AL-FĀRĀBĪ’S LOST TREATISE ON CHANGING BEINGS AND THE POSSIBILITY OF A DEMONSTRATION OF THE ETERNITY OF THE WORLD*

MARWAN RASHED
École Normale Supérieure, 45 rue d’Ulm, 75230 PARIS Cedex 05, France
Email: marwan.rashed@ens.fr

Abstract: This article proposes a reconstitution of the philosophical tenor of al-Fārābī’s lost treatise On Changing Beings (Fī al-Mauğūdāt al-mutagāyiyra). It is shown that this work is not only a response to book VI of John Philoponus’ Contra Aristotelēm, but that its real issues can only be grasped in the context of the author’s metaphysical system. Although, for al-Fārābī, genuine demonstrations proceed from the cause to the caused, thus following the order of being, it will be explained how he also admits a strictly physical proof of the simple fact, independently of its cause, and that the physical demonstration of the eternity of the world pertains to this type of proof. This physical proof is specifically directed against the Kindian doctrine of creation.

Résumé: Cet article se propose de reconstituer la teneur philosophique du traité perdu Sur les êtres changeants (Fī al-Mauğūdāt al-mutagāyiyra) d’al-Fārābī. On montre que cette œuvre n’est pas seulement une réponse au livre VI du Contra Aristotelēm de Jean Philopon, mais que ses enjeux véritables ne se laissent saisir que dans le cadre du système métaphysique de l’auteur. Si, pour al-Fārābī, la démonstration véritable va de la cause au causé, suivant ainsi l’ordre de l’être, on expliquera comment il admet également une preuve strictement physique du simple fait, indépendamment de sa cause, preuve dont relève la démonstration physique de l’éternité du monde. Cette preuve physique est spécifiquement dirigée contre la doctrine kindienne de la création.

Al-Fārābī’s treatise On Changing Beings (Fī al-Mauğūdāt al-mutağāyiyra), now lost, is attested by the ancient bibliographers and alluded to by later scholars. The material for the reconstruction is more or less known since Steinschneider’s book on al-Fārābī,1 and it leaves no place to doubt as to al-Fārābī’s general concern: he elaborated on the arguments of Physics VIII 1 for the eternity of creation.

*I would like to thank Dr Peter Adamson who invited me to present the first stage of this research at the Conference “The Age of al-Fārābī” (London, 2006), and to whom my English text owes many improvements.

motion. But nobody, so far as I know, has attempted to determine in a more precise way how the treatise bears upon Aristotle’s arguments.\(^2\) Was it intended to be an independent proof for the eternity of the world? Or only an important step in a more complex one? Or a reflexion on the physical and cosmological aspects of the transmission of motion? Or a mere refutation of certain attacks directed against Aristotle? Hence my present purpose is not so much to give a philological account of all the testimonies than to suggest what may have been the treatise’s internal organization and, above all, its significance for our understanding of al-Fārābī’s views on Aristotle’s cosmology.

It is well known that Philoponus’ argument against Physics VIII 1, as expressed in the sixth Book of his Contra Aristotelem, was one of al-Fārābī’s targets.\(^3\) It is perhaps less well known – and does not seem to have been emphasized by the specialists – that Books IV and VIII of Galen’s De demonstratione may help to explain certain peculiar features of al-Fārābī’s strategy.\(^4\) This case, however, is not as clear as the situation with Philoponus, because Galen is surely not the immediate adversary al-Fārābī aims at rebuking. His function, I would say by way of anticipation, is rather to remind al-Fārābī of the extreme difficulty of demonstrating the eternity of the world, if one is really cautious to commit neither a petitio principii nor an appeal to the senses or to the testimony of mankind.

