and their concepts can guide our action and can bring them into actual existence.

²⁰⁴ As a matter of historical fact, there is no philosopher in the great tradition of natural kind has ever regarded colours as natural kinds. See, Ian Hacking, "A Tradition of Natural Kinds," *Philosophical Studies: An International Journal for Philosophy in the Analytic Tradition* 61 (1991): 109-26.

does not completely deny the existence of essences nor the attempts to understand them, but only in so far as to refuse the idea of essences as ultimate explanations of things in the world—and in this sense, he is a methodological nominalist. In *Conjectures and Refutations*, Popper accuses the essentialists (like Aristotle, Galileo, and Avicenna) were proposing an obscurantist structure of science in which they demand for ultimate explanations in terms of essence. For he contends that if essences are posited, new and useful questions pertaining to objects of science will not be raised and this will ultimately hinder the growth of knowledge (2002, 103-107). In my view, this is not necessary the case with Avicenna's conception of essentialism and real definition. From my understanding of his theory, and if I am right, there are at least three responses to this form of accusation. Firstly, Avicenna's essentialism stands between ontology and epistemology. The former is about how the structure of human knowledge should be when we have knowledge of such essences; while the latter concerns partly with how can we obtain such knowledge. Epistemologically speaking, to know the essences of things in the world is not an easy affair. Rather it demands meticulous and arduous intellectual efforts. It requires us to grasp the full range of attributes and properties of such things so that we will have a detailed preliminary knowledge of them before formulating an adequate explanation of them. This movement towards universal knowledge of things in the world does not necessarily eliminate the knowledge of particular and material aspects of things. Indeed, this type of knowledge can be further developed in special sciences such as medicine, biology, zoology etc., (see Diagram 2). Secondly, our grasp of the essence of things is not final. As seen

in Section 4 above, it is quite a multi-layered mental process. It involves various stages and thus may be subjected to confusions and errors (see Diagram 4). Thus, we can take a prudent attitude by maintaining the tentativeness of our understanding and explanation of things in the light of future discovery. Lastly, our knowledge of essences and our real definitions are in no way of the real nature of things. In fact, Avicenna himself emphasises this particularly important point in some places in his works. In one place he says,

Animal, then, taken with its accidents, is the natural thing. What is taken in itself is the nature, of which it is said that its existence is prior to natural existence [in the manner of] the priority of the simple to the composite. This is [the thing] whose existence is specified as being divine existence because the cause of its existence, inasmuch as it is animal, is the providence of God, exalted be He. [*Metaphysics*: 156]

And in another work he maintains that,

Knowledge of the real nature (*haqā'iq*) is beyond human ability. We only know a thing's necessary properties and the attributes and accidents concomitant to its essence. We do not know the differentia which constitutes a specific thing and signifies its essence. On the contrary, we know that things have necessary properties and accidents belonging to their real nature (*haqā'iq*). We do not know the real nature of the First Being (i.e., God), the intellect, the soul, celestial body, fire, air, water not even the earth... We do not know the real nature of animal but rather we know its proper cause: perception and action. But attributes like perception and action do not form the real nature of animal. They

are necessary properties or accidents concomitant to its nature. We do not apprehend the true differentia of animal. As a result, then, the difference with respect to essences occurs from the fact that the property that each person apprehends is different from that of apprehended by another person. Then, each proceeds to form a judgement based on the property he apprehends. [Notes: 34-5]

I take it that in these passages Avicenna is not denying that we can apprehend the essence of things, but is rather saying that it is only the real nature of things as they exist in God's mind is beyond human apprehension. On his account, then, we can apprehend the essence of natural existent things from their necessary properties which more or less are adequate reflections of their essences. In other words, even if we do not fully grasp the real nature of, say, human being, we can still apprehend what a human being is by means of its essential and necessary properties. Avicenna himself admits that the apprehended properties of a kind of thing may vary from one person to another. But this, at least, allows us to compare and to determine which property is the best reflection of the thing and marks it off from every other kinds of things—for example, the rational property of human beings which marks them off from monkeys. I mentioned earlier that, according to Avicenna, apprehending a thing's essence is amount to understanding a real definition of that thing. That is, understanding a special kind of proposition which tells us what the thing is. To know what a human being is, for instance, we need to understand that a human being is a rational animal. Provided that we understand what an animal and a rational are, we can therefore understand what a human being is, by apprehending this real definition.

To sum up this part of our discussion: an essence is what is expressed by a real definition. And it is part of our essence as rational, thinking beings that we can at least apprehend a real definition and thereby apprehend the essence of at least some things. It is in this way, I think, that Avicenna takes real definition to have epistemic significance in apprehension.

2.7 Concluding Remarks

My aim in this chapter was to examine Avicenna's analysis of knowledge in terms of the epistemic notion of apprehension. The examination shows the following epistemological upshots. Human knowledge begins with perceptual apprehension of things in the world from which emerges what we may call the ideas or concepts of the things. The ideas/concepts are then expressed by words and these words in turn may be composed into propositions that express our judgements or thoughts about things in the external reality that we apprehended. Upon hearing or seeing these propositions there occurs in our mind what we call, *understanding of their meaning*.

This understanding of the meaning of propositions is made possible by our *knowing* of the precise meaning of the words/concepts that form the propositions. To put the point precisely: our ability to understand the meaning of propositions entails our knowledge of the relevant words/concepts. Despite the fact that apprehending the meaning of propositions entails knowledge of

words/concepts, this specific mental process of apprehension itself is devoid of truth and falsity. In other words, it is neither true nor false despite the fact that knowledge is always true. Since what involved in this mental process is a mere grasping of the content of propositions. The notions of truth and falsity, however, only apply to judgement. For it is only in judging or relating one thing or word/concept with some others that our thought is liable to error. It is to this epistemic notion of judgement in Avicenna's analysis of knowledge that I shall now turn in the next chapter.

Chapter 3

Judgement

3.1 Introduction

In the preceding chapter I examined the notion of apprehension, which is the first necessary and sufficient condition of knowledge in Avicenna's analysis, where it is showed that our understanding of the meaning of propositions depends upon our grasp of the associated words/concepts. The proposition, for example, "thing exists" cannot be apprehended without our knowing of the meaning of the words *thing* and *exist*. In fact, it is for this reason that we can apprehend even an unfamiliar propositions if we know the corresponding words/concepts by which they are expressed. In this way, then, apprehension entails knowledge. Or, putting the matter in another way, we may say: knowledge consists of apprehending the meaning of words/concepts. But as merely a mental operation in which we understand the content or meaning of propositions, apprehension is neither true nor false.

Now, my purpose in the present chapter is to examine the second necessary and sufficient condition of knowledge in Avicenna's analysis, i.e., judgement. Before going further, it is worth repeating that the term *judgement* is my rendition of Avicenna's epistemic notion of *taṣdīq*. As discussed in Chapter 1.5, Avicennan scholars have proposed some possible historical origins of this notion. Wolfson (1943) and Madkour (1952) suggested that the term is equivalent to the Stoic epistemic term of *sunkatathesis*. Maróth (1990), however, argued that it is an epistemic term derived from neo-Platonic logic. Yet some other scholars suggested that it has its origin in the works of Aristotle: Sabra (1980) shows that it is originated in certain passage of Aristotle's *De Interpretatione*; and Galston (1973) and Lameer (2006) argued that the term has its origin in some passages of *Posterior Analytics*. As has also been pointed out in Chapter 1.5, it seems to me that the most plausible historical origins of the notion are *De Interpretatione* and *Posterior Analytics* given the similarity between those passages of Aristotle and that of Avicenna. As has been pointed out earlier in Chapter 1.5, the term is generally rendered as *assent* [see, for instance, Maróth (1990), Inati (1984), and Ahmed (2011)]. But we can also find some other renditions of the term that have been proposed in modern studies on Avicenna, such as: judgement by Wolfson (1943) and Strobino (2010); belief by Sabra (1980) and Lameer (2006); truth making by McGinnis (2007); and acknowledging the truth of a proposition by Gutas (2012). It should also be noted that to date only a few scholars—that is, Wolfson, Maróth, and Lameer—that provide the historical origins of the term and the justifications for their rendition of it.

Therefore, in the present chapter, I will show that, for Avicenna, words (which signify concepts) are the building blocks of our judgements (*taṣḍīq*), which are then expressed by propositions. Thus in forming a judgement (*taṣḍīq*) we basically think of several words simultaneously, or in quick succession. When we hear or read a proposition we will, then, make some effort to understand the proposition before ascertaining its truth or falsity, and from which then we can affirm or deny, believe or disbelieve, or even doubt it.

The chapter is, then, planned as follows. Section 2 begins with an attempt to provide a plausible, if not the most plausible, explanation of the epistemic notion of judgement in Avicenna's analysis of knowledge. This will bring us to Section 3, in which I explain the relation between judgement and reasoning in his analysis of knowledge. In Section 4, I enumerate the kinds of propositions that necessarily compel our certain conviction in their truth and served as the premisses from which we can infer conclusions that are certain and necessarily true. And Section 5 gives a brief concluding remarks in regard to the most important points that emerge along the way.

3.2 Judgement Explained

What Avicenna means when speaking of judgement (*taṣḍīq*) in his analysis of knowledge, I suggest, can be understood as follows. By apprehending the things in the world there emerge in human minds various concepts which are then signified by words. After that there may occur another mental operation

in which the mind thinks of a sequence of words/concepts by comparing them and discerning some relations of agreement or disagreement between them. This mental operation, I suggest, is what Avicenna means by judgement. Consider, for example, the following argument:

We say that the animal faculties assist the rational soul in various ways, one of them being that sensation brings to it particulars from which result four intellectual processes. Firstly, from these particulars the soul abstracts single universals by abstracting concepts from their matters, material attachments and accidents by considering the common factors and differences, and by distinguishing the essential from the accidental. From this the soul gets the fundamental concepts by using the faculties of imagination and estimation.²⁰⁵

Secondly, the soul finds relations of negation and affirmation between these separate universals. Where this combination by negation and affirmation is self-evident, it simply accepts it; but where this is not the case it leaves it till the discovery of the middle term...

The soul then requires the help of the body in order to acquire these principles of apprehension and *judgement*. [*Psychology*: 54-55] (My emphasis)

To put the point precisely, we may say: judgement is a mental process in which some thing or other are judged to be related as they are in fact related. For example, when we apprehend or perceive a swan, with all its physical

²⁰⁵ We have been dealing with Avicenna's account of the emergence of concepts in human minds and the relationships between concepts and words and concepts and apprehension in Chapter 2.4, so it needs no further remarks here.

features, and then proceed to make the judgement 'swan is white'. In passing from the apprehension to the judgement, we have to discern some relation between 'swan' and 'white' as constituents of the state of affairs in front us. This interpretation, *inter alia*, brings out very clearly the epistemic priority of apprehension over judgement. That is to say, there is no judgement without an apprehension of the things about which we judge. From what has been said so far, it seems to me that there is a close similarity between judgement and thought. For we may remember the discussion in the previous chapter that thought is a cognitive process in which we think of several concepts sequentially or simultaneously. Or, in Avicenna's own words: "Thought is a certain movement of the soul among concepts" (*Rem-Phy*, 103).²⁰⁶ It is in this regard that I take Avicenna's notion of judgement as the linguistic counterpart to his notion of thought. As a matter of historical fact, this notion of judgement has its origins in Aristotle.²⁰⁷ As also a matter of historical fact, this same Aristotelian notion of judgement was adopted by some modern philosophers, such as Descartes and Locke, who were hostile to Aristotle or at least to his authority, in developing their own accounts of knowledge.²⁰⁸ In fact, it can still be found in the works of some logicians and philosophers of the nineteenth and early twentieth century²⁰⁹ until it has eventually been replaced by the

²⁰⁶ It should also be noted that in the *Salvation*, Avicenna defines *opinion* as a personal judgement regarding something or other is the case, while there is the possibility of it not being the case. See *Deliverance*, 133.

²⁰⁷ For Aristotelian origins of Avicenna's notion of judgement, see Fazlur Rahman's commentary on the above passage in his translation of the *Psychology*, 104-5.

²⁰⁸ In a philosophical textbook written to replace the teachings of Aristotle, Descartes not only adopted Aristotle's notion of judgement but also the notion of apprehension. See René Descartes, *Principles of Philosophy*, trans. Valentine Roger Miller and Reese P. Miller (Dordrecht-Boston: D. Reidel Pub Co., 1984 [1644]), esp. Pt. I, "Of the Principles of Human Knowledge." Both notions can also be found in John Locke, *An Essay Concerning Human Understanding*, ed. Peter E. Nidditch (Oxford: Oxford Clarendon Press, 1987 [1690]).

²⁰⁹ See John Stuart Mill, *A System of Logic* (London: John Parker, 1843); Gottlob Frege, *Translations from the Philosophical Writings of Gottlob Frege*, ed. Peter Geach and Max

notion of *belief* as proposed by Russell in his attempt to ward off the influence of idealism in English philosophy, though we find that Russell himself was at first using both terms interchangeably, or rather indecisive in his use of the notion of belief, in his analysis of knowledge.²¹⁰

To return to the main point: judgement, like thought, is expressed in language by a proposition.²¹¹ Thus, Avicenna writes:

Sense perception conveys to the soul things that are mixed up and unintelligible, and the intellect makes them intelligible. Once the intellect separates them out as intelligible (concepts), it can then combine them in all manner of ways, some in the order proper to a statement that explains the account of a thing, like definition and description, others in the order of proposition. [Demonstration: 222]

Or, as he puts it in a rather clear and precise terms in another work:

The character of the categorical proposition is such that *by means of it it is possible to express a judgement that something is the case or is not the case.* [Dan-Log: 21-2] (My emphasis)

Black (Oxford: Basil Blackwell, 1960), see the chapter, *Begriffsschrift* [1879]; F. H. Bradley, *The Principles of Logic* (London: Geoffrey Cumberledge, Oxford University Press, 1950 [1883]), F. H. Bradley, *Writings on Logic and Metaphysics* (Oxford: Clarendon Press, 2004); Bernard Bosanquet, *Knowledge and Reality* (London: Swan Sonnenschein, 1892 [1885]), and Bernard Bosanquet, *The Essentials of Logic: Being the Ten Lectures on Judgment and Inference* (London: Macmillan & Co., 1906 [1895]).

²¹⁰ Russell favours the term belief rather than judgement, albeit both terms for him have the same meaning, since the latter are widely used by the idealists and by which they confused the difference between psychology and logic. (It should also be noted that F. H. Bradley and Bernard Bosanquet are the two leading philosophers of the British idealism). But still Russell provides a couple of cases to show the difficulties to analyse knowledge in terms of belief. See Bertrand Russell, *Theory of Knowledge: The 1913 Manuscript* (London-New York: Routledge, 1984), esp. Pt. II.

²¹¹ For our present purpose, I only provide a general observation of Avicenna's view with regard to proposition. A detailed observation of his view shall follow in Chapter 4.2.

It must be noted, however, that arbitrary sequence or combination of words does not make up a proposition. According to Avicenna, for a collection of words or a sentence to be regarded as a proposition it must consist of the following elements:

It is completed by the sense of the subject and the sense of the predicate and the relationship between them, where the combination of senses in the intellect is not their being (made) a subject and predicate in it. Rather it needs for the intellect to judge along with that in the relationship between the two senses affirmatively or negatively. [*Interpretation*: 62]

Or even more precisely:

A proposition and a report is every statement in which there is a relationship between two things such that the judgment 'true' or 'false' follows from it. [*Deliverance*: 14]

In other words, proposition is a complete sentence consists of subject and predicate in which some relation between two things is affirmed or denied—like we say, “human being is a rational animal,” which is an affirmative proposition, or “human being is not a stone,” which is a negative proposition.²¹² Given the fact that judgement affirms or denies something about something it can therefore be regarded as a hypothetical state of mind characterised by its capacity to be true or false. Likewise, as its corresponding

²¹² On Avicenna's affirmative and negative propositions see, *Deliverance*, 17-8; *Rem-Log*, 78-9; and *Dan-Log*, 21-2.

linguistic manifestation, proposition can be regarded as a hypothetical entity characterised by its postulated capacity to be true or false. And it is only *true* judgement or thought—or proposition in which the judgement or thought is expressed—can be regarded as a piece of knowledge. To put the matter precisely: knowledge consists of true judgements or thoughts.

Let me examine further this notion of judgement as Avicenna adopts it in his analysis of knowledge. On Avicenna's account, when a judgement or proposition is presented to us, or when we hear words spoken that express a proposition, there will occur certain mental operations in virtue of which we can be said to have knowledge with regard to it:

A thing can be known in two ways. The first is apprehension. That when the name of the thing is uttered, its meaning will be presented in the mind, without there being true or false. As someone says: "Man" or "Do this!" If you understand the meaning of what has been said, it means that you have apprehended it. The second is apprehension accompanied with judgement. Such as when someone says, for instance: "Every whiteness is an accident," you do not only apprehend the meaning of this statement, but also you judged it to be so. However, if you doubt whether it is to be so or not, then you must have apprehended what is said, for you cannot doubt what you do not apprehend or understand, and thus you do not judge it to be true yet. For every judgement presupposes apprehension, the converse is not true. The apprehension that you have gained in this sense is that the form of this sentence and what it is composed of, such as 'whiteness' and 'accident', have been produced in the mind. True judgement only obtains when there occurs in the mind a relation of this sentence to the things themselves as being correspond to

them; and what brings about denial is the opposite of that.

[*Introduction: 17*]

I take it that in this passage Avicenna is saying that when we hear or read a proposition, there may occur at least two mental operations besides merely hearing of the words of which the proposition is composed. First, we may simply apprehend the meaning of the proposition. Second, there may occur another mental operation, besides apprehending its meaning, in which we judge the proposition to be true or false. There is a definite—indeed, a fundamental—sort of apprehension, that is, understanding of the meaning, which occurs equally, in both operations. We can simply apprehend the meaning of the proposition without making a judgement about it. But, certainly, we cannot make a judgement about the proposition unless we firstly apprehend it. As pointed out *en passim* in Chapter 1.5, this fundamental relation between apprehension and judgement seemed to be vague for some post-Avicennian Arabic philosophers as they were debating on Avicenna's true meaning in his statement "apprehension accompanied by judgement." Some other philosophers, however, understood the relation in the same way as I understand it. Notable among them was Mulla Şadra, who wrote:²¹³

Having clarified the point we wished to make, I don't think you have any [more] doubts about the matters whose approach and validation we have set forth, in that knowledge in all its parts is conception; that some of its elements distinguish themselves from others by something which turns them into belief; that

²¹³ It should be noted that Joep Lameer renders the term *taşawwur* and *taşdıq* as conception and belief.

belief, too, inasmuch as it *is* and *occurrence* in the mind, it is something conceived... (2006, 143)

And, he argued further:

I say: the support of his statements “a conception accompanied by belief” and “or the conception is accompanied by belief” as figuring in the accounts of the *Ishārāt* and the *Shifā’* is the same as the sense of belief as referred to in the three works [cited by Rāzī]. And they are *one* thing, because the relation of conception absolute to belief is one of *unity* and not *relative*, as has been explained many times before. (2006, 151)

Coming back to Avicenna, however, it should be noted that he is consistent throughout his writing with his view that apprehension and judgement represent two specifically different kinds of mental operations, though the former is presupposed in the latter. For without apprehension there would be no judgement. It follows from this that apprehension is the most comprehensive and fundamental cognitive process in propositional thought or knowledge. For it is obvious that we cannot judge a proposition to be true or false or even doubt it without understanding its meaning (*Introduction*, 17). From this it follows, therefore, that propositional knowledge consists of apprehension and judgement. And the first step, therefore, in philosophical analysis of knowledge must begin with an elucidation of the concept of apprehension. It must be, then, followed by an elucidation of the concept of judgement carried out analogous to the elucidation of the former concept. This is given to the fact that the same mental operation involved in both understanding the meaning of a proposition and determining its truth-value.

The only difference is that apprehension is one mental operation and judgement is another. But still there is no difference with regard to the object involved in the two operations, that is, proposition. It is for this reason that when Avicenna speaks of apprehension, he is speaking of a mental operation in which a judgement of true and false is wholly absent. Whereas when he speaks of judgement, he is speaking of a mental operation in which the mind determines the truth and falsity of the apprehended proposition. On this account, then, it seems that judgement is a much higher level of cognitive process than mere apprehension, since it involved a more complex mental operation than that of an apprehension.

This relation between propositional thought and its corresponding judgement is elucidated further in another work, where Avicenna writes:

Compound expressions are made up of simple expressions. There are many kinds. One type is called Proposition or 'statement' or 'affirmative speech.' A proposition is a compound expression which, when hearing it uttered, you can ask yourself whether the expression is true or false. For example, when someone says, "In this community we have reward and punishment," you may say that it is true. Or if someone says, "Man is a flying animal," you may say that this is not so. If someone says, "Whenever the sun rise there is day," you may say this is the case. If someone says, "One can see the stars in the bright sunlight," you may say this is not true... (*Dan-Log*: 20-21)

There are at least a couple of important points with regard to proposition and judgement that can be drawn from this passage. The first is that proposition, in which judgement is expressed, is the sort of thing that can properly be said to be true or false. Having said that, the second point is that, it may also be said that judgement can also be construed as a mental operation in which we *determine* whether or not the relation between the proposition and the fact it stated is obtained—that is, whether it is true or false. And, lastly, it is as a result of our judgement that we may affirm, deny, or even doubt a proposition. Now, the question arises concerning how can we judge a proposition to be true or false? Avicenna's answer to such a question is this:

True judgement consists in that it occurs, in the mind: "The relation of this [complex] form with the things themselves as being in correspondence with them". Denial [on the other hand] is the opposite of that. (*Introduction*: 17)

And again,

As regards truth, one understands by it existence in external things absolutely, and one understands by it permanent existence, and one understands by it the state of the verbal statement or of the judgement indicating the state of the external thing, if it corresponds with it, such that we would say, "This is a true statement" and "This is a true judgement." (*Metaphysics*: 38)

This answer can be paraphrased as follows: every proposition is an expression of judgement about something or other. It must therefore have some relation to the thing in the sense that it corresponds to the thing itself in

reality. Seen in this light, one judgement/proposition is true if it does correspond to this ontological truth. And another judgement/proposition is false if it does not correspond to this ontological truth. And, again, it is only a true judgement/proposition that worthy of the name *knowledge*—for knowledge cannot be false. Before proceeding further, it is necessary to note that Avicenna espouses here a realist theory of judgement, which in turn serves as one of the cardinal principles in his *realist epistemology*.²¹⁴ To clinch this point, let me pursue it a bit further.

We have already seen that, according to Avicenna, a true judgement consists in that what it indicates with regard to the state of thing corresponds to the thing in reality. In this way, then, judgement involves a twofold relation. First, it involves the relation between an object of judgement (or a thing judged) with the mind which judging it to be so and so. And, second, it involves the relation between an object of judgement, as it is judged by the mind, and the real fact or state of affairs in the world.²¹⁵ This second relation provides an objective condition for the truth or falsity of the first relation. For instance, when we say, “grass is green,” this judgement involves: first, the relation of the grass, as apprehended thing, to our mind which apprehending it; and, two, the relation of the grass, as apprehended thing, to the real fact in reality. This latter relation is an objective condition, independent of our own

²¹⁴ This is not, however, the proper place for a detailed discussion of Avicenna’s realist epistemology with regard to his notion of truth. For that is one of the proper concerns in the next chapter.

²¹⁵ I have intimated earlier in Chapter 1 and I shall argue further in Chapter 4 (on Avicenna’s concept of truth) that the world, i.e., the totality of the things there are, consists of individuals, particulars, universals, facts and states of affairs.

subjective judgement, for the grass is being actually in the state in which we judge it is. Let me pursue this line of thought a little bit further.

The natural propensity of our mind may, of course, prompt us to make judgement about the things that we apprehended. But our judgement does in no way determine the way the things are. On the contrary, we cannot know our judgement to be true without knowing that it corresponds to the real fact in the world. It follows therefore that judgement—or even knowing—has no effect upon that which is known and that what is known is altogether independent of our judgement and other kinds of mental processes that occur in our mind. Again, it follows, therefore, that the role of mind in knowing is simply to know and not to create the things known or to determine the way they are. And conversely, things do not depend for them to be the things they are upon being known by us—to take once more our green grass example, the grass *is* green with or without our knowing it to be so. Or, putting the matter the other way, if there is to be any true judgement or knowledge at all, reality must, therefore, be known as it is. But this does not mean that the reality known is completely independent without any relation at all with the mind that knows it. Rather it only means that reality is independent of the cognitive processes by which it is known.

Coming back now to the main line of argument. From what has been said so far, knowledge, in the sense in which Avicenna speaks of it when he speaks of knowledge of matters of fact—i.e., propositional knowledge—is therefore consists of three conditions. Firstly, we must *apprehend*—or rather

understand the meaning of—some proposition; secondly, we must not only apprehend it but also make a *judgement* about it; and, thirdly, the proposition must be *true*. According to his analysis, then, *S* knows that *p* if, and only if, these three necessary and sufficient conditions are satisfied. Or here again, putting the matter the other way, we may say: we come to have knowledge by coming to stand in an appropriate relation to a true proposition. This relation consists of what Avicenna calls *apprehension* and *judgement*. Knowledge, for Avicenna, certainly requires some form of epistemic correspondence relation to the fact. It is a relation that determines what we have knowledge of when we do have knowledge, between our mental judgement and the fact or state of affairs in the world. Knowledge, therefore, implies *truth*. What do we know, then, is a proposition which expressed true judgement. For we cannot know that *p* when *p* is false, because knowledge is always true.

The preceding account may, I hope, suffice to bring out very clearly Avicenna's factual/propositional paradigm for knowledge. It can be put in the simplest possible terms as follows: knowledge is a relation of our mind to a fact. This entails that we cannot know anything but a fact; and we do not know a fact, unless besides merely apprehending a proposition, we also judge it to be true; and yet we can never judge it to be true, unless it corresponds to the real fact or state of affairs in the world.

I think it may be worth pausing here to draw a certain parallel. As I remarked briefly in the chapter Introduction, there is a similarity between some of Avicenna's thoughts and the proposals made by Bunge and

Williamson to reverse the direction of explanation in the predominant philosophical tradition of analysing knowledge in terms of belief. In their proposed analyses both philosophers maintain that knowledge neither can be analysed as a kind of belief nor does it necessarily entail belief. From what has been said so far, it is obvious that Avicenna's analysis does not take knowledge as a kind of belief. In what follows I shall show further that in his analysis, knowledge cannot be explained in terms of belief and nor does it necessarily entail belief.

So, to begin with, there are at least three arguments, each of which I draw from the preceding account, to substantiate my suggestion. The first argument is that knowledge, for Avicenna, is conceptually different from belief. This is abundantly clear from the above account in which Avicenna takes knowledge to consist of true judgement. We are well aware, I think, that we can judge or think about thousand of things of which we believe nothing at all. In fact, it is a common practice in our civilised intellectual discourses that we express our judgements or opinions as merely hypotheses rather than beliefs. Avicenna, I think, would approve this point as he himself says that: "Opinion, in the true sense, is the personal judgements regarding a thing that it is so and so, while leaving intact the possibility that it may not be so (*Deliverance*: 133). When they are perceived to correspond with facts, they are therefore true judgements and opinions. It is in this way, then, that judgements and opinions are worthy of the name knowledge. As for belief, it is the fact that we usually use the word *belief* in two different senses: sometimes what do we mean by a belief is an act of belief—like our beliefs in someone or in God. But

very often, what we mean by it is simply the proposition that we believed—like we believe that what someone says is true.

This last point brings us to the second argument: that belief is a propositional attitude while knowledge for Avicenna, as I argued above, is a *factive state* in which the mind enters into an appropriate relation to a fact, when it knows that something or other is the case. Belief, in its second sense as I remarked just now, is traditionally thought of as propositional attitude, that is, as a psychological relation to the *content* of a proposition. But, as I argued above, knowledge for Avicenna is a relation to a fact rather than to the content of a proposition—for it is knowledge that something or other is the case. Knowledge, in this sense, is *factive*. And it follows, therefore, that knowing—unlike believing—is a factive attitude. So, if *S* knows that *p*, then it follows that *p* states a fact. However, knowledge itself is not a relation to the content of *p*. Rather, it is the relation that holds between *S*'s mind and a fact *p*.²¹⁶ Here is another way of making this point: the knowledge attribution 'S knows that *p*' does not only state that this relation obtains, but also provides us with an indication of why it obtains, by giving the content of the mental judgement in virtue of which *S* has the knowledge.

This argument can be illustrated further by my third argument as follows. It may be recalled that in some of the passages in which Avicenna delineates the necessary and sufficient conditions of knowledge, we can find that he may proceed by saying that [true] judgement may be accompanied or

²¹⁶ This is particularly clear from what has been said about the two relations that involved in knowing above.

followed by either affirmation, denial, or even conviction. It is true, I think, that knowledge of matters of fact does somehow require our acceptance, be it explicit or implicit, to the judgement that something or other is the case. This, I suggest, does not mean that Avicenna takes acceptance, affirmation, denial, or even belief, as a necessary condition, or rather constitutive, of knowledge. As I argued earlier, belief is merely a propositional attitude which accompanies or follows from true judgements. Although it often accompanies them, belief does not by any means constitute them. Thus it follows that, provided that all the necessary and sufficient conditions of knowledge as Avicenna delineates them are satisfied, it is in no way that our attitude—be it acceptance, affirmation, believe, or denial—can alter the fact that something or other is the case. For example, whether we believe or deny it, it is a fact that the earth is spherical. Or conversely, however firm we believe it, it is not a fact that the earth is flat. Here is another way of making this point: even though belief may be a necessary consequent of our knowledge there can still be knowledge without belief.

And, the last argument is that, to explain knowledge in terms of belief will result in circularity, and this is utterly contrary to Avicenna's theory of definition. Let me take the matter a bit detail. Many epistemologists who defended the traditional definition of knowledge as JTB do so with their suppositions that belief is conceptually prior to knowledge.²¹⁷ It is prior, they argued, given that knowledge entails belief but not vice versa—that is, there can be no knowledge without belief. And since knowledge entails belief, they

²¹⁷ See, fn. 2 and fn. 6. See also, D. M. Armstrong, *Belief, Truth and Knowledge* (Cambridge: Cambridge University Press, 1981), esp. Pt. III.

argued again, it should therefore be explained by the assumption that we conceptualise knowledge as the conjunction of belief with some other necessary conditions that must be added to belief to yield knowledge—such as truth and justification. So, given that knowledge entails belief, it follows trivially that: *S* knows *p* if and only if (1) *S* believes *p*; (2) *p* is true; and (3) if *S* believes *p* and *p* is true, then *S* knows *p*. It seems to me that this explanation does not establish the fact that belief is conceptually prior to knowledge and nor does it is adequate to define what knowledge is. Given the fact that, firstly, it takes knowledge to be the same as, or rather equivalent to, belief—that is, all occurrences of knowing that *p* are also occurrences of believing that *p*. And, secondly, it follows from this that the explanation is circular, for the term ‘know’ occurs again in (3). In the light of our discussion in Chapter 2, this traditional definition fails to meet Avicenna’s two essential preconditions for a true definition: first, definition is not a lexical definition or synonymy; second, one term cannot occur twice in a statement that explains or defines the thing.

The foregoing arguments may suffice, I hope, to show that belief is not epistemologically important to Avicenna’s analysis of knowledge. For, on his account, knowledge can be adequately explained in terms of apprehension and judgement rather than belief as is predominant in recent history of epistemology. It must be noted, however, that although Avicenna does not regard belief as a necessary condition of knowledge, it does not mean that our psychological states or emotions has no place at all in his conception of knowledge. Rather, some other psychological states, such as conviction and certitude, seem to be quite significant when we consider another level of

cognitive process by which, according to Avicenna, we can acquire new judgements and *ipso facto* new knowledge. It is to this I shall turn in the next section.

3.3 Judgement and Reasoning

In the preceding chapter, I have shown that for Avicenna knowledge begins with our apprehension of some words/concepts from which we may know some other words/concepts. Then, as I explained in the previous section, out of a combination of such words/concepts we may have judgements. These judgements are true if they correspond to the real facts in the world.

Now, in the present section, I shall show further that out of a combination of true judgements we may have what Avicenna calls *reasoning* (*rawiya*—literally, elaborate and careful thought) or specifically deductive/syllogistic reasoning (*qiyās*),²¹⁸ by means of which, according to him, we may know the things hitherto unknown through the known things. Thus, he writes,

Definition and syllogism are two tools by means of which one acquires objects of knowledge (*ma'lūmāt*) that are [at first] unknown and then become known by means of reasoning (*rawiya*). [*Deliverance*: 3]

²¹⁸ Reasoning, for Avicenna, is a multi-layered cognitive process. It has various levels or forms; and these, in general, are designated as deductive/syllogistic reasoning, inductive reasoning, and analogical reasoning. See, *Dan-Log*, 29; and *Rem-Log*, 49 and 129. My use of the word reasoning here refers to that kind of deductive/syllogism.

In the discussion that follows I shall explore further the nature and character of the mental operation which makes reasoning, and see what, according to Avicenna, is involved in the process of reasoning. For it is particularly germane to both Avicenna's general conception of knowledge and his theory of judgement. And so I want, to begin with, to explicate what Avicenna means by reasoning—though this cognitive process hardly needs to be explained to those who have reasoned and reflected on this operation of their own mind. Anyway, Avicenna's formal account of what reasoning is, is this:

A syllogism is a discourse in which, if some statements are accepted, some other statements necessarily follow from them. For example, if the two propositions, "Every extended thing has shape" and "Every shaped thing is created" are accepted, then the statement, "Every extended thing is created," necessarily follows. Also, if someone says, "If the world has form then the world is created" and "The world has form," then it necessarily follows that "The world is created." This is so because the discourse made up of two propositions, which if accepted, another proposition necessarily follows, (even though the derived proposition is identical to part of one of the premisses.) [*Dan-Log*: 29-30]

There are some important points emerge clearly from this statement which are pertinent to our understanding of the relation between judgement and reasoning in Avicenna's analysis of knowledge. First and foremost, reasoning is the process by which our mind pass from a chain of two true judgements to another that follows from them. This new judgement, however, will not follow

from the two judgements unless there is a connection between them. What is it that makes the two judgements can be said to have a connection? They can be regarded to have a connection if one and the same word/concept occurs in both—for instance, the word *shape* in Avicenna's first example of reasoning above. At this point, it is important to remember that each of the two true judgements, as argued above, designates a fact—one designates the fact that every extended thing has shape, and the other designates the fact that every shaped thing is created. The combination of the two together therefore designates a complex set of facts. And this is designated by means of a new judgement in which the word/concept common to the first two judgements no longer occurs—for example, the judgement "Every extended thing is created," in which the word/concept *shape* no longer appears. In their totality the three judgements, therefore, make up the cognitive process known since the time of Aristotle as syllogistic reasoning, or simply *sylogism*—or commonly known in contemporary philosophy as *inference*. Before going further to the second point, it should be pointed out briefly the mental operations that are implied in reasoning. All reasoning processes must be preceded by apprehension and judgement. Since we cannot reason concerning something unless we firstly apprehend it and make judgement about it. Or, putting the matter the other way, we may say that these three mental processes are not independent of one another. Judgement presupposes apprehension; and reasoning presupposes both apprehension and judgement; but apprehension can occur without either judgement or reasoning—as Avicenna writes, "A syllogism has parts that one makes a judgement about it and others that are apprehended; a definition has parts that are [only] apprehended" (*Deliverance*, 87).

Let us now proceed to the second point. All syllogistic reasoning consists of three propositions. There must be one new proposition that is inferred and two already known propositions from which it is inferred. The inferred proposition is called *conclusion* and the other two from which it is inferred the *premisses*. Thus it follows that an immediate inference such as “Every man is an animal; therefore, every animal is a man,” is not a syllogistic reasoning. The proposition which contains, as a part, the subject of the conclusion, is called the *minor premiss*; while the *major premiss* the proposition in which contains, as a part, the predicate of the conclusion.

The third point concerns the word *necessarily* in the definition. In this context it means that the premisses entail the necessity of the conclusion. Or, as Avicenna puts it precisely, it is only valid reasoning that can be regarded as a syllogistic reasoning (*Metaphysics*: 39). In another work, Avicenna explains further what he means by the requirement that “the conclusion must necessarily follows from the premisses”:

A syllogism is a statement composed of [other] statements. When they are posited, a statement other than them follows from them. The new statement is generated through these statements themselves, not by accident, but by necessity. The meaning of ‘follows’ is that assent [to the truth of the new statement] is granted and that [this new statement] must be inferred due to the assent granted to the premisses and their form (*shakl*).
[*Deliverance*: 42]

His account of this *logical necessity* is as clear and precise an explanation as anyone can find in a logic textbook, and thus it needs no further elucidation. Yet another way of making the same point is the following: syllogism is an inference based on the existing true judgements. In other words, it is a reasoning based on the judgements that have been previously perceived to be true. The necessity of the conclusion lies in the relation between the existing true judgements and the conclusion. The true judgements, then, entail the necessity of the conclusion. Or—to put the matter in another way—the judgement in the conclusion is already implied in that which was judged to be true previously. So, if we wish, we can draw up a syllogism to make it clear that its conclusion follows necessarily from a chain of two true judgements.

What I have presented thus far particularly concerns the form by which our reasoning should proceed. Now, I shall turn to what Avicenna calls the *matter of syllogism* (*mādda al-qiyās*) by which we can establish the connection between the two premisses from which the conclusion may be derived. For the matters from which we reason are no less important than the *form* of reasoning by which we infer a new judgement. In Avicenna's own words:

Both the syllogism and definition are constructed and composed of intelligible concepts in keeping with a determined [mode of] composition. Each one has a matter (*mādda*) from which it is composed and a form (*ṣūra*) whereby its composition is completed. And just as it is not proper to build a house or a chair from any arbitrary whatever nor to complete their construction from their respective matters in any arbitrary form—rather everything has

its specific matter and a specific and exact form—likewise every object of knowledge, known by means of deliberation, has its specific matter and form whereby one comes to its verification.

[*Deliverance*: 3]

So, to begin with, it will be remembered that two judgements are connected in our reasoning if one and the same word/concept occurs in both. This word/concept is one of the matters from which we compose our reasoning, and it designates what Avicenna calls the *term of premiss* (*ḥadd*):

A term is something to which a premiss, insofar as it is a premiss, reduces, when the link [between the subject and predicate] dissolves. Thus, it is without doubt that only a subject and predicate remain. [*Deliverance*: 32]

And in another work:

The essential parts of what is called “premise,” which are the remainders after the analysis to primary single elements and which are the smallest parts of which the proposition is composed, are called “terms.” Here is an example: “Every C is B; every B is A; from this it follows that every C is A.” Each of our statements, “Every C is B” and “Every B is A,” is a premise. C, B and A are terms. [*Rem-Log*: 130]

And again:

In the conjunctive syllogism, you find a repeated common thing which is called “middle term,” such as B in the preceding example. In it you also find something proper to each of the two

premises, such as C in one of the premises of our example, and A in the other premise. And you find the conclusion, obtained only by the union of these two extreme terms, where we said, "...from this it follows that every C is A." What becomes the subject of the conclusion or the antecedent, such as C in our example, is called "minor term." And what becomes the predicate of the conclusion or the consequent, such as A in our example, is called "major term."

The premiss which has the minor term is called "minor premiss."
 The premiss which has the major term is called "major premiss."
 [Rem-Log: 133]

From these passages it is clear that to connect the first premiss with the second we need to link a term, B, with another term, A, in the latter. And then we reduce the two terms to one another by finding a third term in each of them. When this third term, C, is found, we thereby create a connection between them. In this way, then, all syllogistic reasoning contains three terms: a *minor term*, which is the subject of the conclusion; a *major term*, the predicate of the conclusion; and a *middle term* that occurs in the two premisses but not in the conclusion (*Dan-Log: 30*). Using Avicenna's own example, this can be illustrated as follows:

	Every C is B
	Every B is A
Therefore	Every C is A

In this example: the term B is the *middle term*; the term C, being the subject of the conclusion, is called the *major term*; while the term A, being the predicate of the conclusion, is the *minor term*. Again, the premiss where the minor term

belong to is called the *minor premiss*, and the premiss in which contains the major term is called the *major premiss*.

