

Averroes and the teleological argument

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Abstract: The proofs for God's existence advanced in the most prominent theological work of Averroes (d. 1198), the *Kitâb al-kashf*, have been neglected, largely because the book has commonly – and correctly – been viewed as being meant for popular consumption. This article argues that although Averroes' arguments are non-technical, the Commentator nevertheless takes pains not to speak against his philosophical beliefs. Averroes distinguishes between inductive and deductive arguments, with conventional arguments from design falling into the former camp. Averroes also assigns a place for teleological argumentation when assigning a special role for the prime mover within the hierarchy of unmoved movers.

In the statements of Averroes (Abû al-Walid Ibn Rushd, d. 1198 CE) concerning the proofs for God's existence, there is a gap the commentator does not go to the trouble of explaining. Averroes criticized the purported metaphysical proof for the Necessary Existent of Avicenna (Ibn Sînâ, d. 1037).¹ And he held that, in contrast, Aristotle's method of starting from the observed phenomenon of an eternal motion was the correct one. Averroes repeatedly states that the proof from motion developed in natural philosophy is the one truly coherent way of proving God's existence.²

Yet Averroes in his *Book Revealing the Methods of Proving the Tenets of Faith* (the *Kitâb al-kashf*) also puts forward bits and pieces of what appears to be an argument from design. Men, according to Averroes, are naturally inclined to infer the existence of a magnanimous Creator from the magnificent design of the universe: and they are right to do so, for it is the 'direct path' (*al-ṣirât al-mustaqîm*) to which God calls man so that he may acknowledge Him. It is both 'the religious and the natural method'.³ What is more, according to Averroes, the teleological argument is the Qur'ân's own way of pointing out the necessity of an almighty and benevolent Creator. He produces a range of examples to back this claim up – instances in which he detects a teleological argument either plainly stated or else implied.

So, on the one hand the physical proof from motion is the sole scientific method of proving God's existence, while on the other hand the teleological argument provides the specialist and the layman alike with access to the First Principle. What is one to make of these statements, seeing as they do not seem to square with each other? The question has drawn little attention, partly due to the fact that an off-the-shelf solution has readily presented itself in the common belief that Averroes modified his message to fit the audience. On this interpretation, we could say that the *Kitâb al-kashf* (and hence the teleological argument) is meant for popular consumption, whereas the commentary works (and thereby the proof from motion) are aimed exclusively at the philosophically minded. It might furthermore be claimed that the argument from design is not even intended as a real argument. Instead, it is evoked in order to stir the right kind of emotions in the recipient. Its proper use is in the religious guidance of the common people for who reasoned argument is unfeasible – perhaps even undesirable.⁴

The logical status of the argument from design does pose a problem for Averroes; there is even a basic truth to the notion that, in his view, the teleological argument falls within the realm of persuasion rather than scientific discourse. But these claims have to be made more precise for them to have any use in our reading of the texts at issue. In this article I hope to show that while for Averroes the argument from design is of limited cogency and use, he takes pains even in the *Kitâb al-kashf* not to contradict his considered philosophical views. Judging by the sparse remarks made in the *Commentary on the Metaphysics*, the commentator even believed one form of teleological argumentation to have genuine philosophical value.

The *Kitâb al-kashf* on proving God's existence

As the full title of the *Kitâb al-kashf* indicates, (*Kitâb al-kashf an manâhij al-adillah fî' aqâ'id al-millah*, written c. 1179/1180), the book is a work of rational theology written with the aim of prescribing the way in which the fundamental truths of faith are to be conveyed (27.12ff.). The style adopted for the text is pre-eminently non-technical and the tone carefully measured so as not to clash with the tenets of Sunni orthodoxy. As is the norm in such works, the first chapter deals with the existence of God. Averroes takes this to be equivalent to the task of proving the existence of a creator, here identified as 'the Maker' (*al-Şâni'*: cf. *Kashf*, 28.14–16). This is already significant, because one traditional objection to the teleological argument has been that it gives us at best a master artisan (or several), not yet the one true God.⁵ This does not seem to be a concern for Averroes. God's unity, the main divine attributes (His knowledge, life, power, will, hearing, seeing, and speech), and God's freedom from imperfections, are all taken up later. It is essentially the fact of God's fashioning the world that discloses His existence as God:

that we have a (good and great) maker for all intents and purposes *means* that we have a God.⁶

So how does one go about proving this first article of faith? Averroes first goes through a number of options culled from the teachings of the various theological schools. Special attention is paid to the Ash‘arites: this, however, merely with an eye towards refuting their method of proving the existence of God from the creation of the world in time. The inflammatory nature of the topic of temporal vs eternal creation also informs Averroes’ treatment when he finally puts forward what he considers the only acceptable arguments for God’s existence. Averroes declares that the correct methods for proving God’s existence are (1) the argument from providence (*dalil al-‘in‘ayah*) and (2) the argument ‘from the creation of the existents’ substances – for instance, the creation of life out of the inanimate and [the creation of] the faculties of perception and intellection: this we shall call the argument from creation (*dalil al-ikhtir‘*)’.⁷ Both of these formulations carefully skirt the issue of whether creation taken in the collective sense is temporal or eternal. (The subject is picked up later and decided in favour of eternalism.)

At first glance it would appear that the first type of proof offers a clear-cut example of an argument from design, whereas the second approximates some kind of cosmological proof. (Cf. Davidson *Proofs*, 229–230.) Nevertheless it is difficult to discern just what kind of cosmological proof is meant by this ‘argument from creation’. To be sure, the principle that every effect must have a cause is alluded to,⁸ and this is standard fare in any cosmological argument. But when Averroes elaborates on how one should understand this, something altogether different emerges:

As for the argument from creation, it encompasses the existence of all the animals and plants as well as the existence of the heavens. This way [of arriving at God] is based on two principles (*aşlân*) potentially existing in the faculties of all mankind. One is that these existents are created. In [the case of] animals and plants this is self-evident, as when the Exalted says: ‘Those others you call instead of God could not create so much as a fly, not even if they should band together’ (Q. 22.72). We also see bodies that are [at first] inanimate and then become alive, and so we come to know with certainty that there is an Existent giving life [to that thing], its benefactor. This is God, He who Blesses. As to the heavens, we know from their ceaseless motions that they are entrusted (*ma‘mûrah*) with the providence [witnessed] here and that their actions are of much profit (*musakhkhirah*) to us. And [anything] profitable and entrusted [with some task] is necessarily created by something other than itself. (43.17–44.4.)

Obviously, Averroes wishes to establish a way for the heavens, which are not generated (*muḥdath/mukawwin*), nevertheless to be created: they are shown to be created because they execute a task they are charged with. The notion is problematic and will be addressed later (cf. below, §5, n. 52). But I submit that otherwise, what this most resembles is an ‘argument from composition’, a mainstay of Islamic theology. The more closely we examine the marvellous way in which

things are put together, the more keenly we become aware of the majesty of their Creator. This is highlighted by the Qur'anic examples Averroes evokes. We are told to pay attention to how the camel was created, how the heavens were lifted high and the earth laid low (88.17, also 6.79), how man was created from a drop of semen (86.6) and how the idols, by contrast, could not piece together so much as a minuscule fly (22.72). In the modern classification of the proofs for God's existence, all this puts us more in mind of a teleological argument than any cosmological proof.

For Averroes himself, the two ways leading to God converge: the better we understand the wisdom inherent in the existence of existents, the more we see the reason and the final cause specifying their coming to be, which in turn confirms our belief in providence (44.10–12; cf. 43.12–44.2). An extensive list of Qur'anic passages follows supposedly exemplifying one, the other, or both of these pointers towards God (44.15ff.). Averroes confidently concludes:

Due to these considerations it has become manifest that the proofs for the existence of a Maker are reduced to these two kinds, the proof from providence and the proof from creation. Moreover, it has been shown that these two ways constitute both the way of the chosen – and by the chosen I mean the scholars – and that of the multitude. (46.4–6.)

So the substance of both arguments put forward in the *Kitâb al-kashf* is teleological: there is an argument from providence, and an argument related to how wisely each individual thing is put together. These can be thought of as macrocosmic and microcosmic variations on the argument from design. But then the question arises: if the scholar and the masses alike should endorse this 'proof', what is its logical form and status? And how does it relate to the proof from motion, touted in Averroes' commentary works as the one and only scientific method of proving God's existence? We have only a few clues to go on. An oblique reference to the proof from motion seems to be contained in Averroes' account of the 'proof from creation' and the heavenly motions. The notion of heavenly guidance corresponds to the idea first presented in rough outline in *Physics* 8, chapters 7–9: continuous eternal motions are needed to account for the sempiternal continuity of sublunary motions, and the only viable candidates for this job are the heavenly rotations (cf. *Metaphysics*, 12.6, 1072a9–12). As regards the knowledge the masses and the learned have of God's existence, Averroes contends that it differs only 'in its details' or 'in degree'.⁹ The uneducated recognize the truth of the matter through a primitive knowledge grounded in sense experience, whereas the scholar can add to this what he knows of creation and providence through demonstrative science (46.7–10). Moreover, 'with regard to these two proofs, the scholars excel over the multitude not only on account of the great amount of knowledge [at their disposal], but also because of its depth with regard to every single thing in itself' (46.13–16).