These two scholars constitute, so to say, the “Greek frame” of al-Fārābī’s reflexion. But in any philosophical debate, contemporary issues are always at stakes. What was the philosophical present of al-Fārābī? Certainly, the insistence of the mutakallimūn on the non-eternity of the world constitutes one of its major elements. But the most peculiar feature of this debate is perhaps the fact that two scholars who a priori would have sided against the theologians, namely al-Kindī and Tābit ibn Qurra, stood in fact half way between the two camps: al-Kindī, because he extended Aristotle’s finitism beyond its Aristotelian limits, namely to time, which was for Aristotle a case of potential infinity;\(^5\) and Tābit ibn Qurra, because he did not only deny the potentiality of Aristotle’s infinity, but went so far as to admit every form (temporal, mathematical, substantial) of


\(^4\) On al-Fārābī’s knowledge of Galen’s De demonstratione, see below, p. 24.

actual infinity. Therefore, and that is to my mind an important point, to argue for time's infinity without admitting actual infinity was not, in al-Fārābī’s days, a small matter, nor one that would solicit broad agreement even within the narrow philosophical tradition. Indeed al-Fārābī’s deafening silence regarding al-Kindī may be due, at least partially, to the burden the latter put on the former’s shoulder by arguing so carefully against the infinity of time.

I. SOME UNCONCLUSIVE ARGUMENTS FOR THE ETERNITY OF THE WORLD

Despite the fact that he relied extensively on al-Fārābī’s writings, Maimonides sided with the theologians on the question of the world’s eternity. He agreed with Galen’s claim that the issue did not admit of demonstration, and this fact was sufficient, according to him, for declaring true the literal meaning of the Holy Scriptures: the world as a whole had a beginning. Still, Maimonides delivers us with an account of numerous arguments for the eternity of the world. He first presents four physical “methods” (turuq) he attributes to “Aristotle” himself. He then declares that those “who came after him (viz Aristotle) have elicited from his philosophy some methods, by which they establish the eternity of the world with respect to God, praised be His name”.

Al-Fārābī’s influence on Maimonides is well-known and it is hardly possible that the latter excluded the former from the group of Aristotle’s followers. Maimonides’ division of the proofs between “natural” and “theological” thus raises a problem. Unless one demonstration is more concise, elegant, or general than another, there is no reason to multiply proofs showing one and the same conclusion. Unfortunately, Maimonides gives us here no hint as to why Aristotle’s followers added proofs to those of the Master. What is the meaning of this clear-cut division between natural (and ancient) proofs on the one side, theological (and modern) proofs on the other? Which role, if any, did al-Fārābī play in the history of the arguments for the eternity of the world? These are all problems

---


8 Ibn Maymūn, Dalālat, p. 311, ll. 6–7.

9 In his famous letter to Samuel Ibn Tibbon, Maimonides clearly alludes to the fact that he considers al-Fārābī second to nobody, except perhaps Aristotle. See S. Munk, Mélanges de philosophie juive et arabe (Paris, 1955), p. 344.
raised by the treatise On Changing Beings. For even if al-Fārābī seems to have agreed with the arguments of Physics VIII 1 – to which his treatise was devoted –, we still have to determine the exact nature of this agreement. Did he hold that the arguments were correct and sufficient to prove the eternity of the world? Correct but insufficient? Incorrect but, once amended, sufficient? Irretrievably incorrect and insufficient? The answer to these questions will enlarge our understanding of the relationship between al-Fārābī and the Aristotelian tradition.

Towards addressing these issues, in the first section I begin with a brief presentation of some of the physical methods appearing in Maimonides’ Guide, and suggest how they might seem to be insufficient. In the second section I turn to the arguments actually dealt with in Physics VIII 1 according to al-Fārābī, and to the interpretation he presumably gave of them in On Changing Beings. Since they seem unconvincing as well – at least in light of Galen’s criticisms –, I consider more widely in the third section some tenets of al-Fārābī’s philosophical system, in order to determine what his full account of the eternity of the world may have been.