Before going further I would like to add a couple of general remarks about judgement and reasoning in Avicenna's general conception of knowledge. From what has been said thus far, knowledge in the broadest sense in which Avicenna speaks of it is not a mere collection of true judgements. Rather it is a system of interconnected true judgements. It is, in fact, an immense system of derivative knowledge built on an innumerable process of inferences from the existing true judgements. For, as a matter of fact, reasoning is essentially not a one-off mental operation. Rather, it may grow into a web of reasoning, with the first conclusion can serve as a premiss for inferring a second conclusion, which in its turn may serve as a premiss for inferring yet another conclusion and so on until we reach at the last conclusion. However, I should like to make it perfectly clear at this point that, for Avicenna, although reasoning yields new knowledge it does not by any means constitute it.

To return to the main point, although syllogistic reasoning is the most reliable kind of reasoning to furnish us with new knowledge through the use of judgement and reasoning, it does not mean that Avicenna regards all kinds of syllogistic reasoning contain a guarantee of that conclusions or new judgements they yield are necessarily true. On the contrary, according to Avicenna, there are different kinds of syllogistic reasoning with varying degrees of probability that the conclusions or new judgements they yield are

true. And they are of five kinds: demonstrative reasoning (*burhānī*), which yields conclusions/new judgements that are certainly and necessarily true (*yaqīnī*); dialectical reasoning (*jadālī*), which can only furnish us with conclusions/true judgements of probable truth (*shabih al-yaqīn*); rhetorical reasoning (*khitābī*), which produces conclusions/new judgements that are possibly true (*ḍannā ghālibā*); and sophistic reasoning (*sufasṭiqī*), which generates conclusions/new judgements that are improbably true or even false (*mughālīṭī*) (*Demonstration: 51-2*). Each form of syllogism has its essential features by which we can identify the way in which we arrive at a certain conclusions or new judgements in our reasoning:

Demonstrative syllogisms are composed of premisses that must be accepted. If these premisses are necessary, the conclusion drawn from them is necessary, in the manner of their necessity; and [if] they are possible, the conclusion drawn from them is possible.

Dialectical syllogisms are composed of widely-known propositions and determined ones, be they necessary, possible or impossible.

Rhetorical syllogisms are composed of presumed propositions, received ones, which are not widely-known, and those resembling them, be they what they are, even if impossible.

As for sophistic syllogisms, they employ a proposition resembling others to which an experiential critical one is joined for the purpose of producing error. If the resemblance is to necessary propositions and the manner of their usage, the syllogiser is called "a sophist"; and if it is to widely-known

propositions, the syllogiser is called "an agitator" and "a disputer." The agitator is the opposite of the dialectician, and the sophist is the opposite of the sage. [*Rem-Log*: 148-149)

As I intimated a moment ago, each mode of reasoning, according to Avicenna, can of course provide us with new judgements. But not all of them can furnish us with new knowledge. For the new judgements or conclusions derived from them have varying degrees of probability with regard to their truthfulness—from certainly true to improbably true and even false. Now, let us see further Avicenna's account of the probability of truth in judgement and reasoning.

Judgement may have varying degrees [of conviction with regard to its truth]: it may come with certain conviction (*yaqīn*), that is when the primary conviction [in the truth of a proposition] is accompanied by secondary conviction—either in actuality or in proximate potentiality—that what one has judged to be the case cannot not be the case, since it is not possible for this conviction concerning it to disappear. It may be probable (*shabīh bi al-yaqīn*), in that our primary conviction in its truth is not accompanied by secondary conviction both in actuality and in proximate potentiality. But even if there is secondary conviction it comes with a persistence possibility of its being false, or if there is secondary conviction still it might be possible to disappear, except the fact that whenever there is primary conviction one cannot be actually assured of the possibility to deny its truth. And there is persuasive judgement (*iqnā' ṭ dānnī*):²¹⁹ it is one that is judged to be true without the primary conviction or the secondary conviction—either in actuality or in proximate potentiality—and there is the

²¹⁹ It should be noted that in the same passage where Avicenna speaks of the forms of syllogistic reasoning (see the previous paragraph) he uses the term *dānnā ghālibā* (p. 52), of which I render as possible conclusion/judgement.

possibility to deny its truth. And what is judged while the mind concurrently assured of the possibility to deny its truth is called the mere opinion (*ḥaqīqatu maḍnūn*).²²⁰ [*Demonstration*: 51]

Several aspects of this passage deserve further comments. I take it, to start with, that in this passage Avicenna is talking about what, I suggest, may be called the *emotion of judgement*, capable of many degrees from the highest to the lowest, which may arise along with our judgements.²²¹ But, I shall argue that however real and significant it may be as a psychological fact, it does not concern Avicenna's fundamental analysis of knowledge—in terms of apprehension and true judgement. For, although it often accompanies judgements, this emotion of conviction does not by any means constitute our judgements and, *mutatis mutandis*, our knowledge of matters of facts. Now, let me take the matter in detail.

In this passage, Avicenna asserts that there are two different levels of conviction that may arise along with our judgements. The first is obviously the primary conviction. Seen in the light of our discussion so far, this emotion of conviction—or rather psychological attitude—is not a relation to the objects of judgement, but it is a relation to our judgement itself (or a proposition by which it is expressed) when it is perceived to correspond with the real facts in the world. On the other hand, what makes the primary conviction in the truth of

²²⁰ Also, in the same passage when he speaks of the forms of reasoning he uses the term *mughāliḥī*, which I render as improbable or false judgement/conclusion.

²²¹ See also the scholarly discussions of Avicenna's account of certainty by Deborah L. Black, "Certitude, Justification, and the Principles of Knowledge in Avicenna's Epistemology," in *Interpreting Avicenna: Critical Essays*, ed. Peter Adamson (Cambridge: Cambridge University Press, 2013), 120-42; and Jon McGinnis, "Avicenna's Naturalized Epistemology and Scientific Method," in *The Unity of Science in the Arabic Tradition*, ed. Shahid Rahman, Tony Street and Hassan Tahiri (Dordrecht: Springer, 2008), 129-52. As we shall see shortly, my interpretation, on certain points, agrees with that of McGinnis.

the judgement or proposition certain is that it is attended by secondary conviction. That is, a certain conviction arising with our unwavering affirmation to the truth of the judgement when it is perceived to correspond with the real facts that makes its truth indubitable. I take that it is this indubitability that gives rise to our certain conviction in the truth of our judgement—or the proposition by which it is expressed. In this way, then, our certain conviction in the truth of a judgement is not a mere subjective or psychological certainty. Rather our certain conviction must involved reference to the facts; and the way in which to ascertain the reference to the facts is by inspection or acquaintance with the facts themselves. To put the point precisely: certain conviction does not only involve psychological relation but also objective ontological relation.

It will be worthwhile pausing here, before taking up further examination on Avicenna's account of the other degrees of probability of truth, to comment briefly on earlier interpretations of Avicenna's account of certainty. In his interpretation of the primary and secondary convictions, McGinnis (2008) suggests that Avicenna uses the term certainty in two different senses, that is:

Sometimes 'certainty' refers to one's assurance or knowledge of some natural necessity, and in this sense 'certainty' seems to be relative to the knower and the justification and warrant one has for a belief. More frequently, however, 'certainty' refers to the necessity or inevitableness of some causal relation in the world, which, though captured in the premisses and conclusions of a demonstration, nonetheless is independent of any knower and his syllogising, and in fact provides the very basis for knowledge

and syllogisms. For Avicenna, as we shall see, one has the former type of certainty, that is, psychological assurance, only when one is aware of the latter type of certainty, that is, one recognises that a necessary or inevitable causal relation obtains between two things.

As I remarked briefly in the previous note,²²² my interpretation may, in general, agree with that of McGinnis. But I disagree with him, and also with Black (2013),²²³ on certain particular points such as their suggestion that Avicenna speaks of certainty in the sense of justification and warrant that we have for our belief. For it seems obvious, at least to me, that Avicenna here does not talk about belief. Rather what he is talking about is the emotion of conviction in our judgements in particular and about judgement and reasoning in our system of derivative/discursive knowledge in general.²²⁴ As a matter of fact, there are no such things as justification and warrant in the mental process of reasoning. However, if we are to demonstrate our conclusions or new judgements derived from a process of reasoning based on the existing true judgements we can of course present it in the form of syllogism by which they are derived, and this can possibly serve as a way to justify our new judgement. But still justification only concerns belief rather than judgement.²²⁵

²²² See fn. 205.

²²³ Black interprets what she called Avicenna's second-order belief as "knowing that one knows". This interpretation is too brief that I cannot make any comment on it.

²²⁴ It is important to remember at this point that this account of emotion of judgement occurs in the context of delineating his analysis of knowledge, where he begins, "Knowledge acquired through discursive reasoning and knowledge that is available to us without reasoning—is of two kinds: one is judgement and the other is apprehension..." (*Demonstration*: 51).

²²⁵ I will return to this problem of justification when discussing the premisses of demonstrative reasoning in the next section.

Coming back to Avicenna's own account, however: the absence of the secondary conviction will result in our conviction in the truth of the judgement cease to be certain. But still our primary conviction in its truth is still intact given the fact that the judgement corresponds to the real facts in the world. In regard to probable judgement, it consists of our primary conviction in its truth but lacks secondary conviction with regard to its truth. If, in any case, there is secondary conviction it might be inadequate to hold our unwavering conviction—for example, we might not be able to ascertain that it really is corresponding with the real facts. But we still cannot deny its truth since the primary conviction is there. Let us turn next to possible judgement. Unlike the first two judgements, it is a judgement that neither be accompanied by primary conviction nor secondary conviction. In this case, then, even if we can judge it to be true there is always the possibility to deny its truth. The lowest degree of probability of all is improbable judgement. That is, we judge a proposition to be true yet at the same time thinking that it is probably wrong.

This brief survey of Avicenna's theory of inference shows that the conclusions or new judgements derived from the process of reasoning must be certainly true in order to be counted as knowledge. It follows therefore that for Avicenna the best mode of reasoning to attain them is by way of demonstrative reasoning. (It may be remembered that it has been showed in Chapter 1.4 that for him it is only demonstrative reasoning that can provide us with truth in our philosophical and metaphysical inquiries.) In fact, it is quite obvious that his attitude towards the other forms of reasoning is rather dismissive—except to dialectical reasoning since he thinks it may be useful

given the fact that demonstrative reasoning would sometimes follow from dialectical reasoning (*Demonstrative*, 333). Indeed, we can even find a couple of passages from his works in which this attitude is dramatically expressed, particularly in regard to sophistic reasoning:

As regards the special difference [of this demonstrative knowledge] from dialectic, [the difference lies] in power. For dialectical discussion yields opinion [and] not certainty, as you have learned in the art of logic. As for its difference from sophistry, [this] is in terms of desire. This is because [the metaphysician] desires the truth itself, whereas [the sophist] desires to be thought as a wise man who utters truth, even though he is not a wise man. (*Metaphysics*: 13)

And again, in a somewhat vitriolic remarks:

Moreover, censoring the sophist and ever alerting the perplexed [against error] is incumbent at all times on the philosopher—[a task he undertakes] inescapably through some type of argument. There is no doubt that this argument would be a type of syllogism whose required [conclusion] is necessary (unless it would not in itself be a syllogism whose required [conclusion] was necessary but would [instead] be a syllogism in terms of [simply] being a syllogism [in form]). (*Metaphysics*: 39)²²⁶

²²⁶ As a matter of historical fact, it is the characteristic of Arabic philosophers to categorise these forms of reasoning and the knowledge derived from them in terms of natural mental capacity of human beings. For instance, Averroes characterises demonstrative as a unique form of reasoning to philosophers, dialectic to theologians, and rhetoric to people with lower mental capacity. See Averroes, *Decisive Treatise and Epistle Dedicatory*, trans. Charles E. Butterworth (Provo: Brigham Young University Press, 2001).

Now, let's move on to begin looking at what Avicenna has to say about the essential features of demonstrative reasoning. It may be remembered, to start with, that demonstrative reasoning is the mode of reasoning that,

...consists of premisses that must be accepted. If these premisses are necessary, the conclusion drawn from them is necessary, in the manner of their necessity; and [if] they are possible, the conclusion drawn from them is possible. [*Rem-Log*: 148]

Elsewhere, it is defined as follows:

Demonstration is a syllogism composed of [premisses of] certitude that yield conclusion[s] of certitude. Premisses of certitude are [1] primary propositions and whatever is collected within their category or [2] propositions based in experience (*tajribiyyāt*) or [3] propositions acquired from sense perception... As for propositions that are widespread, commonly accepted, and presumed true, well they fall outside this rubric. [*Deliverance*: 95-6]

Being a mode of syllogism, demonstrative reasoning is not particularly different from the others. Its form—that is the composition existing between the premisses—is the same with other modes of reasoning. Furthermore, there is nothing different with regard to its matter, that is, its premisses. But, as remarked earlier, the difference lies in the quality of their premisses, which yield conclusions with varying probability of truth. Take, for instance, dialectic reasoning, it is composed of widely accepted premisses and *ipso facto* does not necessarily yield true conclusions/judgements. On the contrary,

demonstrative reasoning requires that the premisses are *true*. Given that every reasoning from true premisses gives equal strength to the conclusion, and therefore leaving no possibility of its being false. On this account, we can say therefore that the role of demonstrative reasoning is to imparting the truth-value of the premisses to the conclusion. It has been argued, however, that the premisses are true if what they state corresponds to the real facts or states of affairs in the world. Hence when a conclusion or judgement corresponds with fact, it is true by definition, not only as the result of an inference. For the test of true judgement is its conformity with ontological truth. Furthermore, demonstrative reasoning does not only require that the premisses are true, but they must be *certain*. In regard to premisses of certitude, Avicenna writes,

It does not seem to be the case that what is meant by 'certain' is that the conclusion of the demonstration is certain. For if its conclusion is certain, this does not mean that it itself is certain... I am most inclined to believe that what is intended by this is a syllogism composed of certainly true premisses... For if certainty were of the premisses, the demonstration itself would also be certain. [*Demonstration*: 78-9]

What is required, then, for the inferred conclusions or judgements to be regarded as knowledge is that they should not be merely true but also certain. The more certain the premisses are the more certain therefore the inference and its conclusions. This requirement of certainty for demonstrative reasoning is analogous to another requirement, namely: the truth of the premisses and the conclusion must be *necessary*. What Avicenna means by necessary here

can be understood in the following senses. Firstly, and directly related to certainty, is in the sense that,

The premisses of demonstrative reasoning provide knowledge that does not change and it is not possible for the object of that knowledge to be in any other way than that by which it is known. So it is also *necessary* for the premisses of demonstrative reasoning to not possibly change from the way they are (*'an mā huwa 'alayhi*). This sense [of necessity] is one of the senses which are called 'necessary'. [*Demonstration*: 122]

This, in fact, further explains what Avicenna means by secondary conviction as discussed above. That is, our certain conviction in the truth of our judgement that something or other to be the case and cannot not be the case. Here, we are convinced that our judgement is true when we perceive that what it states to be the case actually is the case. But our certain conviction in the truth of our judgement comes from the fact that there is no doubt whatsoever that the judgement necessarily obtains and corresponds to a simulacrum of ontological facts. This is one important respect that makes other modes of reasoning inadequate to provide us with new judgements and knowledge. Dialectic reasoning, for instance, may be able to yield new judgements, but they are not necessarily true. If, in any case, the judgements are true, they are not known to be necessarily true. Let us turn next to the second sense in which Avicenna speaks of necessary. Thus, he writes:

As if we say in this *Book on Demonstration* that every C is B by necessity, we mean that whatever is described by necessity as C is described as B. This is a more general notion than that [i.e.,

the previous notion of necessity]. That is, whatever is described as C, as long as it is so described, is described as B—even if it is not such—as long as its essence exists. [*Demonstration*: 122]

In a paraphrase this logical point might run as follows. Demonstrative reasoning can yield insight into the necessity to adopt certain propositions to be the premisses of our reasoning. The propositions themselves are known to be true without being deduced from each other in that particular process of reasoning. In this way, therefore, our reasoning is an attempt to substantiate one true proposition by connecting it to another true proposition. So the necessity of the proposition that A is true of each B is evident if it logically and necessarily inferred from the necessary connection of the propositions that A is true of each B and B is true of each C.²²⁷ To put the point precisely, in every step of demonstrative reasoning, the inference must be necessary; and it is necessary for the conclusion of that step to follow from the premisses. And to sum up a little: in every step of demonstrative reasoning, it must consist of two necessities: the ontological necessity and the logical necessity.

It should also be noted, however, that demonstrative reasoning, according to Avicenna, is not entirely composed of necessary proposition. For it may also admit possible propositions—that is, propositions derived from possible states of affairs in the world.²²⁸ In this case, then, we may reason using the propositions derived from possible states of affairs from which we may infer possible conclusions. This possibility is due to the states of affairs in

²²⁷ See also *Rem-Log*, 130.

²²⁸ Black notes that this view can already be found in Fārābī. See her “Knowledge (*‘ilm*) and Certitude (*yaqīn*) in al-Fārābī’s Epistemology,” *Arabic Sciences and Philosophy* 16 (2006): 11-45.

the world themselves and not to our reasoning—to use Avicenna’s own example, as in our knowledge of the states of the conjunction and opposition of the stars which is ever changing (*Rem-Log*: 150). In this way, then, our judgements and knowledge are still necessary, but in the sense of necessarily possible in corresponding to a simulacrum of ontological facts.²²⁹

From what has been argued so far, demonstrative inference is the most reliable mode of reasoning by which we can pass from one true judgement to another and so on until we reach the ultimate conclusion or judgement about things in the world. It is the most reliable in the sense that it is the best way to avoid error in our reasoning. For reasoning can be very difficult and intricate that we are prone to commit errors without knowing it. As a matter of fact, errors in reasoning cannot yield conclusions or new judgements that worthy of the name knowledge. There are, at least, two cases in which the conclusions of the invalid reasoning cannot be counted as knowledge. Firstly, from the premisses we know to be true it is possible to infer something false and think that the conclusion is true. Secondly, from that false conclusion we can go on to infer something true and still think that it is true. In regard to the second case, Avicenna writes,

False premisses may yield a true conclusion. It is correct that when the syllogism has a proper composition and true premisses, the conclusion must be true. However, it is not the case that when the contradictory of the antecedent is repeated it yields the contradictory of the consequent. For it is said that [since the

²²⁹ For an elaborated comment on this issue, see Inati’s introduction to her translation of *Rem-Log*, 39-40.

syllogism] either has false premisses or a corrupt composition, it cannot yield a true conclusion. But false premisses can produce true conclusions. An example of this when we you say, 'Every man is a stone; every stone is an animal'; and this yields, 'Every man is an anima,' which is true.

However, the falsity is either in a particular or in a universal premiss. When it is in a universal premiss, the falsity occurs either with reference to the whole (so that the contrary of the premise is true) or the part (so that the contradictory, not the contrary, of the premiss is true). An example of the first case is: 'Every man is a stone,' and of the second is: 'Every man is a writer.'

In the first figure, if the false element is a single premiss that is the Major and if it is false with reference to the whole, it is not possible for it to yield a true conclusion. This is because if the conclusion is true and then the contrary [of the false Major] is posited as a Major, the syllogism will yield the opposite of that previous conclusion as a true conclusion. This is an absurdity. If the Major is false with reference to a part, the syllogism is not precluded from yielding a true conclusion. When the Minor of both premisses are false, or when the syllogism is in a different figure, truth may be concluded from falsity, however they may be. You must derive this on your own. [*Deliverance*: 76-7]

In the first case, it is obvious that the conclusion cannot be considered as knowledge. In the second case, however, can we regard the conclusion as a piece of knowledge? My answer is that: if it is true in the sense that it really corresponds to the fact, it can then be regarded as knowledge. In this case, however, the judgement or conclusion is true by definition, not as the result of an inference. And thus, we cannot be properly said to obtain knowledge from

that particular process of reasoning. However, it is almost impossible for both cases to happen if our reasoning follows the demonstrative inference which require both form and premisses of inference must necessarily be true. The discussion in the present section mostly concerns with the form of demonstrative reasoning. In the next section, however, I shall turn attention to Avicenna's account of the premisses of demonstrative reasoning.

3.4 Epistemological Premisses

In the preceding section, I have endeavoured to show how it is possible, according to Avicenna, to pass from our existing true judgements to some other new true judgements through the process of demonstrative reasoning. As we have seen, our mind has a propensity to expand its knowledge and thus develop an immense system of derivative knowledge. This is, by and large, made possible by the entity called propositions, by which we expressed our judgements and through which we pass from one judgement to another in reasoning. This, I suggest, is what Avicenna describes as the two-faces of propositions (*Dan-Log*: 40). On the one hand, they are the conclusions of inferences. On the other hand, they are the premisses of reasoning from which we infer still other conclusions. From this it logically follows that if a proposition to be certainly true, it must necessarily be inferred from other propositions which are themselves known to be true. Accordingly, these propositions too must be known to be certainly true. Likewise, they in turn must also be inferred from still other proposition, which are known to be

certainly true. If that is the case, our reasoning seems to be entangled in a never-ending vicious circle—a *regress of inference from inference*:

For if every item of learning and teaching were preceded by an item of knowledge and then each item of knowledge were preceded by items of learning and teaching, then intellectual inquiry will continue ad infinitum. And there would be therefore neither learning nor teaching at all. [*Demonstration: 77*]

Avicenna assures us, however, that this should never be the case. For this regress of inference from inference does have its *terminus ad quem*. This, I think, is trivially true given the fact that our derivative knowledge always begins with our judgements of the most basic fact. Thus, Avicenna remarks assuredly:

For if one acknowledge of how intellectual teaching and learning are possible and that such learning and teaching comes about only by prior knowledge, then it is necessary that we have first principles of apprehension and first principles of judgement... Indeed, we necessarily possess states of affairs to whose truth we affirm immediately and object of which we apprehend without mediation. And they are the first principles of apprehension and judgement. [*Demonstration: 77*]

What Avicenna means by the first principles of apprehension and judgement in this passage is obviously the primary concepts and judgements—as I explained earlier in Chapter 1.5 and Chapter 2.4. Accordingly, Avicenna distinguishes judgements/propositions into primary kind, which are not based upon any preceding judgement, and derivative kind, which are inferred from

some preceding judgements/propositions by reasoning.²³⁰ It follows therefore that reasoning must begin from true judgements/propositions that are known without reasoning. It also follows therefore that there must be first principles of judgements whose truth is known immediately without reasoning. These primary judgements are not acquired by reasoning, but all reasoning is based on them.

However, it may be worth pausing here to make some comparison. The term first principles, in the sense in which Avicenna speaks of it, when he talks about derivative judgement and reasoning in the whole system of derivative knowledge, is obviously different from the sense in which the term is used by most modern philosophers. Avicenna, unlike modern philosophers such as Descartes, does not mean it in the sense of foundationalist and justificationist claims of knowledge. As a matter of fact, the problem of foundationalism and justificationism has become one of the controversial issues among contemporary scholars in interpreting Aristotle's account of first principles.²³¹ But this is not really the case in the study of Avicenna, where only two scholars so far interpret his first principles in terms of foundationalism and justificationism, and only one scholar, as far as I know,

²³⁰ As we have seen in the previous two chapters, Avicenna divides concepts into primary kind, which are known immediately and directly and not from any preceding concepts, and derivative kind, which are known through some existing primary concepts.

²³¹ To list only a few: Aryeh Kosman, "Understanding, Explanation and Insight in the *Posterior Analytics*," in *Phronesis* (1973): 374-92; W. D. Ross, *Aristotle's Prior and Posterior Analytics*, (Oxford: Oxford University Press, 1949); Myles Burnyeat, "Aristotle on Understanding Knowledge," in Enrico Berti (ed.), *Aristotle on Science: The Posterior Analytics*, (Padua, 1981), 97-139; and Jonathan Barnes, *Aristotle's Posterior Analytics* (Oxford: Oxford University Press, 1975).

who indirectly denies this interpretation.²³² I find that this problem so interesting that I cannot resist a brief digression.

Let me begin with the interpretation that takes the same line with me. In his comment on this particular passage, McGinnis argues that Avicenna does not concern with providing a foundation for our knowledge or even how to justify our knowledge claim. I am in complete agreement with this suggestion. In fact, as I remarked a moment ago, it is the nature of our derivative judgements and knowledge, if we do have them at all, to be inferred from and to give rise to new knowledge. Moreover, the fact that we do have advanced judgements and knowledge of so many things in the world presupposes that there being some earlier use of apprehension and judgement in our intellectual life. In fact, it is possible, though unnecessary, for us to trace back our first judgement and knowledge to the beginning of our intellectual life or even to the beginning of time, provided we have enough time for that (*Demonstration*: 141). Besides that, there really are some primary concepts and judgements/propositions of which are non-demonstrable and non-derivable but can be immediately apprehended and judged to be true. We may not constantly aware of the existence of those concepts and judgements in our mind, but we will immediately apprehend and judge their truth when they come across our mind (*Metaphysics*: 22 & 39).

²³² The foundationalist and justificationist interpretation of Avicenna's first principles can be found in Sari Nuseibeh, "Al-'Aql al-Qudsī: Avicenna's Subjective Theory of Knowledge," in *Studia Islamica* Vol. 69 (1989): 39-54, and Sari Nuseibeh, "Epistemology," in Seyyed Hossein Nasr & Oliver Leaman (eds.), *History of Islamic Philosophy*, (London & New York: Routledge, 1996); and Deborah L. Black (2013). As for the denial of this interpretation see, Jon McGinnis (2008) and (2010).

In her interpretation, Black suggests that Avicenna understands the first principles in the sense of justification for belief. It seems to me that this interpretation does not hold based on three reasons. Firstly, Avicenna's analysis of knowledge does not concern belief and nor does he regard it as necessary and sufficient condition of knowledge. So there is no reason to provide good reasons for belief. It follows therefore that justification is extraneous to his analysis of knowledge. Secondly, as I argued above, in demonstrative reasoning there are two premisses—or propositions—from which we draw a conclusion—which, in turn, nothing but a proposition too. This new proposition is already implied in the existing propositions. In demonstrative inference, if the two propositions are true and certain, they will necessarily yield a true and certain conclusion. In other words, the conclusion is true and certain since it follows logically and necessarily from true and certain premisses, and not because they justify it. Given this much, it is evident, I hope, that this state of affairs does not involve justification. Finally, I hope it should be clear by now that Avicenna's analysis takes apprehension, judgement, and truth as the necessary and sufficient conditions of knowledge. His analysis, therefore, is totally different from the JTB analysis that takes belief to be conceptually prior to knowledge which leads to the idea that justification too is conceptually prior to knowledge. Rather, on Avicenna's analysis, it is belief that should be analysed in terms of knowledge. Given this fact, if we are to accept justification, knowledge should figure in the analysis primarily as what justifies, not as what gets justified. Knowledge certainly can justify a belief—indeed, a *mere* belief—which is unworthy of the name knowledge.

Coming back to the main arguments, however, let us take a look at what Avicenna regards as primary propositions. The list of these propositions can be found in the logic parts of both his major and minor works. Their numbers, however, vary from work to work: there are fourteen in *The Cure*; sixteen in *Pointers*; nine in *The Salvation*; and thirteen in *Danesh-Name*. Each type of the propositions has its own peculiar origin and its epistemic force which corresponds to one or other kinds of syllogistic reasoning (i.e., demonstrative, dialectic, rhetoric, and sophistic). Given our focus here is on true and certain judgements, I shall only consider the primary propositions that are pertinent to demonstrative reasoning (*Demonstration*: 63-67).²³³ They are, according to Avicenna, the propositions whose truth and certainty necessarily compel our conviction in them. He divides the propositions whose necessity of our conviction in their truth into internal and external to our intellect.²³⁴ The propositions whose necessity of our conviction in their truth are internal to the mind are again subdivided into those that are generated by the intellect itself and those by the lower faculty of the mind. Let us turn firstly to the propositions belonging to the internal aspect of the necessity of conviction.

²³³ The earliest overview of these propositions can be found in Inati's introduction to her translation of *The Logic of Pointers* three decades ago. Another scholarly discussion can be found in Dimitri Gutas, "The Empiricism of Avicenna," *Oriens* 40 (2012): 391-436, though his emphasis is on empiricism; and most recently Black (2013).

²³⁴ I have pointed out earlier in Chapter 1.5 that primary judgements are of two sorts: one is purely perceptual/empirical and the other is purely intellectual.

The propositions, which come directly from the intellect and, whose truth and certainty immediately and necessarily propel our conviction in them, are called primary intellectual propositions:

Primary intellectual propositions (*awwaliyyāt*) are generated in man on account of his intellective faculty, with no cause that necessitates assent to them except their own essences and that thing which makes them proposition[s], i.e., the cogitative faculty. The latter joins simple elements by way of affirmation and negation.

When the simple concepts come about in man either with the help of the senses or the imaginative faculty (*khayāl*) or in some other way and then the cogitative faculty compounds them, the mind must assent to them from the very beginning, without recourse to another cause and without feeling that this is something only recently acquired. Rather, man convinced that he always knew it. The natural intelligence of the estimative faculty does not propose it, as we explained. An example of this is, 'The whole is greater than the part.' This proposition is not acquired from a sense or induction or anything else. True, the senses may supply one with an example of an image of 'the whole' and 'the greater' and 'the part'. As for assent to this proposition, well it is due to primary nature. As we explained, whatever is true among the estimations is included in this totality. [*Deliverance*: 95]

In all of his works the example is the same: the whole is greater than the part. This proposition can never be doubted, and no one ever remember doubting them in the past (*Dan-Log*: 40). As a matter of historical fact, this primary proposition has been the object of much criticism in early modern philosophy,

especially by Hume and Locke.²³⁵ The latter for example, though he did not doubt the truth and certainty of this proposition, argued that the proposition is of no use in confirming less general self-evident propositions or advancing new knowledge. He even asked anyone who could show him any science developed upon this proposition.²³⁶ It is true that Avicenna himself never provides any propositions inferred from this one. But his point, I think, is to show that this proposition itself consists of some of the most basic concepts such as “whole,” “greater,” “part,” and “lesser.” And our judgement in the truth of this proposition entirely depends on our apprehending of these concepts. So, anyone who has a rational faculty and capable of apprehending these concepts, will necessarily judge it to be true that “the whole is greater than its part,” and “things which are equal to the same thing are equal to each other.” If the concepts does not occur to the mind and is not apprehended, then “it would be impossible to know whatever is known through them” (*Metaphysics*: 22). And Locke, in fact, admitted that even uneducated countrymen know these concepts and propositions.

The second type of primary propositions does not emerge directly from the intellect. Rather, they come from the lower faculty of the mind but the intellect necessitates, though not immediately, our certain conviction in their

²³⁵ See David Hume, *An Enquiry Concerning Human Understanding*, (Cambridge: Cambridge University Press, 2007).

²³⁶ It should also be borne in mind that Locke intended his arguments as an attack against the scholastic tradition. John Locke, *An Essay Concerning Human Understanding*, Peter E. Nidditch (ed.), (Oxford: Oxford Clarendon Press, 1987), see especially Ch. VII, 591-608.

truthfulness and certainty. They are called propositions with built-in syllogism (*muqaddamāt fiṭriyyat al-qiyās*):²³⁷

As for the propositions containing their syllogisms, they are propositions in which assent is made only due to an intermediary. That intermediary is not among what escapes the mind—thus requiring the mind to seek it. Rather, whenever the two extreme terms of the problem are present to the mind, the intermediary is also present to it. An example of this is our judgment that two is the half of four. [*Rem-Log*: 121]

Avicenna considers them as primary propositions given the fact that the middle terms that cause us to necessarily judge them to be true are somehow intrinsic in the intellect as soon as we apprehend the extreme term. They are, in fact, closely related to primary intellectual propositions since they are purely intellectual and require no perceptual input in apprehending them. For example: four is an even number. If we understand “four” and “even,” then “four is even” occurs to our mind, since “Four is divisible into two equals” immediately occurs to our mind. Similarly, when “four” occurs to our mind and “two” occurs as well, then “four is double two,” occurs immediately. However, if it is “six” or “thirty”, or any even greater numbers, that occurs, the mind has to find the middle term (*Demonstration*: 64).

Those are the two kinds of primary propositions originated directly or indirectly from the internal processes of our reason, and in turn necessitate

²³⁷ I don't really understand what Gutas means by “propositions based on data with built-in syllogism,” but his rendering of *fiṭriyya* as *built-in* in this context shows his ingenuity, and so I follow him in my rendition of the term. See also Black's rendition as “premises whose syllogism is innate.”

our certain conviction in their truth. We shall now turn to the propositions whose originations are external or not the product of our own intellect, but no less necessitate, though not immediately, our conviction in their truthfulness.

The first is what Avicenna calls observational propositions (*mushāhadāt*). They consist of propositions that are originated from two different sources. The first type of observational propositions is what Avicenna calls perceptual propositions (*maḥsūsāt*). These propositions are apprehended and judged to be true through our direct acquaintance or perception of the things or facts they stated. For example, the propositions “Snow is white,” “The Sun rises and sets,” etc. The second type of observational propositions is called reflective propositions (*i`tibāriyya*), which are produced and judged by our own reflective faculty or self-consciousness. For example, the propositions that express our awareness about our own thought, emotion, and our consciousness of our own selves and actions.

Observational propositions are of the types of [i] the sensibles—the latter being propositions whose assent is acquired from the [external] sense only. Examples of these are our judgement that the sun exists and that it shines, and our judgment that fire is hot. Or [ii] they are of the types of reflective propositions produced by the observation of powers other than those of the [external] sense. Examples of such propositions are our knowledge that we have thought, fear and danger, and our awareness of ourselves and the acts of ourselves. [*Rem-Log*:120]

The second is experiential propositions (*mujarrabāt*). On these propositions, Avicenna writes:

Objects of experience are things by means of which the faculty of sense, in collaboration with syllogisms, generates assent. This is so because, when the existence of something for some other thing repeats itself before our faculty of sensation, e.g., the loosening of the bowels for scammony, and the observed movements of heavenly bodies, this repeats itself in our memory. And when it repeats itself in our memory, an experience comes about for us due to a syllogism that is connected with the memory. [An example is,] ‘If this thing, such as the loosening of the bowels due to scammony, were something arbitrary and accidental and not due to some requirement of nature, then it would not occur consistently in most cases.’ The result is that, if this does not happen in certain case, the soul considers the incident to be rare and seeks a cause due to which it did not happen. When this sensation and this memory combine with this syllogism, the soul concedes—due to this assent—that it is the nature of scammony that, if it is drunk, it causes loosening of the bowels in the drinker. [*Deliverance*: 88]

To put the point precisely: these propositions are derived and judged to be true through recurring experience and experiment, and through the formation of a syllogism that proves the propositions.

The third is testimonial propositions (*mutawātirāt*). Avicenna’s definition of this kind of propositions is as follows:

Similarly, propositions based on transmitted unanimous accounts are those with which the soul finds full tranquillity, by means of which doubt is removed due to the multiple observations, even though doubt is possible. So that uncertainty regarding the

occurrence of these observations in a concordant and a univocal manner is eliminated. This is like our belief in the existence of Makka, Galen. Euclid, and others. [*Rem-Log*: 121]

These propositions compel our conviction in their truth from the fact that they are universally circulated and testified by many people. If the report is doubted, it cannot be considered as testimony. The more testimony about them, the more certain we are in their truth (*Dan-Log*, 41). For example: our certain conviction in the existence of existing cities and countries, though we have not seen them in our life.

And lastly, intuited propositions (*ḥadsiyyāt*). Here is Avicenna's definition of this particular kind of propositions:

Among what resembles the experiential propositions are the intuited ones. These are propositions in which the principle of the judgment is a very strong intuition of the soul, with which doubt is removed and to which the mind submits. If one denies that, because one does not take up the consideration required by the power of this intuition, or by way of opposition, one does not achieve what is achieved by him who has this intuition. An example of this is our judgment that the moon gets its light from the sun in a manner that forms light on it. The intuited propositions too have a syllogistic force; and they are most analogous to the experiential propositions. [*Rem-Log*: 121]

In a paraphrase this definition might run as follows: intuited propositions are derived directly from the intuition of our intellect, with which we cannot by any means doubt their truth but to be certainly convinced in their truthfulness.

The above account brings out very clearly certain characteristics of primary propositions in Avicenna's system of derivative knowledge. First, they must be known immediately and directly and independent of inference from other propositions. Second, they must compel our certain conviction in their truthfulness without any room to doubt them. Third, they are logically indemonstrable propositions and have a very high degree of self-evidence. And lastly, they are of two kinds: some are purely empirical/perceptual and others are purely intellectual.

3.5 Concluding Remarks

In the foregoing discussion, I have endeavoured to provide, what can be considered, a complete account of judgement as Avicenna regards it as the second necessary and sufficient condition of knowledge. Unlike apprehension, this epistemic concept is more complex in its relations. Throughout the discussion, it took us through epistemology into psychology and its fundamental mental relations that involved in apprehension and judgement. From there it took us into metaphysics through the distinction of true and false judgement. And then it took us into logic through the examination of the relation between judgement, as one mental operation, and another mental process, i.e., reasoning, in which we inquired into what, according to Avicenna, makes a valid reasoning. From psychology and logic it took us to metaphysics again through the determination of the truth of the conclusion derived from

reasoning. Then from logic it took us back to psychology through our discussion of the emotion of judgement, and then into metaphysics in determining what makes our judgements and conclusion necessarily true and certain and finally returning back again to logic through the consideration of the logical necessity of inference.

Here is another way of making the preceding remarks: our knowing process begins with a simple mental process of apprehension, and followed by a more complex mental operation of judgement. This mental process involves some part of metaphysics when it comes to determining the truth of a judgement. From a true judgement we pass then to some other true judgements by reasoning. At this stage the knowing process enters into the province of logic. And at this stage also the cognitive process becomes more complex as psychology and logic inevitably come into close relations. This is due to the fact that there can be no reasoning without apprehension and judgement. All valid reasoning is based on existing true judgements and is supposed to yield true conclusions. This, however, cannot be taken for granted. The conclusions need to be checked against the real facts to ascertain its truth. In so doing, it enters once again into the province of metaphysics. Then the process reverts to psychology in its dealing with the emotion of conviction, capable of varying degrees, that arises with judgement. Here, at this stage, the process becomes even more complex as the judgement involved three different relations almost simultaneously—that is, the psychological, metaphysical, and logical relations. It involved psychological relation in the sense that the emotion of conviction is a

psychological attitude towards the judgement, and it involved metaphysical relation in the sense that there is no doubt that what the judgement stated corresponds to the real fact. And it involved logical relation in the sense that the new judgement follows necessarily from the premisses of reasoning.

It truly is the nature of our mind to extend from the known to the unknown and thus expanding the structure of our knowledge. It is in this sense that Avicenna speaks of derivative knowledge. This implies that our present knowledge is the result of innumerable reasoning from some kinds of original propositions which compel our certain conviction in their truth. However, it seems quite obvious from what has been said thus far that truth is one of the necessary and sufficient condition in Avicenna's analysis of knowledge. But as yet we do not really know the real sense in which Avicenna speaks of it. Therefore, it is with his conception of truth that I shall concern in the next chapter.