Anthropocentrism and teleology

These, then, are Averroes' stated views regarding the proofs for God's existence in the *Kitâb al-kashf*. It remains for us to set them in their rightful context. Our first problem is that the argument from providence as it is presented in the *Kashf* appears almost embarrassingly anthropocentric in character. Taking into account the nature of the testimony Averroes summons to support his viewpoint this is *prima facie* understandable: Averroes cites from the Holy Qur'ân, and Islamic scripture makes it a point to demonstrate at every turn the care God has shown for man and his needs. Even cosmic structures can be viewed from the point of view of their utility to man: thus, e.g. the ground is spread like a bed and the mountains lifted as tent-poles to make man's natural abode (Q. 78.4–5). Similar examples abound. (Cf. *Kashf*, 43.6–17, 44.17–45.1.) Yet they appear to sit uncomfortably with Averroes' philosophical convictions.

It is Davidson's contention, in particular, that the argument from design cannot for Averroes be 'a fully adequate demonstration of the existence of God, the chief reason presumably being that argumentation from the functionality of nature views the universe anthropocentrically'. Anthropocentrism would rub Averroes the wrong way as a philosopher, because as a philosopher, the Commentator knew that it is a matter of principle that the superior does not exist for the sake of the inferior.¹⁰ In other words, the entire argument from providence would be based on a false premise. This would severely compromise its validity. Fortunately, there are other factors to consider.

Anthropocentrism qualified

For one thing, the anthropocentrism in Averroes comes strictly qualified, even as it is largely confined to the *Kashf*. In the *Tahâfut al-tahâfut*, for instance – another work often described as popular – Averroes' point is precisely that the cosmos, and particularly the celestial region, has a grandeur all its own, with no reference to man necessary. As the Holy Qur'ân reminds us, 'Surely the creation of the heavens and the earth is greater than the creation of man; yet most men do not know' (Q. 40.57; cf. *Tahâfut*, 190.5–6). This realization helps to highlight what I see as the flaw in Davidson's citation of the principle that the higher cannot care for the lower. For Davidson fails to mention a key qualification in Averroes' formulation: Averroes' words are that the superior does not exist *primarily* or 'in first intention' for the sake of the inferior. (Cf. *Tahâfut*, 484.12–13.) This is to say that the heavens have not been instituted solely for man's benefit: in general, things possess and strive after their own good, regardless of what their relationship to man is. Yet it by no means precludes *God* from being responsible for the good of all creation (including the sublunary world, again including man).

Put briefly, Averroes' argument in the *Incoherence of the Incoherence* runs as follows. Observation confirms (1) that the celestial spheres are alive and endowed

with will and that (2) together they conspire to bring into being the steady and orderly procession of generation and corruption crucial to the sustenance of sublunary life.¹¹ The question arises why they should operate thus in concert. Avicenna had suggested that this would be due to the care the spheres exhibit towards their inferiors in imitation of the divine benevolence.¹² This Averroes cannot accept, in part due to the principle mentioned above: the higher never exists primarily for the sake of the lower; this would be fundamentally backwards. Each creature aims at its own perfection and this is always something higher, not lower, on the scale of excellence (484.8–485.4; cf. 260.12–261.1). Deftly Averroes turns the tables to his advantage. Precisely because the spheres and their immaterial movers would *not* of their own accord tend to the sublunary world, the fact that they still *do* so shows that they obey a first among them. It is this ultimate first principle that is responsible for the order in the motions of the spheres:

If not for the presence of this Commander, they would not constantly concern themselves with what [happens] here in [the sublunary world]: for they are possessed of will, and this act holds no special advantage for them. They therefore move their respective bodies as they are commanded and charged, for the sake of conserving what is found here and to sustain its existence. And the Commander is God (glory be to Him): and all of this is meant by His words 'We come willingly'.¹³

In short: the fact that one encounters in the celestial motions 'a final cause according to secondary intention, necessary for the existence of what is found here' in the sublunary world (491.13–14; cf. 500.8) indicates that there is a higher intelligence at work over what the celestial movers possess individually.¹⁴ Far from discrediting divine providence, the principle that Davidson cites actually shows why it is necessary, given what everyone can readily observe. It is used as a tool for conferring the responsibility for the sublunary harmony from the celestial bodies and their individual movers to the proper subject of our reverence – God, the true prime Mover.¹⁵ We shall have occasion to return to this vision of the ordering and obedience of the separate substances. For now, it is enough to recognize that even if the celestial order is necessary for the wellbeing of man (and of all sublunary creatures), this need not be seen as an affront to the natural order.

Anthropocentrism attenuated

What is more, even in the *Kashf* the anthropocentrism comes somewhat attenuated. For a 'great many' things in the sublunary world, Averroes says, conform with the good of man, as do a 'whole host of particulars' (cf. *Kashf*, 43.10–12): but he will not overstate his case. Not all things that happen here need be shown to be conducive to human life. That this caution is not accidental is confirmed by a look at the early *Compendium of the Metaphysics*. In bringing that work to a close, Averroes turns his attention to the question of divine providence.¹⁶ Since Averroes at the time of writing the *Compendium* still subscribed to the emanationist worldview espoused by al-Fârâbî (d. 950) and Avicenna, the question

he sets for himself is the ancient one of how we get the many from the One. Specifically, why should God have created such a great variety of creatures – some noble, to be sure, but others mean and lowly? It is because

... the existence of most of them is for the best. Of some we can show that they exist for the sake of man or for the sake of each other; with some, this does not seem to be the case, like with those hostile animals that are harmful to [both] human and plant [life]. And because of this it is said further on that the reciprocal destruction of most existents is only imposed by accident and because of the necessity of matter. Such for instance is the case with scorpions ...¹⁷

The basic line of reasoning mirrors that of the *Kashf*: it is apparent enough that the world in its broad outline is well adjusted to the good of man, as well as that of all creatures. This time, however, Averroes picks up a problem. Suppose that someone should point to a counter-example to all this overflowing benefaction – a creature like the scorpion, which does not seem to do much good to anyone. How do we explain this? Averroes refers to the ‘necessity of matter’; what I take him to mean is this. The world is necessarily of a finite size and cannot grow, since it incorporates all the matter there is. Thus for every birth we must have a death to make room for newcomers – a timely reminder of the necessity of passing the torch from generation to generation.¹⁸ But the lessons do not end there. For presumably, for every creature that gives more than it takes, we must also posit another one taking more than it gives away. A full complement of creatures will include both. In the *Tahâfut al-tahâfut* Averroes puts this forward as the philosophers’ (rather Leibnitian) general theodicy: ‘According to them, [divine] Wisdom has decreed that there be great good even when it is tainted by a little evil, for the existence of much good together with little evil is preferable to the privation of much good because of the presence of a little evil.’¹⁹

Averroes thus appears to take even everyday ideas about divine providence quite seriously. At the same time, he is perfectly clear in that restrictions apply. A wonderfully fitting niche has been carved out for man in the cosmic order: but we should not be surprised to find a serpent or two in our paradise, too, for it has not been created for us alone. The emphasis is consistently on the big picture, rather in the manner of al-Fârâbî’s notion of cosmic justice in the cycles of generation and corruption.²⁰ On Averroes’ view, the correct way of construing God’s providential care is to think of it in terms of God’s bringing into being and keeping in existence all manner of wonderful creatures.²¹ There is no room for anthropocentrism here – much less egocentrism.²² Along these lines, it should be noted that Averroes keeps even his examples in the *Kashf* confined to the species level: providence touches man as a representative of his kind, not – it appears – his individual history. As for his other works, in the *Tahâfut* Averroes affirms that even divinatory dreams and the like are ‘in reality a providence concerning the species’ (cf. *Tahâfut*, 504.4–13); and in the *Commentary on the Metaphysics* he contends that ‘individual providence in the sense of no-one else sharing in it is not

something that divine generosity would require' (*Tafsir*, 3:1607.8–9). In other words, God does not play favourites; what is more, man's wellbeing itself comes as a corollary to the primary good of universal design.²³

Averroes' discomfort with the argument from design, to conclude, does not stem from its claimed anthropocentrism. It has instead to do with the argument's logical form.

The incompleteness of induction

In the Islamic tradition, the straightforward procedure for arguing from 'signs' (*dalâ'il*) of providence to the existence of a providential Creator was a common way of setting up the argument from design. (Cf. Davidson *Proofs*, 218ff.) This seems to be the way the argument from providence is presented in the *Kitâb al-kashf* as well. Meanwhile, in the *Tahâfut al-tahâfut* Averroes explicitly states that the working of a final wisdom (*al-ḥikmah al-ghâ'iyah*) and a highest final cause (*sabab mina'l-asbâb al-ghâ'iyah*) in the heavenly domain become evident 'through induction' (*bi'l-istiqrâ'*). The Commentator enthusiastically points out how in the course of a thousand years, 'approximately ten thousand' signs of providence have become known in animal and man; and he maintains an optimistic stance with regard to finding the reasoning behind the specific celestial movements as well (*Tahâfut*, 492.8–14).

It is common enough to conceptualize the teleological argument as being built on mounting evidence. The more we look at the world around us, the more we see signs of planning and design and the more we become convinced that the universe is the work of a purposive and benevolent agent. Some actually regard this feature as an advantage: an inductive argument can acquire ever increasing force as new corroborating evidence comes in.²⁴ So what is the problem with such reasoning?