1. Argument from the nature of matter

The argument from the nature of matter – matter must be already there if one is to explain every change such as generation – is problematic for two reasons. First, it takes for granted what the theologians, and al-Kindī along with them, precisely deny, i.e. the impossibility of the coming into existence of something from nothing. Thus, even if this argument could be considered as scientifically valid, its polemical efficacy was feeble. Secondly, and perhaps more decisively, this argument is not sufficient to assess the validity of Aristotle’s position as against that of the Timaeus. The eternity of the world viewed as this three-dimensional enmattered space is a common good of the whole Greek philosophical tradition. What distinguishes Aristotle’s doctrine from his master’s is that according to the former, it is always this world which has existed, with all its celestial individuals and biological species. Abū Bakr al-Rāzī may serve to illustrate the point, for he explicitly argued for the eternity of matter while adhering to a Platonic cosmogony. We can extend

10 I shall here rely on Davidson, Proofs for Eternity, pp. 12–30.
11 Ibn Maymūn, Dalâlat, p. 310, ll. 1–5.
12 As the author of the Gam’ himself puts it: cf. Abū Naṣr al-Fārābī, L’harmonie entre les opinions de Platon et d’Aristote, texte et traduction, F. M. Najjar et D. Mallet (Damascus, 1999), §58, p. 135, ll. 7–8 Najjar. Mallet, ibid., p. 134, translates: “En effet, tous les discours des savants des autres doctrines et des autres confessions ne montrent, dans le détail, que l’éternité de la matière <dans le passé> et sa permanence <dans le futur>”.
these remarks to the argument from the vacuum, since it ends with the affirmation of matter, and hence of eternity.\textsuperscript{13}

2. Argument from the concept of possibility

A more serious candidate is the argument from the concept of possibility.\textsuperscript{14} The possibility of a thing resides in the actual existence of some other thing. Otherwise, the possible thing would be either already existent (and hence be necessary, on pain of infinite regress), or incapable of existing, hence never existing and presumably not possible after all, but rather “impossible”. This argument, however, begs the question, since it leaves out any “theological” concept of possibility, \textit{i.e.} possibility as the thing’s existence in God’s mind. It will thus fail to persuade the adversary. If one is to admit the thesis of creation \textit{ex nihilo}, then one can admit on the same ground the possibility of anything subsequently created by God out of nothing. Or, more simply, even if one does not allow the existence of miracles in the world history, one cannot rule out the eventuality of a divine creation of the world, followed by never ending physical processes such as generations and heavenly revolutions. According to this line of thought, God would only create the world and give it its first impulse. We find something of this sort in the writings of John Damascene.\textsuperscript{15}

3. Argument from the nature of the celestial spheres

That leaves us with the argument from the nature of the celestial spheres,\textsuperscript{16} which appears inconclusive for similar reasons. To infer the absence of corruption from the absence of contrariety in the cyclical motion is an assumption which can resist neither one of the following objections. First, it does not rule out a distinction between the temporary (the Cosmos as we know it) and the permanent (the period of disorder plus the period of order, \textit{Timaeus’} scheme): even if we admit that the three-dimensional space is eternal, it is possible that the universe was previously in a pre-cosmic state, with no sublunar elements and no celestial spheres.

A second objection was made by Galen himself and, more interestingly, it was quoted by al-Fārābī. In his commentary on \textit{De caelo} I 3, 270b 4–5, Averroes writes the following:\textsuperscript{17}

\begin{itemize}
  \item \textsuperscript{13} Cf. Davidson, \textit{Proofs for Eternity}, pp. 14–15.
  \item \textsuperscript{14} Ibn Maymūn, \textit{Dalaḥat}, p. 310, ll. 13–21.
  \item \textsuperscript{15} Joannes Damascenus, \textit{Expositio fidei}, ed. B. Kotter (Berlin, 1973); \textit{Patristische Texte und Studien} 12, Section 8 (pp. 18–31), p. 21, ll. 69–70 in part.
  \item \textsuperscript{16} Ibn Maymūn, \textit{Dalaḥat}, p. 311, ll. 6–7.
  \item \textsuperscript{17} \textit{Averrois Cordubensis commentum magnum super libro De celo et mundo Aristotelis}, ex recognitio Francisci James Carmody † in lucem edidit Rüdiger Arnzen, 2 vols. (Leuven, 2003), t. I, pp. 44–5, textus 22, ll. 83–91.
\end{itemize}
Then, <Aristotle> said: “and reason confirms the sight and the sight, reason” etc. As to such propositions, Abū Naṣr said that in their case, conviction is very near to certain truth. And since Galen thought that nobody can know whether the world is eternal except through these propositions which take their origin in sensation and in the testimony of the past, he said in his book “On his own opinions” that he had no knowledge about whether the world was created or eternal a parte ante. And it is clear, from what he says in his book which he has called “Demonstration”, that on the subject of the world’s eternity, he does not use types of propositions different from these.18