Chapter 4

Truth

4.1 Introduction

In the present chapter I turn to what Avicenna implicitly takes to be the third, and the final, necessary and sufficient condition in his philosophical analysis of knowledge—i.e., *truth*. Most philosophers unanimously regard this condition to be necessary for propositional knowledge given that it not only requires knowledge to be *factual*, which characterised *what is the case*, but also to be the primary goal in every area of rational and intellectual inquiry.²³⁸

In the light of our discussion in the previous chapter, this epistemic notion of truth is no less necessary in Avicenna's analysis of knowledge. It should be noted that the word *truth* here is equivalent to the Arabic word, *al-ḥaq*. Philologically speaking, scholars do not find any difficulty in rendering

²³⁸ Some philosophers, however, would regard truth as being little more than an illusion and does not have much use in our rational inquiry. See Richard Rorty, *Consequence of Pragmatism*, (Minneapolis: University of Minnesota Press, 2003), esp. Introduction, and "Trotsky and the Wild Orchids," *Common Knowledge* 1 (1992): 140-53, reprinted in *Philosophy and Social Hope*, (London: Penguin, 1999), Ch. 1; see also Stephen P. Stich, *The Fragmentation of Reason*, (Cambridge, MA: Bradford Books, MIT Press, 1990), esp. Ch. 5.

this Arabic word given the fact that it is ubiquitous in Arabic literature, including the Quran, and the word has the same general meaning in whatever context of its utterance. The word is also ubiquitous in Avicenna's works—given that it is his greatest duty, as a philosopher, to find the truth. To give only one instance, Avicenna's use of the word *al-ḥaq* can be found in the *Metaphysics of the Healing* (Bk 1, VIII, p. 38), where he defines what truth (*al-ḥaq*) is. But, it will be remembered, as I remarked in chapter Introduction, that hitherto we can hardly find any scholar working on Avicenna ever provides a systematic and comprehensive account of his conception of truth. It should also be noted that perhaps because they did not face any difficulty in rendering the word *al-ḥaq*, most scholars do not recognise the fact that Avicenna has different senses of the word truth in mind when he speaks of it in his works. As yet the only article that we can find dealing, and that is at best only indirectly, with Avicenna's conception of truth and its related issues is by Sari Nuseibeh almost thirty years ago.²³⁹ So, in developing a systematic account of Avicenna's conception of truth in this chapter, I will, on certain important points, respond to Nuseibeh's interpretation of them in that article.

The detailed plan of this chapter is conceived as follows. The discussion in Section 2 begins with a brief overview of some of the most important philosophical projects of developing an account of truth. After determining certain similarities of these projects to Avicenna's account I shall proceed, in Section 3, to examine what I take to be one of the implicit metaphysical aspects of his conception of truth, namely, the truth-bearers.

²³⁹ See Sari Nuseibeh, "Al-'Aql Al-Qudsī: Avicenna's Subjective Theory of Knowledge," *Studia Islamica* (1989): 39-54.

Section 4 moves on further to take up another implicit metaphysical aspect of Avicenna's conception of truth, that is, the truth relation. I take up further, in Section 5, a discussion on still another metaphysical aspect implicit in his conception of truth, namely, the truth-makers. Then, in Section 6, I examine the philosophical significance of Avicenna's conception of truth to the problems of the objectivity of knowledge and the subjectivity of cognition in his analysis of knowledge, and in his epistemology in general. And, finally, Section 7 recapitulates some of the most important points that emerge throughout the discussion.

4.2 Conceptions of Truth

Despite the fact that truth is so essential in Avicenna's conception of knowledge, his remarks on it are rather monosyllabic and scattered throughout his works. As a matter of historical fact, however, this is also true in Plato and Aristotle, especially the latter who played the most significant role in setting the debate on this issue and its importance in rational inquiry. It might be plausible that the concept of truth as defined by both ancient philosophers did not face serious objections, given the fact that later philosophers like Avicenna seems to take it for granted and never advances it further. Perhaps it is also plausible that they take truth to be a common sense and even a primitive concept that needs no explanation, and to attempt to do

that would be a folly.²⁴⁰ And we have to wait until the end of the nineteenth century and the first decades of the twentieth century for the advent of systematic theories of truth—with Moore and Russell in England, Charles Sanders Peirce and William James in the United States, and Franz Brentano, and later on Martin Heidegger, in Germany.²⁴¹ It may therefore not be out of place here to digress briefly to the debates on philosophical problems of truth in contemporary philosophy—at least since hundred years ago.

In constructing their theories, most philosophers seek to explain the concept of truth, its nature and its explanatory role, both in itself and in its relation to other philosophical issues such as knowledge, meaning, and logic. In doing so, they have to answer, among others, such questions as: What is truth? Does it have an underlying nature? And if it does, what is it?²⁴² Some philosophers, however, would say that the very first question about truth itself

²⁴⁰ For arguments on the futility of trying to explain the concept of truth, see Donald Davidson, “The Folly of Trying to Define Truth,” *The Journal of Philosophy* 93 (1996): 263-78.

²⁴¹ See Moore’s lectures in 1910-1911 published as “True and False Beliefs,” in G. E. Moore, *Some Main Problems of Philosophy* (London: George Allen & Unwin, 1953), 270-87; Bertrand Russell, “Truth and Falsehood,” in *The Problems of Philosophy* (Oxford: Oxford University Press, 2001 [1912]); Charles S. Peirce, *Collected Papers of Charles Sanders Peirce*, Vols. 1-6, ed. Charles Harshtone and Paul Weiss, (Vols. 7-8) ed. Charles Harshtone Paul Weiss and A. W. Burks (Cambridge, MA: Harvard University Press, 1931-1958); William James, *Pragmatism* [1907] in *William James: Writings, 1902-1910* (New York: The Library of America, 1987), esp. Lecture VI, Pragmatism’s Conception of Truth, and *The Meaning of Truth: A Sequel to “Pragmatism”* in *William James: Writings, 1902-1910* (New York: The Library of America, 1987). My readings on the twentieth century German philosophy, however, are limited. Perhaps, in Martin Heidegger’s scornful words (1999), I idolise intelligibility and facts above anything else. As far as I know, an early account of truth in contemporary German philosophy can be found in Franz Brentano’s works which draw heavily on Aristotle, “On the Concept of Truth” [1889], “On the Meaning of “*Veritas est Adaequatio Rei et Intellectus*”” [1915], and “On the Thesis: “*Veritas est Adaequatio Rei et Intellectus*”” [1915], all of which published under *The True and the Evident*, trans. Roderick Chisholm *et. al.* (London: Routledge and Kegan Paul, 1966); and later in Heidegger’s interpretation of Aristotelian alethic truth as “unconcealment” in his *Logic: The Question of Truth*, trans. Thomas Sheehan (Bloomington and Indianapolis: Indiana University Press, 2010 [1925/26]), *Being and Time*, trans. John Macquarrie and Edward Robinson (Oxford: Basil Blackwell, 1985 [1927]), and *Being and Truth*, trans. Gregory Fried and Richard Polt (Bloomington and Indianapolis: Indiana University Press, 2010 [1933/34]).

²⁴² These are not the only questions that philosophers trying to answer. For other variants of questions see, Richard Kirkham, *Theories of Truth: A Critical Introduction* (Cambridge, MA: MIT Press, 2001), 2.

is wrong. Rather, what should really be asked is, “what does it take for a proposition to be true?”²⁴³ And for some others, like John Austin, a proper and even handy question to be asked is “what do we mean by the word truth?”²⁴⁴ Given the intractable disputes about the nature of truth, as well as their empiricist and anti-metaphysical backgrounds, philosophers such as Frank Ramsey, A. J. Ayer, W. V. O. Quine, and P. F. Strawson, whose views are generally called *deflationism*, contended that the problem of the nature of truth is really a pseudo-problem given the fact that truth has no nature at all, and thus it should be abandoned altogether.²⁴⁵ Still, many other philosophers, who defend the traditional theories called *robust* theories of truth, maintained that truth is an important concept and requires substantive metaphysical explanation.²⁴⁶ As a matter of historical fact, since the last hundred years, some philosophers have attempted at different projects of developing robust theories of truth. And those attempts can be categorised into three major projects with their respective branches.²⁴⁷

²⁴³ See, for instance, C. J. F. Williams, *What is Truth?* (Cambridge: Cambridge University Press, 2009); A. C. Grayling, *An Introduction to Philosophical Logic* (Totowa: Barnes and Noble, 1982), 125; and Kirkham, *ibid*.

²⁴⁴ Perhaps it is worthwhile to quote Austin’s remarks here: “But philosophers should take something more nearly their own size to strain at. What needs discussing rather is the use, or certain uses, of the word ‘true’. In *vino*, possibly, ‘*veritas*’, but in a sober symposium ‘*verum*.’” See his “Truth,” in *Philosophical Papers*, ed. J. O. Urmson and G. J. Warnock (Oxford: Clarendon Press, 1961), 85; see also David O’Connor and Brian Carr, *Introduction to the Theory of Knowledge* (Minneapolis: University of Minnesota Press, 1982), 165.

²⁴⁵ See Frank Ramsey, “Facts and Propositions,” *Proceedings of the Aristotelian Society* 7 (1927): 153-70; Frank Ramsey, *On Truth*, ed. Nicholas Rescher and Ulrich Majer (Dordrecht-Boston-London: Kluwer Academic Publishers, 1991); A. J. Ayer, *Language, Truth, and Logic* (New York: Dover Pub., 1952), ch. 5; W. V. O. Quine, *Philosophy of Logic* (Englewood Cliffs: Prentice-Hall, 1970), 10-13; and P. F. Strawson, “Truth,” *Analysis* 9 (1949): 83-97. See also Michael P. Lynch, *The Nature of Truth: Classic and Contemporary Perspectives* (Cambridge, MA: MIT Press, 2001), Pt. VI., 483-611.

²⁴⁶ Some of the defences can be found in Michael Devitt, *Realism and Truth* (Princeton: Princeton University Press, 1997); and Willaim P. Alston, *A Realist Conception of Truth* (Ithaca, NY: Cornell University Press, 1996).

²⁴⁷ My discussion in the following paragraph draws largely on Kirkham (2001), 20-1, and 37.

The first is the *metaphysical project*. Philosophers working in this project attempt to determine what is truth, what is it for a statement, belief, or proposition, etc. to be true. It consists of three different branches: (I) *The extensional project*, which attempts to determine the necessary conditions (e.g. the reference, the denotation) for a statement, proposition, or belief, etc. to be a part of the set of true statements. Its leading proponents, to name only two, are Alfred Tarski and Saul Kripke, and their theories commonly called semantic theory of truth.²⁴⁸ (II) *The naturalistic project*, whose aim is to identify the necessary conditions in which a statement being true in any naturally possible world. (III) *The essence project*—the primary aim of which is to determine the necessary and sufficient conditions for statements (propositions and beliefs) to be true. Different theories have been developed within this project, and the most prominent among them are: the pragmatism of C. S. Peirce; the instrumentalism of William James; the correspondence theories of Bertrand Russell, G. E. Moore, and John L. Austin; the coherentism of Brand Blanshard; and the minimalism of Paul Horwich.²⁴⁹

The second is called the *justification project*, which attempts to identify some features of true and false statements by which the probable truth or falsity of the statement can be judged. This project has been the concerned among philosophers who adopt the foundationalist theories of epistemic justification, and to some extent among some earlier philosophers like F. H.

²⁴⁸ See Alfred Tarski, "The Semantic Conception of Truth," *Philosophy and Phenomenological Research* 4 (1944): 341–376; and Saul Kripke, "Outline of a Theory of Truth," *Journal of Philosophy* 72 (1975): 690–716.

²⁴⁹ For Peirce, James, Russell and Moore, see fn. 4; for Austin see fn. 7; for the first account of coherence theory of truth, see Brand Blanshard, *The Nature of Thought*, 2 Vols. (London: Allen & Unwin, 1939); and for minimal theory of truth see, Paul Horwich, *Truth* (Oxford: Oxford University Press, 1998).

Bradley, James and Blandshard.²⁵⁰ And lastly, is the *speech-act project*, which attempts to explain the locutionary or illocutionary purposes of the utterances that by their surface grammar appears to ascribe the property of truth to some statement (or belief, etc.). For example, the utterances like ‘Statement is true’. This project consists of two primary branches: (I) *the illocutionary-act project*, pursued by those who convinced that utterances have no locutionary purposes, and thus they attempt to explain what we are doing when we make some sort of utterances—as can be found in Strawson’s performative theory of truth;²⁵¹ (II) *the assertion project*, pursued by those who believed that utterances do have locutionary purposes, so they try to explain what we are saying when we make some sort of utterances—as can be found in the redundancy theories of Ramsey and C. J. F. Williams, and the prosentential theory of Dorothy Grover.²⁵²

Let us now return, after this brief excursion, to Avicenna and ask whether there is any resemblance, however cursory it may be, between his conception of truth and some of these theories. My answer is yes, to a certain extent.²⁵³ We can find, I suggest, the resemblance of his conception to the essence project or, to put it precisely, to the correspondence theories of

²⁵⁰ For the foundationalist conception of truth, see Keith Lehrer, *Knowledge* (Oxford: Clarendon Press, 1974) and Keith Lehrer, *Theory of Knowledge* (London-New York: Routledge, 1990); Roderick M. Chisholm, *Theory of Knowledge* (New Jersey: Prentice-Hall, 1989) and Roderick M. Chisholm, *The Foundations of Knowing* (Minneapolis: University of Minnesota Press, 1983); Timothy Williamson, *Knowledge and Its Limits* (Oxford: Oxford University Press, 2000); and Alvin Goldman, “What is Justified Belief?” in *Justification and Knowledge*, ed. George Pappas (Dordrecht: Reidel, 1979), 1-24.

²⁵¹ See Strawson’s “Truth,” in *Analysis*, Vol. 9. No.6, (1949), and “Truth and Knowledge,” in his *Analysis and Metaphysics: An Introduction to Philosophy* (Oxford: Oxford University Press, 1992).

²⁵² For Ramsey see fn. 8; for C. J. F. Williams see fn. 6; see Dorothy Grover, *A Prosentential Theory of Truth* (Princeton: Princeton University Press, 1992).

²⁵³ This, I hope, will become even clearer as we go further.

Russell, Moore, and Austin. Let me take the matter in a bit detail. In constructing their theories these philosophers have to expound some implicit metaphysical aspects of their position as follows: they have to explain what is that has the property of truth, or the *truth-bearer*; what is that correspondence, or the *truth relation*; and what is that to which it corresponds, or the *truth-maker*. For all his monosyllabic remarks about truth, Avicenna, at least as we have seen in previous chapters, does have something to say with regards to these metaphysical aspects. In what follows I shall turn to each aspect respectively.

4.3 Truth-bearers

The term *truth-bearers* refers to the things that can have the truth-value, that is, things that can be true or false. Despite the fact that the term is a contemporary jargon, thus could not be found anywhere in Avicenna's works, it does not mean that he never says anything about the sorts of thing that can be true or false. Before taking a look at what sort of things that he regards to be true or false, let me first turn to the twentieth century Analytic philosophy, from which this term originated. As can be expected, this issue is no less controversial among contemporary philosophers. There is an array of views that can be found in literature with regard to the issue of what sort of things that posses the truth-value, such as, to name only the most important ones.²⁵⁴

²⁵⁴ For further discussions of these viewpoints, see Kirkham (2001, ch. 2); Wolfgang Künne, *Conceptions of Truth* (Oxford: Clarendon Press, 2003), esp. ch. 5; and Mario Bunge, *Treatise on Basic Philosophy: Semantics II: Interpretation and Truth*, Vol. 2 (Dordrecht: Reidel, 1974), esp. ch. 8.

thought as truth-bearer (Frege, 1919)²⁵⁵; belief as truth-bearer (Russell 1912 [2001], 128-9); proposition and belief (with regard to proposition) as truth-bearer (Moore 1953, chs. 15 and 3); sentence type and sentence token as truth-bearer (Tarski, 1933 (p. 156) and 1969 (pp. 63 & 68)); idea as truth-bearer (James, 1987); judgment as truth-bearer (Blanshard, 1939); belief, assertion, and sentence token as truth-bearer (Chisholm 1989, 89); and utterance as truth-bearer (Quine, 1970); whereas some others, the deflationists, deny that anything can bear truth at all (Ramsey (1991), Strawson (1950), C. J. F. Williams (2009), Horwich (1998), etc.).

Returning to Avicenna, then, what sorts of thing that he takes to be the truth-bearers? At least from our discussions in previous chapters, we can see that he ascribes the word 'true' and its cognates to the following sort of things. (1) The mental entities, such as thought, judgement, and intuition, and opinion.²⁵⁶ (2) Linguistic entities such as utterance, expression, sentence, statement and proposition. From this it follows therefore that Avicenna's truth-bearers include all the views (except the deflationary theory) stated above. The view such like this is what Kirkham (2001, 59-63) calls a *tolerant attitude about truth-bearers*. For it refuses to take the dogmatic attitude that takes only one or two kinds of entities that can really bear truth-values, instead, in principle, it puts no limitations on what kinds of entities that can be true or false. Since the motivation for Avicenna's analysis of knowledge concerns over whether and how—namely, the conditions for—thought, judgement,

²⁵⁵ Gottlob Frege, "The Thought: A Logical Inquiry," trans. A. M. and Marcelle Quinton, *Mind* 65 (1956): 289-311.

²⁵⁶ Though Avicenna says sense perception is always true, I do not include it here because what he means is that the sense perception receives the forms of things as they are, and thus no judgement involved in this relation.

utterances, sentences, statements, and propositions can be true, our present discussion will focus only on the linguistic entities. In this way I shall subsume the mental entities such as judgement and thought under linguistic entities for two reasons: firstly, Avicenna himself regards expression/utterance, sentence, statements as the ways by which thoughts are expressed;²⁵⁷ and that judgements, it will be remembered from our discussion in Chapter 3, are mostly expressed by propositions; secondly, it can be remembered from our discussion on concepts and words in Chapter 2 that our mind can only grasp and arrange concepts in their linguistic expression.²⁵⁸

It seems *prima facie* that Avicenna ascribes truth and falsity to a myriad of linguistic entities—utterance, sentence, statement, and proposition. But perhaps to take this multiplicity at face value might be deceptive. For there is, according to him, certain quality that makes such entities to bearing truth-value. Let us now turn to each entity in some details.

(1) *Expression/Utterance, sentence and statement.* The first linguistic item that Avicenna assigns the truth-value is utterance. But not all sorts of utterance, however, can be assigned the truth-value, as Avicenna says, among others:

Know that the expression and impressions that are in the soul are sometimes simple and sometimes compound, and the object in them both is correspondingly parallel. So, just as the simple intelligible is neither real nor unreal, likewise the simple

²⁵⁷ To assist our memory, see *Rem-Log*, 48.

²⁵⁸ Again, to help our memory, see *Introduction*, 23; cf. Inati's introduction to *Rem-Log*, 12.

expression is neither true nor false. Just as, when another intelligible is connected to a simple intelligible in the intellect and is predicated of it, where it is judged that it is thus or is not thus, the judgement is real or unreal, likewise the simple expression, when another expression is connected to it and predicated of it, where it is said then that it is thus or is not such, is true or false. Truth and falsity may be also in another mode of composition, which we shall explain. So names and verbs in (verbal) expressions are comparable to the simple intelligibles in which there is neither differentiation nor composition. In them separately there is neither truth nor falsity. [*Interpretation*: 30-31]

Several aspects of this passage deserve comment. Firstly, Avicenna distinguishes two kinds of expression: simple expression and compound expression. An expression is simple when it only “signifies a meaning, while no part of it signifies in itself any part of that meaning” (*Deliverance*, 5). In other words, simple expression includes such things like concepts, names, words, and verbs. Every concept, name, word or verb signifies its particular meaning, for example, the word “man”, which signifies nothing if we break it into its parts like “m-a-n.”²⁵⁹ Apart from apprehending its meaning, no ascription of truth or falsity is possible with regards to simple expression. It is obvious now that only the compound expression that can be true or false. It is an expression consists of parts from which the whole meaning of it is composed (*Deliverance*, 5). Or to put it more precisely, a compound expression is made up of several words, and in which something is said about something. Now, besides apprehending the meaning of a compound

²⁵⁹ See also, *Deliverance*: 5; *Rem-Log*: 51.

expression, we can also ask whether what it says about is true or false. Secondly, compound expression, however, can be well formed or ill formed and can be complete or incomplete. If it is ill formed or incomplete it then lacks of any significance, and it therefore devoid of truth-value. Avicenna says,

A compound expression differs from a single one and it is called “a sentence.” Under the latter is included a complete sentence and an incomplete sentence.

A complete sentence is one in which every part is an expression having complete signification, whether noun or verb...

Examples of an incomplete sentence are “in the house” and “not a human being.” A part of [expressions] such as these two is intended to have signification, but one of the two parts, such as “not” and “in,” is a particle of which there is no full comprehension unless linked [to another term]. Thus one who says, “Zayd [is] in” or “Zayd [is] not,” does not fully signify what one [intends] to signify in one’s example, unless one adds “in the house” or “not a human being.” This is so because “in” and “not” are two particles, different from nouns and verbs. [*Rem-Log*: 51-52]

Still, thirdly, Avicenna asserts that not every complete, well form sentence (utterance or statement) can be ascribed a truth-value. Some are neither true nor false. Among them is such an utterance like, “Come with me to the mosque” (*Dan-Log*: 21). This is obviously a sentence but it is neither true nor false. A sentence that is true or false is an *assertoric* sentence or an assertion—that is, it asserts something about something—and that the utterer

may be true or false in what he says (*Rem-Log*, 77). It does not follow, however, that every assertion is true or false. For some assertions, according to Avicenna, are neither true nor false:

As for the utterer of something like interrogation, request, wish, aspiration, wonder, etc., he is not called “truthful” in uttering such expressions, or “a liar,” i.e., inasmuch as they express an assertion. [*Rem-Log*: 77]²⁶⁰

Now we have seen that for a linguistic entity to bear a truth-value, it is not sufficient for it to be merely a complete, well formed sentence and has a statement-making potential. For, in the last analysis, what makes it bears a truth-value, for Avicenna, is that we can reasonably ask whether it is true or false (*Dan-Log*, 20). I have noted above that Avicenna takes a tolerant attitude about truth-bearers as long as such linguistic entities meet all these properties to be ascribed a truth-value. Despite that he would insist that there is one linguistic entity that never fails to have these properties especially with regard to our main concern here—the propositional knowledge—that is proposition. This brings us to the next point.

(II) *Proposition*. Our discussion in the last chapter on judgement has, I hope, already made it evident that propositions are the primary truth-bearers

²⁶⁰ This view follows Aristotle’s in *De Interpretatione*, “Every sentence is significant (not as a tool but, as we said, by convention), but not every sentence is a statement-making sentence, but only those in which there is truth or falsity. There is not truth or falsity in all sentences: a prayer is a sentence but is neither true nor false” (16b33-17a4). Also worth noting is the fact that this view is not to be found in Avicenna’s *Interpretation*, but in the work which has been generally regarded as breaking away from the Aristotelian tradition. Scholars working on the relationship between Avicenna’s works and the Aristotelian tradition might have something to say about this.

in propositional knowledge. For it is proposition that form the content of our knowledge, judgement, and reasoning. In fact, our judgement, either it is true or false, can only be expressed by proposition. Now, let me examine further Avicenna's conception of proposition as bearer of truth-value.

A proposition is a compound expression which, when hearing it uttered, you can ask yourself whether the expression is true or false. For example, when someone says, "In this community we have reward and punishment," you may say that it is true. Or if someone says, "Man is a flying animal," you may say that this not so. If someone says, "Whenever the sun rises there is day," you may say this is the case. If someone says, "One can see the stars in the bright sunlight," you may say this is not true. And if someone says, "Number are either black or white," you may answer this is not the case. [*Dan-Log*: 20-21]

This passage brings out very clearly that proposition is a linguistic construct expressed by linguistic objects, namely sentence. Like all other types of sentences (such as phrase, statement and assertion) proposition have a sense and a reference. But, unlike others, only proposition in any case has a determinate truth-value.²⁶¹ Avicenna in fact has an elaborate classification of the types of proposition.²⁶² There are two main types of propositions: *predicative propositions* and *conditional propositions*, which in turn subdivided

²⁶¹ Wilfrid Hodges in his "Avicenna on Affirmative and Negative" (wilfridhodes.co.uk), points out that for Avicenna, at least in his *Categories* and *Interpretation*, affirmation and denial, have to do with sentences. I am no logician or expert in Avicenna's logic, but in light of what I have presented above it is only proposition in any event can be true or false.

²⁶² For further discussion of Avicenna's classification of proposition, see Inati's introduction to her translation of *Rem-Log*; Tony Street, "Avicenna on the Syllogism," in Peter Adamson ed. *Interpreting Avicenna: Critical Essays* (Cambridge: Cambridge University Press, 2013), 48-70; Nicholas Rescher, *Studies in the History of Arabic Logic* (Pittsburgh: University of Pittsburgh Press, 1963), esp. ch. 8; and Wilfrid Hodges, "Avicenna on Affirmative and Negative," wilfridhodes.co.uk.

into *connective* and *disjunctive conditional propositions*. A detailed discussion of all types of propositions is, however, a mammoth task that goes far beyond the ambit of this chapter. Thus I beg leave rather to take up a discussion on the predicative propositions.

A predicative proposition is a sentence in which something is asserted of something and by which a judgement that something or other is the case or is not the case is expressed (*Dan-Log*, 21-22). Proposition is essentially constructed in a subject-predicate structure, and the assertion takes place by means of the copula (*rābiṭa*). To be more precise, predicative proposition has at least three parts: the *predicate*, the *subject*, and the *copula*. Avicenna defines them as follows:

The predicate is that which is judged to exist or not to exist for another thing. [*Deliverance*: 16]

The subject is that about which it is judged whether some other thing exists or does not exist for it. An example of a subject is 'Zayd' in our statement, "Zayd is a writer." And an example of a predicate is 'writer' in our statement, "Zayd is a writer." [*Deliverance*: 16]

It must be known that every predicative proposition must have, in addition to the idea of the subject and that of the predicate, an idea of the union between the two. This is a third idea in addition to the other two. If one presumes that words correspond to ideas in number, then this third [idea] must have a third word signifying it... This word is called *copula*. [*Rem-Log*: 84]

For instance, the proposition, “Human being is an animal.” The part of the proposition about which we are making an assertion, that is ‘Human being’, is the subject. It may signify either a singular or a general object—in this case ‘human being’ is a general, and a singular is like *Zayd* (*Dan-Log*, 23). The part of the proposition which makes an assertion about the subject, that is ‘is animal’, is the predicate; and it signifies only a universal. And the copula is the part of the proposition, that is ‘is’, and it combines with the predicate to form the predicative expression that is an utterance of ‘is animal’. Avicenna also notes that in some languages, like Arabic, the copula can be omitted and the sentence is equivalent to a predicative proposition that do contain one. This he calls a *bipartite proposition* (*thunā’ī*) (*Deliverance*, 21). Take, for example, the proposition, “*Zayd kātib*” (*Zayd a writer*), when it should be said “*Zayd huwa kātib*” (*Zayd is a writer*). There is, of course, a similarity between this view and that of Aristotle since the copula can also be omitted in Greek, where he says: “there is no difference between saying that *a man walks* and saying that *a man is walking*” (my emphasis).²⁶³ But in some languages like Persian and English this word cannot be omitted. For instance, in original Persian, the word “*ast*” (is) cannot be omitted from the proposition “*Zayd dabīrast*” (*Zayd is a writer*) (*Rem-Log*: 84).²⁶⁴ Similarly, in English, our saying “*Zayd is a writer*” is not equivalent to saying “*Zayd a writer*,” and our saying “*a man walks*” is not equivalent to saying “*a man is walking*.”

²⁶³ *De Interpretatione*, 21b9. See Ackrill’s commentary on chapter 3 of *De Interpretatione* in Aristotle, *Categories and De Interpretatione*, trans. J. L. Ackrill (Oxford: Clarendon Press, 2002), 118-124. See also, Paolo Crivelli, *Aristotle on Truth* (Cambridge: Cambridge University Press, 2004), 10.

²⁶⁴ See also, *Deliverance*, 21.

Every predicative proposition is either *affirmative* or *negative*. For instance, if the proposition “Man is an animal or “Man is not an animal,” asserts what is the case, then it is affirmative; if what the proposition asserts is not the case, then it is negative (*Dan-Log*, 22). Some predicative propositions may have further parts besides the subject, the predicate, and the copula. They may contain either a *negative particle* (the word ‘not’, as in the proposition “Man is not an animal”) or a *quantifier* (*sūr*),²⁶⁵ a word that determines the quantity of the subject, such as ‘every’, ‘none’, ‘some’, and ‘not all’ (*Deliverance*, 18). Let us turn first to negative particle. In Arabic, if a negative particle precedes the copula, as in the normal, tripartite (*thulāthī*) proposition, “*Zayd laisa huwa baṣīran*” (Zayd is not sighted), the proposition is a negative since the negative particle has been added to the copula, it eliminates and negates it. But if the copula precedes the negative particle, it joins the latter with the predicate, and that makes the proposition an affirmative, as in saying, “*Zayd huwa ghayr baṣīr*” (Zayd is non-sighted) (*Deliverance*, 23; *Rem-Log*, 84).²⁶⁶ In the case of bipartite proposition, however, a proposition can only be determined whether it is an affirmative or a negative in two ways: the intention of the speaker and the knowledge of linguistic convention (*Deliverance*, 23).

²⁶⁵ My use of *quantifier* here follows Asad Ahmed’s and Allan Bäck’s rendition of *sūr*. Inati renders *sūr* as quantity indicator, and Farhang Zabeeh in his translation of *Dan-Log* leaves the word without rendition. See also, Ahmad Hasnawi, “Avicenna on the Quantification of Predicate (with an Appendix on [Ibn Zur’a]),” in *The Unity of Science in the Arabic Tradition: Science, Logic, Epistemology and their Interactions*, Shahid Rahman et. al., ed. (Dordrecht-London: Springer, 2008), 295-328.

²⁶⁶ In English, the negative particle is added to the copula, not by preceding but by following it, for example, we say, “Human being is not a stone,” and not “Human being not is a stone.” See further Inati’s note in *Rem-Log*, 84, fn. 27.

Let me now turn to quantifier. Avicenna has an elaborated classification of propositions in regard to quantifier. Initially, he divides propositions into two main categories based on their subjects—as has been indicated a moment ago: *singular* (*makhṣūṣa*) and *general* (*kullī*) propositions.²⁶⁷ Propositions are singular if their subjects signify a particular object, and they may be either affirmative or negative. Propositions are general if they signify the many either in regard to existence such as human being or many with regard to what imagination allows such as the Sun (*Deliverance*, 6). *General propositions* are divided into two subcategories: *indefinite* (*muhmala*) and *quantified* (*maḥṣūra*) propositions. As for *indefinite propositions* they may be either affirmative or negative, and they are always particular and we cannot know for certain whether they are about some or all class of the object signified due to the indeterminacy of their quantifier, as Avicenna says:

For if you say, “Men are so and so,” you may mean all men or some men, because all men can be called man and also some men can be called man. It is at least certainly true that the proposition refers to some men, but it is not certain that it refers to all. If you say, “Some men are so and so,” it is not necessary that some others are not so and so. If the proposition is about all, it is also about some. Nor is it quite certain that it is about all, but without doubt the proposition is about some. [*Dan-Log*: 23-24]²⁶⁸

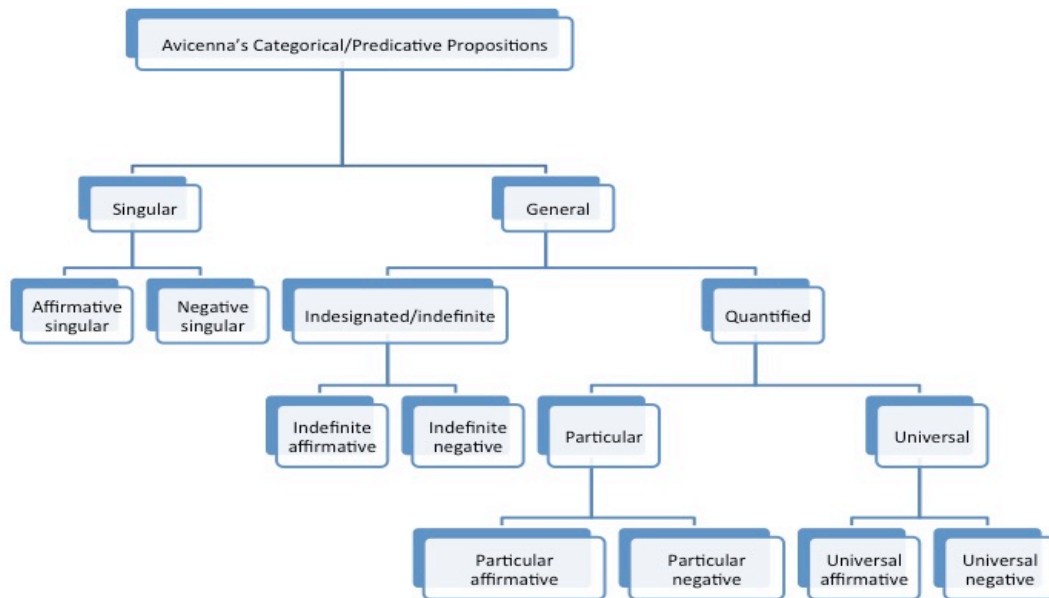
²⁶⁷ For this first, main category, Inati uses the terms *individual* and *universal* in her translation of *Rem-Log*, (see, p. 52), while Ahmed uses *singular* and *universal* in his translation of *Deliverance* (see, p. 6). In contrast, I adopt a Russellian theory of proposition (or description), which basically divides propositions into singular and general based on the quantification of the subject or the object signified. And it is in the classification of general propositions that I use the terms *particular* and *universal* in order to avoid redundancy of terms.

²⁶⁸ See also *Rem-Log*, 81-2; *Deliverance*, 17. For soon to be apparent reasons, it must be noted that this passage corresponds to Aristotle’s *Prior Analytics*, I.1 24a15–20.

Again, Avicenna divides *quantified propositions* into two subcategories, namely, *particular* and *universal propositions*; and both in turn are further divided into an affirmative and a negative subordinate group. Thus, particular propositions are divided into *particular affirmative* and *particular negative propositions*; and *universal propositions* are divided into *universal affirmative* and *universal negative propositions*. The particular affirmative propositions are that which assert affirmatively about some members of the class of things referred to. For example, the proposition “Some people are writers,” and the quantifier here is the word ‘some’ (*Dan-Log*, 23). The particular negative propositions are that which assert negatively about some members of the things signified. Examples are such like the propositions “It is not the case that some men are writers,” “Not all people are writers,” “Not any man is a writer,” and “Not each man is a writer.” In these cases, the negative particles are combined with the quantifiers such as ‘not all’, ‘not everyone’, and ‘not each’ (*Dan-Log*, 23). The universal affirmative propositions are the affirmative assertions about the whole subject, such as when we say, “Whatever is a man is an animal,” and “Every man is an animal,” in which the quantifiers are such words as ‘whatever’ and ‘every’ (*Dan-Log*, 23). And the universal negative propositions are that which assert negatively about the whole subject, e.g., “No man is mortal,” in which the word ‘no’ is the quantifier (*Dan-Log*, 23).

To recapitulate, there are eight kinds of predicative propositions: (1) affirmative singular, (2) negative singular, (3) indefinite affirmative, (4) indefinite negative, (5) particular affirmative, (6) particular negative, (7) universal affirmative, and (8) universal negative.

Diagram 5: Avicenna's System of Categorical/Predicative Propositions



It must be noted that although the affirmative and negative singular propositions can be ascribed a truth-value, they are not, according to Avicenna, useful in philosophical or demonstrative knowledge which concerns only with universal aspects of things. And he asserts that we should avoid making indefinite statements either affirmatively or negatively for they will only bring confusions (*Dan-Log*, 24). I do not know why Avicenna regards these kinds of statements as propositions in the first place. In the light of our discussion in the previous chapter on the demonstrative reasoning that yields certain conviction, these propositions can hardly serve as premisses of inference. We can, I think, arrive at certainty out of doubt à la Descartes. But I do not convince that we could obtain certain and necessary judgement out of confusion. Furthermore, either in science or in life, reasoning with confused people is nothing but a waste of time. Despite the fact that indefinite

statements are complete sentences and assert about something, they do not fit Avicenna's own definition of propositions as sentences by which the question of true and false can be properly asked. It really makes me wonder why we can only find his explicit rejection of this kind of statement, that it can neither be regarded as proposition and nor can it serve as premisses of inference, in the Logic section of *Danesh-Name*—and that is only in a very brief remarks. In another work, *Deliverance*, we can find his rejection of this kind of statement at best only implicitly, where he lists only four kinds of propositions—the universal affirmative, the universal negative, the particular affirmative, and the particular negative—from which we can obtain premisses for reasoning. In fact, to be able to see this we need to compare his accounts of predicative proposition in all his logic books. Even in *Pointers*—a book generally regarded as the last of his major works and the zenith of his philosophical thought after decades of philosophical and logical reflections—where we would expect him to dismiss it completely from his account, we still find him following this particular Aristotelian model in his account of proposition. In the last pages of this work, he writes:

[Error may occur in a syllogism] ... because of overlooking what attaches to predication that has been mentioned... Thus you find that the causes of fallacies are limited to equivocation in expression, be that simple or composite in its substance, to the form and declension of the expression; and to the division of the composite and the composition of the divided... [*Rem-Log*: 160]

This is, indeed, the best that we can find for his rejection of indefinite statements in this work. It is quite disappointing to know that his earlier

rejection in *Danesh-Name* is more explicit and decisive than the one in his last major work. It is even more disappointing that it does not require us to be a logician to notice the inconsistency in his views on this particularly minor point in regard to proposition and to know that indefinite statements are not propositions and of no use in demonstrative reasoning which yields certain and necessary conclusions. I am not sure, however, whether or not other scholars in the field of Avicennian logic have addressed this point. But I do hope that some of them have addressed it somewhere. Perhaps, to look at this from another angle, Avicenna is trying to act as a faithful disciple of Aristotle by taking this point into account in most, if not all, his logic works. Perhaps he does not want to take issue with this point and just following the customary practice of the Aristotelian philosophers, as he remarks somewhat faithfully, “Examples of these propositions are perverted, and there are not many benefits in enumerating or studying them. Still custom warrants their mention” (*Interpretation*, 79). As a matter of historical fact, however, some modern Aristotelian commentators and logicians have also repudiated the significance of this kind of statements both in logic and in Aristotle’s theory of syllogism. The first among them is Jan Łukasiewicz, who says that indefinite statements are of no importance in the Aristotelian system of logic.²⁶⁹ This, then, followed by J. L. Ackrill, who, in his commentary of Aristotle’s *De Interpretatione* (1963), remarks somewhat regretfully, that:

It is a pity that Aristotle introduces indefinite statements at all.
The peculiarity of the indefinite statement is that it lacks an

²⁶⁹ See Jan Łukasiewicz, *Aristotle’s Syllogistic from the Standpoint of Modern Formal Logic*, 2nd enlarged ed. (Oxford: Clarendon Press, 1975), 5.

explicit quantifier (there is no indefinite article in Greek and the word-for-word translation of Aristotle's sentence is 'man is white'; 'a man is white' seems, however, to come closer to the force of the Greek sentence). It may on occasion be intended universally ('what is being revealed may be contrary', 17b8). But since Aristotle does not exploit this, but treats indefinite statements as logically equivalent to I and O statements, he might as well have dispensed with them altogether and confined his attention to A, E, I, and O forms.

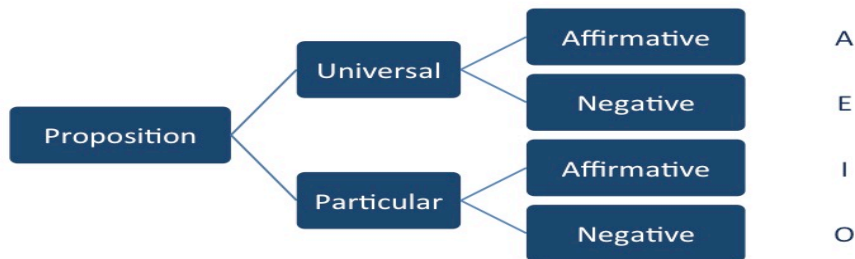
As also a matter of historical fact, since the early nineteenth century most logicians began to dismiss and even discard this doctrine from the canon of logic. For example, John Stuart Mill regards the doctrine as a mistake.²⁷⁰ And by the first decades of the twentieth century this doctrine has been banished completely from logic textbooks.²⁷¹ For all his shortcomings in regard to this minor logical point, Avicenna is right, even today, in asserting that there are only four kinds of proposition that can be ascribed truth-value and thus pertinent to propositional and derivative knowledge: universal affirmative (A-proposition); universal negative (E-proposition); particular affirmative (I-proposition); and particular negative (O-proposition).²⁷²

²⁷⁰ See J. S. Mill, *A System of Logic* (London: Macmillan, 1970 [1843]), 54. See also, W. Stanley Jevons, *Elementary Lessons in Logic* (London: Macmillan, 1888 [1870]), 65. For a history of the logic of indefinite statements from Aristotle via medieval and Renaissance eras to the end of nineteenth century, see E. M. Barth, *The Logic of the Articles in Traditional Philosophy: A Contribution to the Study of Conceptual Structures* (Dordrecht-Boston: D. Reidel, 1974), esp. Ch. 4.