First of all, Averroes would have reason to distrust the inductive argument in service of theology on the basis of what he considers to be dubious precedents in the Islamic milieu. In the early manual on *What is Necessary in Logic*, Averroes' example of a contentious inductive argument reads as follows: 'Fire, air, water, and earth are bodies; they are created; so body is created'.²⁵ This is a standard *kalâm* proof for the creation of the world in time; for Averroes, staunch eternalist that he is, there must consequently be something wrong with it. In the section devoted to the *Topics*, Averroes locates the problem in the fact that only *some* bodies have been examined in order to arrive at the desired conclusion: in other words, the induction implicit in the major premise is incomplete.²⁶ Should one add the heavenly body to the list, it would immediately become apparent that not all bodies come to be and perish.

That this is Averroes' analysis of the problem is confirmed by the section in the same work devoted to the *Syllogism* (i.e. the *Prior Analytics*). Averroes' example of

a syllogism in the first figure is ‘Every body is composed; every composed thing is created; thus, every body is created’.²⁷ In this syllogism, the universal claim made in the major premise is clearly stated, and its problematic nature is thereby also exposed. The confusion lies with the equivocal meaning of ‘body’. In a sense, the term is used of the heavenly body only equivocally, since it does not share certain attributes common to all sublunary elemental bodies (it is not composed of matter and form; it has no contrary; etc.). But in another, and ultimately more fundamental, sense, aether is indeed bodily: in *De Caelo* Aristotle even calls it the first body (*prôton sôma, al-jirm al-awwal*).²⁸ Consequently, the major premise that ‘every body is composed’ carries a crucial limitation: it is only true of things ‘in matter’ – that is, sublunary matter (cf. *Tahâfut al-tahâfut*, 270–271). Applied universally, as in the would-be induction performed by the theologians, the statement is incorrect and the syllogism fails.

So one must be wary whenever a dialectician (and this is how Averroes views the theologians in terms of methodology) presents an induction: although its form is as sound as that of the syllogism and the demonstration, the contentious nature of its subject matter may reduce it to the level of sophistry.²⁹ Such rudimentary observations may be thought to inform Averroes’ cautionary notes in the *Tahâfut*. The details of celestial final causality have not been worked out yet, Averroes reminds us (491.15): and even though the general principle cannot be set in doubt, ‘many of these particular causes either cannot be grasped at all or else can only be grasped after a long [period of] time and [with] long experience, as the Sage is said to have affirmed in his book *Concerning the Particulars Relating to Celestial Governance*’.³⁰ But then Averroes, as we have noted, is an eternalist. How within an infinite time-frame can we *ever* come to know in detail how the divine good is realized?³¹ In fact, Averroes would have to say that such knowledge is perennially unavailable even to God Himself: ‘for the particulars are infinite and no knowledge encompasses them’ (*Tafsîr*, 3.1708.9–10). This points to a deeper problem underlying the cosmological puzzle, and suggests that maybe the question has been set incorrectly.

The fact of the matter is that on Averroes’ view of demonstrative science, an inductive argument simply is not a proof – nor can it *ever* become one. An induction by definition proceeds from the particular to the universal,³² and such procedures are necessarily invalid *qua* deductions. This corresponds to what is known in modern philosophy of science as ‘the problem of induction’; Averroes, for one, is clear on its nature. There is simply no way an induction can be turned into a deduction. According to the account given in Averroes’ *Middle Commentary on Aristotle’s Prior Analytics* even a complete induction (one that lists all the particulars) falls short of being a syllogism on no less than three counts. Induction can only prove true what is already self-evident; induction proceeds from the minor and middle terms to the major; third, and most crucially, induction takes its start from what is more immediate to our cognitive faculties (that is, our perceptions:

cf. Aristotle, *An. post.* 1.18, 81a38–b9), whereas the syllogism begins from what is prior by nature.³³

It is noteworthy that this view is explicitly contrasted with that of al-Fârâbî, who had put forward the remarkable suggestion that a complete induction could indeed become a scientific proof. (See *Talkhîṣ kitâb al-qiyâs*, para. 373, p. 366.2–3.) The difference comes down to a difference in the two thinkers' interpretations of Aristotle's characterization of induction in *Prior Analytics* 2.23. When Aristotle says that 'we must apprehend C as if made up of all the particulars' (68b27–28, with C representing the particular cases supporting some given universal claim), al-Fârâbî reads this in light of the following sentence: 'For induction proceeds through an enumeration of all the particulars' (28–29). In other words, al-Fârâbî holds that in science, a complete induction is needed, and that consequently it must be feasible.³⁴ By contrast, Averroes chooses to retain the 'as if' structure of Aristotle's wording, thereby preserving Aristotle's rather more sophisticated account. Typically, we do not have all the evidence present to us, but this does not prevent us from making inductive inferences: it only prevents them from being logically binding. Considering that al-Fârâbî was to Averroes the 'second teacher' in logic after Aristotle, this comes as a significant departure.

The instructive uses of induction and example

Another way of conceptualizing Averroes' comments about the divine design would be to read them as constituting an argument by *analogy* (or paradigm, or example: *mithâl*). The examples which the Commentator cites as evidence for divine providence would then be just that – examples – and the argument would read something like 'God has designed the heavens well; therefore God has designed this-and-this well', or perhaps: 'God has cared for man; therefore God cares for all things'. But in this case the argument's logical pedigree would be even more suspect: for if dialectic closely mimes the demonstrative art, rhetoric aims considerably lower. It is founded on unexamined opinion; it also omits mention of the universal altogether in an attempt to produce direct, unmediated assent.³⁵ This makes the rhetorical argument particularly prone to misuse. Averroes' example of a (fallacious) argument by analogy reads as follows: 'the animals, the plants and the minerals are generated: therefore the heavens are generated' (*Talkhîṣ kitâb al-jadal*, §26, 48.10–11). A comparison with an inductive variant of the same argument (cf. §3 above) reveals how this one leaves out several vital steps that would have to be spelled out for it to be logically compelling. One of these steps appears to be induction – here of the form 'bodies of types A, B, and C are generated; therefore all bodies are generated' – which helps to explain why Aristotle considers the paradigm the rhetorical counterpart to induction (*Rhetoric* 1.2, 1356a36–b5).³⁶ In this particular case, such exactitude would expose the argument for the fallacy it is.

If the argument from design as a dialectical or rhetorical construct finds no place in scientific enquiry what, then, is its function?³⁷ Here al-Fârâbî's positive influence on Averroes gains in prominence. For al-Fârâbî had assigned a place in the philosophical curriculum to the non-demonstrative logical arts commensurate with their logical and epistemological status. Underlying the Fârâbîan scheme is the Arabic distinction between conception (*taṣawwūr*) and assent (*taṣdīq*) in the cognitive process.³⁸ As the move from one to the other is not automatic, there is room for different kinds of grounds to assent. And although one can never give assent without having a conception of a thing, one can certainly do so without syllogistic; indeed, this is what al-Fârâbî thought most people in most cases do.³⁹ A true talent for the speculative sciences is a rare gift among men and signifies an inborn superiority, one that should translate into religio-political influence. And such power should in turn be used to cast scientific truths into such shapes as the multitude *can* accept and understand. These evocative images can concern scientific as well as religious matters:

For image-making and imitation by means of similitudes is one way to instruct the multitude and the vulgar in a large number of difficult theoretical things so as to produce in their souls the impressions of these things by way of their similitudes. The vulgar need not conceive and comprehend these things as they are. It is enough if they comprehend and intellect them by means of what corresponds to them. For to comprehend them in their essences as they are (*fī haqīqati-hâ*) is extremely hard, except for whoever devotes himself to the theoretical sciences alone.⁴⁰

There are two things to note here. Certainly prominent enough is al-Fârâbî's condescending attitude toward the 'vulgar', whom he considers beyond the pale of reasoning. It is this aspect of al-Fârâbî's thought that has generated most controversy. But the affirmation that the multitude *do* grasp the same essential truths as the scholars – even if only in the form of metaphors and sensible images – is just as important. To quote Deborah Black, 'Such a social role for rhetoric is admittedly elitist, but like its basically Platonic inspiration, it has as its motivation the more egalitarian desire to ensure that all people are able to fulfill their rational capacities in some measure.'⁴¹ Aristotle, according to al-Fârâbî, did not wish for philosophers to be the only ones to attain happiness: on the contrary, the Stagirite was 'of the opinion that whenever the others labour, their labour, too, ought to be directed toward what they know to the measure of their ability to know', and that he therefore 'did not confine himself in instruction to giving an account of how to instruct the one who should be given certainty about the beings, but gave also an account of the art and the power by which to instruct all others in these very same beings'.⁴²

Averroes moves within this tradition when he recommends the teleological argument as something that both the learned and the multitude can grasp, albeit

in different degrees.⁴³ After all, in comparing induction with deduction Aristotle himself had said that ‘induction is more persuasive, clearer, more intelligible in the way perception is, and commonly used by the public’, even as ‘deduction is more coercive and more effective with those skilled in understanding’ (*Topics*, 1.12, 105a15.19, tr. R. Smith). Moreover, if rhetoric, too, aims at producing assent and opening the mind to the reception of correct conceptions, then clearly one example of providence can often serve as well as a hundred – sometimes better. In the *Decisive Treatise* Averroes cites a Qur’anic proof-text to justify this approach: does God not tell us to debate with people ‘in the most effective manner’? He maintains that in the end, all three arts – demonstration, dialectic, and (rhetorical) persuasion – achieve their respective aims.⁴⁴

Of course, for truth to be preserved throughout the distribution and popularization process, it has to be secure in the first place: the ‘thing as it really is’ must be known by the rhetorician or dialectician, if his or her argument’s relation to the truth is not to be entirely accidental.⁴⁵ Presumably, the trustworthiness of this knowledge is in the final resort vouchsafed for by the normal – and normative – scientific process. Analogy relies implicitly on the same kind of procedure as induction: both function as if they *already* had access to the general rule – to the universal and the essence.⁴⁶ These can only be reached through demonstration and/or immediate intellection, because ‘things as they are’ or ‘in their existence’ are the province of demonstration and science, for Averroes as much as for al-Fârâbî. (See *Talkhîṣ kitâb al-burhân*, §§ 6–7, 38.1–39.4.)