It is obvious that Averroes owes his quotation of Galen’s De demonstratione to the passage of al-Fārābī he is presently dwelling upon. We can reconstruct the following process. While commenting on Aristotle’s sentence, al-Fārābī remarked that the type of propositions employed here by Aristotle was not absolutely demonstrative. Hence his probable remark: Galen was not entirely mistaken in objecting that every physical proposition on the eternity of the world was a priori condemned by the fact that in this matter, we must necessarily rely on sense-perception and the Ancients’ testimony. To say that the celestial realm was ever so is to accept as true some ancient astronomical observations transmitted from generation to generation. But everybody will agree that observation is not free from error, nor historical transmission absent from distortions.

We are here confronted with an exegetical problem, one we can fortunately solve thanks to Abū Bakr al-Rāzī’s quotations in his Doubts against Galen. If Galen, in his De demonstratione, makes use of such a kind of “nearly apodictic” propositions that we find in Aristotle’s De caelo, does this entail that he attempted in this work to prove some sort of cosmic eternity? Though it is what al-Rāzī wants us to believe that he did, such a reading must be rejected on the basis of two important testimonies on De demonstratione IV, namely a self-reference in On Marasmus (Marc. VII, 671) and a discussion in Philoponus’ Contra Proclum, 599.17ff. Both texts show that Galen argued against the sole claim that everything that has been generated must perish.19 Galen’s position is that we cannot prove whether the world has been generated or not and that we cannot prove whether it will perish or not. But although there is no

18 Deinde dixit: “Et ratio testatur visui et visus rationi” etc. Tales propositiones in eis dixit Albunacir quod fides est propinquissima veritati certe; et cum Galienus estimavit quod nullus potest scire mundum esse eternum nisi per has propositiones quorum origo est a sensu et testimonio vetustatis, dixit in suo libro quem posuit in eis que credidit quod nullum certum habebat de mundi utrum esset novus aut antiquus; et manifestum est quod ipse non utitur in antiquitate mundi nisi talibus propositionibus ex verbis suis in libro suo quem appellavit Demonstrationem.

19 In collaboration with Riccardo Chiaradonna, I am presently preparing a new edition, with a commentary, of the extant fragments of Galen’s De demonstratione. We shall give there a full account of these fragments.
hint whatsoever which would make the world’s generation more probable than its eternity a parte ante, the cosmic stability seems to suggest that it will not pass away. As al-Rāzī puts it in what is likely to be an exact quotation:

Galen categorically affirmed, in the fourth book of his treatise On demonstration, that the world does not pass away, saying: “if the world were subject to corruption, neither the bodies which are in it would stay in the unique state they have, nor the distances between them, nor the quantities, nor the movements, and it would be necessary for the sea’s water that was before us to pass away. But none of these things leaves its state nor changes. For astronomers have observed them during many thousands of years. Necessarily, then, the world is not subject to decay; therefore, it does not undergo corruption”.20

It seems likely that the astronomers’ observations mentioned in this text are precisely what al-Fārābī alludes to in his commentary on Aristotle’s De cælo. Still, Galen made use of “this kind of propositions” not to demonstrate the eternity of the world a parte ante, but the mere likelihood of its eternity a parte post.