²⁷¹ See, Alfred Tarski, *Introduction to Logic and to the Methodology of the Deductive Sciences* (Oxford: Oxford University Press, 1994 [1941]), Wesley C. Salmon, *Logic* (New Jersey: Prentice-Hall, 1963); W. H. Newton-Smith, *Logic: An Introductory Course* (London: Routledge, 1985); Wilfrid Hodges, *Logic* (London: Penguin Books, 1980); and Paul Tomassi, *Logic*, (London: Routledge, 1999).

²⁷² See *Deliverance*, 74; *Dan-Log*, 24.

Diagram 6: Types of Propositional Truth-bearers



4.4 Truth Relation

Let me turn now now to the next metaphysical aspect in Avicenna’s theory of truth. The truth relation can be roughly said as the criteria by which it can be judged whether a truth-bearer is true or false. Every theory of truth has its own criteria such as pragmatic, coherence, relational etc. Let us see now what Avicenna takes to be a truth relation in his theory:

As regards truth, it can be understood as existence in external world... and it can also be understood as the state of proposition or belief signifying the state of affairs (*ḥāl*)²⁷³ in the external world, if it *corresponds* (*muṭābaqa*)²⁷⁴ with it, such that we would say, “This is a true proposition” and “This is a true belief”... As for the truth as correspondence, it is the same as truth in the above sense, except that, I reckon, it is *veracious* in

²⁷³ This term can also be rendered as *fact*. It corresponds to the Greek *pragma*. I will return to this point in a moment.

²⁷⁴ *Muṭābaqa* can also be rendered as agreement, correlation, conformity, etc.

terms of its relation (*nisba*) to a state of affairs and *true* in terms of the relation of the state of affairs to it. [*Metaphysics*: 38-9]

In a paraphrase the passage might run like this: the truth of a proposition consists in a relation which it obtains to a fact in the world—and it is false if this relation does not obtain. The relation in question is what Avicenna calls a ‘correspondence’ or ‘agreement’. There are, however, two kinds of correspondence proposed by correspondence theorists: correspondence-as-*isomorphism*/congruence and correspondence-as-correlation. The former claims that there is a structural isomorphism between truth-bearers and the facts to which they correspond when the truth-bearer is true (Kirkham 2001, 119). In this regard, then, the elements of propositions or judgements mirrors or pictures or maps one-to-one the elements of facts in such a way like a map mirrors the structure of that portion of the world of which it is a map. It is precisely because of this isomorphism that the truth-bearer and the fact can be said to correspond with each other. On the contrary, correspondence as correlation says that every truth-bearer is merely correlated to a state of affairs it signifies. If the state of affairs to which a given truth-bearer is correlated actually obtains, then the truth-bearer is true—and false if it does not obtain (Kirkham 2001, 119). On this view, therefore, the truth-bearer does not mirror, picture, or in any way structurally isomorphic with the state of affairs to which it is correlated. Francis Cornford and Kirkham suggest that Plato can be regarded as espousing a correspondence-as-isomorphism theory at *Sophist* 262E-263D.²⁷⁵ Again, Kirkham suggests that Aristotle was

²⁷⁵ See Francis M. Cornford, *Plato's Theory of Knowledge: The Theaetetus and The Sophist of Plato Translated with a Running Commentary*, (London: Routledge & Kegan Paul, 1935), 309-17; and Richard Kirkham, 120. I do not wish to contest their suggestions here, since it

the first to propose correspondence-as-correlation theory with his remarks in *Metaphysics*, “To say of what is that it is not, or of what is not that it is, is false, while to say of what is that it is, and of what is not that it is not, is true” (1011b26). Paolo Crivelli (2004), however, takes this account of truth to be correspondence-as-isomorphism.

Coming back to Avicenna, however, we may ask to which kind of correspondence does Avicenna’s theory belong. As an answer, I would like to suggest that to a certain extent there are some mental entities that have structural isomorphism with facts. These are the forms and essences of things in external reality which we intellectually apprehended. We read in his *Metaphysics*, that:

Animal, then, taken with its accidents, is the natural kind. What is taken in itself is the nature, of which it is said that its existence is prior to natural existence [in the manner of] the priority of the simple to the composite. This is [the thing] whose existence is specified as being divine existence because the cause of its existence, inasmuch as it is animal, is the providence of God, exalted be He. As regards its being with matter and accidents and this individual—even though through the providence of God, exalted be He—it is due to the particular nature. And, just as in existence animal has aspects above the one, likewise [it has them] in the mind. For there is in the mind the form of animal abstracted in the manner of abstraction which we have mentioned, and in this respect it is called

would go beyond the ambit of this chapter. However, I would like to point out that Plato’s remarks in the dialogue that, “Stranger: And the true one states about you the things that are (or the facts) as they are... Stranger: Whereas the false statement states about you things different from the things that are,” are barely different from Aristotle’s as we will see in a moment. But if we take Plato’s theory of form into account these identifications may be true.

intellectual from. There is also in the mind the form of animal with respect to what corresponds in the mind (in terms of one specific definition) to many concrete instances. As such, the one form would be related in the mind to a plurality. In this respect it is a universal, being an idea in the mind whose relation to whatever animal you take does not differ. In other words, whichever [of these instances you take] whose representation is brought to the imagination in any state—the mind thereafter abstracting its pure meaning from accidents—then this very form is realized for the mind. This form is what is realized as a result of abstracting animality from many any particular image, taken either from an external existent or from something that plays the role of an external existent—even if it itself does not exist externally but [is something] the imagination invents. [*Metaphysics*: 156]

And, in the next couple of pages, he goes on to write, that:

It has thus become clear that it is impossible for [a] nature to exist in the concrete and to be a universal in actuality—that is, that it alone is common to all [things of the kind]. [Rather], universality occurs to some nature if [such a nature] comes to exist in mental conception. As for the manner in which this takes place, you must reflect on what we have said in the *Psychology*. That [aspect] of “the human” that is intellectually apprehended in the soul is the universal. Its universality [however] is not due to its being in the soul but due to many individuals, existent or imagined, that are governed for it by the same governing rule.

As for the fact that this [universal] form is a disposition in a particular soul, it [itself] is one of the individuals that are the objects of knowledge or conceptions. And, just as the one thing

can be a genus and a species through different considerations, similarly, through different considerations, it can be a universal and a particular. Thus, inasmuch as this form is some form among the forms of the soul, it is a particular. And, inasmuch as many share [common characteristics] with it in one of the three modes we have previously explained, it is a universal. There is no contradiction between these two things. [*Metaphysics*: 159]

In the light of this lengthy quotation from *Metaphysics*, a view asserted time and again with different emphasis and locution in most of his works, it is evident that Avicenna believes that the external reality consists of some kind of facts, and that the ideas about them in our mind pictures or maps one-to-one to the facts. Metaphysically speaking, all these are made possible by what Avicenna calls the *Giver of Forms*—from which things receive their essences that make them what they are and by which it is possible for human reason to apprehend these essences (*Metaphysics*: 334-8).²⁷⁶ This point warrants further considerations. Firstly, as I have pointed out earlier in Chapter 1, this view is purely speculative and only holds within Avicenna's speculative cosmology. Nevertheless, it is indubitable that we do know the essence of certain things, for example, the essential nature of rationality in human beings—and we do know that this idea about human beings truly corresponds to them. Secondly, all these essences are what Avicenna calls intelligible ideas/concepts, and in the light of our discussion above, they are not the truth-bearers. Lastly, let me offer a conjecture. The isomorphic correspondence between these ideas and the facts only holds as long as we

²⁷⁶ Cf. Jules Janssens, "The Notions of *Wāhib al-Ṣuwar* (Giver of Forms) and *Wāhib al-'Aql* (Bestower of Intelligence) in Ibn Sīnā," in *Intellect and Imagination in Medieval Philosophy*, ed. M. C. Pacheco and J. F. Meirinhos (Turnhout: Brepols Publishers, 2006), 551-62.

apprehend them as such. Once we baptised them by giving them names this structural isomorphism will subsequently cease to exist, and therefore become correlative. Avicenna, I think, would say that there is nothing natural about the correlation between these ideas and facts. This correlation is merely a result of linguistic conventions, which themselves are the results of the historical development of the language. This is perfectly evident in the following remarks, and for soon to be apparent reasons, I beg leave to quote them in full:

...So what arises by sound signifies what is in the soul, namely, what are called impressions (*āthār*). Those in the soul signify objects and are called senses (*maʿānin*), that is, the intentions (*maqāṣid*) for the soul, just as impressions in comparison to expression also are senses...

Whether the expression be an inspired and revealed object whose teaching from almighty God is primary, or whether nature has proceeded in specifying a sense by a sound more appropriate for it, just as the sand grouse (*qaṭan*) is called 'sand grouse' through its sound, or people have met and made a convention, or an instance of this has come before and then is transformed little by little into something else where it is not noticed, or some of the expressions occur in one way, and others in another—still they are signified by convention. I mean, it is not necessary for a single man to make some expression to be reserved for some sense, nor does the nature of men bring them to it. rather (those men) following or contemporary with them have made a convention on that, and kept it up, inasmuch as, if we imagined that it happened to the first [man] the imagination to use, instead of the expression that he did use, another one, [be it] inherited or invented, which he invented and

taught to the second [man] so that his use about it would be judged to be like his judgment about the former [expression], and so that, if there were a first teacher, men would come to know these expressions. Still they arrive at it from God Almighty, through an imposition from him or in some other way, however you like... [*Interpretation: 27-8*]

So the acquaintance [with things] persist through the significations of expressions by reason of a [mutual] consent of speakers that is not necessary so that, even though we impose it in virtue of the first teacher necessarily from God or in some other way, still it is conventional in virtue of (their) collaboration. So the reception [of the conventional signification] of the second (man) from the first is inasmuch as the first one has said to him: Such is meant by such—or he performs an action providing an instance of the institution [of the name], and the like. Then the second and the third (man) agree with him on it without being required that they appoint that expression for that sense and that they appoint the same expression for the same sense... [*Interpretation: 28*]

The sense of the signification of the expression is that, when the sound of a name is inscribed upon the imagination, a sense is inscribed upon the soul. Then the soul discovers that this conception has this sound. Then, whenever perception brings it to the soul, (its) attention (is) on its sense. [*Interpretation: 28*]

Moreover, the signification of what is in the soul of states of affairs is a natural signification that does not differ, either in what it signifies or in what is being signified, just as with the signification between the expression and the mental impression in the soul. So, even though what is being signified is not different, still what signifies differs, where it is not like the signification between the (verbal) expression and the written

one. So in general what signifies and what is being signified may differ. [*Interpretation*: 29-30]

So the name is not a name in its own nature. Rather it becomes a name when it is made a name. That is whenever a signification is intended for it and then it becomes significative. That makes it a name, that is, makes it significant of an attribute. [*Interpretation*: 37]

From what has so far been said, it seems to me that Avicenna believes that truth consists in a relation between propositions/judgements and concepts and the real facts or states of affairs in the world. Proposition in the sense in which Avicenna speaks of it is an assertive speech-act made by, or information conveyed by, a statement-making or declarative sentence, in which a meaning can be ascribed. And it is this meaning that makes the proposition corresponds to particular fact or state of affairs in the world.²⁷⁷ On this view, a proposition is true when it describes truly (*ṣādiqa*) the particular fact to which it is correlated. In other words, a proposition is true if and only if the sentence used to make the proposition describes truly the particular fact to which it particularly refers. It is interesting that Avicenna identifies truth with veracity (*ṣādiqa*), which is synonymous to trustworthy and reliability. This insight, I reckon, is compatible with our intuition that truth implies accuracy, trustworthy, and reliability—and thus makes it indispensable prerequisite for understanding Avicenna's conception of truth. Now, we need to ask, what makes a statement or proposition to be trustworthy or reliable. The answer is obviously that when it accurately describes the way the things are. If a

²⁷⁷ See also Nabil Shehaby's commentary in his *The Propositional Logic of Avicenna* (Dordrecht-Boston: D. Reidel Pub., 1973), 219.

proposition states a thing such and such, then it is reliable if and only if the thing is really such and such. A proposition, therefore, is false and unreliable if and only if it describes a thing not in the way it really is. At this stage it is pertinent to remember our discussion on *definition* in Chapter 2. To repeat, definition is a statement which signifies the essence of a thing which makes it as it is. For example, the definition, 'human being is a rational animal'. This proposition is composed in such a way to have a meaning in which it describes the particular fact that human being is an animal which capable of reason. This description is true given the fact that human being is really an animal capable of reason.

Before going further, it should be noted that my interpretation of Avicenna's view on truth relation or correspondence proposed here explicitly contradicts to the one proposed by Sari Nuseibeh almost thirty years ago. Thus, it may help to attend, if only briefly, to what he said. According to Nuseibeh, Avicenna's consistent accounts of truth relation in all his works, "even though it goes by the name 'correspondence' (p. 47)," do not mean *correspondence*. It means, "At the very most, on the Avicennian account, there is mere conjunction or coincidence... (p. 46)" This suggestion, however, is clearly unwarranted. As a matter of historical fact, Avicenna's correspondence theory was very popular among the scholastics, but unfortunately he never has been given due credit. For example, Thomas Aquinas claimed that his definition of truth as *adaequatio intellectus et rei* (the

agreement between the intellect and the object)²⁷⁸ is drawn from Isaac Israeli's *Book of Definition*.²⁷⁹ Ever since 1930s, scholars have shown that Aquinas was wrong in this regard since there is no such definition to be found in Israeli's work,²⁸⁰ but they found that the formula goes back to Avicenna.²⁸¹ They have also pointed out that it was a habit among scholastic theologians to quote his formula without acknowledging his name.²⁸² It is also worth noting that in his studies on the history of the concept of truth, Heidegger says that Aquinas referred this definition to Avicenna, and he goes on to suggest that Avicenna himself takes the idea from Israeli.²⁸³ It is obvious, therefore, that Heidegger's historical account is doubly wrong. For all these shortcomings in dealing with historical texts and facts, Wolfgang Künne suggests that the definition of truth as correspondence is in fact older than Avicenna's works (2005, 102). Already in the early sixth century, commentators of Aristotle's such as Ammonius, Philoponus, and Proclus, in commenting on his *Categories*, claimed that truth consists in the correspondence or agreement of

²⁷⁸ Aquinas also used such terms as *commensuratio*, *concordia*, *conformitas* or *convenientia* with an object. See Wolfgang Künne, *Conceptions of Truth*, (Oxford: Clarendon Press, 2005), 102.

²⁷⁹ In two different works Aquinas says, "Further, Isaac says in his book *On Definitions* that truth is the agreement/correspondence of thought and thing" (*Summa Theologica* [i, q. 16, a. 2, ad 2]), and "Thus, Isaac writes: "Truth is the conformity of thing and intellect"" (*Quaestiones Disputate de Veritate* [q. 1, a. 1]).

²⁸⁰ What can be found in Israeli's work is this: §24. Definition of True (*ḥaq*): ...The dialecticians defined it as follows: Truth is a statement which is established by demonstration, either through the intellect or the senses. Isaac says: This definition gives the quality, not the quiddity, of truth, because if someone asks what truth is, the answer will be: that which a thing is; if he then asks how this is, we shall answer: because it is a statement established by demonstration, either through the intellect or from the senses. See Alexander Altmann and Samuel Stern, *Isaac Israeli: A Neoplatonic Philosopher of the Early Tenth Century* (Chicago: University of Chicago Press, 2009), 58.

²⁸¹ *Ibid.* 58-9. Cf. Künne, *ibid.*

²⁸² *Ibid.*

²⁸³ See Heidegger's study on traditional conception of truth in his *Being and Time*, trans. J. Macquarrie and E. Robinson (Oxford: Basil Blackwell, 1985), 257.

statements to things.²⁸⁴ Avicenna, I think, is familiar with the Arabic translations of these commentators and might have derived his account of truth from them apart from his own interpretation of Aristotle.²⁸⁵ Let me now turn to the idea itself.

If what Nuseibeh says is true, the best that the Active Intellect, or the ‘*Aql al-Qudsi*,²⁸⁶ can provide us with is the ideas that are merely coincidental with the nature of the things in external world. This conclusion, then, is in stark contrast to Avicenna’s repeated explanation—as I presented it above—of the role of the exalted Active Intellect and the nature of knowledge that emanates from it—as well as to his own account of this explanation in the same article. He even goes so far to claim that for Avicenna there is no relation or correspondence at all between our knowledge (ideas etc.) with the states of affairs in the world and our knowledge is only about our own mental entities rather than the states of affairs in the world (p. 42). To justify his interpretation he culled Avicenna’s remarks from his *Metaphysics*, which read as follows: “It is clear that the object of information must have some kind of existence in the soul, and information *in reality* is about what exists in the soul, and it is only *secondarily* about sensible objects in the external world” (p. 43). Avicenna, I believe, will surely contend that this interpretation of his ideas is utterly wrong. For Nuseibeh is committing the very error that Avicenna warns his reader

²⁸⁴ See Künne, *ibid.*, 102. Cf. Philoponus, *In Aristotelis Categorias commentarium*, 81: 29–34; Ammonius, *In Aristotelis De Interpretatione commentarium*, 21: 10–13; and Proclus, *In Platonis Timaeum commentaria*, II, 287: 3–5.

²⁸⁵ To pursue the historical sources of Avicenna’s conception of truth any further would be beyond the purview of this chapter. And it is best pursued by the Arabists or historians of ideas who are working on the receptions and translations of Greek ideas and works into Arabic.

²⁸⁶ It seems that Nuseibeh is very much fond of this term though it occurred only once in the whole of Avicenna’s works, that is, in the *The Soul of The Cure*, 287.

against in the same passage. I beg leave to quote the passage *in extenso* here:

These [people] have fallen into [the *error*] that they have because of their *ignorance* [of the fact] that giving information is about ideas that have an existence in the soul—even if these are nonexistent in external things—where the meaning of giving information about [these ideas] is that they have some *relation* to *external things*. Thus, for example, if you said, “The resurrection will be,” you would have understood “resurrection” and would have understood “will be.” You would have predicated “will be,” which is in the soul, of “resurrection,” which is in the soul, in [the sense] that it would be correct for this meaning, with respect to another meaning also intellectually apprehended (namely, one intellectually apprehended in a future time), to be characterized by a third meaning (namely, [the object] of intellectual apprehension: *existence*). This [pattern of reasoning] applies correspondingly to matters relating to the past. It is thus clear that that about which information is given must have some sort of existence in the soul. Information, in truth, is about what exists in the soul and [only] accidentally about what exists externally. [Metaphysics: 26-7] (My emphasis)

In order to have a better understanding of this passage let us return once more to our example of the definition of human being—as rational animal. The idea of rationality which emerges in our mind is structurally corresponds to the nature of all human beings. And all these human beings do not exist in our mind; they, like our own selves, exist in the external world. When we define human being in such a way as rational animal, this definition signifies the

essence of human beings that makes them as they are. This definition is about every human being as s/he exists in this world. And it is a true definition as it correlatively corresponds to the fact that human beings are rational beings.²⁸⁷ I wonder, then, if Nuseibeh has ever encountered a rational being outside his mind in his entire life. I shall now turn to the next metaphysical aspect of Avicenna's account of truth.

4.5 Truth-makers

Truth-makers are entities in virtue of which a proposition (or rather a truth-bearer) is true.²⁸⁸ Before proceeding further, however, some historical notes are in order. As can be expected, a basic notion of truth-maker is already intimated in the works of Aristotle. It can be found, among others, at Categories 14b14–22, where it reads,

If there is a man, the statement whereby we say that there is a man is true, and reciprocally—since if the statement whereby we say that there is a man is true, there is a man. And whereas the true statement is in no way the cause of the actual thing's existence, the actual thing does seem in some way the cause of the statement's being true; it is because the actual thing exists or does not that the statement is called true or false.

²⁸⁷ On Avicenna's explanation that the thing conceived in the mind and its existence in concrete thing is the same, see *Metaphysics*, 108.

²⁸⁸ For contemporary debates on truth-makers see, Kevin Mulligan, Peter Simons and Barry Smith, "Truth-Makers," *Philosophy and Phenomenological Research* 44 (1984): 287–321; D. M. Armstrong, *Truth and Truthmakers* (Cambridge: Cambridge University Press, 2004); Helen Beebe and Julian Dodd, Jr., *Truthmakers: The Contemporary Debate* (Oxford: Oxford University Press, 2005); and E. J. Lowe and A. Rami, *Truth and Truth-Making* (Stocksfield: Acumen, 2009).

This notion, as we shall presently see, can also be found in Avicenna and in certain scholastic theologians.²⁸⁹ And then it disappeared almost completely from philosophical literature for centuries until it reappears in the works of Moore, Russell, and Wittgenstein on logical atomism. Russell, for example, says that the world consists of facts, which are independent of our thought; and a fact is the kind of thing that makes a proposition true or false.²⁹⁰ But given the animosity of Anglophone philosophers towards metaphysics and ontology in general, due to the prevalent influence of logical positivism, the notion of truth-maker and even the theory of truth itself did not receive the attention it deserves throughout the first half of the twentieth century.²⁹¹ Later on, an intimation of the notion of truth-maker reappears again in the work of John Austin, where he nicely put it: “When a statement is true, there is, *of course*, a state of affairs which makes it true... It takes two to make a truth.”²⁹² But it is only in 1984 that the concept of truth-maker for the first time receives a clear and detailed formulation in a seminal paper co-authored by Kevin Mulligan, Peter Simons and Barry Smith, where they provide its historical origins in the works of Husserl, Russell, and Wittgenstein.²⁹³ It is therefore obvious that the term truth-maker is a recently coined philosophical concept. And it is on this ground that certain authors have argued against attempts to attribute this concept to those philosophers.²⁹⁴

²⁸⁹ For the latter see Armstrong, *ibid.* 4.

²⁹⁰ See Bertrand Russell, *The Philosophy of Logical Atomism* (London-New York: Routledge, 2010[1918]), 6. See also Ludwig Wittgenstein, *Tractatus Logico-Philosophicus*, trans. D. F. Pears and B. F. McGuinness (London-New York: Routledge, 2001 [1922]).

²⁹¹ Cf. E. J. Lowe and A. Rami, *ibid.*, vii.

²⁹² See Austin, “Truth,” *ibid.*, 91 and 92, fn. 1.

²⁹³ See n. 54.

²⁹⁴ See among others, Julian Dodd, “Is Truth Supervenient on Being?” *Proceedings of the Aristotelian Society* 102 (2002): 69-85; Fraser MacBride, “The Problem of Universals and the

These critiques, however, should not deter us from ascribing the concept to those philosophers and, in our own case, to Avicenna. For it is not unusual in the long history of philosophy that philosophers always invent or derive new philosophical concepts or terms out of the ideas or remarks of earlier philosophers. In some cases the latter simply do not have the linguistic resources or insight to put the idea in a single word, or perhaps it is just unthinkable at that particular time. Therefore new concepts are invented in order to provide precise articulation or expression for certain ideas. Such new concepts, however, are not totally new or alien to a pre-given language; rather they may somehow have their roots in such linguistic context. This, I believe, is in the same spirit with Avicenna's view on the evolution of language as he presents it in *Interpretation*.²⁹⁵ These new concepts or terms, however, must above all denote those ideas. And in the case of truth-maker it really denotes the point those philosophers were trying to make: that there is a thing or an entity which makes a proposition true.

Now, it is beyond dispute, at least among correspondence theorists, that there is such an entity in virtue of which a proposition is true. But it seems that they have different views when it comes to the question of what sorts of entities the truth-makers are. And the answers hinge upon their respective metaphysical (or ontological) temperament—the realists and the nominalists. I shall, however, only consider the former since the latter is not directly germane to our discussion on the truth-maker in Avicenna's conception of

Limits of Truth-making," *Philosophical Papers* 31 (2002): 27-37; and Hans-Johann Glock, "Truth in the *Tractatus*," *Synthese* 148 (2006): 345-68.

²⁹⁵ See particularly Chapter One: Language, Thought and Objects, 25-31.

truth.²⁹⁶ So, to begin with, Wittgenstein takes them to be facts, since he believes that “The world is the totality of facts, not of things”, though he does not bother to explain what ‘fact’ and ‘totality’ mean.²⁹⁷ We have seen a moment ago that Russell in his theory of logical atomism takes facts to be the truth-makers. Another early twentieth century philosopher who explains this issue very well is Moore. Thus, his view deserves lengthy quotation here:

To say of this belief that it is true would be to say of it that the fact to which it refers *is*—that there is such a fact in the Universe as the fact to which it refers; while to say of it that it is false is to say of it that *the fact to which it refers* simply is not—that there is no such fact in the Universe... To say that a belief is true is to say always that *the fact to which it refers is* or has being, while to say of a belief that it is false is to say always, that the fact to which it refers, is not or has *no* being... every true belief has some peculiar relation to one fact, and one fact only—every *different* true belief having the relation in question to a different fact... But, curiously enough, if we want to name *the fact to which a belief refers*—the fact which *is*, if the belief be true, and *is not* if it be false—we can only do it by means of exactly the same expressions. If the belief that lions exist be true, then there is in the Universe, some fact which would not be at all if the belief were false. But what is this fact? What is its name? Surely this fact is the fact *that lions exist*. These words ‘that lions exist’ constitute its name and there is no other way of referring to it than by these or some equivalent words. And

²⁹⁶ As an addition to our discussion in Chapter 1, nominalism is a metaphysical view which comes, at least, in two varieties. One variety rejects the existence of universals, and thus asserts that the world only consists of particulars. The other variety denies the existence of abstract objects. The most popular nominalist account of truth-maker is trope theory (from Greek, *tropos*), which admits only the modes of particular or individual concrete things as the truth-makers. For an illuminating analysis of this theory see E. J. Lowe (2001), Chs. 9-10; and D. M. Armstrong (2004), Chs. 4 and 10.

²⁹⁷ See Ludwig Wittgenstein, *Tractatus Logico-Philosophicus*, (London-New York: Routledge, 2001 [1922]), 1.1.

these words you see are the very same words which we are obliged also to use in naming the belief. The belief *is* the belief *that lions exist*, and the fact, to which the belief refers, is the fact *that lions exist*. [1953, 255-7]

Then, he goes on to say that,

Well then, using the name 'correspondence' *merely* as a name for this relation, we can at once assert 'To say that this belief is true is to say that there is in the Universe a fact to which it corresponds; and that to say that it is false is to say that there is *not* in the Universe any fact to which it corresponds'. And this statement I think, fulfils all the requirements of a definition—a definition of what we actually mean by saying that the belief is true or false. [1953, 277]

This is no place to indulge in a detailed assessment of what Moore has been saying above. However, some remarks about his substantive point are in order. The point is, then, this: Moore believes that truth depends on being in the universe. A belief or a proposition is true in virtue of what exists in the Universe. And all the things that exist or have their being in the Universe with their particular states, conditions, and situations are what he calls *facts*.²⁹⁸ Moore's fact-based correspondence is still alive today among contemporary philosophers and it can be found, first and foremost, in Searle's account of truth. Here is what he says:

²⁹⁸ For an illuminating analysis of Russell's and Moore's accounts of truth and truth-maker, see Wolfgang Künnle (2005), Ch. 3.

If it is true that the cat is on the mat, there must be something in virtue of which it is true, something that makes it true... The something that makes it true that the cat is on the mat is just that the cat is on the mat. And so on for any true statement. What makes it true that grass is green is that grass is green, etc. *But we still need a general term for all those somethings, for what makes it true that grass is green, that snow is white, that $2 + 2 = 4$ and all the rest. "Fact" has evolved to fill this need.* The word "fact" in English has come to mean (fairly recently, by the way) that in virtue of which true statements are true.²⁹⁹

On Searle's account, then, a statement is made true by *how-things-are-in-the-world* that is independent of the statement. And the general term he prefers to refer to these *how-things-are-in-the-world* is "facts", which to him is synonymous with "state of affairs" and "situation" (1995, 210).³⁰⁰ This view is obviously very much similar to that of Moore. However, other philosophers such as Armstrong favour the term 'state of affairs' rather than 'fact' to refer to *how-things-are-in-the-world*. For, in his view, the word 'fact' is very much connected to the notions of statement and proposition, while the term 'state of affairs' is desirable since "it sounds less colloquial and more like a term of art."³⁰¹

²⁹⁹ John R. Searle, *The Construction of Social Reality* (New York: The Free Press, 1995), 211. Searle in fact has developed a rich theory of facts, in which he divides facts into two general categories, the natural or brute facts and the social and institutional facts. See also, John R. Searle, "Social Ontology: Some Basic Principles," *Anthropological Theory* 6 (2006): 12-29.

³⁰⁰ Yet Julian Dodd argues that Searle's account of fact as *how-things-are-in-the-world* is obscure. And he asserts that the world is the totality of things, not of facts. See Julian Dodd, "The World is the Totality of Things, Not of Facts': A Strawsonian Reply to Searle," *Ratio* 15 (2002): 176-93.

³⁰¹ See D. M. Armstrong, "A World of State of Affairs," *Philosophical Perspectives* 7 (1993): 429-40. Thus it seems that this choice of term is really a matter of preference, since the whole discussion in this paper and in a larger work which bears the same title concerned with fact. See also, D. M. Armstrong, *A World of State of Affairs* (Cambridge: Cambridge University Press, 1997).

Coming back now to Avicenna. The entities that Avicenna takes to play the role of truth-makers are quite implicit in our discussion so far. In the previous section, we encountered such entities as *thing*, *state of affairs*, and *fact*, to which propositions (or beliefs) must correspond in order to be true. But to know this much is not to know a great deal: we need to explore further the entities that Avicenna takes to be the truth-makers. The best place to begin is his *Interpretation*, where he says:

Now we need to put forward for confirmation what must be confirmed for this chapter originally. So we say that the true meaning of the affirmation is to judge the *existence* of the predicate to the subject. It is absurd to judge of the non-existent that it is something existent. So every subject of an affirmation is *existent* either *in individual (objects)* or *in the intellect...* Our discourse is about the conception of (what) comes to pass, where we do not intend by the conception of the existent something else. It is up to them to intend whatever they want by the existent. Rather, the intellect judges things affirmatively according to their *being in themselves* and having the predicate present to them [along with] their *existence*, or having the predicate being thought in the intellect (as) present to them—not in so far as they are in the intellect alone, but rather according to the fact that, when they exist, this predicate is present to them. So, if there is no existence of the thing at the time of the judgment except in the intellect, then it is absurd for us to say that B, for instance, has present to it that it is A, not in the intellect, but rather in the state of affairs itself, while it is not existent in the state of affairs itself—then how is anything present to it? So the apprehension of the affirmation and (its) assertion is the certainty of a judgment about something, whose existence is about it, just as the apprehension of the denial is

the non-assertion of a judgment about something, where this is no doubt its non-existence. [*Interpretation*: 106-7]³⁰²

On Avicenna's view, then, the truth of a proposition depends on existent in the world.³⁰³ Or to put it in other way, a proposition is true in virtue of what exists in the world. What exist in the world are things and they are such individual objects as trees, mountains, animals, human beings, atoms, etc.³⁰⁴ Since time immemorial no one can deny that there is such a thing as the sum of all the objects that exist that we call the *world* or—what Moore called—the *universe*. The world, then, is the totality of existent things—which are either abstract or concrete, and which may either exist both in external reality and in human mind or in human mind alone (*Metaphysics*: 24). And all the things that exist in the world with their particular states, conditions, and situations are what he calls as *state of affairs* or *facts*. With regard to this, Avicenna says,

So, when someone says that so-and-so exists and in it there has been determined truth or falsity, whereas the other says that it does not exist and is determined to be true or false, then the first is true in a determination of truth, so that it is not possible for the state of affairs not to exist, or the other is true in a determination of truth—then here it is not possible for the state of affairs to exist, since it would not have been possible for the thing to exist, since it would not have been possible for the thing to exist together with the truth of the statement that it does not exist. By conversion, if the statement is true, the state of

³⁰² Elsewhere he says: "Truth is also said of the veridical belief in the existence of something" (*Metaphysics*: 284).

³⁰³ The assertions that a proposition is true or false by virtue of existent things are ubiquitous throughout his logic works. See *Avicenna's Propositional Logic* (1973), and *Interpretation*.

³⁰⁴ Avicenna's detailed discussion on things and existence can be found, among others, in Book V, Chapter I, of his *Metaphysics*, 148-57.

affairs is existent, and, if the state of affairs is existent, the statement is true. So, if the thing in itself either is white through itself or is not white through itself, the statement is true about it either that it is white through itself or that it is not white, so that existence and non-existence are with truth and falsity, and so that, if the statement about that is true, then the state of affairs no doubt takes place, and, if it is false, the state of affairs does not take place at all... The state of affairs does not become existent through its having been made true by the statement. Rather the statement is true now because the state of affairs in itself is like that. Therefore this necessity is in the state of affairs itself even if nothing is said. [*Interpretation*: 97-8]

This lengthy quotation makes it obvious that propositions are linguistic representations of our judgements by which we attempt to describe how things are in the world, which exist independent of the propositions. According to Avicenna, propositions are not born with a truth-value, rather it must be ascertained once the proposition has been formulated. The proposition will be true or false depending entirely on the real facts or states of affairs—that is to say, depending on whether things in the world really are the way the proposition asserts they are. But the proposition, if it is true, is by no means the cause for the existence of such fact. Rather, it is the fact that makes the proposition true. For it is in virtue of the existence or non-existence of the real fact or state of affairs that the proposition is true or false. Furthermore, the fact or things in the world exist as they are independent of what has been or will be said about them. In other words, all the things in the world exist as they really are with or without the knowing subject.

All the points that I have been making here about Avicenna's truth-maker can hardly be true for Nuseibeh. For he does not find anywhere in Avicenna's works or philosophical system that human beings have direct access to "the external world of sensible objects" or "to check against the objects themselves that exist in the physical world" (p. 46). If I say, for instance, "Prof. Nuseibeh is a son-in-law of the late philosopher John Austin," no one can ever verify this statement, not even himself. Since the existence and the relation between his wife and John Austin are in the external world outside his and our mind, to which, according to him, we are not granted access in Avicennian model. This claim, if true, would render Avicenna's view flies in the face of common sense. Even worse, his own view defeats his lifelong intellectual endeavours to provide a complete philosophical explanation of the whole existence in this world (see Chapter 1). But it seems to me that the real problem does not lie in Avicenna himself but in Nuseibeh's interpretation, which flies so much in the face of the textual evidences that I provide here and all Avicenna's works taken as a whole as a complete system of philosophy. It is true, however, that Avicenna never tells us how we can know whether a proposition corresponds to a thing or state of affairs, or—to put it differently—how we can know whether a statement describes things as they really are in the world. Perhaps, I think, Avicenna assumes that it is something very basic that no longer needs to be taught to his reader, who he believes to be intelligent enough to read his work. For example, when I say, "There is a black digital piano on the right corner of my study room," how it can be known that my statement is true? Everyone, except Nuseibeh and his Avicenna, can just go into the room and see if there really is a black digital

piano on its right corner. This is what our common sense will tell us to do and it does not require us to study philosophy or to receive intuition from above to be able to do so.

Let me now return to our Avicenna and recapitulate the main points about his account of truth and its relation to his analysis of knowledge. Propositions (by which judgements are expressed) are assertive speech acts by which we state something about something. Or to put it more precisely, propositions refer to or are about facts. Factual propositions may be true or false. They are not, however, born with truth-value, but we have to find out or apprehend their meaning and ascertain their truth or falsity. They are true if they correspond to the things as they really are in the world—i.e., facts—or otherwise false. In the light of our preceding discussion, this can be stated in the following formulations:

Propositions are true if and only if they correspond to reality (existent things).

Propositions are true if and only if they correspond to the facts (or states of affairs).

Or even in a simpler formulation:

It is true that p , if (and only if) p .

This being the case, propositions are true, then, not by virtue of themselves, but they are made true by facts, which are independent of those propositions.

It implies that what makes propositions true or false is independent of our judgement or thought or what have been or not been said about them. In the light of our discussion in Chapter 2 (on apprehension) and Chapter 3 (on judgement), human thought—which consists of apprehension and judgement—is called knowledge only on the condition that it is true. From a metaphysical point of view, propositions are certain class of mental processes or judgements about certain facts that can be true or false. On this view, it follows that factual propositions are true or false not because of what we affirm or deny. Rather on the contrary the truth of both depends entirely on the way the world is—that is to say, on real facts (real things and states of affairs)—which is independent of our subjective mind, judgement, or thought. On this analysis, therefore, truth is not the same as our conviction or belief and nor can it be defined in terms of belief or acceptance. Rather believing p consists in taking a propositional attitude toward p as a proposition that representing our true judgement. This is what we call a true belief that p , which constitutes a part of our factual knowledge, and contrary to a *mere* belief which does not deserve the name of knowledge at all.

To sum up: it should be evident, I hope, that Avicenna's conception of truth is that of correspondence—the view that a proposition/judgement is true if and only if it corresponds to fact or reality. This is the most venerable of all theories of truth in the whole history of philosophy. In fact, almost every philosopher before Kant subscribed to this conception of truth (Putnam 2010, 1). That said, I should now turn to a couple more issues with regard to Avicenna's conception of truth before moving on to the next section.

First, in the light of our discussion in Chapter 3 that a conclusion of a demonstrative reasoning must necessarily follow from its two premisses, is it possible, then, to think that Avicenna somehow would approve a coherence theory of truth? The theory which regards truth as a property of the whole system of propositions, that is, a conformity of propositions with each other. The answer, I suggest, is no. It is for two reasons. First, the requirement of the necessity of conclusion should be understood in terms of logic. And logic, in Avicenna, as much as in Aristotelian tradition, is a theory of deduction not a theory of truth. Second, if he knew such a theory, Avicenna will surely reject it as inadequate since it does not concern itself with factual reference. Whereas in his view of factual knowledge, in order for the propositions (premisses and conclusion) to be true they should not only cohere with one another, or be compatible with other pieces of prior, existing knowledge, but they must also have external references. This requirement, I think, makes Avicenna's conception of knowledge immune from Gettier's case that our belief may be based on a false justification or reasoning, since it requires that all propositions must be true by way of corresponding to the real facts or states of affairs in the world.

This last point brings us to the next issue, that is, correspondence theory of truth only applies to factual knowledge—which describes or explains the state of affairs belonging to the external world. It follows therefore that this conception of truth must be distinguished from other conceptions of truth in Avicenna's comprehensive philosophical system. To put it precisely, it must

be distinguished from the following kinds of truth in his philosophical system: (I) logical truth—namely, the first principles of logic such as the law of contradiction; (II) mathematical truth—that is, the principles of mathematics such as the axioms of geometry; and (III) religious truth—including theological and mystical truths.

The first two kinds of truth are also called formal truth since logic and mathematics are defined as formal knowledge which contains only formal propositions. Ontologically speaking, logic and mathematics deal exclusively with *entia rationis* or mental existence (*wujūd ẓihnī*) (see Chapter 1). In other words, both kinds of knowledge are not about factual or concrete existence but about mental constructs such as predicates, propositions, and theories, which need bear no relations to any concrete entities in the external world. Thus the truth of logic and mathematics can be established by reason alone, namely by purely conceptual means such as arguments (deductions and analyses) and counterexamples. As for religious (theological and mystical) truth it is based on faith or belief grounded in the sacred texts or religious tradition and experience. Unlike factual knowledge, religious or theological knowledge is a closed system of belief based on the teaching of a particular religion and its founder.

So, in general, we can identify four kinds of truth in Avicenna's structure of knowledge. But the one that is pertinent to his analysis of propositional knowledge is factual truth—which goes with the name correspondence theory. Our theoretical investigation of Avicenna's conception

of truth in his analysis of knowledge shall end here. For in the following section I shall delve a bit further into its metaphysical assumptions and ramifications.