Acknowledging the way the non-demonstrative (persuasive) arts rely on demonstration is helpful on several levels. For one thing, it helps explain some of what Averroes has to say about providence towards the end of his exposition in the *Kitâb al-kashf*. The multitude, we are told, achieve an understanding of providence through sense-perception: this fits in well with its association with the particular and thereby with the induction and the example. Meanwhile, it is on account of his grasp of *demonstration* that ‘one of the scholars could claim that what the learned know concerning the science of the parts of the human and animal [body] comprises nearly so-and-so many thousand profitable [things]’ (46.10–12). What I take this to mean is that no one scholar can lay claims to such a vast knowledge of particulars *qua* particulars – perhaps not even the scientific community as a whole. However, the philosopher knows the *principle*, the universal, and is thereby able to recognize singular cases as its particular instantiations as they come along. And he can point to them as confirmation of his theory, even if they do not strictly speaking prove it.

Such an understanding of the relationship between demonstration and persuasion finds confirmation in, and itself further illuminates, Averroes’ closing comments regarding the difference between the scholar’s and the masses’ understanding of divine providence. As was noted before, the Commentator holds that the gap is as much qualitative as it is quantitative: the scholar not only has a greater

number of examples at his disposal, but his or her understanding in each case is deeper.

The way the masses examine the existents resembles the way in which they inspect works of art, that is, insofar as they have no knowledge of the inherent craft. They merely recognise them for works of art, and that an artisan is [responsible] for them. In this example the scholar resembles one who, when inspecting a work of art, knows something of the art [in question] and the wisdom involved in it. No doubt one who is such and knows works of art in such a manner is more knowledgeable concerning the artisan *qua* artisan than one who does not understand about works of art anything except that they are just that. (*Kashf*, 46.16–21)

In light of the foregoing I propose the following interpretation. The multitude and the learned alike can attain a certain cognition about a divine design both on the microscopic and the macrocosmic levels. But it takes a specialist to recognize just *how* finely tuned the universe is. This is not only a matter of time-consuming observation. The scholar in each case must also be a specialist in the *relevant* art. The zoologist more than anyone recognizes the functionality of the animals' limbs; the botanist the miracle of photosynthesis; the cosmologist infers the necessity of the celestial arrangement; while the meteorologist examines how this affects the sublunary world. This subtly underlines a point Averroes makes in many places, most notably in the *Decisive Treatise*: the philosopher's work is vital for the wellbeing of the religious community. The metaphysician, finally, is the one with the deepest insight into the 'art' of creation as such: for he or she inquires into the being of beings, which is to say into the mode of being of secondary, primary, and separate substances. (Cf. §5 below.) This, I presume, is why Averroes says that the 'proof from creation' enquires into the *substances* of existents (*Kashf*, 43.4). The aim is always a pure intellection of the abiding universal underlying accidental and contingent features.

Example and induction, however inadequate they may be as the be-all and end-all of science, may yet possess an instrumental value in this task. For human intellection by Aristotelian precepts can only arise from an abstraction from worldly particulars. Example and induction can therefore aid us in honing our picture of what, for example, the natural variancy in the instantiation of a particular form is, even if they cannot give that concept itself: in Jaakko Hintikka's terms, induction in Aristotle is not so much a tool for *forming* concepts as for *reforming* them. Induction is used to refine our picture regarding certain conceptual relations.⁴⁷

Realizing this can finally help dispel the trouble with the infinite particulars mentioned earlier (§3). For knowledge by its nature concerns the finite and determinate and intellection is always of the universal form – of the abiding structural features of the universe.⁴⁸ As Porphyry had pointed out, already Plato exhorted us to reach as far as the lowest species – no further, i.e. not to the

individuals, since of (infinite) individuals there can be no knowledge.⁴⁹ Thus when the scholar sifts through the particulars to find so-and-so many signs of providence, what he is really getting at is a finite body of eternally valid knowledge, not an infinite mass of disconnected ephemeral data. And this is what he is directing the attention of the (philosophical or non-philosophical) pupil to, as well.

Providence in the *Metaphysics*: order and form

To catch a glimpse of this properly philosophical vision of teleology and providence – for we can only glimpse it – we need to turn to Averroes' reading of Aristotle. Though there is no full-blown argument from design in the medieval Aristotelian canon,⁵⁰ the Commentator makes full use of passages in *De Caelo et Mundo* endowing universal 'Nature' with providential properties.⁵¹ For a more systematic picture we turn to the *Metaphysics*.

The tenth chapter of *Metaphysics*, Lambda, purports to consider 'in which of two ways the nature of the universe contains the good or the highest good, whether as something separate and by itself, or as the order of the parts.' (12.10, 1075a11–12, tr. W. D. Ross). Averroes contends that the answer to this very question discloses Aristotle's views on providence. The Sage will have us know that the dichotomy between the transcendent and the inner-worldly good is in fact false, as it is in the case of the army and its commander:

For the good is found both in the order and in the leader, and more in the latter; for he does not depend on the order but it depends on him. And all things are ordered together somehow, but not all alike – both fishes and fowls and plants; and the world is not such that one thing has nothing to do with another, but they are connected. For all are ordered together to one end. (1075a12–17, tr. Ross)

While the Arabic translation used by Averroes has some peculiarities to it, none are so serious as to obscure Aristotle's basic position or impede Averroes' understanding of it.⁵² The good inherent in the Prime Mover is somehow isomorphic with the universal order. Meanwhile, the meaning of the parallel Aristotle draws next, that between the different parts of the universe and the different ranks of household members, is that 'part of it contains a perfect order without being impaired by that which is accidental, and this is the state of the celestial bodies; moreover, part of it is without order accidentally, and it is that which is below the celestial bodies' (3:1712.9–11, tr. Genequand).

It must be known to you that this is Aristotle's view concerning providence, and that the problems arising about providence are solved by [his view]; for there are people who say that there is nothing for which God does not care, because they claim that the Wise must not leave anything without providence and must not do evil, and that all his actions are just. Other people refuted this theory through the fact that many things happen that are evil, and the Wise should not produce them; so these people went to the opposite extreme and said that therefore there is no providence at all.

The truth in this is that providence exists, and that what happens contrary to providence is due to the necessity of matter, not to the shortcomings of the creator, so that some people carried on their reflection on this to the point that they said that there are two gods, a god who created evil and a god who created good.
(*Tafsîr*, 3:1715.1–11, tr. Genequand)

Paradoxically, the nobler members of the universal order, i.e. the celestial entities, though likened to ‘free men’ enjoy less freedom in their actions – at least in the *liberum arbitrium* sense.⁵³ This is in fact necessary for the realization of the good in the world: there is no chance in celestial events.⁵⁴ Our freedom, by contrast, is also our curse. We arrive at where we began: matter is the harbinger of evil (cf. §2 above). But we would not expect Averroes to leave matters there. The remaining challenge of dualism is resolved at the very end of Averroes’ commentary. Averroes has this to say on *Metaphysics*, 12.10, 1075b17–18:

His words: ‘and for those who posit two first principles, there must be another principle, more powerful’ mean: it is necessary that he who posits several first principles of the universe, i.e. two or more, should posit one principle better than those which is that which wills the order and the unity existing in the universe; if the different principles were not united, the universe would decay. (*Tafsîr*, 3:1727.4–8, tr. Genequand)

Again a familiar contention: without an absolute First Principle the universe would fall apart. Now, however, Averroes specifies his claim. It is the separability of the celestial movers (of which there are exactly as many as there are observable celestial motions, *Metaphysics*, 12.8, 1073a37–b1; cf. Averroes, *Tafsîr*, 3:1644–45) that guarantees that they ultimately fall in line. Conversely, ‘if no substance besides the perceptible is posited as principle of the sensible substance, there is no first principle and no principle of the apparent order, and therefore no celestial order’ (*Tafsîr*, 3:1730.11–13, tr. Genequand). What is the significance of this? Why is the celestial movers’ separation from their bodies so important for their influence?

The answer lies in the particular mode of being that separation entails. As Richard C. Taylor has shown, Averroes believed it to be a demonstrable fact that the separate movers as immaterial are intellects (or ‘intelligences’, as the medieval Latin idiom has it). It is furthermore plausible that these intelligences are differentiated and arranged hierarchically according to a ‘potentiality in knowing’.⁵⁵ The intellection of the First Intelligence (the Prime Mover) according to Averroes is absolutely simple and indivisible (*Tafsîr*, 3:1706.2–10); that of the other movers, presumably less so.