We can now return to al-Fārābī’s thesis. The first thing to be noted is that al-Fārābī appears as an acute reader of Galen. For he accepts the non-cogency of such propositions. The only disagreement with Galen is that al-Fārābī sides with Aristotle in thinking that we can apply these “nearly certain” propositions to the question of past eternity, whereas Galen limits their use to future eternity. Given that, we must be very careful when interpreting al-Fārābī’s propinquissima veritati certe, “very near to certain truth”. For according to someone as deeply convinced of the necessity of logical rigor as was al-Fārābī, to be “very near to the truth” is not the same as being true. Nor, a fortiori, is it the same as being apodictic. Admittedly, al-Fārābī allowed some non apodictic proposition to belong to science. But they never belong to, so to say, the “most scientific” part of science. They are always didactic, propaedeutic, etc.21 Is al-Fārābī likely to have accepted these propositions in a demonstration of the eternity of the world? Obviously not. The issue was much too sensitive and important for him be satisfied by a mere approximation of the truth.

However, in another passage dealing with the eternity of the world in the context of Galen’s agnosticism, al-Fārābī claimed that the eternity of the celestial sphere, contrarily to that of the sublunar world, was perfectly demonstrable. Along the lines of Top. I 11, if perhaps in a more elaborate way, al-Fārābī begins his discussion of

21 See, for example, al-Fārābī, Kitāb al-ʿIṣṭiḥāba, in Deux ouvrages inédits sur la Rhétorique, ed. J. Langhade and M. Grignaschi (Beirut, 1986), pp. 59–61 (Arabic text) and pp. 58–60 (French translation).
what a problem is by stressing the numerous aspects by which it can be considered as particularly important. Roughly speaking, these aspects can lie in the elevated matter of the question under consideration, in its difficulty, or in its significance for the common people. A very good example of such a problem consists in the interrogation “is the world eternal a parte ante or not?”, since it contains in itself each aspect which contributes to make a problem a significant one:

And some of the things about which the philosophers’ opinions are divergent are of important significance. And their importance and magnificence arise either from their nobility in themselves, or from the nobility of the things which are known in virtue of them, or because it is most useful for the people to have a knowledge of them; or their importance arises from the difficulty of attaining their causes, or from the difficulty of the path leading to the discovery of their demonstrations. For example, our saying “is the world eternal a parte ante (azali) or not?” is among the things about which philosophers diverge, and it is important in virtue of the fact that the essence of the quaesitum is in itself noble – since it is the world as a whole; and to this is conjoined the nobility of the thing one is led to by this knowledge. Indeed, its knowledge is the path leading to divine science. Furthermore, attaining the causes of its eternity a parte ante, if one is to prove that it is eternal a parte ante, is difficult, and attaining the causes of its incipience, if one is to prove that it is incipient, is difficult as well. Furthermore, the knowledge people have of it is of important usefulness for them. Moreover, if one happens to be in error in such cases, then that will be a cause of error in very many things, and if one happens to hold a correct view thereon, that will be a cause of attaining the correct view about very many things.22

In the lines immediately following, al-Fārābī gives further examples of such “problems”. It is to be noted that in each case they pertain to the theoretical part of philosophy, and not to ethics. The first example, already quoted, is the first part of the first Kantian antinomy. Al-Fārābī then mentions its second part. Then follows something akin to the second Antinomy, and ultimately some problems belonging to the question of time and modality:

To this kind pertain our sayings: “is the world finite or infinite?”; “is body divisible ad infinitum?”; “is it possible for a thing that its existence be possible without this thing being existent at all, neither in the past nor in the future?”; “is there a thing for which it is possible by virtue of its nature to be non-existent without non-existence occurring to it either in the past or in the future?”; “is it possible for what has never ceased to exist in the past to pass-away in the future?”; “is it possible for what will never cease to exist in the future not to have existed in the past?”23

23 Al-Fārābī, Kitāb al-Ǧadal, p. 81 al-ʿAğam.
The fact that each one of the problems quoted belongs to theoretical philosophy shows that al-Fārābī does not here consider dialectic as exclusively concerned with ethical discussion: it can also deal with scientific problems. The question that arises is of course the following: is dialectic, by itself, able to prove one horn or the other of the problem? Before answering it, al-Fārābī describes in which sense, and to what extent, the question of the eternity of “the world” is semantically ambiguous:

Such things deserve to be examined and scrutinized at length, and also that one dedicate one’s efforts to apply dialectic to them. And that is Aristotle’s purpose when he says: “and regarding those things about which we have no argument, in reason of their importance, it is in our opinion that our saying ‘in virtue of what?’ about them is difficult, such as our saying: ‘is the world eternal a parte ante or not?’” (Top. I 11, 104b 14–16 cf. 505.15–16 Badawi). For this example he proposes is very dialectical under one aspect, since when we say “is the world eternal a parte ante or not?”, insofar as we employ this wording, it is not possible at all that we produce a certain syllogism, neither of the fact that it is eternal a parte ante nor of the fact that it is not eternal a parte ante. For our word “the world” is an ambiguous word and, moreover, taken as indefinite. So, if the world is taken in its entirety in such a way, <it will be found to have> many parts, one of which is clearly not eternal a parte ante, another such that it is possible to produce about it a syllogism showing that it is eternal a parte ante, and another of unclear status. Thus, when we take the world in its entirety, it is sometimes eternity a parte ante which is imagined, and sometimes incipience, so that we always produce opposed syllogisms. The only way then is to examine, for each of its parts, whether it is eternal a parte ante or not, and in how many ways a thing can be eternal a parte ante, and in how many ways it is said to be not eternal. This is the method leading to the production of its demonstration, whereas according to the first method, it is not possible to produce its demonstration, the syllogisms produced being opposed syllogisms in each case.25

From this text, one could gain the impression that it is possible for dialectic to prove the eternity or the non-eternity of the world. But a final paragraph indicates that for al-Fārābī, there was a distinction to be made between a dialectical discussion of the question – where the word “the world” is taken as an indefinite whole, so that inferential arguments can be produced in favour of both sides of the problem – and a scientific (demonstrative) one, where the term is split into its different meanings (or, which amounts to the same, the object into its different parts):

And for this reason, since Galen the doctor did not follow the demonstrative method, on this quaesitum in particular, he thought that there was no

24 Correcting aw into id, in conformity with Badawi’s edition (Manṭiq Aristū [Cairo, 1980], vol. 2, p. 505.1.15).
25 Al-Fārābī, Kitāb al-Gadal, pp. 81–2 al-ʿAğam.
demonstration of it, that the demonstrations pertaining to it were counter-balancing each other, and that it was among the things subject to doubt. It is for this reason that Aristotle has considered these *quaesita* as most proper to dialectic, since the discussion about them, when they are taken in such ways, can be neither settled nor decided.26

Al-Fārābī, if I am right, accuses Galen of not having understood that the dialectical discussion of the eternity problem, even though technically possible and theoretically justified, was not the only possible one. For scientific demonstration (probably by dividing and examining separately the different parts of the world) has a role to play, and in fact it alone is able to settle the issue. Unfortunately, there is not the slightest hint, in al-Fārābī’s text, regarding the method to be employed in demonstrating the eternity of some part (presumably the celestial one, or a part of it) of the world. Let us also note that in this context, the mention of some part of undetermined status is puzzling: is there in the world some cosmological place, intermediate between the two others (say, for example, the sphere of the Moon), in whose case suspension of judgment is required? Or is some psychic principle in the chain of generations intended here? Al-Fārābī remains silent on this point.

This doctrine is confirmed by an excursus in the commentary on *De interpretatione*, where al-Fārābī explains the scientific usefulness of metathetic propositions by the following example:

It is, therefore, wrong to say that this section is useless. If it were indeed useless, how should we know whether a *quaesitum* on, say, motion, should run: ‘is motion beginningless or incipient’, or: ‘is motion beginningless or not beginningless’? Similarly with the question whether the world is beginningless or incipient. Is this or the question whether the world is beginningless or not beginningless the *quaesitum*? Would such a question be a *quaesitum* even if unquantified? Or is no question a *quaesitum* unless quantified like this: ‘Is every movement eternal, or is not every movement eternal?’— ‘Is every world eternal, or is not every world eternal?’ 27