4.6 Truth, Realism, and Objectivity

In this section, I shall pick up some points from the whole arguments that I have been making about Avicenna's conception of truth, and take a closer look at the metaphysical assumptions underlying them. I have argued that Avicenna's correspondence conception of truth only applicable to factual propositions, or factual knowledge. This conception captures the intuition that factual truth consists in agreement to reality. From what has so far been said about Avicenna's conception of truth, it seems that Avicenna is very much a realist. To say this much, however, is not to say a great deal about his realism: we need to specify the nature and extent of his realism in the light of our discussion in this chapter and the previous ones.

Most correspondent theorists—such as Moore, Russell, and Armstrong, to name only three—embrace one or another kind of realism. This, however, is not a rule since in principle it is possible to accept correspondence theory and at the same time rejecting realism.³⁰⁵ Furthermore, it is also possible for

³⁰⁵ For further discussion on the relationship between correspondence theory of truth and realism see, Michael Devitt, *Realism and Truth* (Princeton, New Jersey: Princeton University Press, 1997), especially, Chs. 2-4, "Aberrations of the Realism Debate," *Philosophical Studies: An International Journal for Philosophy in the Analytic Tradition* 61 (1991): 43-63; Kirkham (2001), especially Ch. 3, on nonrealist theories of truth.

the realists to reject correspondence theory of truth, as did most philosophers who advocate coherence theory of truth. How about Avicenna, then?

As we have seen in Chapter 1, Avicenna is a realist in, at least, two respects. First, he is a metaphysical/ontological realist who believes in the existence of external world independent of our minds. Second, he is an epistemological realist who believes that the world—with all its states of affairs and properties—can be known and that our knowledge of factual existence is incomplete,³⁰⁶ and some of it is gained directly from perception and much of it from reason. I take it that it is these basic philosophical assumptions that necessitate his conception of truth, namely: to our judgement or thought there are corresponding things in the real world. This is evident from our discussion in previous section where I show that Avicenna extends his (ontological) realist assumption—of the mind-independent existence of the world—to the truth-makers. There we find that he takes facts, states of affairs, or things, to be as they are independently of human thoughts or judgements. What I mean by *independence* in this relation is that if there were no minds, there would still be real things in the world. And it is these real things that make our judgement about them to be true or false. To put it more precisely: judgement must conform to things, not things to judgement.

From the point of view of Avicenna's realism the world does not depend for its existence and nature on the cognitive activities and capacities of our minds, nor is constituted or limited by our knowledge, judgements,

³⁰⁶ See Avicenna's letter to an anonymous disciple in his *Discussions* (p. 54), translated in Gutas (2014), 53.

beliefs, concepts, theories, and languages. This is the reason why we never find anywhere in his works that Avicenna, unlike Moore and Russell in their early writings,³⁰⁷ says that the structure of the world, or reality, consists of true propositions.³⁰⁸ By the same token, Gutas' remarks that the world is syllogistically structured (2014, 207-214), albeit insightful and penetrating, is hardly compatible with Avicenna, since this is not the claim that classical realists or contemporary scientific realists would ever make. To say that the structure of the world is syllogistical just because we derived much of our knowledge of it through syllogistic reasoning would seem like we are trying to reduce the whole reality to our own mental activities. In fact, reality is not identical to our cognitive processes, nor do our minds become identical with reality in the course of cognition. This is particularly clear in Avicenna's refutation of an Aristotlian view that human intellect becomes identical with its objects of intellection as something impossible (*Soul*, 239).³⁰⁹

³⁰⁷ It is important to note here that Moore and Russell were growing up in the context where idealism—a view, among others, that reality is made up of our own ideas and sense data—was predominant in British philosophy. It is only in their later years that Moore and Russell (under Moore's influence) were able to break away from idealism and developed their realist views into full-fledged metaphysical doctrine. For Moore's realist turn see, "The Refutation of Idealism," *Mind* 12 (1903): 433-53; and his two seminal papers on realism, "A Defence of Common Sense" (1903) reprinted in his *Philosophical Studies* (London: Routledge & Kegan Paul, 1970), 1-30, "Proof of an External World," reprinted in *G. E. Moore: Selected Writings*, Thomas Baldwin ed., (London: Routledge, 1993), 147-70, and Avrum Stroll, *Moore and Wittgenstein on Certainty* (Oxford: Oxford University Press, 1994), especially Chs. 1-5; and for Russell's realist turn see especially, *The Principles of Mathematics* (London: Routledge, 2009 [1903]).

³⁰⁸ It seems plausible to say that Avicenna, unlike Russell and Moore, is always a realist given the fact that realism used to be a global philosophical position beginning from the post-Socratic periods up to the downfall of Scholastic Realism and the rise of Nominalism in the fourteenth and fifteenth centuries. On the rise of nominalism see, among others, Robert Pasnau, *Metaphysical Themes: 1274-1671* (Oxford: Oxford University Press, 2011), esp. Ch. 5.

³⁰⁹ Here Avicenna criticises Aristotle's view in *De anima* III 4, 429a16, 430a14 and III 7, 431a1. Hilary Putnam, however, regards these remarks as metaphor. See Hilary Putnam, *Words and Life* (Cambridge, MA: Harvard University Press, 1995), 63. For further discussions on Aristotle's view see Charles H. Kahn, "Aristotle on Thinking," in *Essays on Aristotle's De Anima*, ed. Amélie Oksenberg Rorty and Martha C. Nussbaum (Oxford: Clarendon Press, 1995), 346-66; and Jonathan Lear, *Aristotle: The Desire to Understand* (Cambridge: Cambridge University Press, 2007) especially Chapter 4, Section 3, on mind.

Clearly Avicenna's metaphysical doctrine of realism presupposes the objective existence of mind-independent reality—with things, particulars, and universals forming its constituents. It is this metaphysical doctrine that entails his epistemological realism which maintains that this objective reality—with all the things in it, including universals—can be known. And it is the same doctrine that presupposes his realism about truth, in which our judgements and factual propositions are objectively and mind-independently true, given the fact that what makes our judgements and propositions true are the objective mind-independent existence of facts and states of affairs in reality. Or putting the point precisely: truth is objective. It does not depend on our own subjective minds, judgements, or let alone beliefs; rather, it is our mind that dependent on truth in our judgements about the real facts in the world. Truth, then, is over-individual mental awareness of the objective reality. It is this objective truth that implied in objective knowledge. That is, knowledge of such objective mind-independent reality, which transcends individual knower.

As a matter of fact, even today, objective truth and knowledge is the goal of many philosophers, ancient and modern. It is also a matter of fact, even today, that the possibility of this kind of truth and knowledge has been denied by the sceptics, subjectivists, idealists, conventionalists, pragmatists, and constructivist-relativists. In fact, Nuseibeh (1989) has made an attempt about thirty years ago to deny the possibility of objective knowledge in Avicenna, where he tried to show that Avicenna has a concept of knowledge that is “in a fundamental sense, subjective...” and “does not leave any room in

it for a rational verification of knowledge” (pp. 39, 41). The reader who follows the whole arguments developed in this chapter and the previous ones and has a considerable understanding of what epistemology is or what analysis of knowledge is all about, will notice that there is something utterly wrong in his understanding of Avicenna’s analysis of knowledge, and also in epistemology—both in its conceptual and historical aspects.

In his article, Nuseibeh put forward a thesis about Avicenna’s epistemology based on the following *Avicennian propositions*, which can be extracted from a number of different remarks that Avicenna makes in regard to knowledge. The first proposition is that *the roots of human knowledge are intuitions*; the second proposition is that *the source of intuitions is the Active Intellect*; and from these follow the third proposition that *the primary objects of knowledge are forms in the human intellect* (pp. 41-2). In other words, deductive reasoning and knowledge consist in the intuition of ideas or forms or middle terms, namely, the terms that connect between the major and minor terms; and this act of intuition occurs when human intellects come into contact with the Active Intellect (*Soul*, 248-9).³¹⁰ From these propositions follow his thesis about Avicenna’s conception of knowledge, which he believed amount to “the subjective claim that what we have direct access to, and what we can hold direct or primary discourse about are mental entities rather than objects in the external world” (p. 42).

³¹⁰ I shall return to Nuseibeh’s interpretation of Avicenna’s explanation of deductive reasoning and the role of the Active Intellect, where herein lies, among others, his misunderstanding of Avicenna’s conception of knowledge, in Chapter 5, Section 4.

It is obvious that Nuseibeh was trying to portray Avicenna as advancing some kind of subjectivism. The view that things in the world are utterly unknown since all their general and special relations, all their resemblances and differences, all the universals, conceived by the subjective mind exists only in the mind. In other words, the only knowledge that possible for human beings is the knowledge of the *a priori* constitution of their own individual mind, and all the ideas or concepts it imposes upon things (if there really are such things), regardless of what things really are. As a matter of historical fact, subjectivism has appeared in varying forms from the beginning of modern philosophy (in Descartes, Spinoza, Locke, Leibniz, Berkeley, and Hume) to the Kantian and post-Kantian philosophies (of Fichte, Schelling, and Hegel) in Germany and to British philosophy in the nineteenth and early twentieth centuries. Under the prevailing influence of nominalism, and hardly knowing it, all these philosophies had their starting-points in the individual mind or consciousness. Although various philosophers have interpreted and developed it in two opposing directions, in terms of *a priori* and *a posteriori* constitution of human knowledge, they were all begin with the same underlying nominalist assumption that the things apprehended in perception exist only in the mind, and that they are numerically and existentially distinct for each individual mind. On the contrary, as I pointed out in Chapter 1, philosophy in the post-Socratic periods up to, at least, the time of Avicenna has been prevailingly realist and objectivist in all its forms and ramifications—where philosophical inquiry begins with an objectively existent cosmos in which the individual mind is merely a part.

Coming back to Nuseibeh, however: I believe that his interpretation of Avicenna's conception of knowledge is nothing but a massive tissue of confusions. If we match it against the arguments that I have developed so far, his various points will simply dissolve. In order to avoid verbiage, however, I will only advance a couple of arguments against his thesis. And each argument is drawn from our discussion in the previous chapters. It seems to me, firstly, that Nuseibeh has misunderstood Avicenna's account of the object of knowledge, in which consists of our awareness of the difference between the idea of a thing and the thing that validates the idea.³¹¹ Failure to bear this point in mind will surely make us confused about the way in which our judgement/thought can refer to a thing and eventually would make us think, like Nuseibeh did, that knowledge is nothing but a fancy creation of our own subjective mind. We have seen in Chapter 2 that knowledge begins in apprehension which functions as a mediating process between our mind and the world. It provides our mind with the rudiments for a more complex mental process from which emerge the images, ideas, and conceptual relations about what we have encountered in the world. These images and ideas are at once the *differentia* and *relata* between the mind and the world. Still, Nuseibeh will surely contend, as he did, that these ideas are not derived either from the things themselves or the world in which they exist and thus have no objective validity at all.

This leads me to my second argument against his thesis that knowledge for Avicenna is subjective and has no objective validity whatsoever.

³¹¹ See especially our discussions on the truth-maker in this chapter and on apprehension in Chapter 3.

To reject this interpretation we can simply remember our discussion on Avicenna's metaphysical realism (Chapter 1.3) in which he maintains the inseparability of *phenomena* and *noumena*, where phenomena being the *appearances* of noumena, and noumena being that which *appear* and is partially apprehended in phenomena. In Avicenna's metaphysical doctrine, as we have seen earlier, both aspects of things have their inseparable existence, not only in the mind, but also in the real world which the mind apprehended. These inseparable aspects of things, between what is sensible and what is intelligible or conceivable in things or natural world, has been maintained in all his writings on logic, psychology, natural philosophy, and metaphysics. And they are even more fundamental in his analysis of knowledge as to mark the distinction between *factual* and *philosophical* knowledge. For *noumena* being taken to denote things-in-themselves as they exist in all the complexity of their objective attributes and relations, and phenomena being taken to denote these same things-in-themselves so far only as they are known in their objective attributes and relations. The final outcome of this philosophical objectivism, as we have seen in Chapter 1.4, is the ever-growing knowledge of the natural world as it is, as well as the proper place and activity of human mind in it, which Avicenna calls *wisdom*.

These arguments, though a little swift, are more than sufficient to maintain that Nuseibeh's thesis flies so much in the face of Avicenna's underlying metaphysical assumption and conception of knowledge. It is also important to note here that Nuseibeh himself admitted that his thesis may seem inconsistent with Avicenna's writings and practices in medical inquiry,

but to him this should be taken as “a basis of understanding the limitations imposed on Man’s epistemic ability” (p. 52). It is true that Avicenna himself admits that our knowledge is limited, but it is not in the way in which Nuseibeh understood it. Furthermore, if his thesis about Avicenna’s subjectivism is true, then, the entire Avicennian philosophical corpus serves nothing but merely a monument of grand hallucination.

4.7 Concluding Remarks

This completes my exposition of Avicenna’s conception of truth in his analysis of knowledge. It should be evident by now that knowledge—in the sense that Avicenna speaks of it, when he speak of knowledge of matters of fact—implies truth. For knowledge in the sense in which he speaks of it requires some form of epistemic correspondence relation (or rather truth relation). That is, a relation that determines what we have knowledge of when we do have knowledge, between our minds and judgements and the world. From this it follows therefore that we come to have knowledge by coming to stand in an appropriate relation to the real facts in the world, and this relation is what Avicenna calls *apprehension* and *judgement*. It *prima facie* seems that we now have the right answer to the following question: “What does *S* know?” The answer: what *S* knows is a variety of true factual propositions, which in essence represent true factual judgements.

I have been maintaining all along that a proper understanding of Avicenna's analysis of knowledge is not possible without a prior understanding of its underlying metaphysical assumption—that is, Realism. The whole arguments that I have developed so far may suffice, I hope, to prove that this metaphysical doctrine is indispensable for a better understanding of his necessary and sufficient conditions of knowledge, and without which it is difficult for us to get it right about everything he says on human knowledge and the mental processes involved in it. To repeat: Avicenna is, first and foremost, a metaphysical realist. It is this fundamental doctrine that makes him an epistemological realist and being the guiding light in his conception of truth. Furthermore, what makes epistemologists like Avicenna a genuine realist is that they have their own account of cognitive psychology which, *inter alia*, demonstrates that the intellectual inquiry into reality presupposes both metaphysical and epistemological realism. And this account shall be the subject of concern in the next chapter.

Chapter 5

Ways of Knowing

5.1 Introduction

The discussions in the previous chapters were centred on the three epistemic notions that Avicenna takes to be the necessary and sufficient conditions of knowledge. It will be remembered from those discussions that knowledge in the sense in which Avicenna speaks of it, when he speaks of propositional knowledge, is that in which we cannot know anything but matters of facts. Knowing a fact, however, is not something we do. Rather, it is a state our minds have come to enter in relation to one or other fact—that is, a *factive mental state*. It is an end-state, which culminates from certain mental processes. To be in that state, or rather to know something, our minds have to undergo these mental processes. They are, therefore, the conditions that need to be satisfied for us to be said to have knowledge. These conditions are: to know about a fact, we must first *apprehend* it; and besides merely apprehending the fact we must also make a *judgement* about it; and the judgement that we make about it must be *true*, in the sense that the

judgement obtains to the fact itself. Furthermore, judgements are usually expressed by propositions. So whenever we encounter a proposition the same conditions apply. That is, when we hear or read a proposition, we must apprehend the meaning of the proposition; and besides merely apprehending the proposition we also make a judgement about it, in which we ascertain the relation of its content to the real fact that it presented really obtains.

In this chapter, however, I shall be further concerned with the epistemic faculties that involved in the mental processes that lead to knowledge, with the objective of rounding out my account of Avicenna's analysis of knowledge. Some faculty might or might not seem explicit in the preceding discussions. But they are all, in fact, present or rather fully operative in different stages of human cognitive process. However, it must be noted at the outset that the emerging account is not intended to be exhaustive or detailed. For, as I remarked at the beginning of this study, this psychological aspect of Avicenna's epistemology has always been the primary concerns among contemporary scholars that there is almost nothing of theoretically significant and interesting can be said about it anymore. Therefore, I shall only take up certain points in his account that I think needs to be given further explication and alternative interpretations.

This chapter is planned as follows. Section 2 deals with the most primitive of human epistemic faculties, i.e., consciousness, and the knowledge that it gives rise to human minds. Then, in Section 3, I turn to the most important faculty in our relation to the external reality, that is, sense

perception. In Section 4, I take up further discussion on the mutual relations between the faculties of perception, mind, and intellect and the knowledge that emerges out of this complex interaction. And lastly, some of the most important points in the discussion are summed up briefly in Section 5.

5.2 Consciousness

Consciousness is a primordial mental phenomenon in human life. It gives rise to the primitive forms of knowledge, particularly, the self-knowledge. In fact, self-consciousness or self-knowledge is the beginning of our mental or intellectual life. This view of self-knowledge is a long-standing wisdom. It goes back as early as Socrates' affirmation of Oracle's injunction at Delphi to "Know Thyself."³¹² It is worth noting that Avicenna regards this injunction as a universal truth. Already in his first work, *Compendium on the Soul*, he asserts that all ancient philosophers and saints as well as the Quran have affirmed this truth (1906, 15-16). This may suffice, I suppose, to show the significance of consciousness and self-knowledge in Avicenna's philosophy. A detailed account of this subject, however, is a mammoth task which goes far beyond the ambit of this chapter.³¹³ I will, then, dwell on it only in so far as it is pertinent to the primary concerns in this study.

³¹² See, among others, Plato's *Charmides* (164d), in Plato, *Meno and Other Dialogues*, trans. Robin Waterfield (Oxford: Oxford University Press, 2005), 18.

³¹³ For detailed scholarly accounts of Avicenna's views on consciousness, see Jari Kaukua, *Self-Awareness in Islamic Philosophy: Avicenna and Beyond* (Cambridge: Cambridge University Press, 2015); Michael E. Marmura, "Avicenna's "Flying Man" in Context," *The Monist* 69 (1986): 383-395; Sara Heinämaa et al., *Consciousness: From Perception to Reflection in the History of Philosophy* (Dordrecht: Springer, 2007), esp. Ch. 4; Deborah L. Black, "Avicenna on Self-Awareness And Knowing that One Knows," in *The Unity of Science*

Let us, to start with, see what Avicenna has to say about consciousness:

The human soul has a natural capacity (*bi al-ṭabʿ*) for consciousness (*shuʿūr*) of things that exist. Some [souls] are naturally conscious of entities. Others have the ability to become conscious of them through acquisition. The awareness the soul has naturally, transpires continually and actually (*bi al-fiʿl*). Thus, its consciousness of itself is both natural and constitutive of its being and belongs to it in actuality and without ceasing. [Notes: 30]

Several aspects of this passage deserve comment, and I shall begin with the last sentence. In a paraphrase this might run as follows: consciousness (*shuʿūr bi al-dhāt*) is a property of the intellect, which by nature makes it perpetually aware of itself and of the world around it. In this light, then, it would appear that our everyday experiences presuppose certain degrees of active awareness of ourselves. No matter how deeply we are preoccupied with other matters or activities in our daily life, this consciousness is always there, and we are never confused as who is doing such things. The stream of human consciousness is rather uninterrupted even in sleeping or under anaesthetic influence:

Return to your self and contemplate. Whether you are being sound of mind and sober, or rather in some other mental state

in the Arabic Tradition: Science, Logic, Epistemology and Their Interactions, ed. Shahid Rahman et al. (Dordrecht: Springer, 2008), 63-87.

where you would yet discern a thing soundly and clearly, would you be unaware of the existence of your self and not affirm it? I do not believe that [such knowledge] would escape any reasonable [person's] awareness so that his representation of his self was not fixed in his memory even if he asleep or in a state of drunkenness. [*Rem-Phy*: 94].

This passage brings out clearly Avicenna's view that our own self-consciousness is something that we never fail to know and is mentally present whether or not it is manifested in our outward behaviour.³¹⁴ For consciousness, as Avicenna asserts elsewhere, is "identically the same as our existence" (*Notes*, 161). Thus, it will only fade away with our departure from this world. As a matter of historical fact, many philosophers took a strong position about the infallibility of our own consciousness and its mental occurrences on the ground that they are self-verifying.³¹⁵ We learned from the history of philosophy that Descartes, confronted by radical scepticism, takes his own consciousness as the most certain knowledge that no one can ever doubt it, and make it as the unshakable ground for the possibility of our knowledge of the world.³¹⁶

³¹⁴ Hence, in our attempt to understand human consciousness, it is inadequate to reduce it to human behaviour. This has been repeatedly argued in philosophical literature, and among the latest work to reassert this is Thomas Nagel's *Mind and Cosmos: Why the Materialist Neo-Darwinian Conception of Nature is Almost Certainly False* (Oxford: Oxford University Press, 2012), esp. Ch. 3, 35-69. But I also agree with Nagel that the theistic explanation of consciousness like that of Avicenna, whose explanation is largely ontological and cosmological, though having more richer explanation of the problem, no more adequate to give us detail explanation of how our mind (and consciousness) fit into the world.

³¹⁵ See, for example, Tyler Burge, "Individualism and Self-Knowledge," *Journal of Philosophy* 85 (1988): 649-63; and Sven Bernecker and Duncan Pritchard, *The Routledge Companion to Epistemology* (London-New York: Routledge, 2011), ch. 28, 305-15.

³¹⁶ See René Descartes, *Meditations on First Philosophy*, trans. George Heffernan (Notre Dame: Notre Dame University Press, 2003), especially the Second Meditation, 98-117; René Descartes, *A Discourse on the Method*, Ian Maclean trans., (Oxford: Oxford University Press, 2006), esp. Part IV, 28-34.

As remarked earlier, scepticism has never been a problem for Avicenna. Nor does he view consciousness in such a foundationalist stance. Still, he does admit that consciousness can really furnish us with knowledge. In fact, as we shall shortly see, some of the earliest items of human knowledge are acquired directly from our own consciousness. At this point it is important to remember what has been said earlier in Chapter 1 and 2 that our knowledge begins with some primary or intuitive concepts from which some other concepts are derivable. They are such concepts as *existent*, *thing*, and *necessary*. In his own words:

We say: The ideas of “the existent,” “the thing,” and “the necessary” are impressed in the soul in a primary way. This impression does not require better known things to bring it about... If the expression denoting them does not occur to the mind or is not understood, then it would be impossible to know whatever is known through them. [*Metaphysics*: 22]³¹⁷

I have considered earlier, in Chapter 1 and Chapter 2, the epistemic significance of primary concepts in Avicenna’s analysis of knowledge in particular and in his system of derivative knowledge in general. The points that I now want to take up further therefore concern with Avicenna’s account of their nature and psychological origins. These concepts, to start with, seem *prima facie* to some of us to be some kind of innate ideas inbuilt in our

³¹⁷ On historical analysis on these concepts see, Michael E. Marmura, “Avicenna on Primary Concepts in the Metaphysics of His *Shifā’*,” in *Logos Islamikos: Studia Islamica in Honorem Georgii Michaelis Wickens*, ed. R. M. Savory and D. A. Agius (Toronto: Pontifical Institute of Mediaeval Studies, 1984), 219-39.

minds.³¹⁸ I shall argue, however, that if we look rather more closely at them in the light of Avicenna's views of consciousness we will see that these concepts are not innate at all. Let me take the matter in detail.

From what has so far been said, it is clear that the first thing that emerges in our life is our own self-consciousness. From this conscious experience of our selves and the world around us it gives rise to the idea that we are something that *exists*. And from this conscious experience also comes the idea of *necessary*, in the sense that given the persistent conscious experience of our selves and the world around us it is necessary therefore that there are existent things in this world. I must confess, however, that this order of explanation does not belong to Avicenna. For it follows the traditional post-Cartesian account which takes existence to be conceptually prior in human minds and *mutatis mutandis* in the order of philosophical explanation. The idea of necessary only comes about by virtue of the self-verifying nature of our own consciousness. Let us, then, see what Avicenna has to say about this order of explanation.

³¹⁸ Some scholars assume that Avicenna and Suhrawardi, who follows in his footsteps, take these concepts to be innate. See Mehdi Aminrazavi, "How Ibn Sīnīan is Suhrawardī's Theory of Knowledge?," *Philosophy East and West* 53 (2003): 203-14; Mehdi Aminrazavi, *Suhrawardī and the School of Illumination* (London: Routledge, 1997); John Walbridge, *The Leaven of the Ancients: Suhrawardī and the Heritage of the Greeks* (Albany: State University of New York Press, 2000); John Walbridge, *The Science of Mystic Lights: Quṭb al-Dīn Shīrāzī and the Illuminationist Tradition in Islamic Philosophy* (Cambridge, MA: Harvard University Press, 1992); Hossein Ziai, *The Knowledge and Illumination: A Study of Suhrawardī's Hikmat al-Ishraq* (Atlanta, GA: Scholars Press, 1990). This assumption in regard particularly to Suhrawardī has recently been denied in Seyed N. Mousavian, "Did Suhrawardī Believe in Innate Ideas as A Priori Concepts? A Note," *Philosophy East and West* 64 (2014): 473-80; and "Suhrawardī on Innateness: A Reply to John Walbridge," *Philosophy East and West* 64 (2014): 486-501.

[...] Of these three, the one with the highest claim to be first conceived is the necessary. This is because the necessary points to the assuredness of existence... [*Metaphysics*: 28]

It is obvious that in this passage Avicenna takes the concept of necessary to be conceptually prior to existence. It is conceptually prior given the fact that it comes from our certain conviction in the existence of our selves. But it seems to me *prima facie* that this ingenious point must lead to a serious problem. For how can we be certain of our own existence without firstly conscious that we exist? How can we be certain about something without firstly knowing that the thing exists? However serious these difficulties are for Avicenna's account of primary concepts, it should suffice to show that they are not innate concepts. For they are in fact apprehended from the conscious experience of our own selves and the environment around us.³¹⁹ We might not exactly know the particular time in which we acquire them, but do understand what their meanings are when first hearing them. This point will become clearer still when we turn to the concept of *thing*. In the first passage quoted above, Avicenna argues that our mind by nature has the capacity to be conscious of things that exist around us. And, in fact, it is through our perception of the things that appear before us that we conceived the concept of thing.

Therefore, let me renew a suggestion I made earlier: these concepts are not innate. For knowledge or consciousness is of some or other thing. While innate and knowledge would roughly mean knowing things without having any sort of awareness or contact, direct or indirect, with them.

³¹⁹ For a different interpretation of the origins of these primary concepts, see Lenn E. Goodman, *Avicenna* (Ithaca: Cornell University Press, 2005), 124-5.

Furthermore, in the light of our discussion especially in Chapters 2 and 3, besides apprehending these primary concepts we can then form a primary judgement like the one made by Descartes, “I think, therefore I am.” This primary experiential judgement, I reckon, is so certain that there is no occasion for anyone to doubt its truth.

There is one last point that I want to make before I close this section of the chapter. It is with regard to Avicenna’s view on the relation between consciousness and our knowledge of the external reality. Thus, Avicenna says:

If we know a thing, then in our perception of it, there is consciousness of our own selves... for we are conscious of our selves first. Otherwise, whence would we know that we perceive it unless we first conscious of it? [Notes: 161]

This passage seems *prima facie* pertinent to all that I have been arguing about the many facets of Avicenna’s realism, especially in contrast to Nuseibeh’s interpretation of his theory of knowledge. For it brings out very clearly Avicenna’s view that our knowledge or perception of some or other part of external reality consists in the presentation of that reality in our consciousness. It may be remembered that for Avicenna consciousness is the property of human mind. It follows therefore that consciousness may presence in all levels of our mental processes, from perception to cognition and reasoning. From this it also follows that when reality is presented in our consciousness, it does not mean that it is presented only in the sense

perception, but in all the presentational-fields that we have in our mind—in the common sense, imagery, imagination, and retentive faculties and so on. In this way, then, it is not our consciousness that makes things exist; rather, they exist as they are with or without our awareness of them. This point will become clearer still when we turn to his theory of perception in the next section.

5.3 Perception—Where Mind Begins

Perception is the most fundamental epistemic faculty by which we come to know most of the things in the world. In fact it is the faculty that relates our mind to the external reality. We can in fact find a passage in his work where Avicenna, quoting Aristotle, says that:

It is said, “Whoever loses a certain sense necessarily loses a certain knowledge, which is to say that, one cannot arrive at the knowledge to which that sense leads the soul. That is because the starting points from which one arrives at certain knowledge are demonstration and induction, that is, induction of the essential. [Of these two], induction necessarily relies on sense perception. [*Demonstration*: 220]

We may also remember from the preceding discussions (especially in Chapter 2) that it is from perception that our mental process begins. It occurs both at the beginning and at the end of our cognitive process—by which we come to know the real facts or states of affairs in the world. In Avicenna’s light,

perception provides us with facts for our judgements as well as facts verifying our judgements of the former—as we have seen in Chapter 3. Even more fundamentally, when we see things in the external world it means that we take in the percepts or sensible forms of the things—that is to say, we perceive them. According to Avicenna, for such percepts to have any cognitive value at all, they must be in some way analogous to the things perceived. We then coordinate those percepts in our mind, and form concepts about them—as we have seen in Chapter 2.

It is worth mentioning here, however, that it becomes increasingly common among contemporary Avicennian scholars to attribute the philosophical term of *sense data* when talking about Avicenna's theory of perception. As far as I can ascertain, the first scholar to attribute such philosophical term to Avicenna is Fazlur Rahman, in the early 1960s, but it never gains popular use among scholars.³²⁰ However, after almost forty years, it reappears again since the early 2000s in the work of Dag Hasse and since then it seems to become increasingly popular among some other leading and younger scholars in the field.³²¹ To return to the main point, however, such an

³²⁰ It must be noted, however, that Rahman use the term only once in his introductory essay on Avicenna. See, Fazlur Rahman, "Ibn Sīna," in *A History of Muslim Philosophy*, Vol. I, ed. M. M. Sharif (Weisbaden: Otto Harrassowitz, 1963), 480-506. Furthermore, it can be found in Lenn Goodman's book on Avicenna. But he uses the term *sense data* in a negative claim that, for Avicenna, "we cannot make a universal, necessary judgments out of fragmentary *sense data* [*italic is mine*]." See Lenn E. Goodman, *Avicenna*, 126.

³²¹ See, Dag N. Hasse, "Avicenna on Abstraction," in *Aspects of Avicenna*, ed. Robert Wisnovsky (Princeton: Markus Wiener Publishers, 2001), 39; and it is then followed by Tommaso Alpina, "Intellectual Knowledge, Active Intellect and Intellectual Memory in Avicenna's *Kitāb al-Nafs* and Its Aristotelian Background," *Documenti e Studi Sulla Tradizione Filosofica Medievale* 25 (2014): 131-83; and Riccardo Strobino, "Principles of Scientific Knowledge and the Psychology of (their) Intellection in Avicenna's *Kitāb al-Burhān*," in *Savoir et démonstration. Les commentaires médiévaux sur les Seconds Analytiques*, ed. J. Biard (Turnhout: Brepols, 2015), 31-45. See also Dimitri Gutas, "The Empiricism of Avicenna," in *Oriens*, Vol. 40 No. 2 (2012): 391-436. Gutas, following an empiricist language, use the same

attribution would give an impression that Avicenna is a precursor to the sense data theory. That means, in other words, Avicenna thinks that we never perceive things and states of affairs in the world, but only our own experiences, or our own sense data. If that is true, therefore, the whole argument that I have been developing about his analysis of knowledge is totally wrong. Yet, I think, it cannot be the case. As a matter of fact, long before the sense data theory became a popular view in the early twentieth century, Avicenna has already presented an argument which can be adopted to counter certain arguments of sense data theories. I shall present this argument shortly. But before that I would like to mention that McGinnis (2008) has also noted earlier, albeit in passing, that Avicenna never thinks that we can construct our knowledge of the external world out of sense data. Moreover, I do not find those scholars, in attributing the term to Avicenna, substantiate their claim either by textual or terminological evidences. For, as a matter of fact, sense data is not a mere combination of words. It in fact is a philosophical theory about human perception and knowledge of the world.³²²

As a matter of historical fact, most of the great early modern philosophers such as Descartes, Locke, Berkeley, Hume, and Kant, believed that we do not perceive the real world. Rather, what we can only perceive directly are our own inner experiences, which are called “ideas” by Locke, “impressions” by Hume, and “representations” by Kant. The question arises,

term with respect to Avicenna’s primary propositions. As we have seen earlier in Chapter 3, it is about proposition rather than sense data.

³²² The classic works on the theory of sense data are Bertrand Russell, *Our Knowledge of External World* (London-New York: Routledge, 2009 [1914]); A. J. Ayer, *The Foundations of Empirical Knowledge* (London: MacMillan, 1969 [1940]); G. E. Moore, “Sense Data,” in *Some Main Problems of Philosophy* (London: George Allen & Unwin Ltd., 1953), 28-51.

then, what is the relationship between all these ideas, impressions, and representations with the world that we do not see?³²³ Taking their cues from those early modern philosophers, the Logical Positivists—the members a philosophical movement during the first half of the twentieth-century—would contend that the “world” in question is all just human’s mental construction out of sense data. Again, the question arises, why then should we bother to explain how the world works and how we are able to learn about it?

I should really now turn to my positive task of delineating Avicenna’s view on perception in the light of his analysis of knowledge that I presented it in the previous chapters. It has been showed in Chapter 3 that our thought and judgement is made possible by perception. It has been showed also in Chapter 2 that to have any conceptual knowledge about things in the world around us we must firstly perceive or apprehend them. However abstracts the concepts are, they must—at the most basic level, originate in perception. This does not mean, however, that Avicenna denies the possibility of concepts of the material entities which lie beyond sense perception. We have seen in Chapter 1, in regard to his ontological scheme and his unified system of knowledge, that mathematical concepts are among such that which lie beyond the material aspects of things and sense perception.³²⁴ So, our capacity of

³²³ This question is in the same tenor taken by John R. Searle, *Mind: A Brief Introduction*, (Oxford: Oxford University Press, 2004), and particularly by John Austin, who according to Searle contributed the most to the complete destruction of sense data theory, in *Sense and Sensibilia*, Warnock, G. J., ed., (Oxford: Clarendon Press, 1962). But, as a matter of comparison, Bernard Williams in his review of Austin’s work notes that, “Sense-data are, in fact, a pretty dead duck by now; but if the duck has any life in it, Austin’s arguments are not enough to finish it off.” See Bernard Williams, *Essays and Reviews, 1959-2002* (Princeton-Oxford: Princeton University Press, 2014), 41.

³²⁴ Almost the same view, I think, can be found in modern physical science. For example, Einstein used to note that the concepts of theoretical physics are independent of sense experience and are not abstracted from it. See Albert Einstein, “Physics and Reality,” Jean

knowledge, at the most basic level, is due to our faculty of perception, without which our mind could not possess any state with conceptual content.

Now, in perceiving a thing, we are having a perceptual experience which is causally related to the thing perceived given that its form is imprinted on our sense modality. Thus, Avicenna writes:

The perceptive faculty can be divided into two parts, the external sense and the internal sense. The external senses are the five or eight senses. One of them is sight, which is a faculty located in the concave nerve; it perceives the image of the forms of coloured bodies imprinted on the vitreous humour. These forms are transmitted through actually transparent media to polished surfaces. The second is the sense of hearing, which is a faculty located in the nerves distributed over the surface of the ear-hole; it perceives the form of what is transmitted to it by the vibration of the air which is compressed between two objects, one striking and the other being struck, the latter offering it resistance so as to set up vibrations in the air which produce the sound. This vibration of the air outside reaches the air which lies motionless and compressed in the cavity of the ear, moving it in a way similar to that in which it is itself moved. Its waves touch that nerve, and so it is heard.

The third sense is that of smell, a faculty located in the two protuberances of the front part of the brain which resemble the two nipples of the breasts. It perceives the odour conveyed to it by inhaled air, which is either mixed with the vapour in the air or

Piccard trans., in *Journal of the Franklin Institute*, Vol. 221 No. 3 (1936): 349-82. It should also be noted that Einstein's revolution in physical science has made Karl Popper to believe that we should not exclude metaphysics from science, see Karl Popper, *Conjectures and Refutation: The Growth of Scientific Knowledge*, (London-New York: Routledge, 2002 [1963]), esp. ch. 11, 341-94.

is imprinted on it through qualitative change in the air produced by an odorous body.

The fourth sense is that of taste, a faculty located in the nerves distributed² over the tongue, which perceives the taste dissolved from bodies touching it and mingling with the saliva it contains, thus producing a qualitative change in the tongue itself.

The fifth sense is that of touch, which is a faculty distributed over the entire skin and flesh of the body. The nerves perceive what touches them and are affected when it is 10 opposed to them in quality, and changes are then wrought in their constitution or structure.

Probably this faculty is not one species but a genus including four faculties which are all distributed throughout the skin. The first of them judges the opposition between hot and cold; the second that between dry and moist; the third that between hard and soft; and the fourth that between rough and smooth. But their coexistence in the same organ gives the false impression that they are essentially one.

The forms of all the sensibles reach the organs of sense and are imprinted on them, and then the faculty of sensation perceives them. [*Psychology*: 26-7]

Or, putting the matter the other way, we may say: when we perceive a thing, our perceptual experience is causally related to certain properties of that thing in such a way that we are thereby enabled to apprehend them and form a fairly reliable judgement as to what those properties are. These properties are then what Avicenna qualifies as sensibles or visible properties of the thing

perceived. In this way, perception, for Avicenna, is one of the constitutive parts of epistemic process. That is to say, it is a possible source of knowledge or true judgement about the thing perceived. But, this does not mean that by seeing a thing we thereby necessarily acquire true judgement and hence knowledge about it. This argument has, at least, a couple of things going for it. Firstly, there is often the case that we see things whose very existence we are quite ignorant at the time of seeing them. So it is possible that at the time of being presented with an array of visible or sensible things we fail to notice certain properties of them. But we are able to recall their presence at a later time, though this requires that we must have seen them earlier, since our faculty of memory can only recollect what have been seen or experienced in our sense modality (*Soul*, 45). Secondly, of which is analogous to the first, and of which I did not mention in preceding section on consciousness, but ought to be mentioned here, is that perception is intentional—it is directed towards an object. Therefore, it is natural that we could miss certain properties of the things in our first encounter with them. To avert misunderstanding, I am not bringing together two contradictory interpretations of Avicenna's view. What I am saying is that perception is a possible source of our knowledge about the thing we have seen, but there is still a possibility that we do not, at first sight, notice certain properties of it.

Likewise, in saying that by perceiving a thing we are enabled to form reliable judgements about the thing, it does not mean that we are necessarily have to form those judgements every time we see a thing. All I am saying is that, for Avicenna, it is only because a thing presents as it is in our perception

that we are able to form judgement with respect to its sensible properties. This point, I reckon, is quite clear from our discussions in Chapters 2 and 3. It must also be noted here that our perception, since it perceives thing as it is, is always true. It is only our judgement of what we perceive that may possibly be wrong. In this case, Avicenna gives an example of our seeing something yellow, which we judge it to be honey and sweet:

As for those which are sensibles, we see, for example, something yellow, and we judge that it is honey and sweet. For the thing sensing (*al-ḥāss*) does not convey this to it at this time. And it is in the genus of what is sensible, even though the judgment itself is not through anything sensible at all—even though its parts fall under the genus of the things sensed, nonetheless, [the thing sensing] does not perceive this in any way—for it is only a judgment by which one judges this, and sometimes there may be error in it. [*Soul*: 166]

A sense data theorist might smile at this argument. And she would press Avicenna with the “argument from illusion” about a stick which appears to be straight, but it seems to bend underwater.³²⁵ To this kind of argument, as I intimated earlier, Avicenna has already gave a complex problem with quite a detail explanation. This explanation is so interesting that I should quote the relevant passage *in extenso*:

Next, the imagery and form-bearing faculty, which [are two names for] a faculty arrayed behind the anterior ventricle of the

³²⁵ For a fuller account of this argument, see A. J. Ayer, *The Foundations of Empirical Knowledge*, (London: MacMillan, 1969 [1940]); and for a critique against it, see John Austin, *Sense and Sensibilia*, Warnock, G. J., ed., (Oxford: Clarendon Press, 1962).

brain that retains [the forms that] the common sense receives from the five external senses, where [those forms] remain in it after the departure of those sensibles. Know that the receptivity of any faculty other than the faculty used for memory is akin to water, for while water can receive ephemeral representations and, in general terms, shapes, it cannot retain them. However, we will give you still further verification of this. When you want to know the difference between the action of the external sense generally speaking, that of the common sense, and that of the imagery, then consider the drop of rain that falls in such a way that you see a straight line, or the straight thing that revolves such that its edge is thought to be circular. The thing cannot be perceived as straight or circular unless it is considered many times, but the external sense cannot see it twice, or rather sees it as it is; but when it takes shape in the common sense and [the thing itself] disappears before the form vanishes from the common sense, the external sense does see it as it is, and the common sense perceives it as something where it was and where it came to be, and then it sees a circular or straight extension. That cannot be attributed in any way to the external sense. As for the imagery, it perceives the two aspects and forms images of them both, even if the thing itself vanishes and disappears. [*Soul*: 44-5]

In the light of this passage it can be said that in some cases we perceive something and perceive it as it really is. But to say this much is still not to say a great deal: we need to take into account in far more detail the *conditions* in which we perceive the thing. In the case of circular thing, we do perceive the thing but under conditions that may be more or less misleading. From the fact that the thing looks (sort of) circular it does not mean that we are really seeing a circular thing. For it is in fact just the look. On the contrary, we are

really seeing a thing, a mind-independent existing material object, which under those conditions looks circular.