Now everything in the world in its own way desires and imitates the perfection of the First Principle: thus even while the separate substances each desire a share of the Prime Mover’s perfect knowledge, the heavens’ perfection lies in their eternal rotation. This motion the spheres receive from their respective intelligences, and the two activities together provide the key to the puzzle of celestial harmony. When commenting on Aristotle’s words that the Prime Mover moves as

the object of love (*Metaphysics*, 12.7, 1072b2–3), Averroes specifies that within the celestial mechanics, continuity is provided by the motion of the outermost sphere, while the subsequent spheres produce generation and corruption by way of their more complex motions. The latter result from motions produced by the First Principle and the spheres' individual intelligences together: and 'from this issues God's providence for all existents' (*Tafsîr*, 3:1607.3). Here we see Averroes negotiating a narrow course between the Scylla of monist monotony and the Charybdis of unregulated chaos. On the one hand, if the motion directly inspired by the Prime Mover – that of the outermost sphere – were the only one in existence, it would be wholly uniform, no push and pull in the sublunary realm would occur, and consequently no generation and corruption. This would be contrary to the principle of God or nature working for the best: for as Aristotle says in his work *On Coming-to-Be and Passing-Away* (2.10, 336a23–b24), eternal cyclical becoming is the next best thing to eternal being.⁵⁶ Thus we get variable motions. But then again, such motions by themselves do not account for the continuity of sublunary events – for the way they fit together, even as they aim at disparate goods. For cosmic harmony we need the unity of the First Principle. It is in this unity that all of the separate intelligences share, and it is from this unity that the orders of the eternally recurrent forms issue:⁵⁷

Such a decree (*taqdîr*) proceeds⁵⁸ from the workings of an intelligent divinity resembling the one form of the one principal art to which the various arts are subordinated. Consequently, one must understand that when nature actualizes something of the utmost orderliness (*ghâyah al-nazâm*) without [itself] being intelligent, it is inspired (*mulhamah*) by activating powers more exalted than it is: and these are called 'intelligences'. (*Tafsîr*, 3:1502.12–1503.1.)

It is unclear how exactly one should construe this 'inspiration', as Averroes in what follows explicitly rejects the notion of Forms being impressed on matter from the outside by a separate Giver of Forms (*Wâhib al-şuwar*).⁵⁹ Apparently, something on the lines of teleological causation in the Aristotelian sense is meant. But then it seems clear that in the end, the formal, the final, and the efficient cause converge: for as the world's ultimate aim, the Prime Mover is at the same time its (remote) formal cause, the latter function being due to the fact that the First Principle is ultimately responsible for the preservation of sublunary species and their universal forms. In light of this and because of the primacy of actuality, then, it is said that 'all proportions and forms exist in potentiality in prime matter and in actuality in the Prime Mover, in the way artifacts exist in actuality in the soul of the maker' (*al-şâniç*, N.B.; *Tafsîr*, 3:1505.3–5). The *Tahâfut al-tahâfut* condenses the philosophers' line of reasoning into a single succinct paragraph:

Because these bonds are in place between the [heavenly] bodies; and because they can be traced back to a single body and a single end; and because they all contribute to a single actuality, i.e. the world in its entirety: [because of all this the philosophers] believed that [the bodies can] all be traced back to a single Principle, as is the case when several arts aim at one artifact, when they all fall back on one

principal art. And because this is so, they further believed that the separate principles can be traced back to a single separate Principle which is the cause of them all, and that the forms and the arrangement [*nazâm*] and the order which subsist in it [i.e. the first Principle] form the most exalted [mode of] being in all [the modes of] form, arrangement, and order there are. And this arrangement and order is the cause of the [various] arrangements and orders in the sublunary, transient world; and in [accordance with] it, the intelligences are elevated, each according to their proximity or distance from it.⁶⁰

Consequently, the account of the *Kashf* is not so far off the mark, after all: even if the picture of God actually putting together and caring for every thing is far too crude and anthropomorphic, it still remains true to say that without His eternal actuality – without Him providing the paradigmatic mode of being for all beings – things would not assume the form they do, these forms would not hold, nor yet would they conform with each other. Strands of both the ‘proof from providence’ and the ‘proof from creation’ thus become intertwined in the uppermost reaches of philosophical theory.

It would then seem that Davidson actually has it backwards when he suggests that Averroes in the ‘proof from creation’ is serving up a sort of fuzzy cosmological argument. Davidson surmises that Averroes in the *Kashf* ‘must be permitting himself a certain liberty; and his meaning must be that in a loose sense the proof from motion subsumes the teleological argument, and the latter can be thought of as a popular version of the former’ (*Proofs*, 230). But if our interpretation is correct, then the ‘proof from creation’, despite its fuzziness, is closely related to the pursuit of metaphysics; what is more, the proof from motion itself for Averroes remains in a sense incomplete without an extension that reads much like a teleological argument. For the proof set down in the *Physics* can only arrive at the immaterial movers, not differentiate between such entities or specify the First Principle’s mode of causality as ‘form and end’, as Averroes puts it in his commentary on *Metaphysics* Lambda (*Tafsîr*, 3:1433.12).

To be sure, all of this is a far cry from the popular image of God directly caring for creatures, even as Averroes’ proof from *ikhtirâc* is a far cry from the *kalâm* proof from creation.⁶¹ Providence for Averroes issues from all beings from the ground (the elements) upwards imitating the First Principle – not from this harmony being effected forcibly from above. On the individual level, this teleology takes the form of each existent being acquiring a functional form in accordance with the appropriate celestial movements, and this is what is meant by divine ‘creation’: the actualization of all latent potentialities in matter. (Cf. *Tafsîr*, 3:1499.2–16.) There is no creation *ex nihilo*, nor is there room for a first moment of creation. On the cosmic scale, what is important to notice is that none of the existents consciously acts to the others’ advantage – not even God, it seems. Instead, God’s responsibility for the universal order is demonstrated through the fact that this order does not come about by the conscious work of any inner-worldly agent, nor is it yet possible that it could come about by chance. As the *Kashf* would have it,

... the materialists (*al-dahriyyah*) of our religion who deny the Artisan (bless Him) resemble the man who acknowledges the works of art [yet] does not understand that they are works of art. What he sees of artfulness he puts down to chance, and [claims] that the thing has come to be of itself. (46.21–47.2)

The Muslim, by contrast, sees it as an explication of the mind of God.⁶² Whether Averroes' vision can be deemed properly pious depends largely on the questioner's own religious commitments. What can be said for it is that it represents an imaginative reconstruction of Aristotelian doctrines and principles.⁶³

Conclusion

A uniform reading of Averroes' comments regarding the teleological argument is thus feasible. In its popular (dialectical or rhetorical) form the argument from design is indeed an argument, but it does not constitute a proof, just because induction (*istiqrâ'*) and example (*mithâl*) in general do not furnish us with scientific proofs. The argument may still be used in persuasion, and it can be employed in perfectly good faith. For the natural philosopher in the course of his studies does encounter ever more examples of God's goodness and greatness, and anyone with eyes to see can substantiate these findings. But as the entire body of evidence can never be gathered; the argument in this form always retains its 'as if' structure. For a proper proof, we need to proceed from 'what is better known by nature', and *sensu strictissimo* this is impossible when the object under study is God.⁶⁴ What can be said with certainty is that if the divine mind did not provide a certain blueprint for the celestial motions, 'this [sublunary] order would not hold, or there would be another order' (*Tahâfut*, 47.5–6; cf. *Tafsîr*, 3:1735.13–1736.3). As we can know nothing about such a radically different order, Averroes seems to side with treating this intelligible order as the one and only possible world – at least for us.⁶⁵

Considered from this viewpoint, Averroes may – largely on the strength of his reading of *An. pr.* 2.23, 68b27–29 – be said to have anticipated one of Kant's central criticisms concerning the notion of a universal teleology. For, according to Kant, an overall providential order can never come as a positive conclusion of the natural sciences. It is instead a practical postulate: God is a regulative principle, not only of our morals, but of our study of nature.⁶⁶ But the latter concept points to a crucial difference between Averroes and Kant as well, one that tells us something important about how far each of the two is willing to go in their defence of human reason. In the *Critique of Pure Reason*, Kant says that what he calls the 'physico-theological' proof for God's existence

... always deserves to be mentioned with respect. It is the oldest, the clearest, and the most accordant with the common reason of mankind. It enlivens the study of nature, just as it itself derives its existence and gains ever new vigour from that source. It suggests ends and purposes, where our observation would not have detected them by itself, and extends our knowledge of nature by means of the guiding-concept of a special unity, the principle of which is outside nature. This

knowledge again reacts on its cause, namely, upon the idea which has led to it, and so strengthens the belief in a supreme Author [of nature] that the belief acquires the force of an irresistible conviction. (A623–24/B651–52, tr. Kemp Smith)

We have seen that Averroes would have no quarrel with any of this; in fact, Kant's ideas about the teleological argument's general accessibility and of it providing a 'guiding-concept of unity' find suggestive parallels in Averroes' statements. However, Kant's appreciative remarks are merely set up for a subsequent exposure of the physico-theological 'proof's' severe limitations. According to Kant, logically speaking, the most we get from observing order and harmony in the cosmos is 'the existence of a cause *proportionate* to it' (A627/B655). What we require, by contrast, is a recognition of God as infinite and incommensurable with anything in the world.

The difference, which I take it is fairly obvious, is that Averroes would never be content with demoting the 'principle of unity' needed for the proper functioning of reason to a practical postulate. Averroes inherits from Aristotle a very robust form of realism – when the mind grasps the universals it in a sense becomes them – and to the Commentator's mind this unequivocally entails that the unity of reason must needs be not only a subjective, but also an objective necessity. This forms the crux of, for example, Averroes' polemic against the Ash'arite theologians. For things to have a discernible and intelligible nature, in fact for them to *be* anything at all, they have to conform to a stable and non-negotiable universal order.⁶⁷ Furthermore, the phenomenon of nature forming a unity necessarily somehow hinges upon there actually existing one overarching transcendental immaterial principle, whose very nature it is to be intelligence – 'thought thinking thought'. And if the contents of the thought 'there' somehow correspond to the sum total of the forms that arise in imitation of it over 'here', then Averroes indeed believes that the world order is commensurate with God's goodness. So when Kant utters the following confident statement, we can only assume that he did not envision anyone like Averroes doing the philosophical rounds anymore:

Now no one, I trust, will be so bold as to profess that he comprehends the relation of the magnitude of the world as he has observed it (alike as regards both extent and content) to omnipotence, of the world order to supreme wisdom, of the world unity to the absolute unity of its Author, etc. Physico-theology is therefore unable to give any determinate concept of the supreme cause of the world, and cannot therefore serve as the foundation of a theology which is itself in turn to form the basis of religion. (A628/B656, tr. Kemp Smith)

For it appears that this is precisely what Averroes wants to do: to argue from the order of the world to the mind of God; from its forming a unified whole to the unified and only potentially indivisible nature of God's intellection; from the created manifold to all potentialities being realized by Him. No matter that in Averroes' conception the ontological priorities are the reverse (mind over matter, divine intellection over worldly explication, actuality over potentiality), and all

purported inductions are really only illustrations of previously intellected truths. The crucial point is that for Averroes the world's perfection is proportionate to God's. This makes the argument from design not only viable as an argument for God, but the most informative we have. We might say that where the proof from motion tells us *that* God exists and *who* He is (the first unmoved mover), the teleological argument can tell us ever more about *what* He is and *how* He acts. This gives new substance to the Aristotelian notion that the mind is divine and the divine mindful.⁶⁸

Notes

1. Cf. H. A. Davidson *Proofs for Eternity, Creation, and the Existence of God in Medieval Islamic and Jewish Philosophy* (Oxford: Oxford University Press, 1987), 311–335; H. A. Wolfson 'Averroes' lost treatise on the prime mover', in *Studies in the History of Philosophy and Religion* vol. 1 (Cambridge MA: Harvard University Press, 1973), 402–429; C. Steel and G. Goldentops 'An unknown treatise of Averroes against the Avicennians on the First Cause: edition and translation', *Recherches de Théologie et Philosophie Médiévales*, 64 (1997), 86–135.
2. See ʿU. Amīn (ed.) *Talkhīṣ [sic] mā ba'd al-ṭabī'ah (Compendium of the Metaphysics)* (Cairo: Mustafā al-Bābī al-Habībī, 1958), 124.6–7; cf. also *Aristotelis de physico auditu libri octo. Cum Averrois Cordubensis variis in eosdem commentariis* (Long commentary on the *Physics*); [henceforth *In Phys.*], bk 1, comm. 83, in *Aristotelis opera cum Averrois commentariis* (Venice 1562–1574; repr. Frankfurt a.M.: Minerva GmbH, 1962); 9 vols and 3 supplementary vols; [henceforth *AoAc*], vol. 4, fol. 47E–L; *ibid.*, bk 2, comm. 26, fol. 58K–59C; *ibid.*, bk 8, comm. 3, fo. 340E–F; M. Bouyges SJ (ed.) *Tafsīr mā ba'd al-ṭabī'ah* (Long Commentary on the *Metaphysics*) [henceforth *Tafsīr*] (Beirut: Imprimerie Catholique, 1938–1952), 4 vols, 3:1422–1427. For a close account of how the proof from motion is handled in Averroes' commentary on the *Physics* see D. B. Twetten 'Averroes on the prime mover proved in the physics', *Viator*, 26 (1995), 107–134.
3. M. J. Müller (ed.) *Kitāb al-kashf'an manāhij al-adillah fī'raqā'id al-millah* [hereafter *Kashf*], in *Philosophie und Theologie* (Munich: Die Königliche Bayerische Akademie der Wissenschaften, 1859), 45.15, 46.12–13.
4. Davidson in his catalogue of proofs for God's existence (*Proofs*, 229ff.) espouses this explanation on the basis of what seems to me an uncharacteristically cursory reading of the *Kitāb al-kashf*.
5. The point is most famously put by Immanuel Kant in the *Critique of Pure Reason*, A626–27/B654–55. Davidson evidently employs the same criterion (*Proofs*, 213ff.) when distinguishing between 'full' and 'incomplete' versions of the proof; in Davidson's view, Averroes only furnishes an incomplete one.
6. The idea that every Muslim's first religious obligation is to contemplate the world's need for a Creator goes back at least to Abū al-Ma'ālī al-Juwaynī (d. 1085); cf. M. Y. Mūssā and ʿA. ʿA. ʿAbd al-Ḥamīd (eds) *Kitāb al-irshād* (The Book of Guidance), (Cairo: Maktabah al-Khānjī, 1950), 3.
7. *Kashf*, 43.1–6. The term *ikhtirāʿ* is difficult to capture with any precision: the root verb connotes 'to invent, to devise, to contrive, to create, to originate'. Müller renders *ikhtirāʿ*, *die wundervolle Hervorbringung* in German: this is certainly evocative, perhaps excessively so. I have chosen to err on the side of discretion and translate *ikhtirāʿ* with the neutral, if rather bland, 'create'.
8. Or maybe that for every invention there is an inventor: '*al-aṣl al-thānī fa-huwa anna kull mukhtarāʿ fa-la-hu mukhtarāʿ*'; *Kashf*, 44.4.
9. *Kashf*, 46.7, depending on whether one reads *fī'l-tafṣīl* or *fī'l-tafḍīl*; cf. 43, n. 7 in Müller's translation in *Philosophie und Theologie*. Either reading is consistent with the point I am trying to make.
10. Davidson cites a passage in the *Tahâfut al-tahâfut* to this effect: see *Proofs*, 230, referring to Averroes, M. Bouyges (ed.) *Tahâfut al-tahâfut* (Beirut: Imprimerie Catholique, 1930); [hereafter *Tahâfut*], 484–485, but cf. below.
11. *Tahâfut*, 187.13ff., and cf. *Kashf*, 43.8–10: 'As for the existence of such conformity to human existence, one becomes certain of it when one considers [the way] night and day and sun and moon conform to the existence of man. The agreeability of the four seasons and the place where [man] is situated, i.e.