Finally, there is another important point with regard to Avicenna's theory of perception which proved to be very significant to his analysis of knowledge. The point is that: without perception and the ability to perceive things as they really are, it seems that there is no adequate basis for us to verify our judgements about the things in the world. It follows therefore that it is only in virtue of possessing the faculty of perception that we can acquire genuine knowledge. In fact, as we have seen in Chapter 3, Avicenna regards perceptual propositions among the premisses by which we can infer true conclusions/judgements that deserve to be called knowledge. Furthermore, perception is no less necessary even to our ordinary judgements in our daily life. If, for instance, some one says that there is a brown piano at the corner of the study room, I can ascertain its truth by just going and having a look. There are another couple of important points that need to be said on Avicenna's theory of perception. But I shall shelve them to the next section.

5.4 Perception and Reason

One of the reasons for some philosophers to take up philosophical explanations of knowledge is that they believe philosophising as a way of knowing. That it may furnish us with some knowledge of how our faculties make it possible for us to have genuine knowledge of the world. However, it

has been a prevalent tendency, since the late eighteenth century or so and especially since the early twentieth century, to suppose that philosophers must join one camp or the other, that is: Rationalist or Empiricist.³²⁶ When the extent of a certain philosopher's dependence on certain epistemic faculties is recognised, there is a temptation to think that she belonged to one of the camps or she might have been put into the wrong one.

For example, Aristotle is generally regarded as the ancient founder of empiricism, while some others contend that he is a rationalist.³²⁷ To bring the point closer to home: Avicenna used to be thought as a rationalist *par excellence*, but recent literature tries to portray him as a preeminent empiricist philosopher, almost as much as Locke in the eighteenth century.³²⁸ Let us take another example from early modern philosophy: On the one hand, Descartes is widely considered as a rationalist philosopher, even as a founder of Modern Rationalism. On the other hand, Locke is traditionally regarded not merely as an empiricist but the founder of British Empiricism.³²⁹

³²⁶ The most recent historical study on the beginning of this rationalist/empiricist classification may be found in Alberto Vanzo, "From Empirics to Empiricists," *Intellectual History Review* 24 (2014): 517-38.

³²⁷ On Aristotle's rationalism, see Michael Frede and Gisela Striker, *Rationality in Greek Thought* (Oxford: Clarendon Press, 2002), esp. Frede's chapter on "Aristotle's Rationalism," 157-73. On Aristotle's empiricism, see Jean De Groot, *Aristotle's Empiricism: Experience and Mechanics in the 4th Century BC* (Las Vegas-Zurich-Athens: Parmenides Publishing, 2014).

³²⁸ See for example, E. Terry Prothro, "Ibn Sina: Tenth Century Empiricist," *The Journal of General Psychology* 61 (1954): 3-9; Sari Nuseibeh, "Avicenna: Medicine and Scepticism," *Koroth* 8 (1981): 9-20; Sari Nuseibeh, "Al-'Aql al-Qudsī: Avicenna's Subjective Theory of Knowledge," *Studia Islamica*, 69 (1989): 39-54; Lenn Goodman, *Avicenna* (Ithaca: Cornell University Press, 2005), esp. Ch. 3; Jon McGinnis, "Scientific Methodologies in Medieval Islam," *Journal of the History of Philosophy* 41 (2003): 307-27; Dimitri Gutas, "The Empiricism of Avicenna," *Oriens* 40 (2012): 391-436.

³²⁹ For example, see John Cottingham, *The Rationalists* (Oxford: Oxford University Press, 1988); Pauline Phemister, *The Rationalist: Descartes, Spinoza and Leibniz* (Cambridge: Polity Press, 2006); Stephen Priest, *The British Empiricists* (London: Routledge, 2007).

It seems to me, however, that the terms empiricism and rationalism, and the crude classification of philosophers as rationalists and empiricists, are rather misleading and superficial. Indeed, as Gilbert Ryle has noted in the middle of the last century, “The historical truth is that the supposed two-party system of Rationalists versus Empiricists just did not exist.” (Ryle 2009, 157). As a matter of fact, Ryle is not alone in recognising this truth. There are other philosophers and historians of philosophy—before and after him—who have taken the task of attacking this crude, superficial classification. For instance, Karl Popper, among other great contemporary philosophers, argues that both empiricism and rationalism, if there are such things, are mistaken. Rather, for Popper, both reason and sense perception are indispensable for the growth of human knowledge.³³⁰ All these attacks, over the years, have led most historians and philosophers to abandon such shallow classification, though sometimes it still manages to emerge in popular writings on philosophy.

I find nowhere in the works of those great philosophers that they called themselves as rationalist or empiricist—nor do I find Locke called Descartes a rationalist. Furthermore, it is not quite clear what kind of empiricists or rationalists that Aristotle, Avicenna, Locke, and Descartes really are. But it is quite clear that both Descartes and Locke reject most of the doctrines that a rationalist or an empiricist, as traditionally defined, should hold. For our

³³⁰ See Karl Popper, *Conjectures and Refutation: The Growth of Scientific Knowledge*, (London-New York: Routledge, 2002 [1963]), esp. “On the Sources of Knowledge and Ignorance”, 3-41. The most notable attacks from historical standpoint are such by A.C. Ewing, “Some Points in the Philosophy of Locke,” *Philosophy* 56 (1937): 33-46; Richard Popkin, “Did Hume Ever Read Berkeley?” *Journal of Philosophy* 56 (1959): 533-45; David Norton, “The Myth of British Empiricism,” *History of European Ideas* 1 (1981): 331-44; and Knud Haakonssen, “The History of Eighteenth-Century Philosophy: History or Philosophy?” in *The Cambridge History of Eighteenth-Century Philosophy*, Knud Haakonssen (ed.), (Cambridge: Cambridge University Press, 2006), 3-25.

present purpose, it may suffice to take up only one doctrine: namely, the doctrine of sufficient reason (for the rationalist) or experience (for the empiricist). From a careful reading of Descartes' works, it will be found that he regards reason on its own is insufficient. He believes, in fact, that both reason and experience are important, though in different ways, in acquiring knowledge. To be sure, let me quote Descartes' words in 1637:

I noted, moreover, in respect of observations and experiments, that the further we progress in knowledge the more necessary they become. For, at the beginning, rather than to seek out rarer and more contrived experiments, it is better to undertake only those which communicate themselves directly to our senses, of which we cannot remain ignorant, provided that we reflect a little on them. The reason for this is that rarer experiments often mislead us, at a time when we do not still know the causes of more common ones, and the circumstances on which they depend are nearly always so specific and minute that it is difficult to take good note of them.³³¹

By the same token, Locke never thinks that sense perception may suffice to give us universal and certain knowledge. Among the doctrines that he tries to set out in his *Essay* is that: the evidence of particular perceptions can never be a foundation for true knowledge; true knowledge is both completely general and completely certain and is of the type of pure mathematics;

³³¹ René Descartes, *A Discourse on the Method*, trans. Ian Maclean (Oxford: Oxford University Press, 2006), Part VI, 52. From letters to his friends, we may find Descartes is complaining that he needs more time than he had to make observations on the carcasses of animals in butchers' shop. See, René Descartes, *The Philosophical Writings of Descartes, Vol. 3, The Correspondence*, ed. John Cottingham et al. (Cambridge: Cambridge University Press, 1991). See also, Daniel Garber, *Descartes Embodied: Reading Cartesian Philosophy through Cartesian Science* (Cambridge: Cambridge University Press, 2001), Ch. 5, 85-110; Desmond Clarke, *Descartes' Philosophy of Science* (Manchester: Manchester University Press, 1982), Ch. 8, 197-206.

inductive generalisations from collected observations can never yield better than probable generalisations giving us opinion but not knowledge, and so forth.³³² In the case of Aristotle, some scholars have, in fact, endeavoured to give a fair treatment of his views with respect to the equal important role of both sense perception and intellect in his grand system of demonstrative knowledge.³³³

As for Avicenna, it should be clear by now that for him both sense perception and reason are indispensable for our systematic understanding of the world. He even spell it out clearly that the two are working together: “the animal faculties assist the rational soul in various ways...” (*Psychology*, 54).³³⁴ This has been largely discussed in previous chapters. In what follows I will only point out further its implications with respect to our present concerns. As I intimated in the last section, perception occurs both at the beginning and at the end of the cognitive process that yields knowledge to our mind. But I scarcely mentioned there all the mental operations that occur between the two points, besides apprehension, judgement, and reasoning. There are, however, at least two more mental processes that involved in knowing a thing. Firstly, induction, by which the mind assembles particular sensibles and percepts perceived through perception; and secondly, intuition (*ḥads*) by which we apprehend the true essence of things. Let me take the matter in detail.

³³² See John Locke, *An Essay Concerning Human Understanding*, Peter E. Nidditch (ed.), (Oxford: Oxford Clarendon Press, 1987); see also Gilbert Ryle, *Critical Essays*, (London-New York: Routledge, 2009), esp. Chs. 7 and 8.

³³³ The most notable works, to name only three, are by Jonathan Lear, *Aristotle: The Desire to Understand*, (Cambridge: Cambridge University Press, 2007), esp. Ch. 4, 96-151; Victor Kal, *On Intuition and Discursive Reasoning in Aristotle*, (Leiden: E. J. Brill, 1988); Orna Harari, *Knowledge and Demonstration: Aristotle's Posterior Analytics*, (Dordrecht: Springer, 2004), esp. Ch. 1.

³³⁴ See also the *Soul*, 221.

In the light of our discussion in Chapter 2, through perception we take in the sensible properties (percepts) of the perceived thing. From these properties we derived what is called the essence of the thing. For example, when thinking of human beings in general, there emerges an idea or concept which encapsulates the true essence of them, that is, rational. This essence is shared by the whole species of humankind. To be sure this concept is derived from percepts. But, it is not a mere distillation or summary of our perceptual experience. The emergence of concept in human minds is truly a creative process. It consists in the emergence of something new (an idea)—through intuition—in our mind that was not in perception (*Metaphysics*, 110). From a contemporary neurophysiological point of view, this process can be explained as the emergence of a new plastic neuronal system, which occurs in one of the higher brain centres.³³⁵ Therefore, the crucial difference between this modern explanation and that of Avicenna is that it takes concepts to be the properties and in fact the creation of human brain rather than something received from the external Active Intellect. This kind of concept, as I suggested earlier in Chapter 2, may be called metaphysical concept of empirical kind since it is about the non-directly perceptible aspect of thing in the world (*Metaphysics*, 156). There is also what I called metaphysical concepts of trans-empirical or transcendental kind. They are such concepts as essence, substance, cause, and self—just to name only a few.

³³⁵ For a detail account of this process in terms of neurophysiological research, see Mario Bunge, *Treatise on Basic Philosophy, Vol. 5, Epistemology and Methodology I: Exploring the World* (Dordrecht: D. Reidel Pub., 1983), esp. Ch. 1, 21-34.

Unlike empirical concepts, transcendental concepts are not originated in the perceptual properties in our mind. Rather, they are derived from our intellectual reflection. Or more to the point, they are derived from our intellectual reflection on the metaphysical concepts of empirical kind. It must also be emphasised here that Avicenna time and again asserts that thinking in so far as it involved objects of (sense) experience must be grounded in perception, whereas in matters regarding the objects of reason the mind can work on its own without the help of perception (*De Anima*: 223). This, I hope, may suffice to show that for Avicenna both perception and reason play equally important role in our knowledge of concepts.

It is worth noting that idealists, like Hegel, deny the existence of metaphysical concepts of empirical kind, or at best regard them as dependent upon transcendental concepts.³³⁶ On the contrary, radical empiricists, as traditionally defined, and radical materialists deny the existence of metaphysical concepts, and regard the words designating them as meaningless. This is generally the philosophical attitude of the Logical Positivists during the first half of the twentieth century. The same attitude, indeed, can already be found in Hume and Kant. Hume used to dismiss metaphysical concepts such as substance and cause since he could not find their roots in sense perception.³³⁷ Similarly, Kant rejected all the concepts of pure reason, particularly if they purported to refer to things-in-themselves

³³⁶ See, G. W. F. Hegel, *The Science of Logic*, trans. George di Giovanni (Cambridge: Cambridge University Press, 2010).

³³⁷ See, David Hume, *A Treatise of Human Nature*, ed. David Fate Norton and Mary J. Norton (Oxford: Oxford University Press, 2000 [1738]).

(*Ding an sich*).³³⁸ All these criticism, however, only holds if we believe in the empiricist and materialist dogma that all that exist are which that can make some sense impression on us. But it seems to me that this dogma is hard to believe. This is especially when we take into account all the progress that have been made in mathematics and physics even during the times of Hume and Kant, which contained such metaphysical concepts as infinity, speed of light, and mass, and has become more and more abstract and far removed from sense perception in contemporary science with the concepts such as field, electron, and gene, etc.³³⁹ In fact, Einstein used to assert that “There is no inductive method which could lead to the fundamental concepts of physics.”³⁴⁰ Furthermore, the existence of conscious minds and their ability to access to the evident truth of mathematics are among the problems that science and philosophy cannot explain until now. Be that as it may, this materialist or naturalist reductionism has been the predominant influence in contemporary science and philosophy of mind, though there are always strong oppositions in both fields against its general assumption—that everything must be explained in terms of material and physical facts alone.³⁴¹

³³⁸ See Immanuel Kant, *Critique of Pure Reason*, trans. Paul Guyer and Allen W. Wood, (Cambridge: Cambridge University Press, 1999).

³³⁹ See, Mario Bunge, *Treatise on Basic Philosophy, Vol. 5, Epistemology and Methodology I: Exploring the World* (Dordrecht: D. Reidel Pub., 1983), esp. Ch. 1, pp. 21-34.

³⁴⁰ See, Albert Einstein, “Physics and Reality,” trans. Jean Piccard, *Journal of the Franklin Institute*, 221 (1936): 349-82.

³⁴¹ For the critiques against materialist or physical reductionism in general science, see the works of Karl Popper (*op. cit.*) and Mario Bunge (*op. cit.*). In philosophy of mind, see Thomas Nagel, “Panpsychism,” in *Mortal Questions* (Cambridge: Cambridge University Press, 1979), 181-195, “The Psychophysical Nexus,” in *Concealment and Exposure and Other Essays* (Oxford: Oxford University Press, 2002), 194-235; Jaegwon Kim, *Mind in a Physical World: An Essay on the Mind-Body Problem and Mental Causation* (Cambridge, MA: MIT Press, 1998); Galen Strawson et al., *Consciousness and Its Place in Nature: Does Physicalism Entail Panpsychism?* (Exeter: Imprint Academic, 2006); and Charles Hartshorne, “Physics and Psychics: The Place of Mind in Nature,” in *Mind in Nature: Essays on the Interface of Science and Philosophy*, ed. John B. Cobb, Jr., and David Ray Griffin (Washington, DC: University Press of America, 1977), 89–96.

Coming back to Avicenna, however, by saying that transcendental concepts are derived from intellectual reflection it does not follow that they are completely isolated from the real things in the world. On the contrary, they still refer to some or other aspect of external reality. Furthermore, some metaphysical concepts, say in mathematics, may be informed by empirical ones (*Metaphysics*, 2).³⁴² In the same way, some metaphysical concepts may inform empirical concepts and this in turn may guide some experience and action (*Metaphysics*, 2). This account may suffice, I hope, to show the role of perception, mind, and reason in Avicenna's account of knowledge. I have brought into light that he underlines the differences between percept and concept, and between empirical and transcendental concepts. But at the same time he maintains that the items of each kind of concepts are not mutually exclusive but they form the multi-layered structure of human cognitive processes. If we still insist to give his philosophical position a name, it may be called, I suggest, *empirio-rationalism*. For he subsumes both empiricism and rationalism, and he acknowledge the significant role of both sense perception and reason.

I shall now take up briefly one final point before I close this section. It is with regard to reasoning and derivative knowledge. We have seen in Chapter 2 that for Avicenna knowledge is not a mere collection of true judgements, but it is a system of interconnected true judgements. This is made possible by the power of human mind to extend its knowledge—to pass from one true judgement to some other new true judgements by way of reasoning. For this

³⁴² A detail discussion may be found in his *Metaphysics*, Book III, Chs. 3 and 5.

process of discursive reasoning to be able to yield new true judgements, it must meet certain conditions. Firstly, the first two existing true judgements or, simply, propositions, must be necessarily and rationally connected to each other; and secondly, the facts they presented must correspond to the real facts in the world. It is only in this way, according to Avicenna, that our reasoning can produce certain and true conclusions/judgements. Again, even in his theory of inference, we can see that Avicenna is consistently maintaining the equally important role of both perception and reason. In this way, then, knowledge in the sense that Avicenna speaks of it, when he speaks of discursive/derivative knowledge, is that which rationally grounded, and empirically verified.

5.5 Concluding Remarks

In the foregoing sections, I have presented Avicenna's account of how our epistemic faculties made it possible for human being to have an ever-growing immense system of knowledge. To renew my suggestion: Avicenna is right, I believe, in linking his analysis of knowledge with psychology. As remarked above, although knowledge and cognitive process are two different things, the former is an end-state while the latter is the process from which the former culminated. Yet it is impossible to separate the two or to understand the one without the other. For Avicenna, knowledge in fact can be defined in terms of our epistemic faculties: perceptual knowledge is defined in terms of perception, discursive knowledge in terms of reasoning, etc.

All our knowledge of reality, perceptual or conceptual, is constructed—though not always deliberately. It begins, first and foremost, with our own conscious mind. Then our perception relates our mind with the external reality. Like all truly great philosophers, Avicenna acknowledges the important role of both perception and reason in providing us with different kinds of knowledge. This is particularly evident not only in his analysis of knowledge but in his general system of derivative knowledge: from perceptions we have percepts; out of a combination of such percepts we have concepts; out of a combination of concepts we have judgements; out of a combination of judgements, reasoning; and, finally, out of innumerable and successive process of reasoning we have a grand system of derivative knowledge.

Chapter 6

Conclusion:

Avicenna's Analysis of Knowledge Summarised in Contemporary Form

The present chapter is divided into two parts. In the first, I shall present the theoretical implications of the argument developed in the foregoing chapters by way of summarising Avicenna's analysis of knowledge in modern, contemporary form. And the second part of the chapter is largely devoted to some potential theoretically, or rather philosophically, significant and interesting topics for future research in the light of this exploratory study.

I.

The trajectory of the argument of my thesis is now complete. I set out to demonstrate and reconstruct Avicenna's philosophical analysis of knowledge. And in the final analysis it turned out that according to Avicenna's analysis:

S knows P (where S stands for an individual person and P for an arbitrary thing in the world) *primarily* if and only if:

1. S apprehends P .
2. S makes a judgement that P .
3. P is true.

In propositional paradigm of knowledge, this analysis may be presented as follows:

S knows P (where S stands for an individual person and P for an arbitrary proposition) *primarily* if and only if:

1. S apprehends the meaning of P .
2. S makes a judgement that P is the case.
3. P is true.

This analysis, however, may or may not stop here. The proposition P that S judged to be really the case could be used as a starting point from which S can infer some new knowledge:

S , starting with P , things in the world Q and proposition R of Q , S knows R *derivatively* if and only if:

1. P is the initial cause of Q .
2. P (i) has been apprehended by S ; and (ii) has been judged to be the case by S ; and (iii) P is true.

3. R (i) has been apprehended by S ; and (ii) has been judged to be the case by S , from P following a valid process of inference.
4. P and R are true.
5. R necessarily follows from P .
6. It is not possible then for R not to be the case.
7. S knows with certainty that P and R are really the case.

If the foregoing account of Avicenna's analysis of knowledge is on the right lines, then there are several conclusions of philosophical and metaphysical interests can be drawn from it. Avicenna's analysis of knowledge gives us a realistic picture of the general character of human knowledge, including an account of how it develops into a system of derivative knowledge. Such a picture shows that the abilities to perceptually apprehend some particular thing as possessing certain characteristics and properties and to make judgement about the thing, which is then expressed in a form of proposition, are fundamental to knowledge in general.

This picture, of course, implies that an analysis of knowledge must fundamentally involve an inquiry into the nature of language and meaning. They are in fact not independent, but analogous inquiries. A theory of language and meaning is fundamental to the analysis of knowledge from the fact that: first, it must be explained how the basic semantic links between words and world are established; second, it must be explained how the meanings of propositions, which expressed our judgements, are systematically determined by the meanings of constituent words and constructions; and third, it must be explained how we can apprehend the

meanings of propositions as so determined. For apprehending the meaning of a proposition is prerequisite in making judgement about its truth.

Furthermore, the claim that we are able to determine the truth (or falsity) of a proposition implies the ability to recognise what makes a proposition true. And this consists in our ability to determine a certain correspondence between the proposition and that which in the world that the proposition is about. In this way, then, knowledge implies ontological relation between judgements and the world. And we may call this a realist conception of knowledge.

Finally, it is indisputable that much, or probably the greater part, of human knowledge is derived from prior judgements and knowledge. More exactly, a great part of the structures of our knowledge are erected on inference or reasoning. But inference itself, though it plays a very important role in constructing our edifice of knowledge, is not a fundamental source of knowledge. This follows from the fact that inference requires premisses. Although some of its premisses may themselves be derived from the existing true propositions, the process must, in the last resort, rest on the primary propositions, which themselves are not inferential.

II.

In addition to the main argument, I have put forward some novel arguments and approach in regard to both Avicenna's general system of philosophy and analysis of knowledge. In this thesis, however, I have only presented them in a preliminary manner, and many aspects of them deserve much more careful and detailed attention. Thus, I would like to suggest some potential lines of future research.

The first is in regard to Avicenna's metaphysical realism. I have argued that his metaphysical realism is important for a better and deeper understanding of his analysis of knowledge and his system of philosophy as a whole. It is no doubt that Avicenna's metaphysics is a very deep system or ideas to penetrate. And I do not pretend, in this thesis, to understand all its aspects and ramifications. As a matter of fact, there are two excellent scholarly works that have so far been written on Avicenna's metaphysics: *Avicenna's Metaphysics in Context* by Robert Wisnovsky (2003), which concerned with his theory of cause with particular focus on the soul and God; and *The Reception of Aristotle's Metaphysics in Avicenna's Kitāb al-Šifā'* by Amos Bertolacci (2006), which, as can clearly be seen in its title, focused on the Aristotelian origins of his work. Clearly a lot more works need to be written on Avicenna's metaphysics. One of the most theoretically and philosophically significant works to be done, in the light of the present thesis, is to develop a comprehensive account of Avicenna's unified system of knowledge that

demonstrate how his metaphysical realism plays a fundamental role as a unifying principle.

Secondly, rather than taking Avicenna's metaphysics as merely an antiquarian interest, it is also of highly philosophical and theoretical importance to develop some aspect of his ideas in an effort to restore metaphysics to a central position in contemporary philosophy as has been done by some prominent contemporary neo-Aristotelian metaphysicians such as Kit Fine and E. J. Lowe, to name only two, since the last thirty years or so ago.

Thirdly, I have demonstrated the significant role of essence in Avicenna's metaphysical realism. It has been argued that his theory of essence is indeed more sophisticated than that of Plato and Aristotle. As a matter of fact, essentialism is one of the key issues for contemporary metaphysicians like Fine, Lowe, Ellis and others in their attempt to provide alternative metaphysical foundations for contemporary theories about the nature of reality vis-à-vis the dominant metaphysics of the present age, i.e., physicalism. Besides treating Avicenna's essentialism as merely an antiquarian subject, I think it is certainly a desideratum to develop a rigorous account of Avicennian essentialism as another attempt to provide an adequate account of the underlying structure of reality.

These three points, however, are some of the most important aspects of Avicenna's philosophical programme that can be interpreted or

reinterpreted as a way to bring metaphysics back to a centre stage in contemporary philosophy. Besides that, there are a number of specific topics in Avicenna's analysis of knowledge that deserve a more comprehensive and systematic study. They include the following.

The first is Avicenna's theory of concepts.³⁴³ I have discussed in a cursory manner some kinds of concepts that Avicenna might have in mind when he speaks of concepts in his works. It follows therefore that a comprehensive and systematic account of each kind of concepts—including their nature, their emergence, and their place in the structure of human mind, and Avicenna's psychological explanation, if any, of what is happening in human mind when such concepts present to our mind while making judgements and apprehending propositions—would thus be a primary desideratum in this case.

The second topic concerns Avicenna's theories of judgement and inference. I have presented both theories in so far as they are sufficient for the purpose of my thesis. Obviously, there are more scholarly studies need to be done on both topics, but I would like to suggest only two general directions. Firstly, we need to study further Avicenna's psychological and logical accounts of judgement and how they serve as the epistemic foundation for his system of logic. Secondly, a detailed and systematic account of Avicenna's theory of inference is obviously a must.

³⁴³ It must be noted that I do not mention Avicenna's theory of definition here since it is the main subject of interest in the scholarly works of Riccardo Strobino.

The third topic is Avicenna's theory of truth. I have argued that Avicenna has different conceptions of truth analogous to the various kinds of human knowledge. But my concern in this thesis is primarily with his correspondence theory of truth and secondarily, or rather indirectly, with his coherence theory of truth. It follows therefore that a comprehensive study on his conceptions of truth and the role of truth in his system of logic is particularly of scholarly importance in this case.

And lastly, as is obvious in this thesis, it is particularly of theoretical and philosophical significance to develop a more detailed and rigorous arguments for Avicenna's analysis of knowledge as a better alternative to the traditional JTB account of knowledge. That, however, will certainly be the primary task in my next project to further develop this thesis into a book form.

Bibliography

- Abed, Shukri B. *Aristotelian Logic and the Arabic Language in al-Farabi*. Albany: State University of New York Press, 1991.
- _____. "Avicenna: iii. Logic," in *Encyclopaedia Iranica*, vol. III, edited by Ehsan Yarshater, 70-3. New York: Columbia University Press, 1987.
- Ackrill, J. L. *Essays on Plato and Aristotle*. Oxford: Oxford University Press, 1997.
- Adamson, Peter ed. *Interpreting Avicenna: Critical Essays*. Cambridge: Cambridge University Press, 2013.
- _____. *Al-Kindī*. Oxford: Oxford University Press, 2007.
- _____. "On Knowledge of Particulars." *Proceedings of the Aristotelian Society* 105 (2005): 257-278.
- Adamson, Peter and Key, Alexander. "Philosophy of Language in the Medieval Arabic Tradition." In *Linguistic Content: New Essays on the History of Philosophy of Language*, edited by Margaret Cameron and Robert J. Stainton, 74-99. Oxford: Oxford University Press, 2015.
- Adamson, Peter and Taylor, R. C. ed. *The Cambridge Companion to Arabic Philosophy*. Cambridge: Cambridge University Press, 2005.
- Afnan, Soheil. *Philosophical Terminology in Arabic and Persian*. Leiden-Boston: Brill, 1964.
- Ahmed, Asad Q. *Avicenna's Deliverance: Logic*. Karachi: Oxford University Press, 2011.
- _____. "The *Jiha/Tropos-Mādda/Hūlē* Distinction in Arabic Logic and its Significance for Avicenna's Modals." In *The Unity of Science in the Arabic Tradition*, edited by Shahid Rahman, Tony Street and Hassan Tahiri, 229-252. Dordrecht: Springer, 2008.
- Akasoy, Anna and Raven, Wim ed. *Islamic Thought in the Middle Ages: Studies in Text, Transmission and Translation, in Honour of Hans Daiber*. Leiden-Boston: Brill, 2008.
- Alpina, Tommaso. "Intellectual Knowledge, Active Intellect and Intellectual Memory in Avicenna's *Kitāb al-Nafs* and Its Aristotelian Background." *Documenti e Studi Sulla Tradizione Filosofica Medievale* 25 (2014): 131-83.
- Alston, William P. *A Realist Conception of Truth*. Ithaca, NY: Cornell University Press, 1996.
- _____. *Epistemic Justification*. Ithaca, NY: Cornell University Press, 1989.
- Altmann, Alexander and Stern, Samuel. *Isaac Israeli: A Neoplatonic Philosopher of the Early Tenth Century*. Chicago: University of Chicago Press, 2009.
- Amīn, 'Uthmān. *Iḥṣā' al-'Ulūm li al-Fārābī*. Cairo: Dār al-Fikr al-'Arabī, 1949.
- Ameriks, Karl. *The Cambridge Companion to German Idealism*. Cambridge: Cambridge University Press, 2000.

- Aminrazavi, Mehdi. "How Ibn Sīnā Is Suhrawardī's Theory of Knowledge?" *Philosophy East and West* 53 (2003): 203-214.
- _____. *Suhrawardi and the School of Illumination*. London: Routledge, 1997.
- Anagnostopoulos, Georgios. *A Companion to Aristotle*. Blackwell, 2009.
- Anawati, G. "Ishām Ibn Sīnā fī taqaddum al-'ulūm." *At-Turāt al-'Arabī* 2/5–6 (1981): 16–42.
- Annas, Julia. "Knowledge and Language: the *Theaetetus* and the *Cratylus*." In *Language and Logos: Studies in Ancient Greek Philosophy Presented to G. E. L. Owen*, edited by Malcolm Schofield and Martha Craven Nussbaum, 95-114. Cambridge: Cambridge University Press, 1982.
- Annis, David. "A Note on Lehrer's Proof that Knowledge Entails Belief." *Analysis* 29 (1969): 207-8.
- Ariew, Roger. *Descartes among the Scholastics*. Leiden-Boston: Brill, 2011.
- Aristotle. *Categories and De Interpretatione*. Translated by J. L. Ackrill. Oxford: Clarendon Press, 2002.
- _____. *Metaphysics*. Translated by Hugh Lawson-Tancred. London: Penguin Books, 1998.
- Armstrong, D. M. *Sketch for a Systematic Metaphysics*. Oxford: Clarendon Press, 2010.
- _____. *Truth and Truthmakers*. Cambridge: Cambridge University Press, 2004.
- _____. *A World of States of Affairs*. Cambridge: Cambridge University Press, 1997.
- _____. "A World of State of Affairs." *Philosophical Perspectives* 7 (1993): 429-40.
- _____. *Belief, Truth and Knowledge*. Cambridge: Cambridge University Press, 1981.
- _____. *Universals and Scientific Realism: Nominalism and Realism, Vol. 1*. Cambridge: Cambridge University Press, 1978.
- _____. *Universals and Scientific Realism: A Theory of Universals, Vol. 2*. Cambridge: Cambridge University Press, 1978.
- _____. "Does Knowledge Entail Belief?" *Proceeding of the Aristotelian Society* 70 (1969-70): 21-36.
- Arnaldez, R. "The Theory and Practice of Science according to Ibn Sīnā and al-Bīrūnī." *Studies in Philosophy of Medicine* 1 (1977): 58–69.
- Atiyeh, George N. *Al-Kindi: The Philosopher of the Arabs*. Islamic Research Institute: Islamabad, 1967.
- Austin, John L. *Sense and Sensibilia*, edited by G. J. Warnock. Oxford: Clarendon Press, 1962.
- _____. *How to Do Things with Words*. Oxford: Clarendon Press, 1962 [1955].
- _____. *Philosophical Papers*. Edited by J. O. Urmson and G. J. Warnock. Oxford: Clarendon Press, 1961.
- Avicenna. *The Metaphysics of the Healing*, translated by Michael E. Marmura. Provo, UT: Brigham Young University Press, 2005.
- Ayer, A. J. *The Foundations of Empirical Knowledge*. London: MacMillan, 1969 [1940].
- _____. *The Problem of Knowledge*. London: Macmillan, 1956.
- _____. *Language, Truth, and Logic*. New York: Dover Pub., 1952.
- Bäck, Allan. "Avicenna's Conception of the Modalities." *Vivarium* 30 (1992):

- 217-55.
- _____. "Avicenna on Existence." *Journal of the History of Philosophy* 25 (1987): 351-367.
- Bakar, Osman. *Classification of Knowledge in Islam: A Study in Islamic Philosophies of Science*. Kuala Lumpur: Institute for Policy Research, 1992.
- _____. *Tawhid and Science: Essays on the History and Philosophy of Islamic Science*. Penang, Malaysia: Secretariat for Islamic Philosophy and Science, 1991.
- Banchetti-Robino, Marina Paola. "Ibn Sīnā and Husserl on Intention and Intentionality." *Philosophy East & West* 54 (2004): 71–82.
- Barnes, Jonathan. *Aristotle: A Very Short Introduction*. Oxford: Oxford University Press, 2000.
- _____. *Aristotle's Posterior Analytics*. Oxford: Clarendon Press, 1985.
- _____. "Aristotle's Theory of Demonstration." *Phronesis* 14 (1969): 123-152.
- Barth, E. M. *The Logic of the Articles in Traditional Philosophy: A Contribution to the Study of Conceptual Structures*. Dordrecht-Boston: D. Reidel, 1974.
- Bartlett, Robert C. and Collins, Susan D. eds. *Aristotle's Nicomachean Ethics*. Chicago: University of Chicago Press, 2011.
- Bayer, Greg. "Definition through Demonstration: The Two Types of Syllogisms in "Posterior Analytics" II.8." *Phronesis* 40 (1995): 241-264.
- Beaney, Michael. "Analytic Philosophy and History of Philosophy: The Development of the Idea of Rational Reconstruction." In *The Historical Turn in Analytical Philosophy*, edited by Erich H. Reck, 231-60. Basingstoke: Palgrave Macmillan, 2013.
- Beebee, Helen and Dodd, Jr., Julian. *Truthmakers: The Contemporary Debate*. Oxford: Oxford University Press, 2005.
- Benfey, Christopher. "Wittgenstein's Handles." *The New York Review of Books*, May 24, 2016. Accessed May 27, 2016, <http://www.nybooks.com/daily/2016/05/24/wittgensteins-handles/>.
- Berjak, Rafik and Iqbal, Muzaffar. "Ibn Sīnā-Al-Bīrūnī Correspondence (i)-(viii)." *Islam & Science*, Vol. 1 (2003) – Vol. 5 (2007).
- Berkeley, George. *Principles of Human Knowledge*. Edited by Howard Robinson. Oxford: Oxford University Press, 1999 [1710].
- Berlin, Isaiah. *Vico and Herder: Two Studies in the History of Ideas*. London: Chatto and Windus, 1980.
- Bernecker, Sven and Pritchard, Duncan. *The Routledge Companion to Epistemology*. London-New York: Routledge, 2011.
- Berti, Enrico, ed. *Aristotle on Science. The Posterior Analytics: Proceedings of the Eighth Symposium Aristotelicum*. Padua: Editrice Antenore, 1981.
- Bertolacci, Amos. *The Reception of Aristotle's Metaphysics in Avicenna's Kitāb Al-Šifā': A Milestone of Western Metaphysical Thought*. Leiden-Boston: Brill, 2006.
- _____. "The Doctrine of Material and Formal Causality in the Ilāhiyyāt of Avicenna's Kitāb al-Shifā'." *Quaestio* 2 (2002): 125-54.
- _____. "From al-Kindī to al-Fārābī: Avicenna's Progressive Knowledge of Aristotle's Metaphysics According to his Autobiography." *Arabic Sciences and Philosophy* 11 (2001): 257-95.
- Bevir, Mark. *The Logic of the History of Ideas*. Cambridge: Cambridge

- University Press, 2004.
- Biard, Joël. "Nominalism in the Later Middle Ages." In *The Cambridge History of Medieval Philosophy, Vol. 2*, edited by Robert Pasnau, 661-73. Cambridge: Cambridge University Press, 2010.
- Bingöl, Abdulkudûs. "The Logical Essence and its Acquisition in Ibn Sînâ's Philosophy." *Acts of the International Symposium on Ibn Turk, Khwârezmi, Fârâbî, Beyrûnî and Ibn Sînâ*, Ankara, 9-12 September 1985. Ankara: Turk Tarih Kurumu Basimevi, 1990.
- Black, Deborah L. "Certitude, Justification, and the Principles of Knowledge in Avicenna's Epistemology." In *Interpreting Avicenna: Critical Essays*, edited by Peter Adamson, 120-42. Cambridge: Cambridge University Press, 2013.
- _____. "Avicenna on Self-Awareness and Knowing that One Knows." In *The Unity of Science in the Arabic Tradition*, edited by Shahid Rahman, Tony Street and Hassan Tahiri, 63-87. Springer, 2008.
- _____. "Rational Imagination: Avicenna on the Cogitative Power." In *The Proceedings of the Conference on Philosophical Psychology in Arabic and Latin Aristotelianism*, Universidad Panamericana, Mexico City. 2008.
- _____. "Knowledge ('ilm) and Certitude (yaqīnī) in al-Farabi's Epistemology." *Arabic Sciences and Philosophy* 16 (2006): 11-45.
- _____. "Psychology: Soul and Intellect." In *The Cambridge Companion to Arabic Philosophy*, edited by Peter Adamson and Richard C. Taylor, 308-26. Cambridge: Cambridge University Press, 2005.
- _____. "Imagination and Estimation: Arabic Paradigms and Western Transformation." *Topoi* 19 (2000): 59-75.
- _____. "Estimation (Wahm) in Avicenna: The Logical and Psychological Dimensions." *Dialogue* XXXII (1993): 219-58.
- Blackburn, Simon. "Thomas Nagel: A Philosopher Who Confesses to Finding Things Bewildering." Review of *Mind and Cosmos: Why the Materialist Neo-Darwinian Conception of Nature is Almost Certainly False*, by Thomas Nagel. *New Statesman*, November 8, 2012. <http://www.newstatesman.com/culture/culture/2012/thomas-nagel-philosopher-who-confesses-finding-things-bewildering>.
- _____. *Spreading the Word: Groundings in the Philosophy of Language*. Oxford: Clarendon Press, 1984.
- Blanshard, Brand. *The Nature of Thought*, 2 Vols. London: Allen & Unwin, 1939.
- BonJour, Laurence. *Epistemology: Classic Problems and Contemporary Responses*. Rowman & Littlefield Publishers, 2002.
- _____. "Against Naturalized Epistemology." *Midwest Studies in Philosophy* 19 (1994): 283-300.
- _____. *The Structure of Empirical Knowledge*. Cambridge, MA: Harvard University Press, 1985.
- Bosanquet, Bernard. *The Essentials of Logic: Being the Ten Lectures on Judgment and Inference*. London: Macmillan & Co., 1906 [1895].
- _____. *Knowledge and Reality*. London: Swan Sonnenschein, 1892 [1885].
- Boyd, Richard N. "On the Current Status of the Issue of Scientific Realism." *Erkenntnis* 19 (1983): 45-90.
- Bradley, F. H. *Writings on Logic and Metaphysics*. Oxford: Clarendon Press,