- the earth, is likewise' clear. In Aristotle's *On Coming-To-Be and Passing-Away* only the influence of the sun is mentioned; in his *Middle Commentary* Averroes confidently adds that 'what Aristotle says concerning the sphere of the sun can be extended to our understanding of the spheres of the rest of the planets'; J. al-Dîn al-'Alawî (ed.) *Ṭalkhîṣ al-kawn wa-'l-fasâd* (Beirut: Dâr al-Gharb al-Islâmiyy, 1995), 125,8–9.
12. Averroes depends on al-Ghazâlî's brief remarks for his views on this point; cf. M. Bouyges (ed.) *The Incoherence of the Philosophers: A Parallel English-Arabic text*, tr. M. E. Marmura (Provo UT: Brigham Young University Press, 1997), 153.14–18 (= Averroes, *Tahâfut*, 483.17–20). The point in al-Ghazâlî's likely source, Avicenna's *Dânish Nâma-i 'alâ'î*, ch. 51, is slightly different. There it is said that the spheres do not do good because of any external cravings, because their perfection would then be dependent on their inferiors: instead, the providence they exercise is an expression of pure disinterested benevolence. See the English translation in *The Metaphysica of Avicenna (ibn Sînâ)*, tr. Parviz Morewedge (London: Routledge and Kegan Paul, 1973), 94–96; on providence, Avicenna *al-Shifâ': al-Ilâhiyyât*, M. Y. Mûssâ *et al.* (eds) (Cairo: Organisme Général des Imprimeries Gouvernementales, 1960), 2 vols, 2, 414ff. Avicenna's conception has deep roots in Neoplatonic thought: see, e.g. Proclus *Stoikheïōsis theologikê*, props. 7 and 25, and the present author's 'Proclus on Plenitude', *Dionysius*, 18 (2000), 103–128, at 108–109.
 13. *Tahâfut*, 190.15–191.4, citing the Qur'ân, 41:11; the first half of the verse has God addressing the heavens, saying 'come forth of your own will or against it'. Cf. further 191.4–193.9; 216.11–217.10. It should be noted that although I have made my own translations, there is a useful English translation in *Averroes' Tahafut Al-Tahafut*, tr. with introduction and notes by S. Van Den Bergh (London: Luzac, 1954), 2 vols, with pagination to the Arabic indicated.
 14. As Averroes plainly states his case, the ancient philosophers 'ascertained that the existence of these separate principles is connected to a First Principle among them: were it not so, no order would exist'; *Tahâfut*, 185.9–10.
 15. Davidson attributes a similar argument to Gersonides (*Proofs*, 231–232); for more information see S. Nadler 'Gersonides on providence: a Jewish chapter in the history of the general will', *Journal of the History of Ideas*, 62 (2001), 37–57.
 16. Charles Genequand in his translation of book 12 of Averroes' *Commentary* remarks that it was standard practice among the Arabs to include a discussion of these topics in any account of the *Metaphysics*; see *Ibn Rushd's Metaphysics: A Translation with Introduction of Ibn Rushd's Commentary on Aristotle's Metaphysics, Book Lâm*, tr. C. Genequand (Leiden: E. J. Brill, 1984), 51.
 17. *Talkhîṣ mâ ba'd al-tabî'ah*, 159.8–13.
 18. Cf. *In Phys.*, bk 1, comm. 81, fo. 46C–D, where Averroes makes the further point that all this is done in imitation of the divine perfection.
 19. On the value of variety see the author's forthcoming 'Gaps in the "Great Chain of Being": diversity and value in late ancient and Islamic thought', in M. Oksanen and J. Pietarinen (eds) *Biodiversity and Philosophy* (Cambridge: Cambridge University Press), in press.
 20. See R. Walzer (ed. and tr.) *Alfarabi on the Perfect State* (Oxford: Oxford University Press, 1985), 144–149; the justification of the existence of harmful creatures seems to be Averroes' original contribution. For more on the necessary continuity of natural cycles in Averroes see my 'Al-Ghazâlî and Averroes on the end of all things', *Medieval Philosophy and Theology*, 10 (2001), in press.
 21. On this point Averroes follows Alexander of Aphrodisias; see the latter's *Questions*, in *Supplementum Aristotelicum II*, I. Bruns (ed.) (Berlin: G. Reimer, 1892), 2 vols, 2:63.8–28.
 22. A comparison with Maimonides may prove illuminating. When Maimonides discusses providence in the *Guide of the Perplexed* he finds, as Averroes does, that Aristotelian providence extends only to the species. But for Maimonides this hardly suffices, since Scripture requires that providence extend also to the (human) individual. It is precisely at this point that Maimonides introduces Neoplatonist terminology, contending that the 'overflow' (*faḍl, shefâ'*) of divine goodness can proceed to the particular level indirectly through the intermediary of the celestial intellects. See *Guide of the Perplexed*, bk 3, chs 17–18; cf. A. Hyman 'Demonstrative, dialectical and sophistic arguments in the philosophy of Moses Maimonides', in E. L. Ormsby (ed.) *Moses Maimonides and his Time* (Washington DC: The Catholic University of America Press, 1989), 35–51, at 45–48.
 23. Since the whole universe desires the First Principle, in a manner to be explicated later: *Tafsîr*, 3:1605.12–15, and cf. §5 below.

24. In recent times, cf. most notably R. Swinburne in *The Existence of God* (Oxford: Clarendon Press, 1979).
25. Cf. Averroës' *Three Short Commentaries on Aristotle's 'Topics', 'Rhetoric', and 'Poetics'*, C. E. Butterworth (ed. and tr.) (Albany NY: The State University of New York Press, 1977), *Topics*, §8. Passages in this work will henceforth be referred to by individual work (e.g. '*Topics*') and paragraph. All translations are Butterworth's.
26. *Three Short Commentaries, Topics*, §8.
27. See the Latin translation in *Averrois Cordubensis Epitome in Libros Logicae Aristotelis Abramo de Balmes Interprete*, in *AoAc*, vol. 1, parts 2b and 3, fo. 50M; cf. further C. E. Butterworth's notes to the *Three Short Commentaries*, 107–108 and 110.
28. Cf., e.g. *Averrois in libros de Coelo cum eius textu Commentariis* (Long commentary on *De Caelo*), bk 1, comms 20 and 21, in *AoAc*, vol. 5, fos 14H–16G.
29. For the relations between the three modes of argumentation see Averroës' *Middle Commentary on the Topics: Talkhîş kitâb al-jadal*, M. M. Kassem (ed.), rev. and annot. C. E. Butterworth and A. 'A. al-Majîd Haridî (Cairo: The General Egyptian Book Organization, 1979), §25, 47.4–13. Cf. al-Fârâbî's account of how the procedure of *istidlâl bi-'l-shâhid 'alâ'l-ghâ'ib* ('from the manifest to the hidden') can go wrong in the hands of the theologians: see J. Lameer *Al-Fârâbî and Aristotelian Syllogistics* (Leiden: E. J. Brill, 1994), 208ff. Lameer finds an example of the type of proof al-Fârâbî alludes to in al-Bâqillânî's *Kitâb al-tamhîd*, for which cf. Davidson *Proofs*, 136–146.
30. *Tahâfut*, 492.3–5; on the similarly vexed question concerning the hierarchy of the celestial movers, 233.8–234.3. The work Averroës alludes to is unknown to us, as it was to him.
31. In his *Compendium of Aristotle's On Coming-To-Be And Passing-Away* Averroës contends that the different celestial periods are incommensurable, i.e. that there is no 'great year' after which the stars return to an identical position. Combined with a theory of celestial influence this gives us an infinity of, e.g. human individuals, which appears to compound the problem. See *Risâlah al-kawn wa-'l-fasâd, in Rasâ'il Ibn Rushd al-falsafiyah* (Beirut: Dâr al-fikr al-lubnânî, 1994), 6 vols, 2–3:124.10–18.
32. *Topics* 1.12, 105a13–14; cf. *Talkhîş kitâb al-jadal*, §26, 36.14–15 as well as *Three Short Commentaries, Topics*, §8.
33. M. M. Kassem (ed.) *Talkhîş kitâb al-qiyâs*, rev. and annot. C. E. Butterworth and A. 'A. al-Majîd Haridî (Cairo: The General Egyptian Book Organization, 1983), §374, 366.6–16.
34. For al-Fârâbî's separation of complete (scientific) from incomplete (rhetorical) induction see R. al-'Ajam (ed.) *Al-mantiq 'ind al-Fârâbî* (Beirut: Dâr al-Mashriq, 1985–1986), 4 vols, 3:97–106; cf. Lameer, *Al-Fârâbî*, 170–172. Both *epagôgê* and *apagôgê* (abduction) are rendered by *istiqrâ'* in the Arabic version of *An. Pr.*, a fact that may have influenced al-Fârâbî's theorizing: Lameer, *Al-Fârâbî*, 162–169.
35. *Three Short Commentaries, Rhetoric*, §5.
36. One is here put in mind of Simo Knuutila's explanation as to why Aristotle linked paradigm to induction: 'It seems that Aristotle calls paradigms as [*sic*] rhetorical induction, because he thinks that an orator, when arguing from particulars to particulars, has analysed things in a manner which does not differ from what is said about induction in general.' S. Knuutila 'Remarks on induction in Aristotle's dialectic and rhetoric', *Revue internationale de philosophie*, 47 (1993), 78–88, at 87.
37. Averroës plays down the role of induction even in acquiring the first principles of science, a point on which he diverges from Aristotle; see Butterworth's introduction to the *Talkhîş kitâb al-jadal* (38ff.). For Averroës, first principles are reached through a special faculty that grants immediate intuitive intellection. See M. M. Kassem (ed.) *Talkhîş kitâb al-burhân*, rev. C. E. Butterworth and A. 'A. al-Majîd Haridî (Cairo: The General Egyptian Book Organization, 1982), §154, 181.
38. See here H. A. Wolfson's seminal essay 'The terms *Taşawwur* and *Taşdîq* in Arabic philosophy and their Greek, Latin and Hebrew equivalents', repr. *Studies in the History of Philosophy and Religion* vol. 1 (Cambridge MA: Harvard University Press, 1973), 478–492.
39. See D. L. Black *Logic and Aristotle's Rhetoric and Poetics in Medieval Arabic Philosophy* (Leiden: E. J. Brill, 1990), 63ff.
40. Abû Nasr al-Fârâbî *Falsafah Aristûţâlis* M. Mahdi (ed.) (Beirut: Dâr Majallah Shi'r, 1961), 85.8–12; translation taken from *Alfarabi's Philosophy of Plato and Aristotle*, tr. M. Mahdi (New York: The Free Press of Glencoe, 1962).
41. Black *Logic*, 178.
42. Al-Fârâbî *Falsafah Aristûţâlis*, 84.14–18, tr. Mahdi.