- 2004.
- _____. *The Principles of Logic*. London: Geoffrey Cumberledge, Oxford University Press, 1950 [1883].
- Braver, Lee. *A Thing of This World: A History of Continental Anti-Realism*. Evanston: Northwestern University Press, 2007.
- Brentano, Franz. *The True and the Evident*. Translated by Roderick Chisholm *et. al.* London: Routledge and Kegan Paul, 1966.
- Broad, C. D. "Wittgenstein and the Vienna Circle." *Mind* 71 (1962): 251.
- Broadie, Alexander. "The Practical Syllogism." *Analysis* 29 (1968): 26-28.
- Broadie, Sarah and Rowe, Christopher. *Aristotle: Nicomachean Ethics*. Oxford: Oxford University Press, 2002.
- Bunge, Mario. *Chasing Reality: Strife over Realism*. Toronto: Toronto University Press, 2006.
- _____. *Treatise on Basic Philosophy, Vol. 5, Epistemology and Methodology I: Exploring the World*. Dordrecht: D. Reidel Pub., 1983.
- _____. *Treatise on Basic Philosophy: Semantics II: Interpretation and Truth, Vol. 2*. Dordrecht: D. Reidel Pub., 1974.
- Burge, Tyler. "Individualism and Self-Knowledge." *Journal of Philosophy* 85 (1988): 649-63.
- Burnyeat, Myles F. "Episteme." In *Episteme, etc. Essays in Honour of Jonathan Barnes*, edited by Benjamin Morrison and Katerina Ierodiakonou, 1-32. Oxford: Oxford University Press, 2011.
- _____. "Aristotle on Understanding Knowledge." In *Aristotle on Science: 'The Posterior Analytics'* (Proceedings of the Eighth Symposium Aristotelicum), edited by Enrico Berti, 97-139. Padua, 1981.
- _____. "Socrates and the Jury: Paradoxes in Plato's Distinction between Knowledge and True Belief, Part 1." *Proceedings of the Aristotelian Society* 54 (1980): 173-91.
- Butterworth, Charles E. *Alfarabi. The Political Writings: Selected Aphorisms and Other Texts*. Ithaca: Cornell University Press, 2001.
- _____. "The Political Teaching of Avicenna." *Topoi* 19 (2000): 35-44.
- _____. "The Study of Arabic Philosophy Today." *Middle East Studies Association Bulletin* 17 (1983): 8-24.
- Ceylan, Yasin. "A Kantian Approach to the Avicennian Doctrine of Abstraction." *Islamic Studies* 31 (1992): 71-82.
- Chakravartty, Anjan. *A Metaphysics for Scientific Realism: Knowing the Unobservable*. Cambridge: Cambridge University Press, 2007.
- Chase, James and Reynolds, Jack. *Analytic Versus Continental: Arguments on the Methods and Value of Philosophy*. Durham: Acumen, 2011.
- Chisholm, Roderick. *Theory of Knowledge*. Englewood Cliffs, NJ: Prentice-Hall, 1989 [1966].
- _____. *The Foundations of Knowing*. Minneapolis: University of Minnesota Press, 1983.
- Chomsky, Noam. *Cartesian Linguistics: A Chapter in the History of Rationalist Thought*, 3rd ed., Cambridge: Cambridge University Press, 2009.
- _____. *Language and Problems of Knowledge: The Managua Lectures*, Cambridge, Ma-London: The MIT Press, 1988.
- _____. "Recent Contribution to the Theory of Innate Ideas: Summary of Oral Presentation." *Synthese* 17 (1967): 2-11.
- Chomsky, Noam & Katz, Jerrold J. "On Innateness: A Reply to Cooper." *The*

- Philosophical Review*, Vol. 84, No. 1 (1975): 70-87.
- Churchland, Patricia S. "Epistemology in the Age of Neuroscience." *The Journal of Philosophy* 84 (1987): 544–553.
- Churchland, Paul M. and Hooker, Clifford A. ed. *Images of Science: Essays on Realism and Empiricism, with a Reply from Bas C. van Fraassen*. Chicago: University of Chicago Press, 1985.
- Clarke, Desmond. *Descartes' Philosophy of Science*. Manchester: Manchester University Press, 1982.
- Cleary, John J. "On the Terminology of 'Abstraction' in Aristotle." *Phronesis* 30 (1985): 13-45.
- Code, Alan. "The Persistence of Aristotelian Matter." *Philosophical Studies* 29 (1976): 357-67.
- Cohen, L. Jonathan. "More About Knowing and Feeling Sure." *Analysis* 27 (1966): 11-16.
- Copplestone, Frederick. *A History of Philosophy, Vol. III: Late Medieval and Renaissance Philosophy*. New York: Doubleday, 1993.
- Cooper, David E. "Innateness: Old and New." *The Philosophical Review* 81 (1972): 465-83.
- Corbin, Henry. *Avicenna and the Visionary Recital*. New York: Pantheon Books, 1960.
- Cornford, F. M. *Plato's Theory of Knowledge: The Theaetetus and The Sophist of Plato Translated with a Running Commentary*. London: Kegan Paul, 1935.
- Cottingham, John. *Cartesian Reflections: Essays on Descartes's Philosophy*. Oxford: Oxford University Press, 2008.
- _____. *The Rationalists*. Oxford: Oxford University Press, 1988.
- Crivelli, Paolo. *Aristotle on Truth*. Cambridge: Cambridge University Press, 2004.
- Cunningham, Andrew. "The Identity of Natural Philosophy: A Response to Edward Grant." *Early Science and Medicine* 5 (2000): 259-78.
- _____. "A Last Word." *Early Science and Medicine* 5 (2000): 299-300.
- Curley, Edwin. "Dialogues with the Dead." *Synthese* 67 (1986): 33-49.
- Dağ, Mehmet. "Some Notes on Avicenna's Epistemology." In *Acts of the International Symposium on Ibn Turk, Khwārezmi, Fārābī, Beyrūnī and Ibn Sīnā*, Ankara 9-12 September 1985, Ankara: Turk Tarih Kurumu Basimevi, 1990.
- Daiber, Hans. *Bibliography of Islamic Philosophy*, 2 Vols. Leiden-Boston: Brill, 1999.
- Davidson, Donald. "The Folly of Trying to Define Truth." *The Journal of Philosophy* 93 (1996): 263-78.
- Davidson, Herbert E. *Alfarabi, Avicenna, and Averroes on Intellect: Their Cosmologies, Theories of the Active Intellect, and Theories of Human Intellect*. Oxford: Oxford University Press, 1992.
- D'Ancona, Christina. "Degrees of Abstraction in Avicenna: How to Combine Aristotle's *De Anima* and the *Enneads*." In *Theories of Perception in Medieval and Early Modern Philosophy*, edited by Simo Knuuttila and Pekka Kärkkäinen, 47-71. Dordrecht: Springer, 2008.
- Descartes, René. *Meditations on First Philosophy*. Translated by George Heffernan. Notre Dame: Notre Dame University Press, 2003.
- _____. *The Philosophical Writings of Descartes, Vol. III, The*

- Correspondence*. Translated by John Cottingham, Robert Stoothoff, Dugald Murdoch, Anthony Kenny. Cambridge: Cambridge University Press, 1995.
- _____. *A Discourse on the Method*. Translated by Ian Maclean. Oxford: Oxford University Press, 2006.
- _____. *The Philosophical Writings of Descartes*, 2 Vols. Translated by John Cottingham, Robert Robert Stoothoff, Dugald Murdoch. Cambridge: Cambridge University Press, 1984.
- _____. *Principles of Philosophy*. Translated by Valentine Rodger Miller and Reese P. Miller. Dordrecht-Boston: D. Reidel Pub., 1984 [1644].
- _____. *The Philosophical Works of Descartes*, 2 Vols. Translated by Elizabeth S. Haldane & G.R.T. Ross. New York: Dover, 1955.
- Daiber, Hans. "Limitations of Knowledge according to Ibn Sīnā: Epistemological and Theological Aspects and the Consequences." In *Erkenntnis und Wissenschaft: Probleme der Epistemologie in der Philosophie des Mittelalters*, edited by M. Lutz-Bachmann et al., 25-34. Berlin: Akademie-Verlag, 2004.
- Davidson, Donald. *Inquiries into Truth and Interpretation*. Oxford: Clarendon Press, 1991).
- Davidson, Herbert A. *Alfarabi, Avicenna, and Averroes on Intellect: Their Cosmologies, Theories of the Active Intellect, and Theories of Human Intellect*. Oxford: Oxford University Press, 1992.
- _____. "Alfarabi and Avicenna on the Active Intellect." *Viator* 3 (1972): 109-178.
- De Groot, Jean. *Aristotle's Empiricism: Experience and Mechanics in the 4th Century BC*. Las Vegas-Zurich-Athens: Parmenides Publishing, 2014.
- _____. "Is Aristotelian Science Possible? A Commentary on MacIntyre and McMullin." *The Review of Metaphysics* 60 (2007): 463-477.
- Devitt, Michael. *Putting Metaphysics First: Essays on Metaphysics and Epistemology*. Oxford: Oxford University Press, 2010.
- _____. *Ignorance of Language*. Oxford: Clarendon Press, 2006.
- _____. *Realism and Truth*. Princeton: Princeton University Press, 1997.
- _____. "Aberrations of the Realism Debate," *Philosophical Studies: An International Journal for Philosophy in the Analytic Tradition* 61 (1991): 43-63.
- Dodd, Julian. "Is Truth Supervenient on Being?" *Proceedings of the Aristotelian Society* 102 (2002): 69-85.
- _____. "The World is the Totality of Things, Not of Facts': A Strawsonian Reply to Searle." *Ratio* 15 (2002): 176-93.
- Dummett, Michael. *Frege: Philosophy of Language*. London: Duckworth, 1973.
- Dupré, John. "Metaphysical Disorder and Scientific Disunity." In *The Disunity of Science: Boundaries, Contexts and Power*, edited by Peter Galison and David Stump, 101-17. Stanford: Stanford University Press, 1996.
- _____. *The Disorder of Things: Metaphysical Foundations of the Disunity of Science*. Cambridge, MA: Harvard University Press, 1993.
- _____. "The Disunity of Science." *Mind* 92 (1983): 321-46.
- Einstein, Albert. "Physics and Reality." Translated by Jean Piccard. *Journal of the Franklin Institute* 221 (1936): 349-82.
- Ellis, Brian. *The Philosophy of Nature: A Guide to the New Essentialism*. Chesham: Acumen, 2002.

- _____. *Scientific Essentialism*. Cambridge: Cambridge University Press, 2001.
- Endress, Gerhard. "The Language of Demonstration: Translating Science and the Formation of Terminology in Arabic Philosophy and Science." *Early Science and Medicine* 3 (2002): 231-54.
- Engelmann, Edward M. "Scientific Demonstration in Aristotle, "Theoria", and Reductionism." *The Review of Metaphysics* 60 (2007): 479-506.
- Ewing, A. C. "Some Points in the Philosophy of Locke." *Philosophy* 56 (1937): 33-46.
- Fakhry, Majid. "The Subject-Matter of Metaphysics: Aristotle and Ibn Sina (Avicenna)." In *Islamic Theology and Philosophy: Studies in Honor of George F. Hourani*, edited by Michael E. Marmura, 137-47. Albany: SUNY Press, 1984.
- _____. *A History of Islamic Philosophy*. New York: Columbia University Press, 1970.
- Faroqhi, Suraiya N. *The Cambridge History of Turkey, Vol. 3, The Later Ottoman Empire, 1603–1839*. Cambridge: Cambridge University Press, 2006.
- Feigl, Herbert. *The "Mental" and the "Physical": The Essay and a Postscript*. Minneapolis: University of Minnesota Press, 1967.
- _____. "Physicalism, Unity of Science and the Foundations of Psychology." In *The Philosophy of Rudolf Carnap* (The Library of Living Philosopher: Volume XI), edited by Paul Arthur Schilpp, 227-67. La Salle, Illinois: Open Court, 1963.
- Feldman, Seymour. "Rescher on Arabic Logic." *The Journal of Philosophy* 61(1964): 724-34.
- Ferejohn, Michael. *The Origins of Aristotelian Science*. New Haven-London: Yale University Press, 1991.
- _____. "Definition and the Two Stages of Aristotelian Demonstration." *The Review of Metaphysics* 36 (1982): 375-95.
- Ferraris, Maurizio. *Manifesto of New Realism*. Translated by Sarah De Sanctis. Albany: State University of New York, 2014.
- Fine, Gail. *On Ideas: Aristotle's Criticism of Plato's Theory of Forms*. Oxford: Oxford University Press, 2004.
- _____. "Knowledge and True Belief in the Meno." In *Oxford Studies in Ancient Philosophy*, Vol. XXVII, edited by David Sedley, 41-81. Oxford: Oxford University Press, 2004.
- _____. "Knowledge and Logos in the *Theaetetus*." *Philosophical Review* 88 (1979): 366-97.
- Fine, Kit. *The Limits of Abstraction*. Oxford: Clarendon Press, 2002.
- _____. "Ontological Dependence." *Proceedings of the Aristotelian Society* 95 (1995): 269-90.
- _____. "Essence and Modality." In *Philosophical Perspectives, 8: Logic and Language*, edited by James E. Tomberlin, 1-16. Atascadero, CA: Ridgeview, 1994.
- _____. "Aristotle on Matter." *Mind* 101 (1992): 35-57.
- Fodor, Jerry. "Special Sciences (Or: The Disunity of Science as a Working Hypothesis)." *Synthese* 28 (1974): 97-115.
- Foucault, Michel. *The Archeology of Knowledge*. London-New York: Routledge, 2002 [1969].

- _____. *The Oder of Things: An Archeology of the Human Sciences*. London-New York: Routledge, 2002 [1966].
- Fraassen, Bas C. van. *Scientific Representation*. Oxford: Clarendon Press, 2008.
- _____. "Putnam's Paradox: Metaphysical Realism Revamped and Evaded." *Philosophical Perspectives* 11 (1997): 17-42.
- _____. *The Scientific Image*. Oxford: Clarendon Press, 1980.
- Frede, Michael. "History of Philosophy as a Discipline." *Journal of Philosophy* 85 (1988): 666-72.
- Frede, Michael and Striker, Gisela. *Rationality in Greek Thought*. Oxford: Clarendon Press, 2002.
- Frege, Gottlob. *Translations from the Philosophical Writings of Gottlob Frege*. Edited and translated by Peter Geach and Max Black. Oxford: Basil Blackwell, 1960.
- _____. "The Thought: A Logical Inquiry." Translated by A. M. and Marcelle Quinton. *Mind* 65 (1956): 289-311.
- French, Robert and Cunningham, Andrew. *Before Science: The Invention of the Friar's Natural Philosophy*. Aldershot: Ashgate Publishing, 1996.
- Frolova, Yevgeniya. "The Problem of Method in Ibn Sina's Philosophy." In *Muslim Philosophy in Soviet Studies*, edited by Marietta Stephanyants. New Delhi: Sterling Publishers Private limited, 1988.
- Fumerton, Richard. *Epistemology*. Oxford: Blackwell, 2009.
- Furth, Montgomery. *Substance, Form and Psyche: An Aristotelian Metaphysics*. Cambridge: Cambridge University Press, 1988.
- Gacek, Adam. *Arabic Manuscripts: A Vademecum for Readers*. Leiden and Boston: Brill, 2009.
- Gadamer, Hans-Georg. *Truth and Method*. London: Continuum, 2006.
- Galison, Peter and Stump, David eds. *The Disunity of Science: Boundaries, Contexts and Power*. Stanford: Stanford University Press, 1996.
- Galston, Mariam. "Al-Fārābī on Aristotle's Theory of Demonstration." In *Islamic Philosophy and Mysticism*, edited by Parviz Morewedge, 23-34. New York: Caravan Books, 1981.
- _____. "Realism and Idealism in Avicenna's Political Philosophy." *The Review of Politics* 41 (1979): 561-77.
- Garber, Daniel. *Descartes Embodied: Reading Cartesian Philosophy through Cartesian Science*. Cambridge: Cambridge University Press, 2001.
- Gardet, Louis. *La pensée religieuse d'Avicenne*. Vrin: Paris, 1951.
- Geach, Peter and Black, Max ed. *Translations from the Philosophical Writings of Gottlob Frege*. Oxford: Basil Blackwell, 1960.
- Gettier, Edmund. "Is Justified True Belief Knowledge?" *Analysis* 23 (1963): 121-23.
- Glock, Hans-Johann. *What is Analytic Philosophy*. Cambridge: Cambridge University Press, 2008.
- _____. "Truth in the *Tractatus*." *Synthese* 148 (2006): 345-68.
- Gohlman, William E. *The Life of Ibn Sīna: A Critical Edition and Annotated Translation*. Albany, New York: SUNY, 1974.
- Goldman, Alvin I. "What is Justified Belief?" In *Justification and Knowledge*. Edited by George Pappas, 1-24. Dordrecht: Reidel, 1979.
- _____. "A Causal Theory of Knowing." *The Journal of Philosophy* 64 (1967): 357-72.

- Gaukroger, Stephen. *Descartes: An Intellectual Biography*. Oxford: Clarendon Press, 1995.
- Goichon, A.-M. *Lexique de la Langue Philosophique D'Ibn Sīnā*. Paris: Desclée de Brouwer, 1938.
- _____. *Livre des definition*. Cairo: L'Institut Français d'Archéologie Orientale, 1963.
- Goodman, Lenn E. *Avicenna*. London: Routledge, 1992.
- Goodman, Nelson. *The Structure of Appearance*. Dordrecht: Springer, 1977.
- Goodman, Nelson and Quine, W. V. O. "Steps Toward a Constructive Nominalism." In *The Nature of Properties: Nominalism, Realism, and Trope Theory*, edited by Michael Tooley, 337-54. New York: Garland Pub, 1999.
- Gotthelf, Allan and Lennox, John G. eds. *Philosophical Issues in Aristotle's Biology*. Cambridge: Cambridge University Press, 1987.
- Grant, Edward. "God and Natural Philosophy: The Late Middle Ages and Sir Isaac Newton." *Early Science and Medicine* 5 (2000): 279-98.
- _____. "God, Science, and Natural Philosophy in the Late Middle Ages." In *Between Demonstration and Imagination. Essays in the History of Science and Philosophy Presented to John D. North*, edited by Lodi Nauta and Arjo Vanderjagt, 243-67. Leiden: Brill, 1999.
- Grayling, A. C. *An Introduction to Philosophical Logic*. Totowa: Barnes and Noble, 1982.
- Greenough, Patrick and Pritchard, Duncan ed. *Williamson on Knowledge*. Oxford: Oxford University Press, 2009.
- Greenough, Patrick and Lynch, Michael P. ed. *Truth and Realism*. Oxford: Oxford University Press, 2006.
- Grice, H. P. "Utterer's Meaning, Sentence-Meaning, and Word-Meaning." In *The Philosophy of Language*, edited by John R. Searle, 54-70. Oxford: Oxford University Press, 1971.
- Grover, Dorothy. *A Prosentential Theory of Truth*. Princeton: Princeton University Press, 1992.
- Gutas, Dimitri. *Avicenna and the Aristotelian Tradition: Introduction to Reading Avicenna's Philosophical Works*. Leiden-Boston: Brill, 2014 [1988].
- _____. "The Empiricism of Avicenna." *Oriens* 40 (2012): 391-436.
- _____. "Avicenna: The Metaphysics of the Rational Soul." *The Muslim World* 102 (2012): 417-25.
- _____. "Imagination and Transcendental Knowledge in Avicenna." In *Arabic Theology, Arabic Philosophy: From the Many to the One: Essays in Celebration of Richard M. Frank*, edited by James E. Montgomery, 337-54. Leuven-Paris-Dudley: Peeters, 2006.
- _____. "Intellect Without Limits: The Absence of Mysticism in Avicenna." In *Intellect and Imagination in Medieval Philosophy, Proceedings of the XI. International Congress of Medieval Philosophy, Porto 26-31/VIII/2002*, edited by M.C. Pacheco and J.F. Meirinhos, 351-72. Turnhout: Brepols, 2006.
- _____. "The Logic of Theology (*kalām*) in Avicenna." In *Logik und Theologie*, edited by Dominik Perler and Ulrich Rudolph, 59-72. Leiden-Boston: Brill, 2005.
- _____. "Avicenna's Marginal Glosses on De anima and the Greek

- Commentatorial Tradition." *Bulletin of the Institute of Classical Studies* 47 (2004): 77-88.
- _____. "The Study of Arabic Philosophy in the Twentieth Century: An Essay on the Historiography of Arabic Philosophy." *British Journal of Middle Eastern Studies* 29 (2002): 5-25.
- _____. "Certainty, Doubt, Error: Comments on the Epistemological Foundations of Medieval Arabic Science." *Early Science and Medicine* 7 (2002): 276-89.
- _____. "Intuition and Thinking: The Evolving Structure of Avicenna's Epistemology." In *Aspects of Avicenna*, edited by Robert Wisnovsky, 1-38. Princeton: Markus Weiner Publishers, 2001.
- _____. "Avicenna's Eastern ("Oriental") Philosophy: Nature, Contents, Transmission." *Arabic Sciences and Philosophy* 10 (2000): 159-180.
- _____. *Greek Thought, Arabic Culture. The Graeco-Arabic Translation Movement in Baghdad and Early Abbasid Society (2nd–4th/8th–10th Centuries)*. London-New York: Routledge, 1998.
- _____. "Ibn Ṭufayl on Ibn Sīnā's Eastern Philosophy." *Oriens* 34 (1994): 222-41.
- _____. "Avicenna's "Maḍhab" with an Appendix on the Question of His Date of Birth." *Quaderni di Studi Arabi* 5/6 (1987-1988): 323-36.
- _____. "Philoponos and Avicenna on the Separability of the Intellect: A Case of Orthodox Christian/Muslim Agreement." *Greek Orthodox Theological Review* 31 (1986): 121–129, reprinted in D. Gutas, *Greek Philosophers in the Arabic Tradition*, Aldershot: Ashgate, 2000.
- Guthrie, W. K. C. "Aristotle as a Historian of Philosophy: Some Preliminaries." *The Journal of Hellenic Studies* 77 (1957): 35-41.
- Gutting, Gary. "Foucault, Michel (1926–1984)." In *The Routledge Encyclopedia of Philosophy*, 10 vols., edited by Edward Craig, 708-13. London and New York: Routledge, 1998.
- Gyekye, Kwame. "The Term Istithnā' in Arabic Logic." *Journal of the American Oriental Society* 92 (1972): 88-92.
- _____. "The Terms "Prima Intentio" and "Secunda Intentio" in Arabic Logic." *Speculum* 46 (1971): 32-38.
- Haakonssen, Knud. "The History of Eighteenth-Century Philosophy: History or Philosophy?" In *The Cambridge History of Eighteenth-Century Philosophy*, edited by Knud Haakonssen, 3-25. Cambridge: Cambridge University Press, 2006.
- Hacking, Ian. "The Disunities of Science." In *The Disunity of Science: Boundaries, Contexts and Power*, edited by Peter Galison and David Stump, 37-74. Stanford: Stanford University Press, 1996.
- _____. "A Tradition of Natural Kinds." *Philosophical Studies: An International Journal for Philosophy in the Analytic Tradition* 61 (1991): 109-26.
- Hacohen, Malachi H. *Karl Popper, The Formative Years 1902-1945: Politics and Philosophy in Interwar Vienna*. Cambridge: Cambridge University Press, 2000.
- Harari, Orna. *Knowledge and Demonstration: Aristotle's Posterior Analytics*. Dordrecht: Kluwer Academic Publishers, 2004.
- Harmann, Gilbert. "Reflections on Knowledge and Its Limits." *The Philosophical Review* 111 (2002): 417-28.

- Hartshorne, Charles. "Physics and Psychics: The Place of Mind in Nature." In *Mind in Nature: Essays on the Interface of Science and Philosophy*, edited by John B. Cobb, Jr., and David Ray Griffin, 89-96. Washington, DC: University Press of America, 1977.
- Hasnawi, Ahmad. "Avicenna on the Quantification of Predicate (with an Appendix on [Ibn Zur'ā])." In *The Unity of Science in the Arabic Tradition: Science, Logic, Epistemology and their Interactions*, edited by Shahid Rahman et. al., 295-328. Dordrecht-London: Springer, 2008.
- Hasse, Dag N. "Avicenna's Epistemological Optimism." In *Interpreting Avicenna: Critical Essays*, edited by Peter Adamson, 109-19. Cambridge: Cambridge University Press, 2013.
- _____. "Avicenna on Abstraction." In *Aspects of Avicenna*, edited by Robert Wisnovsky, 39-72. Princeton: Markus Weiner Publishers, 2001.
- _____. *Avicenna's De Anima in the Latin West: The Formation of a Peripatetic Philosophy of the Soul 1160-1300*. London-Turin: Warburg Institute, 2000.
- Healey, Richard. "Physicalist Imperialism." *Proceedings of the Aristotelian Society* 79 (1978-1979): 191-211.
- Heath, Peter. *Allegory and Philosophy in Avicenna*. Pennsylvania: University of Pennsylvania Press, 1992.
- Heck, Paul L. "The Hierarchy of Knowledge in Islamic Civilization." *Arabica* T. 49, Fasc. 1 (2002): 27-54.
- Hegel, G. W. F. *The Science of Logic*. Translated by George di Giovanni. Cambridge: Cambridge University Press, 2010.
- Heidegger, Martin. *Being and Truth*. Translated by Gregory Fried and Richard Polt. Bloomington and Indianapolis: Indiana University Press, 2010 [1933/34].
- _____. *Logic: The Question of Truth*. Translated by Thomas Sheehan. Bloomington-Indianapolis: Indiana University Press, 2010 [1925/26].
- _____. *Being and Time*. Translated by John Macquarrie and Edward Robinson. Oxford: Basil Blackwell, 1985 [1927].
- Heinämaa, Sara et al. *Consciousness: From Perception to Reflection in the History of Philosophy*. Dordrecht: Springer, 2007.
- Hellman, Geoffrey. "Realist Principles." *Philosophy of Science* 50 (1983): 227-49.
- Hellman, Geoffrey and Thompson, Frank. "Physicalism: Ontology, Determination, and Reduction." *The Journal of Philosophy* 72 (1975): 551-64.
- Henrich, Dieter. *Between Kant and Hegel: Lectures on German Idealism*. Edited by David Pacini. Cambridge, MA: Harvard University Press, 2003.
- Hintikka, Jaakko. *Analyses of Aristotle*. Dordrecht: Kluwer Academic Publishers, 2004.
- _____. "Concepts of Scientific Method from Aristotle to Newton." In *Knowledge and the Sciences in Medieval Philosophy*, Vol. I, edited by M. Asztalso, J. Murdoch and I. Miiniluoto. Helsinki: Luther-Agricola Society, 1990.
- _____. "On The Ingredients of an Aristotelian Science." *Nous* 9 (1972): 55-69.

- Hirsch, E. D. *The Aims of Interpretation*. Chicago: Chicago University Press, 1978.
- _____. *Validity in Interpretation*. New Haven: Yale University Press, 1967.
- Hodges, Wilfrid. "Ibn Sina, Frege and the Grammar of Meanings." *Al-Mukhātabāt* 5 (2013): 29-60.
- _____. *Logic*. London: Penguin Books, 1980.
- _____. "Ibn Sīnā on Reduction ad Absurdum." Accessed February 6, 2014, wilfridhodges.co.uk.
- _____. "Avicenna on Affirmative and Negative." wilfridhodges.co.uk/
- _____. "Ibn Sīnā and Conflict in Logic." wilfridhodges.co.uk/
- _____. "Ibn Sīnā's Justification of the Use of Induction in Demonstration." wilfridhodges.co.uk/
- _____. "Ibn Sīnā's View of the Practice of Logic." wilfridhodges.co.uk/
- Horwich, Paul. *Truth*. Oxford: Oxford University Press, 1998.
- Hughes, Aaron W. *The Texture of the Divine: Imagination in Medieval Islamic and Jewish Thought*. Bloomington-Indianapolis: Indiana University Press, 2003.
- Hume, David. *An Enquiry Concerning Human Understanding*. Edited by Peter Millican. Oxford: Oxford University Press, 2007 [1748].
- _____. *A Treatise of Human Nature*. Edited by David Fate Norton and Mary J. Norton. Oxford: Oxford University Press, 2000 [1738].
- Ibn Sīnā. *Kitāb an-Najāt*. Edited by Majid Fakhry. Beirut: Dar al-Afāq, 1985.
- _____. *Al-Mabda' wa-l-Ma'ad*. Edited 'A. Nūraānī. Tehran, 1363/1984.
- _____. *Kitāb al-'Uyūn al-Ḥikmah*. Edited by 'Abd. Raḥmān Badawī. Beirut: Dār al-Qalam, 1980.
- _____. *Fī Ithbāt al-Nubuwwāt*. Edited by Michael Marmura. Beirut, 1968.
- _____. *Kitāb ash-Shifā', al-Manṭiq, al-Burhān*. Edited by A. A. Afifi, revised by I. Madkour. Cairo: Maṭba'ah al-miriyyah, 1956.
- _____. *Al-Ishārāt wa-t-Tanbīhāt*. Edited by Maḥmūd Shahābī. Tehran: Chābknāna-i Dānishqāh, n.d.
- Inati, Shams C. Shams Inati, *Ibn Sina's Remarks and Admonitions: Physics and Metaphysics – An Analysis and Annotated Translation*. New York: Columbia University Press, 2014.
- _____. "Ibn Sīnā." In *History of Islamic Philosophy*, Vol. 2, Part I. Edited by Seyyed Hossein Nasr and Oliver Leaman, 231-46. London-New York: Routledge, 1996.
- _____. "Logic." *History of Islamic Philosophy*, Vol. 2, Part I. Edited by Seyyed Hossein Nasr and Oliver Leaman, 802-23. London-New York: Routledge, 1996.
- _____. *Ibn Sīnā Remarks and Admonitions, Part One: Logic*. Toronto: Pontifical Institute of Medieval Studies, 1984.
- Irwin, T. H. "Aristotle's Concept of Signification." In *Language and Logos: Studies in Ancient Greek Philosophy Presented to G. E. L. Owen*, edited by Malcolm Schofield and Martha Craven Nussbaum, 241-66. Cambridge: Cambridge University Press, 1982.
- Israel, Jonathan I. *Democratic Enlightenment: Philosophy, Revolution, and Human Rights 1750–1790*. Oxford: Oxford University Press, 2011.
- _____. *Enlightenment Contested: Philosophy, Modernity, and the Emancipation of Man 1670–1752*. Oxford: Oxford University Press, 2006.

- _____. *Radical Enlightenment: Philosophy and the Making of Modernity 1650-1750*. Oxford: Oxford University Press, 2001.
- Ivry, Alfred L. *Al-Kindī's Metaphysics: A Translation of Ya'qūb ibn Ishāq al-Kindī's Treatise "On First Philosophy"*. New York: SUNY Press, 1974.
- Jackson, Frank. *From Metaphysics to Ethics: A Defence of Conceptual Analysis*. Oxford: Clarendon Press, 1998.
- James, William. *Pragmatism*. In *William James: Writings, 1902-1910*. New York: The Library of America, 1987.
- _____. *The Meaning of Truth: A Sequel to "Pragmatism"*. In *William James: Writings, 1902-1910*. New York: The Library of America, 1987.
- Janssens, Jules. "The Notions of *Wāhib al-Ṣuwār* (Giver of Forms) and *Wāhib al-'Aql* (Bestower of Intelligence) in Ibn Sīnā." In *Intellect et imagination dans la Philosophie Médiévale / Intellect and Imagination in Medieval Philosophy*, Vol. 1, edited by M. C. Pacheco and J. F. Meirinhos, 551-62. Turnhout: Brepols Publishers, 2006.
- _____. *An Annotated Bibliography on Ibn Sina (1970-1989): Including Arabic and Persian Publications and Turkish and Russian References*. Leuven: Leuven University Press, 1991.
- Janssens, Jules and De Smet, Daniël, ed. *Avicenna and His Heritage*. Leuven: Leuven University Press, 2001.
- Jevons, W. Stanley. *Elementary Lessons in Logic*. London: Macmillan, 1888 [1870].
- Jolivet, Jean. "L'idée de la sagesse et sa fonction dans la philosophie des 4^e et 5^e siècles." *Arabic Sciences and philosophy* 1 (1991): 31-65.
- Jolley, Nicholas. *The Light of the Soul: Theories of Ideas in Leibniz, Malebranche, and Descartes*. Oxford: Clarendon Press, 1990.
- Kahn, Charles H. "Aristotle on Thinking." In *Essays on Aristotle's De Anima*, edited by Amélie Oksenberg Rorty and Martha C. Nussbaum, 346-66. Oxford: Clarendon Press, 1995.
- Kal, Victor. *On Intuition and Discursive Reasoning in Aristotle*. Leiden: E. J. Brill, 1988.
- Kalin, Ibrahim. "The Sacred versus the Secular: Nasr on Science." In *The Philosophy of Seyyed Hossein Nasr* (The Library of Living Philosophers: Volume XXVIII), edited by Lewis E. Hahn, Randall E. Auxier, and Lucian W. Stone, Jr., 445-62. La Salle, Illinois: Open Court, 2001.
- Kant, Immanuel. *Metaphysical Foundations of Natural Science*. Translated by Michael Friedman. Cambridge: Cambridge University Press, 2004.
- _____. *Correspondence*. Translated by Arnulf Zweig. Cambridge: Cambridge University Press, 1999.
- _____. *Critique of Pure Reason*. Translated by Paul Guyer and Allen W. Wood. Cambridge: Cambridge University Press, 1998.
- Kasaba, Reşat. *The Cambridge History of Turkey, Vol. 4, Turkey in the Modern World*. Cambridge: Cambridge University Press, 2008.
- Kaukua, Jari. *Self-Awareness in Islamic Philosophy: Avicenna and Beyond*. Cambridge: Cambridge University Press, 2015.
- Kennedy-Day, Kiki. *Books of Definition in Islamic Philosophy: The Limits of Words*. London: Routledge, 2003.
- Kenny, Anthony. *A New History of Western Philosophy, Vol. 1: Ancient Philosophy*. Oxford: Clarendon Press, 2004.

- Khalidi, Muhammad Ali. *Medieval Islamic Philosophical Writings*. Cambridge: Cambridge University Press, 2005.
- Kim, Jaegwon. ; *Mind in a Physical World: An Essay on the Mind-Body Problem and Mental Causation*. Cambridge, MA: MIT Press, 1998.
- _____. "What is Naturalized Epistemology?" In *Philosophical Perspectives*, Vol. 2. Edited by James E. Tomberlin, 281-406. Atascadero, CA: Ridgeview Publishing Co., 1988.
- Kirk, G. S. "Popper on Science and the Presocratics." *Mind* 69 (1960): 318-39.
- Kirkham, Richard. *Theories of Truths: A Critical Introduction*. Massachusetts: MIT Press, 2001.
- Kitcher, Philip. "The Naturalists Return." *Philosophical Review* 101 (1992): 53-114.
- Koertge, Noretta. "Rational Reconstruction." In *Essays in Memory of Imre Lakatos*, edited by Robert S. Cohen, Paul K. Feyerabend and Marx W. Wartofsky, 359-69. Dordrecht: Reidel, 1976.
- Kornblith, Hilary. *A Naturalistic Epistemology: Selected Papers*. Oxford: Oxford University Press, 2014.
- _____. *Knowledge and Its Place in Nature*. New York: Oxford University Press, 2002.
- _____. *Naturalizing Epistemology*. Cambridge, MA: MIT Press, 1994.
- _____. "The Psychological Turn." *Australasian Journal of Philosophy* 60 (1982): 238-53.
- Kosman, Aryeh L. "Understanding, Explanation, and Insight in the *Posterior Analytics*." In *Exegesis and Argument: Studies in Greek Philosophy Presented to Gregory Vlastos*, edited by Edward N. Lee, Alexander P. D. Mourelatos & Richard Rorty, 374-92. Assen: Van Gorcum, 1973.
- Koterski, Joseph W. *An Introduction to Medieval Philosophy: Basic Concepts*. Oxford: Wiley-Blackwell, 2009.
- Kripke, Saul A. *Naming and Necessity*. Cambridge, MA: Harvard University Press, 2001 [1972].
- _____. "Outline of a Theory of Truth." *Journal of Philosophy* 72 (1975): 690-716.
- Kristeller, Paul Oskar. "Philosophy and Its Historiography." *The Journal of Philosophy* 11 (1985): 618-625.
- _____. "History of Philosophy and History of Ideas." *Journal of the History of Philosophy* 11 (1964): 1-14.
- Künne, Wolfgang. *Conceptions of Truth*. Oxford: Clarendon Press, 2003.
- Lærke, Mogens, Smith, Justin, and Schliesser, Eric ed. *Philosophy and Its History: Aims and Methods in the Study of Early Modern Philosophy*. Oxford: Oxford University Press, 2013.
- Lagerlund, Henrik. "Avicenna and Tūsī on Modal Logic." *History and Philosophy of Logic* 30 (2009): 227-39.
- _____. ed. *Forming the Mind: Essays on the Internal Senses and the Mind/Body Problem from Avicenna to the Medical Enlightenment*. Dordrecht: Springer, 2007.
- Lakatos, Imre. *The Methodology of Scientific Research Programmes: Philosophical Papers Vol. 1*, edited by John Worrall and Gregory Currie. Cambridge: Cambridge University Press, 1978.
- _____. "History of Science and Its Rational Reconstructions." *Boston Studies in the Philosophy of Science* 8 (1971): 91-135.

- Lameer, Joep. "Avicenna on Universals: A Fragment from his Lost al-Mūjaz." *Sophia Perennis* 18 (2011): 31-56.
- _____. *Al-Farabi and Aristotelian Syllogistics: Greek Theory and Islamic Practice*. Leiden-Boston: Brill, 1994.
- Leaman, Oliver. "Philosophy, Its History, and the Intentionalist Fallacy." *History of Philosophy Quarterly* 20 (2003): 361-71.
- Lear, Jonathan. *Aristotle: The Desire to Understand*. Cambridge: Cambridge University Press, 2007.
- Lehrer, Keith. *Theory of Knowledge*. Boulder, CO: Westview Press, 1990.
- _____. *Knowledge*. Oxford: Clarendon Press, 1974.
- _____. "Belief and Knowledge." *The Philosophical Review* 77 (1968): 491-99.
- Leplin, Jarrett. *A Novel Defense of Scientific Realism*. Oxford: Oxford University Press, 1997.
- _____. *Scientific Realism*. Berkeley-California-London: University of California Press, 1984.
- Lewis, David. "A World of Individuals." In *The Nature of Properties: Nominalism, Realism, and Trope Theory*, edited by Michael Tooley, 355-72. New York: Garland Pub, 1999.
- Lloyd, G. E. R. *Aristotle: The Growth and Structure of His Thought*. Cambridge: Cambridge University Press, 1999.
- _____. "Popper versus Kirk: A Controversy in the Interpretation of Greek Science." *The British Journal for the Philosophy of Science* 18 (1967): 21-38.
- Locke, John. *An Essay Concerning Human Understanding*. Edited by Peter E. Niddich. Oxford: Oxford Clarendon Press, 1987 [1690].
- Loux, Michael J. "Aristotle on Matter, Form, and Ontological Strategy." *Ancient Philosophy* 25 (2005): 81-123.
- Lowe, E. J. "What is the Source of Our Knowledge of Modal Truths?" *Mind* 121 (2012): 919-50.
- _____. "Essentialism, Metaphysical Realism, and the Errors of Conceptualism." *Philosophia Scientiæ* 12 (2008): 9-33.
- _____. *The Four-Category Ontology: A Metaphysical Foundation for Natural Science*. Oxford: Oxford University Press, 2006.
- _____. *A Survey of Metaphysics*. Oxford: Oxford University Press, 2002.
- _____. *An Introduction to the Philosophy of Mind*. Cambridge: Cambridge University Press, 2000.
- _____. *The Possibility of Metaphysics: Substance, Identity, and Time*. Oxford: Oxford University Press, 1998.
- _____. *Subjects of Experience*. Cambridge: Cambridge University Press, 1996.
- Lowe, E. J. and Rami, A. *Truth and Truth-Making*. Stocksfield: Acumen, 2009.
- Łukasiewicz, Jan. *Aristotle's Syllogistic from the Standpoint of Modern Formal Logic*, 2nd enlarged ed. Oxford: Clarendon Press, 1975.
- Lynch, Michael P. *The Nature of Truth: Classic and Contemporary Perspectives*. Cambridge, MA: MIT Press, 2001.
- MacBride, Fraser. "The Problem of Universals and the Limits of Truth-making." *Philosophical Papers* 31 (2002): 27-37.
- Macfarland, Joseph C. and Paren, Joshua ed. *Medieval Political Philosophy: A Sourcebook*. Ithaca: Cornell University Press, 1963.