43. Averroes accepted the *taṣawwur-taṣdīq* distinction as part of his philosophical education: see, e.g. the introduction to the treatise on *What Is Necessary In Logic: Epitome in Libros Logicae, AoAc*, vol. 1, pts 2b and 3, fo. 36E. Cf. C. E. Butterworth 'A propos du traité *al-ḡarūr fī l-manṭiq* d'Averroes et les termes *taṣdīq* et *taṣawwur* qui sont développés', in G. Endress and J. A. Aertsen (eds) *Averroes and the Aristotelian Tradition* (Leiden: E. J. Brill, 1999), 163–171. On al-Fārābī and Avicenna see *Black Logic*, 71, n. 53.
44. 'For the natures of men are on different levels with respect to [their paths to] assent. One of them comes to assent through dialectical arguments just as firmly as the demonstrative man through demonstration, since his nature does not contain any greater capacity; while another comes to assent through rhetorical arguments, again just as firmly as the demonstrative man through demonstrative arguments'; G. F. Hourani (ed.) *Kitāb faṣl al-maḡāl* (Leiden: E. J. Brill, 1959), 12.12–13.3; translation taken from *Averroes on the Harmony of Religion and Philosophy*, tr. with introduction and notes by G. F. Hourani (London: Luzac, 1961).
45. Epistemologically the connection is accidental, since the truth is not carried through the argument at hand. See Averroes' *Commentary on Posterior Analytics*, bk 1, comm. 9: Arabic text in 'A. Badawī (ed.) *Sharḥ al-burhān li-Aristū wa-talkhiṣ al-burhān* (Kuwait: Al-majlis al-watani li'l-thaqāfah wa-l-funūn wa-l-ʿadab, 1984), 184. I owe the point to Richard C. Taylor.
46. Thus when Averroes says that 'in the [case of the] example we do not prove the existence of the middle term in the major through all the particulars' (*Talkhiṣ kitāb al-qiyās*, §376, 368.9–10), what he is saying is that we do not *present* such a proof in the argument. The assumption is implicit (cf. n. 36 above).
47. See K. J. J. Hintikka 'Aristotelian induction', *Revue internationale de philosophie*, 34 (1980), 422–439. There is an intriguing parallel in al-Fārābī on this point. According to Deborah Black, the masses' reliance on sense perception reflects the rudimentary nature of the *Categories*, which in turn reflects 'the very indeterminateness and generality of a still undeveloped understanding of things'. It is the philosopher's job, meanwhile, to 'refine it into a proper and essential understanding of particular species'; *Black Logic*, 118 (cf. al-Fārābī, *Falsafah Aristūʿatī*, 85.20ff.). The essential acquisition that allows the philosopher to take up the latter task is – metaphysics.
48. Cf. *In Phys.*, bk 2, comm. 26, in *AoAc*, vol. 4, fo. 58K–59D; *Tafsīr*, 1:237. The natural investigation leads to the metaphysical and hence, to the separate substances: fo. 59A–C, and cf. §5 below.
49. See A. Busse (ed.) *Porphyrii Isagoge et in Aristotelis Categorias Commentarium* (Berlin: Reimer, 1887), 6.14–17; cf. Averroes *Middle Commentary on Porphyry's Isagoge and on Aristotle's Categoriae*, tr. H. Davidson (Cambridge MA: The Mediaeval Academy of America, 1969), 11.
50. Such an argument is found in the early dialogue *On Philosophy* (Rose frags 10 and 12), a work that was, however, unavailable to Averroes.
51. Nature acts in a righteous manner (1.3, 270a20) and (together with God, 1.4, 271a33) does nothing in vain (cf. also 2.11, 291b13); nature always produces the best of possibilities (2.5, 288a2); nature does everything deliberately and in so doing cares for animals, too (2.8, 290a29–35); nature equalizes and produces order (2.12, 293a2–3); etc. An example can give us a feeling for Averroes' interpretational strategies. Aristotle remarks that should the heavens produce sound as they roll across the skies, as the Pythagoreans had suggested, nothing here on Earth could withstand the impact: it is therefore 'as if nature foresaw the consequences, how if the motion were otherwise than it is, nothing in our own terrestrial region would be the same' (2.9, 291a25, tr. W. K. C. Guthrie), and so precluded this from ever happening. Averroes predictably substitutes the Creator (*creator optime fecit*) for nature; what is more remarkable, he drops the 'as if' clause and plainly states that God *did* foresee the available options. See *Averrois in libros De coelo cum eius textu commentariis*, bk 2, comm. 56, in *AoAc*, vol. 5, fo. 135G–M.
52. One discrepancy in fact substantially improves Averroes' reading: instead of 'all things being directed towards one end', the text in front of Averroes has it that '[t]hey are all ordered together by connection with one thing'. This lessens the impression of there being a simple cosmic teleology at work and better preserves the notion of genuinely different goods for different existents.
53. Because the spheres' will is perfectly intellectually determined and because material deficiencies do not interfere with their actions, the spheres invariably 'choose' the better. Averroes can give this doctrine an Islamic gloss: the celestial bodies co-operate, because they have been commanded to do so (*Tafsīr*, 3:1714.1–5). The mention of the heavens 'willing' (*yurīdu*) in Averroes is in itself remarkable

- (see Genequand *Ibn Rushd's Metaphysics*, 206, n. 188): but it is an equivocal or at best an analogical notion.
54. See *In Phys.*, bk 2, comm. 46, in *AoAc*, vol. 4, fo. 65K–L (similarly comm. 67, fo. 73C). Significantly, Averroes remarks that the subject does not ‘properly’ belong to natural philosophy, but to first philosophy.
 55. R. C. Taylor ‘Averroes on psychology and the principles of metaphysics’, *Journal of the History of Philosophy*, 36 (1998), 507–523: cf. *Tahâfut*, 216.6–12.
 56. See Averroes’ paraphrase in *Talkhîṣ al-kawn wa-l-fasâd*, 123.5ff. and 127.4ff. Significantly, Averroes claims that the account given in *De gen. et corr.* constitutes a *teleological* explanation, as opposed to the material and efficient causal explanations of the sublunary world’s workings advanced elsewhere in Aristotle’s works, *ibid.*, 126.12ff.
 57. Note here the way in which Averroes glosses Aristotle’s account of ancient astrology. The popular astrologers claim that the forms in this world obey the spheres that carry their appearances (in the images of animals). This is wrong, Averroes says: but ‘if one’s interpretation is that [the ancients’ talk of] ‘gods’ was mere allegory and what they meant was the first substances which are the celestial bodies’ principles, this would be a correct interpretation and an allegory that is in conformity with the truth’; *Tafsîr*, 1689.9–11.
 58. *Ṣâdir*: Averroes’ lapse into Neoplatonic terminology is telling.
 59. Cf. *Tafsîr*, 3:1496.2ff. Barry Kogan in this connection has talked about the ‘kinetic code’ which the spheres carry; see B. S. Kogan *Averroes and the Metaphysics of Causation* (Albany NY: The State University of New York Press, 1985), 180–201.
 60. *Tahâfut*, 217.1–10. Put more briefly, the philosophers understood that both the heavens and the earth pursue a single aim (*ghâyah wâhidah*) in that they imitate one and the same principle: ‘And this is the meaning of His words (Bless Him): ‘If there were in the two a god besides God, they would both corrupt’ [Q. 21:22]. Because of the presence of good in all existents they became convinced that evil is generated accidentally, like the penalties imposed by the rulers of virtuous cities – that is to say, evils occur for the sake of the good, not by primary intention’. *Tahâfut*, 177.1–177.5.
 61. For the latter see W. Lane Craig *The Kalam Cosmological Argument* (London and Basingstoke: The MacMillan Press, Ltd, 1979).
 62. Averroes’ entire explication of Aristotle’s *Metaphysics* ends with the exclamation ‘And in all this, nature resembles art’ (*Tafsîr*, 3:1736.3). The notion of God as the ‘Form of forms’ is very close here, but Averroes does not evoke it. I hope to address the issue in a future study.
 63. Most pertinent here is the account of cosmic teleology presented in *De Caelo*, 2.12.
 64. Even the vaunted proof from motion is only a proof *quia* or ‘through signs’ (*min’l-dalâ’il, per signa*). See, e.g. Averroes *In Phys.*, bk 2, comm. 22, fo. 57A–B; for further materials, cf. C. Burnett and A. Mendelsohn ‘Aristotle and Averroes on method in the Middle Ages and the Renaissance: The “Oxford Gloss” to the *Physics* and Pietro D’Afelro’s *Expositio Proemii Averrois*’, in D. A. DiLiscia, E. Kessler, and C. Methuen (eds) *Method and Order in Renaissance Philosophy of Nature: The Aristotle Commentary Tradition* (Aldershot: Ashgate, 1997), 53–111.
 65. Here we run into problems associated with what is nowadays known as the ‘anthropic cosmological principle’. I have discussed some aspects of this in my article ‘Plenitude, possibility, and the limits of reason. a Medieval Arabic debate on the metaphysics of nature’, *Journal of the History of Ideas*, 61 (2000), 539–560.
 66. Cf. N. Rescher *Kant and the Reach of Reason* (Cambridge: Cambridge University Press, 2000), 99–129.
 67. See B. S. Kogan *Averroes*, 100–135.
 68. Parts of this paper were presented in seminars at King’s College, London and at Marquette University in March and September 2001; I wish to thank the participants and especially Peter Adamson, Martin Stone, Richard C. Taylor, and David B. Twetten for their valuable comments and criticism. Thanks are also due to Monte Johnson and to Alfred Ivry. After this article was completed, I received a copy of a new English translation of the *Kitâb al-kashf* by Ibrahim Najjar: *Faith and Reason: Averroes’ Exposition of Religious Arguments* (Oxford: Oneworld, 2001). I chose to retain my own translations: it should be noted that even if Najjar considers Averroes’ proofs for God’s existence to be markedly more anthropocentric than I do, (cf. his introduction, xii), his translations do not conflict with my interpretation.