- Mach, Ernst. *Knowledge and Error: Sketches on the Psychology of Enquiry*. Translated by Thomas J. McCormack. Dordrecht: D. Reidel Pub., 1976.
- Maffie, James. "Recent Work on Naturalizing Epistemology." *American Philosophical Quarterly* 27 (1990): 281–93.
- Mandelbaum, Maurice. "The History of Philosophy: Some Methodological Issues." *The Journal of Philosophy* 10 (1977): 561-72.
- Mander, W. J. *British Idealism: A History*. Oxford: Oxford University Press, 2011.
- Mango, Andrew. *From the Sultan to Atatürk: Turkey*. London: Haus Publishing, 2009.
- Marenbon, John. *Medieval Philosophy: An Historical and Philosophical Introduction*. London-New York: Routledge, 2007.
- _____. *Early Medieval Philosophy (480-1150)*. London-New York: Routledge, 1988.
- Marmura, Michael E. "Avicenna's Critique of Platonists in Book VII, Chapter 2 of the *Metaphysics* of his *Healing*." In *Arabic Theology, Arabic Philosophy. From the Many to the One: Essays in Celebration of Richard M. Frank*, edited by James Montgomery, 355-69. Leuven: Peters, 2006.
- _____. *Probing in Islamic Philosophy: Studies in the Philosophies of Ibn Sina, al-Ghazali and Other Major Muslim Thinkers*. Binghamton, NY: Global Academic Publishing, 2005.
- _____. "Quiddity and Universality in Avicenna." In *Neoplatonism and Islamic Thought*, edited by Parviz Morewedge, 77-87. New York: SUNY Press, 1992.
- _____. "Review: Plotting the Course of Avicenna's Thought." *Journal of the American Oriental Society* 111 (1991): 333-42.
- _____. "The Fortuna of the *Posterior Analytics* in the Arabic Middle Ages." In *Knowledge and the Sciences in Medieval Philosophy*, Vol. I, edited by M. Asztalso, J. Murdoch and I. Miiniluoto, 85-103. Helsinki: Luther-Agricola Society, 1990.
- _____. "Avicenna's "Flying Man" in Context." *The Monist* 69 (1986): 383-95.
- _____. "Avicenna on Primary Concepts in the *Metaphysics* of his *al-Shifā'*." In *Logos Islamikos*, edited by R. M. Savory and D. A. Agius, 219-39. Toronto: Pontifical Institute of Mediaeval Studies, 1984.
- _____. "Avicenna on Causal Priority." In *Islamic Philosophy and Mysticism*, edited by Parviz Morewedge, 65-83. New York: Caravan Books, 1980.
- _____. "Avicenna on the Division of the Sciences in the *Isagoge* of His *Shifā'*." *Journal for the History of Arabic Science* 2 (1980): 239-51.
- _____. "Avicenna's Chapter on Universals in the *Eisagoge* of his *Shifā'*." In *Islam: Past Influence and Present Challenge: Studies in Honour of W. M. Watt*, edited by Alford T. Welch and Pierre Cachia, 34-56. Edinburgh: Edinburgh University Press, 1979.
- _____. "Avicenna's Chapter "On the Relative" in the *Metaphysics* of the *Shifā'*." In *Essays on Islamic Philosophy and Science*, edited by George F. Hourani, 83-99. New York: SUNY Press, 1975.
- _____. "Ghazali and Demonstrative Science." *Journal of the History of Philosophy* 3 (1965): 183-204.
- _____. "Avicenna's Psychological Proof of Prophecy." *Journal of Near*

- Eastern Studies* 22 (1963): 49-56.
- _____. "Some Aspects of Avicenna's Theory of God's Knowledge of Particulars." *Journal of the American Oriental Society* 82 (1962): 299-312.
- Maróth, Miklós. *Die Araber und die antike Wissenschaftstheorie*. Leiden-Boston: Brill, 1994.
- _____. "Taṣawwur and Taṣdīq." In *Knowledge and the Sciences in Medieval Philosophy*, Vol. II, edited by Simo Knuuttila, Reijo Työrinoja and Sten Ebbesen, 265-74. Helsinki: Luther-Agricola Society, 1990.
- Martinich, A. P. "A Moderate Logic of the History of Ideas." *Journal of the History of Ideas* 73 (2012): 609-25.
- _____. "Philosophical History of Philosophy." *Journal of the History of Philosophy* 3 (2002): 405-07.
- Matthews, Gareth B. "Aristotelian Essentialism." *Philosophy and Phenomenological Research* 50 (1990): 251-62.
- Maurer, Armand. *Medieval Philosophy: An Introduction*. New York: Random House, 1962.
- Maxwell, Grover. "The Ontological Status of Theoretical Entities." In *Minnesota Studies in the Philosophy of Science, Volume III: Scientific Explanation, Space and Time*, edited by Herbert Feigl and Grover Maxwell, 3-27. Minneapolis: University of Minnesota, 1962.
- McGinn, Colin. *Philosophy of Language: The Classics Explained*. Cambridge, MA: MIT Press, 2015.
- McGinnis, Jon. *Avicenna*. New York: Oxford University Press, 2010.
- _____. "Avicenna's Naturalized Epistemology and Scientific Method." In *The Unity of Science in the Arabic Tradition*. Edited by Shahid Rahman, Tony Street and Hassan Tahiri, 129-52. Springer, 2008.
- _____. "Logic and Science: The Role of Genus and Difference in Avicenna's Logic, Science and Natural Philosophy." *Documenti E Studi Sulla Tradizione Filosofica Medievale* 18 (2007): 165-86.
- _____. "Scientific Methodologies in Medieval Islam." *Journal of the History of Philosophy* 4 (2003): 307-23.
- McGinnis, Jon and Reisman, David C. ed. *Classical Arabic Philosophy: An Anthology of Sources*. Indianapolis & Cambridge: Hackett Publishing Company, Inc., 2007.
- McGinnis, Jon and Reisman, David C. ed. *Interpreting Avicenna: Science and Philosophy in Medieval Islam*. Leiden & Boston: Brill, 2004.
- McGuinness, Brian. "Wittgenstein and the Vienna Circle." *Synthese* 64 (1985): 351-8.
- McKeon, Richard. "Aristotle's Conception of the Development and the Nature of Scientific Method." *Journal of the History of Ideas* 8 (1947): 3-44.
- McKirahan, Richard D. "Aristotelian Epagoge in Prior Analytics 2. 21 and Posterior Analytics 1. 1." *Journal of the History of Philosophy* 21 (1983): 1-13.
- Menn, Stephen. "Avicenna's Metaphysics." In *Interpreting Avicenna: Critical Essays*, edited by Peter Adamson, 142-69. Cambridge: Cambridge University Press, 2013.
- Merton, Robert K. *The Sociology of Science: Theoretical and Empirical Investigations*. Chicago: Chicago University Press, 1973.
- _____. "Science, Technology and Society in Seventeenth Century England."

- Osiris* 4 (1938): 360–632 [reissued 1970].
- Michot, Y. “*Al-Nukat wa-l-fawā'id: An Important Summa of Avicenna Falsafa.*” In *Classical Arabic Philosophy: Sources and Reception*, edited by Peter Adamson, 90-124. London-Turin: The Warburg Institute-Nino Aragno Editore, 2007.
- _____. “Al-Farabi and His Influence on the Early Avicenna: The Evidence from the *Kitāb al-Mabda' wa'l-Ma'ad.*” In *Proceeding of the International Al-Farabi Symposium*, edited by Fehrullah Terkan and Senol Korkut, 327-40. Ankara: Elis Yayinlari, 2005.
- _____. *La destinée de l'homme selon Avicenne.* Louvain: Peeters, 1986.
- Mill, John Stuart. *A System of Logic.* London: Macmillan, 1970 [1843].
- Miller, Alexander. “The Significance of Semantic Realism.” *Synthese* 136 (2003): 191-217.
- Millikan, Ruth. “Naturalist Reflections on Knowledge.” *Pacific Philosophical Quarterly* 65 (1984): 315–34.
- Modrak, Deborah K. W. *Aristotle's Theory of Language and Meaning.* Cambridge: Cambridge University Press, 2001.
- Monk, Ray. *Ludwig Wittgenstein: The Duty of Genius.* London: Vintage Books, 1991.
- Moore, G. E. *Philosophical Studies.* Routledge & Kegan Paul Ltd, 1970 [1922].
- _____. *Some Main Problems of Philosophy.* London: George Allen & Unwin Ltd, 1953.
- _____. “The Refutation of Idealism,” *Mind* 12 (1903): 433-53.
- Morewedge, Parviz. *The Metaphysica of Avicenna (Ibn Sīnā).* London: Routledge & Kegan Paul, 1973.
- _____. “Philosophical Analysis and Ibn Sīnā's ‘Essence-Existence’ Distinction.” *The Journal of the American Oriental Society* 3 (1972): 425-35.
- Moris, Zailan. “The Essential Relation Between Revelation and Philosophy in Islam and Its Importance in Understanding the Nature and History of Islamic Philosophy.” In *The Philosophy of Seyyed Hossein Nasr* (The Library of Living Philosophers: Volume XXVIII), edited by Lewis E. Hahn, Randall E. Auxier, and Lucian W. Stone, Jr., 619-31. La Salle, Illinois: Open Court, 2001.
- Mousavian, Seyed N. “Did Suhrawardi Believe in Innate Ideas as A Priori Concepts? A Note.” *Philosophy East and West* 64 (2014): 473-80.
- _____. “Suhrawardi on Innateness: A Reply to John Walbridge.” *Philosophy East and West* 64 (2014): 486-501.
- Mulligan, Kevin, Simons, Peter and Smith, Barry. “Truth-Makers.” *Philosophy and Phenomenological Research* 44 (1984): 287–321.
- Mure, G. R. G. *The Works of Aristotle translated into English I.* Oxford: Oxford University Press, 1928.
- Nanay, Bence. “Rational Reconstruction Reconsidered.” *The Monist* 93 (2010): 598-617.
- Nagel, Thomas. *Mind and Cosmos: Why the Materialist Neo-Darwinian Conception of Nature is Almost Certainly False.* Oxford: Oxford University Press, 2012.
- _____. *Concealment and Exposure and Other Essays.* Oxford: Oxford University Press, 2002.
- _____. *Mortal Questions.* Cambridge: Cambridge University Press, 1979.

- Najjar, Fauzi M., trans. "Alfarabi, The Enumeration of the Sciences." In *Medieval Political Philosophy: A Sourcebook*, edited by Ralph Lerner and Muhsin Mahdi, 24-30. New York: The Free Press of Glencoe, 1963.
- Nasr, Seyyed Hossein. *Islamic Philosophy from Its Origin to the Present: Philosophy in the Land of Prophecy*. New York: SUNY Press, 2006.
- _____. *Science and Civilization in Islam*. Chicago: ABC International Group, Inc., 2001.
- _____. *Three Muslim Sages: Avicenna, Suhrawardī, Ibn 'Arabī*. Delmar, NY: Caravan Books, 1997.
- _____. "Ibn Sīnā's Oriental Philosophy." In *History of Islamic Philosophy, Vol. I*, edited by Seyyed Hossein Nasr and Oliver Leaman, 247-51. London-New York: Routledge, 1996.
- _____. *The Need for a Sacred Science*. Surrey: Curzon Press Ltd., 1993.
- _____. *Knowledge and the Sacred*. New York: SUNY Press, 1989.
- _____. *Islamic Science: An Illustrated Study*. Kent: World of Islam Festival Publishing Company Ltd., 1976.
- _____. *An Introduction to Islamic Cosmological Doctrines: Conceptions of Nature and Methods Used for Its Study by Ikhwān al-Ṣafā', al-Bīrūnī, and Ibn Sīnā*. Cambridge, MA: Harvard University Press, 1964.
- Nehamas, Alexander. "Episteme and Logos in Plato's Later Thought." *Archiv für Geschichte der Philosophie* 66 (1979): 93-103.
- Neurath, Otto. *Unified Science*. Dordrecht: D. Reidel Pub. Co., 1987.
- _____. *Philosophical Papers 1913-1946*. Dordrecht: D. Reidel Pub. Co., 1983.
- _____. "The Scientific Conception of the World: The Vienna Circle." In *Empiricism and Sociology*. Dordrecht & Boston: D. Reidel Publishing Company, 1973.
- Neurath, Otto, Carnap, Rudolf, and Morris, Charles W. eds. *Foundations of the Unity of Science: Toward an International Encyclopedia of Unified Science*. Chicago: Chicago University Press, 1969.
- _____. *International Encyclopedia of Unified Science, vols. 1 and 2, Foundations of the Unity of Science*. Chicago: University of Chicago Press, 1938-70.
- Newton-Smith, W. H. *Logic: An Introductory Course*. London: Routledge, 1985.
- Norton, David. "The Myth of British Empiricism." *History of European Ideas* 1 (1981): 331-44.
- Nozick, Robert. *Philosophical Explanations*. Harvard: Belknap Press, 1981.
- Nuseibeh, Sari. "Al-'Aql al-Qudsī: Avicenna's Subjective Theory of Knowledge." *Studia Islamica* 69 (1989): 39-54.
- _____. "Avicenna: Medicine and Scepticism." *Koroth* 8 (1981): 9-20.
- O'Connor, David and Carr, Brian. *Introduction to the Theory of Knowledge*. Minneapolis: University of Minnesota Press, 1982.
- Oppenheim, Paul and Putnam, Hilary. "The Unity of Science as a Working Hypothesis." In *Minnesota Studies in the Philosophy of Science, Vol. 2*, edited by Herbert Feigl et al., 3-36. Minneapolis, MN: Minnesota University Press, 1958.
- Opwis, Felicitas and Reisman, David C. ed. *Islamic Philosophy, Science, Culture, and Religion: Studies in Honor of Dimitri Gutas*. Leiden-

- Boston: Brill, 2012.
- Ormos, István. "The Theory of Humours in Islam (Avicenna)." *Quaderni di Studi Arabi* 5/6 (1987-1988): 601-07.
- Osler, Margaret J. "The History of Philosophy and the History of Philosophy: A Plea for Textual History in Context." *Journal of the History of Philosophy* 4 (2002): 529-33.
- Owen, G. E. L. "Particular and General." *Proceedings of the Aristotelian Society* 79 (1978): 1-21.
- Panaccio, Claude. *Ockham on Concepts*. Hampshire: Ashgate, 2004.
- Pasnau, Robert. *Metaphysical Themes: 1274-1671*. Oxford: Oxford University Press, 2011.
- Peirce, Charles S. *Collected Papers of Charles Sanders Peirce*, Vols. 1-8. Edited by Charles Harshtone and Paul Weiss (Vols. 1-6) and A. W. Burks (Vols. 7-8). Cambridge, MA: Harvard University Press, 1931-1958.
- Penner, Terry. *The Ascent From Nominalism: Some Existence Arguments in Plato's Middle Dialogues*. Dordrecht: D. Reidel Pub, 1987.
- Perin, Casey. "Substantial Universals in Aristotle's Categories." In *Oxford Studies in Ancient Philosophy, Vol. XXXIII*, edited by David Sedley, 125-44. Oxford: Oxford University Press, 2007.
- Phemister, Pauline. *The Rationalist: Descartes, Spinoza and Leibniz*. Cambridge: Polity Press, 2006.
- Pinkard, Terry. *German Philosophy 1760-1860: The Legacy of Idealism*. Cambridge: Cambridge University Press, 2002.
- Plantinga, Alvin. *Warrant and Proper Function*. Oxford: Oxford University Press, 1993.
- Plato. *Meno and Other Dialogues*. Translated by Robin Waterfield. Oxford: Oxford University Press, 2005.
- Pocock, J. G. A. *Political Thought and History: Essays on Theory and Method*. Cambridge: Cambridge University Press, 2009.
- Poland, Jeffrey. *Physicalism: The Philosophical Foundations*. Oxford: Oxford University Press, 1994.
- Popkin, Richard H. "Philosophy and the History of Philosophy." *The Journal of Philosophy* 11 (1985): 625-32.
- _____. "Did Hume Ever Read Berkeley?" *Journal of Philosophy* 56 (1959): 533-45.
- Popper, Karl R. *The Logic of Scientific Discovery*. London: Routledge, 2002 [1934].
- _____. *Conjectures and Refutations: The Growth of Scientific Knowledge*. London-New York: Routledge, 2007 [1963].
- _____. *The Open Society and Its Enemies, Vol. 1: The Spell of Plato*. London: Routledge, 2002.
- _____. *The Open Society and Its Enemies, Vol. 2: Hegel and Marx*. London: Routledge, 2002.
- _____. *Realism and the Aim of Science: Volume 1 of Postscript to the Logic of Scientific Discovery*. Maryland: Rowman and Littlefield, 1983.
- _____. *Objective Knowledge*. Oxford: Clarendon Press, 1973.
- _____. "Back to the Presocratics." *Proceedings of the Aristotelian Society* 59 (1958): 1-24.
- Priest, Stephen. *The British Empiricists*. London: Routledge, 2007.

- Prothro, E. Terry. "Ibn Sina: Tenth Century Empiricist." *The Journal of General Psychology* 61 (1954): 3-9.
- Putnam, Hilary. *Words and Life*. Cambridge, MA: Harvard University Press, 1995.
- _____. *Renewing Philosophy*. Cambridge, MA: Harvard University Press, 1992.
- _____. *Realism with a Human Face*. Cambridge, MA: Harvard University Press, 1992.
- _____. *Realism and Reason: Philosophical Papers, Vol. 3*. Cambridge: Cambridge University Press, 1983.
- _____. "Why Reason Can't Be Naturalized." *Synthese* 52 (1982): 3-23.
- _____. "Three Kinds of Scientific Realism." *The Philosophical Quarterly* 32 (1982): 195-200.
- _____. "The Meaning of "Meaning"." *Minnesota Studies in the Philosophy of Science* 7 (1975): 131-93.
- _____. "What is Realism?" *Proceedings of the Aristotelian Society* 76 (1975-1976): 177-94.
- Quine, W. V. O. *Philosophy of Logic*. Englewood Cliffs: Prentice-Hall, 1970.
- _____. "Epistemology Naturalized." In *Ontological Relativity and Other Essays*. New York: Columbia University Press, 1969.
- _____. *From a Logical Point of View*. New York: Harper & Row, 1953.
- Radford, Colin. "Does Unwitting Knowledge Entail Unconscious Belief?" *Analysis* 30 (1970): 103-7.
- _____. "Knowledge: By Examples." *Analysis* 27 (1966): 1-11.
- Rahman, Fazlur. "Ibn Sīna." In *A History of Muslim Philosophy*, Vol. I, edited by M. M. Sharif, 480-506. Weisbaden: Otto Harrassowitz, 1963.
- _____. *Prophecy in Islam: Philosophy and Orthodoxy*. Chicago: Chicago University Press, 1958.
- _____. "Essence and Existence in Avicenna." *Medieval and Renaissance Studies* 4 (1958): 1-16.
- _____. *Avicenna's Psychology* (An English Translation of Kitāb an-Najāt, Book II, Chapter VI with Historico-Philosophical Notes and Textual Improvements on the Cairo Edition). Oxford: Oxford University Press, 1952.
- Rahman, Shahid, Street, Tony and Tahiri, Hassan ed. *The Unity of Science in the Arabic Tradition*. Springer, 2008.
- Ramsey, Frank. *On Truth*. Edited by Nicholas Rescher and Ulrich Majer. Dordrecht-Boston-London: Kluwer Academic Publishers, 1991.
- _____. "Facts and Propositions." *Proceedings of the Aristotelian Society* 7 (1927): 153-70.
- Rashed, Roshdi. "The End Matters." *Islam and Science* 1 (2003): 153-60.
- Rashed, Roshdi, ed. *Encyclopedia of the History of Arabic Science*, Vol. I. London-New York: Routledge, 1996.
- Razavi, Mehdi Amin. *Suhrawardi and the School of Illumination*. London-New York: Routledge, 2013 [1997].
- Reichenbach, Hans. *Experience and Prediction: An Analysis of the Foundations and the Structure of Knowledge*. Chicago: University of Chicago Press, 1938.
- _____. *The Rise of Scientific Philosophy*. Berkeley: University of California Press, 2002 [1951].

- Reisman, David C. and al-Rahim, Ahmed, ed. *Before and After Avicenna: Proceedings of the First Conference of the Avicenna Study Group*. Leiden and Boston: Brill, 2003.
- Rescher, Nicholas. *Interpreting Philosophy: The Elements of Philosophical Hermeneutics*. Frankfurt: Ontos Verlag, 2007.
- _____. *The Development of Arabic Logic*. Pittsburgh: University of Pittsburgh Press, 1964.
- _____. *Studies in the History of Arabic Logic*. Pittsburgh: University of Pittsburgh Press, 1963.
- _____. "Some Arabic Technical Terms of Syllogistic Logic and Their Greek Originals." *Journal of the American Oriental Society* 82 (1962): 203-04.
- Richardson, Alan. "Rational Reconstruction." In *The Philosophy of Science: An Encyclopedia, Vol. 2*, edited by Sahotra Sarkar and Jessica Pfeifer, 681-85. London: Routledge, 2006.
- Richardson, Kara. "Avicenna's Conception of the Efficient Cause." *British Journal for the History of Philosophy* 21 (2013): 220-39.
- Ricoeur, Paul. *Being, Essence and Substance in Plato and Aristotle*, translated by D. Pellauer and J. Starkey. Cambridge: Polity Press, 2013.
- Rizvi, Sajjad H. *Mullā Ṣadrā and Metaphysics: Modulation of Being*. London: Routledge, 2009.
- _____. *Mullā Ṣadrā Shīrāzī: His Life and Works and the Sources for Safavid Philosophy*. Oxford: Oxford University Press, 2007.
- _____. "Process Metaphysics in Islam? Avicenna and Mullā Ṣadrā on Intensification in Being." In *Before and After Avicenna: Proceedings of the First Conference of the Avicenna Study Group*, edited by David C. Reisman and Ahmed H. Al-Rahim, 233-48. Leiden: Brill, 2003.
- Rorty, Richard. *Consequence of Pragmatism*. Minneapolis: University of Minnesota Press, 2003.
- _____. *Philosophy and Social Hope*. London: Penguin, 1999.
- _____. "Trotsky and the Wild Orchids." *Common Knowledge* 1 (1992): 140-53.
- _____. "The Historiography of Philosophy: Four Genres." In *Philosophy in History: Essays on the Historiography of Philosophy*, edited by Richard Rorty, J. B. Schneewind, and Quentin Skinner. Cambridge: Cambridge University Press, 1984.
- Rorty, Richard, Schneewind, J. B. and Skinner, Quentin ed. *Philosophy in History: Essays on the Historiography of Philosophy*. Cambridge: Cambridge University Press, 1984.
- Rosenthal, Franz. *Knowledge Triumphant: The Concept of Knowledge in Medieval Islam*. Leiden-Boston: Brill, 2007.
- _____. *The Classical Heritage in Islam*. London-New York: Routledge, 1992.
- Ross, W. D. *Aristotle's Prior and Posterior Analytics*. Oxford: Clarendon Press, 1949.
- _____. "The Discovery of the Syllogism." *The Philosophical Review* 48 (1939): 251-72.
- Roth, Michael D. and Galis, Leon. *Knowing: Essays in the Analysis of Knowledge*. New York: Random House, 1970.
- Russell, Bertrand. *The Philosophy of Logical Atomism*. London-New York: Routledge, 2010[1918].

- _____. *Human Knowledge: Its Scope and Limits*. London-New York: Routledge, 2009 [1948].
- _____. *Our Knowledge of the External World: As a Field of Scientific Method in Philosophy*. London-New York: Routledge, 2009 [1914].
- _____. *The Principles of Mathematics*. London: Routledge, 2009 [1903].
- _____. *The Problems of Philosophy*. Oxford: Oxford University Press, 1997 [1912].
- _____. *An Inquiry into Meaning and Truth*. London-New York: Routledge, 1995 [1940].
- _____. *Theory of Knowledge: The 1913 Manuscript*. London-New York: Routledge, 1984.
- _____. "On Denoting." *Mind* 14 (1905): 479-93.
- Ryle, Gilbert. *The Concept of Mind*. London-New York: Routledge, 2009 [1949].
- _____. *Critical Essays*. London-New York: Routledge, 2009.
- Sabra, A. I. "Avicenna on the Subject Matter of Logic." *The Journal of Philosophy* 77 (1980): 746-64.
- _____. "Twelfth-Century Defence of the Fourth Figure of the Syllogism." *Journal of the Warburg and Courtauld Institutes* 28 (1965): 14-28.
- Şadr, Muhammad Bāqir. *Our Philosophy*. Translated by Shams C. Inati. London-New York: Muhammadi Trust, 1987.
- Sainsbury, R. M. *Departing from Frege: Essays in the Philosophy of Language*. London-New York: Routledge, 2002.
- Salmon, Wesley C. *Logic*. New Jersey: Prentice-Hall, 1963.
- Sarkar, Sahotra and Pfeifer, Jessica ed. *The Philosophy of Science: An Encyclopedia*. New York-London: Routledge, 2006.
- Schlick, Moritz. "Die Wende in der Philosophie." *Erkenntnis* 1 (1930): 4-11.
- Schofield, Malcolm. "The Dénouement of the Cratylus." In *Language and Logos: Studies in Ancient Greek Philosophy Presented to G. E. L. Owen*, edited by Malcolm Schofield and Martha Craven Nussbaum, 61-81. Cambridge: Cambridge University Press, 1982.
- Searle, John R. *Speech Acts: An Essay in the Philosophy of Language*. Cambridge: Cambridge University Press, 2011 [1969].
- _____. *Philosophy in a New Century: Selected Essays*. Cambridge: Cambridge University Press, 2008.
- _____. *Mind: A Brief Introduction*. Oxford: Oxford University Press, 2004.
- _____. *Consciousness and Language*, (Cambridge: Cambridge University Press, 2002.
- _____. "Social Ontology: Some Basic Principles." *Anthropological Theory* 6 (2006): 12-29.
- _____. *Expression and Meaning: Studies in the Theory of Speech Acts*. Cambridge: Cambridge University Press, 1999 [1979].
- _____. *The Construction of Social Reality*. New York: The Free Press, 1995.
- _____. "Literary Theory and Its Discontents." *New Literary History* 25 (1994): 637-67.
- _____. "Literal Meaning." *Erkenntnis* 13 (1978): 207-24.
- _____. "Reiterating the Differences: A Reply to Derrida." *Glyph* 2 (1977): 198-208.
- _____. *The Philosophy of Language*. Oxford: Oxford University Press, 1971.
- Sebold, Richard. *Continental Anti-Realism: A Critique*. London-New York:

- Rowman & Littlefield Int., 2014.
- Sellars, Wilfrid. "Substance and Form in Aristotle." *Journal of Philosophy* 54 (1957): 688-99.
- Shalkowski, Scott A. "Semantic Realism." *The Review of Metaphysics* 48 (1995): 511-38.
- Shapere, Dudley. "External and Internal Factors in the Development of Science." *Science & Technology Studies* 4 (1986): 1-9.
- Shapin, Steven. *A Social History of Truth: Civility and Science in Seventeenth-Century England*. Chicago: University of Chicago Press, 1994.
- Shehaby, Nabil. *The Propositional Logic of Avicenna* (A Translation from *al-Shifā'*: *al-Qiyās* with Introduction, Commentary and Glossary). Dordrecht-Boston: D. Reidel Publishing Company, 1973.
- Shields, Christopher. *The Blackwell Guide to Ancient Philosophy*. Oxford: Blackwell Pub., 2003.
- Skinner, Quentin. *The Visions of Politics*, 2 vols. Cambridge: Cambridge University Press, 2002.
- _____. "Meaning and Understanding in the History of Ideas." *History and Theory* 8 (1969): 3-53.
- Skyrms, Brian. "The Explication of 'X Knows that p'." *The Journal of Philosophy* 64 (1967): 373-89.
- Smart, J. J. C. *Philosophy and Scientific Realism*. London: Routledge & Kegan Paul, 1963.
- Smith, Robin. "The Relationship of Aristotle's Two Analytics." *The Classical Quarterly* 32 (1982): 327-35.
- Soames, Scott. *What is Meaning*. Princeton: Princeton University Press, 2010.
- Sober, Elliott. "Psychologism." *Journal for the Theory of Social Behaviour* 8 (1978): 165-91.
- Sorell, Tom and Rogers, G. A. J. ed. *Analytic Philosophy and History of Philosophy*. Oxford: Clarendon Press, 2005.
- Sosa, Ernest. *Knowledge in Perspective: Selected Essays in Epistemology*. Cambridge: Cambridge University Press, 1991.
- Spinoza, Benedict de. *On the Improvement of the Understanding, The Ethics, Correspondence*. Translated by R. H. M. Elwes. New York: Dover Pub., 1955.
- Steup, Matthias et al., ed. *Contemporary Debates in Epistemology*. Oxford: Wiley Blackwell, 2005.
- Steup, Matthias and Sosa, Ernest, eds. *Contemporary Debates in Epistemology*. Oxford: Blackwell Publishing, 2005.
- Stich, Stephen P. *The Fragmentation of Reason*. Cambridge, MA: Bradford Books, MIT Press, 1990.
- _____. "Between Chomskian Rationalism and Popperian Empiricism." *The British Journal for the Philosophy of Science* 30 (1979): 329-47.
- Stich, Stephen P. and Nisbett, Richard. "Justification and the Psychology of Human Reasoning." *Philosophy of Science* 47 (1980): 188-202.
- Strawson, Galen, et al., *Consciousness and Its Place in Nature: Does Physicalism Entail Panpsychism?* Exeter: Imprint Academic, 2006.
- Strawson, P. F. *Philosophical Writings*. Oxford: Oxford University Press, 2011.
- _____. *Entity and Identity*. Oxford: Oxford University Press, 1997.
- _____. *Analysis and Metaphysics: An Introduction to Philosophy*. Oxford:

- Oxford University Press, 1992.
- _____. *Logico-Linguistic Papers*. London: Methuen, 1971.
- _____. "On Referring." *Mind* 59 (1950): 320-44.
- _____. "Truth." *Analysis* 9 (1949): 83-97.
- Street, Tony. "Avicenna on the Syllogism." In *Interpreting Avicenna: Critical Essays*. Edited by Peter Adamson, 48-70. Cambridge: Cambridge University Press, 2013.
- _____. "Fakhraddīn ar-Rāzī's Critique of Avicenna Logic." In *Logik und Theologie*, edited by Dominik Perler and Ulrich Rudolph, 99-116. Leiden-Boston: Brill, 2005.
- _____. "Logic." *The Cambridge Companion to Arabic Philosophy*, Cambridge: Cambridge University Press, 2005.
- _____. "The Eminent Later Scholar' in Avicenna's *Book of the Syllogism*." *Arabic Sciences and Philosophy* 11 (2001): 205-18.
- _____. "Toward a History of Syllogistic After Avicenna: Notes on Rescher's Studies on Arabic Modal Logic." *Journal of Islamic Studies* 2 (2000): 209-28.
- _____. "Avicenna and Ṭūsī on the Contradiction and Conversion of the Absolute." *History and Philosophy of Logic* 21 (2000): 45-56.
- _____. "On Studying Medieval Arabic Logic, Review of *Al-Fārābī and Aristotelian Syllogistics: Greek Theory and Islamic Practice* by Joep Lameer." *Journal of the American Oriental Society* 117 (1997): 536-41.
- _____. "Review: *Ibn Sīnā und die peripatetische "Aussagenlogik"* by Miklós Maróth." *Philosophy East and West* 45 (1995): 281-86.
- Strobino, Riccardo. "Principles of Scientific Knowledge and the Psychology of (their) Intellection in Avicenna's *Kitāb al-Burhān*." In *Savoir et démonstration. Les commentaires médiévaux sur les Seconds Analytiques*, edited by J. Biard, 31-45. Turnhout: Brepols, 2015.
- _____. "Avicenna's Use of the Arabic Translations of the Posterior Analytics and the Ancient Commentary Tradition." *Oriens* 40 (2012): 355-89.
- _____. "Avicenna on the Indemonstrability of Definition," *Documenti e studi sulla tradizione filosofica medievale* 21 (2010): 113-163.
- Stroll, Avrum. *Twentieth-Century Analytic Philosophy*. New York: Columbia University Press, 2000.
- _____. *Moore and Wittgenstein on Certainty*. Oxford: Oxford University Press, 1994.
- Stroud, Barry. *Understanding Human Knowledge*. Oxford: Oxford University Press, 2000.
- Suhrawardī. *The Philosophy of Illumination*. Translated by John Walbridge and Hossein Ziai. Provo, Utah: Brigham Young University Press, 1999.
- Szpiech, Ryan. "In Search of Ibn Sīnā's "Oriental Philosophy" in Medieval Castile." *Arabic Sciences and Philosophy* 20 (2010): 185-206.
- Ṭabāṭabā'ī, Sayyid Muhammad Husayn. *The Elements of Islamic Metaphysics*. Translated by Sayyid 'Alī Qūlī Qarā'ī. London: ICAS Press, 2003.
- Tahko, Tuomas E. ed. *Contemporary Aristotelian Metaphysics*. Cambridge: Cambridge University Press, 2012.
- Tarski, Alfred. *Introduction to Logic and to the Methodology of the Deductive Sciences*. Oxford: Oxford University Press, 1994 [1941].
- _____. "The Semantic Conception of Truth." *Philosophy and*

- Phenomenological Research* 4 (1944): 341–376.
- Taylor, Richard C. "Al-Fārābī and Avicenna: Two Recent Contributions." *MESA Bulletin* 39 (2005): 180-2.
- Tomassi, Paul. *Logic*. London: Routledge, 1999.
- Touminen, Miira. *Apprehension and Argument: Ancient Theories of Starting Points of Knowledge*. Dordrecht: Springer, 2007.
- Tsohatzidis, Savas L. *John Searle's Philosophy of Language: Force, Meaning and Mind*. Cambridge: Cambridge University Press, 2007.
- Uebel, Thomas E. "Writing a Revolution: On the Production and Early Reception of the Vienna Circle's Manifesto." *Perspectives on Science* 16 (2008): 70-102.
- Umar, Muhammad Suheyl. "From the Niche of Prophecy': Nasr's Position on Islamic Philosophy within the Islamic Tradition in Excerpts and Commentary." In *The Philosophy of Seyyed Hossein Nasr* (The Library of Living Philosophers: Volume XXVIII), edited by Lewis E. Hahn, Randall E. Auxier, and Lucian W. Stone, Jr., 89-131. La Salle, Illinois: Open Court, 2001.
- Unger, Peter. "An Analysis of Factual Knowledge." *The Journal of Philosophy* 65 (1968): 157-70.
- Upton, Thomas V. "Truth vs. Necessary Truth in Aristotle's Sciences." *The Review of Metaphysics* 57 (2004): 741-53.
- Vanzo, Alberto. "From Empirics to Empiricists." *Intellectual History Review* 24 (2014): 517-38.
- Walbridge, John. *The Leaven of the Ancients: Suhrawardī and the Heritage of the Greeks*. Albany: State University of New York Press, 2000.
- _____. *The Science of Mystic Lights: Quṭb al-Dīn Shīrāzī and the Illuminationist Tradition in Islamic Philosophy*. Cambridge, MA: Harvard University Press, 1992.
- Walzer, Richard. *Greek into Arabic: Essays on Islamic Philosophy*. Cambridge, MA: Harvard University Press, 1962.
- Ward, Lee. *John Locke and Modern Life*. Cambridge: Cambridge University Press, 2010.
- Warren, James and Sheffield, Frisbee. *The Routledge Companion to Ancient Philosophy*. New York-London: Routledge, 2014.
- Watson, Richard. *Cogito, Ergo Sum: The Life of René Descartes*. Boston: David R. Godine Pub, 2007.
- _____. "What is the History of Philosophy and Why is It Important." *Journal of the History of Philosophy* 4 (2002): 525-28.
- Wedin, Michael V. *Aristotle's Theory of Substance: The "Categories" and "Metaphysics" Zeta*. Oxford: Oxford University Press, 2000.
- Williams, Bernard. *Essays and Reviews, 1959-2002*. Princeton-Oxford: Princeton University Press, 2014.
- _____. *The Sense of the Past: Essays in the History of Philosophy*. Princeton-Oxford: Princeton University Press, 2006.
- _____. "Cratylus' Theory of Names and its Refutation." In *Language and Logos: Studies in Ancient Greek Philosophy Presented to G. E. L. Owen*, edited by Malcolm Schofield and Martha Craven Nussbaum, 83-93. Cambridge: Cambridge University Press, 1982.
- _____. *Descartes: The Project of Pure Enquiry*. London-New York: Routledge, 1978.

- Williams, C. J. F. *What is Truth?* Cambridge: Cambridge University Press, 2009.
- Williams, Donald C. "On the Elements of Being." *Review of Metaphysics* 7 (1953): 3-18.
- Williamson, Timothy. *The Philosophy of Philosophy*. Oxford: Blackwell Publishing, 2007.
- _____. *Knowledge and Its Limits*. Oxford: Oxford University Press, 2000.
- Wilson, Malcolm. *Aristotle's Theory of the Unity of Science*. Cambridge: Cambridge University Press, 2005.
- Wisnovsky, Robert. "Avicenna and the Avicennian Tradition." In *The Cambridge Companion to Arabic Philosophy*, edited by Peter Adamson and Richard C. Taylor, 92-136. Cambridge: Cambridge University Press, 2005.
- _____. *Avicenna's Metaphysics in Context*. Ithaca, New York: Cornell University Press, 2003.
- _____. "Towards a History of Avicenna's Distinction between Immanent and Transcendent Causes." In *Before and After Avicenna: Proceedings of the First Conference of the Avicenna Study Group*, edited by David C. Reisman and Ahmed H. Al-Rahim, 49-68. Leiden: Brill, 2003.
- _____. *Aspects of Avicenna*. Princeton: Markus Weiner Pub, 2001.
- Wittgenstein, Ludwig. *Philosophical Investigations*. Translated by G. E. M. Anscombe, P. M. S. Hacker, and Joachim Schulte. Oxford: Blackwell, 2009 [1953].
- _____. *Tractatus Logico-Philosophicus*. Translated by D. F. Pears and B. F. McGuinness. London-New York: Routledge, 2001 [1922].
- Wolfson, Harry A. "The Terms *Taşawwur* and *Taşdıq* in Arabic Philosophy and Their Greek, Latin and Hebrew Equivalents." *The Muslim World* 33 (1943): 114-28.
- Wolterstorff, Nicholas. *John Locke and the Ethics of Belief*. Cambridge: Cambridge University Press, 1996.
- Yaldir, Hulya. "Ibn Sīnā (Avicenna) and René Descartes on the Faculty of Imagination." *British Journal for the History of Philosophy* 17 (2009): 247-78.
- Yazdi, Mesbah. *Philosophical Instructions: An Introduction to Contemporary Islamic Philosophy*. Binghamton, NY: Institute of Global Cultural Studies, 1999.
- Zabeeh, Farhang. *Logic of Danesh-Name Alai: Avicenna's Treatise on Logic, Part One of Danesh-Name Alai*. The Hague: Martinus Nijhof, 1971.
- Zarka, Yves Charles. "The Ideology of Context: Uses and Abuses of Context in the Historiography of Philosophy." In *Analytic philosophy and history of philosophy*, edited by Tom Sorell and G. A. J. Rogers, 147-59. Oxford: Clarendon Press, 2005.
- Ziai, Hossein. *The Knowledge and Illumination: A Study of Suhrawardi's Hikmat al-Ishraq*. Atlanta, GA: Scholars Press, 1990.