The remark on quantification must be explained against the background of al-Fārābī’s understanding of the *Topics*. One of Galen’s errors lies in the fact that he did not quantify his *quaesitum*, so that his whole approach of the question the eternity of “the world” was unsound. But that is not all. The present text shows also that even if al-Fārābī is ready to accept that in a way, “the world” is *not* beginningless (*gāyr azali*), since at least some of its parts must have a temporal beginning, we have still to distinguish between ‘not

26 Kitāb al-Ǧadal, p. 82 al-‘Ağām.
beginningless’ and ‘incipient’ (ḥādīt). From the non-beginningless of “the world” as a whole, it does not follow that the world as a whole is incipient, insofar as something ḥādīt may be eternally ḥādīt.

II. THE TREATISE ON CHANGING BEINGS

We are left with the arguments from motion and time, which formed the core of the treatise On Changing Beings. The crucial text for the argument from motion is Phys. VIII 1, 251a 8–28, where Aristotle intends to prove that there always has been and always will be motion. The articulation of this passage is clear, and I shall begin with a brief account of it.

• (1) Aristotle starts by recalling his definition of motion as it appeared at Phys. III 1, 201a 10–11: motion is the actualization of the movable qua movable. This is taken by Aristotle to imply the existence of the movable. But the movable itself must either have been generated after not having existed, or be eternal a parte ante.
• (1.1) Let us first suppose that the movable has been generated. This fact presupposes the presence of some generative motions previous to our supposed “first” motion. A contradiction.
• (1.2.1) On the other hand, if the movable has not been generated but was always existing at rest, that implies the existence of some motion to prevent the movable from undergoing some (actual) motion. Hence, the allegedly first motion was preceded by this motion. A contradiction.
• (1.2.2) Moreover, a motion will be required in order to counteract the eternal motion which was an impediment to the movable’s motion, so as to permit its actual motion. Another contradiction.
• At this point, Aristotle has proved by reductio that no motion can take place without being preceded by another motion.
• (2) He then adds two subsidiary (cf. πρὸς δὲ τούτων) arguments from the nature of time.
• (2.1) The first one is that time presupposes motion; but everyone, with the sole exception of Plato, admits that time always has been and always will be. Therefore, the same is true of motion.
• (2.2) The second argument – I take it, with MS E and the Arabic translation (cf. p. 810: wa-a라도), that the text read δὲ; and not ὁν at 251b 19 – is that the “now” is a mean (μεσότηςς) between the past and the future. Therefore, there is no first and no last “now”. Hence, time is eternal in both directions, and consequently motion.
There are two apparent flaws in this demonstration. The first one is that the opponent is not likely to admit (with 1.1.) that the generation of the movable temporally precedes its motion.\(^{28}\) It is not absurd to suppose that generation and motion take place simultaneously, and destruction and rest as well. The second one bears upon time. For after all, it is Aristotle’s assumption that time is the number of motion (cf. 2.1).\(^{29}\) One may very well suppose, without contradicting oneself, that there was an infinite time of rest before the first motion occurring in the world. To these two problems, we must add a difficulty appearing in (2.2). Just as we can imagine a line starting at one point and drawn to infinity, we can imagine time starting at one “now” and going then always further. There is no obvious reason which accounts for why every “now” should be considered as a mean between a past and a future. From this point of view, the correlation between time and motion does not help us, at least \textit{prima facie}: a motion starts at one “now” and then goes on. Why then refrain from thinking that the world as a whole started its existence and motion at one “now” (the first “now”, so to say) and then went on until today?

Three authors, Ibn Bāgia, Ibn Ruṣd and Ibn Māymūn, all born in Muslim Spain, have preserved some material from al-Fārābī’s \textit{On Changing Beings}. The testimonies – for testimonies they are rather than fragments – can be divided into three groups. The texts of the first group, which are by far the most numerous, are concerned with the idea that there is a motion prior to every motion. The second group contains two texts dealing with time. The third group contains only one testimony, which is said to come “from the beginning” of al-Fārābī’s treatise, where he is said to have held the thesis that every motion is by definition continuous.

It is obvious that there is a connexion between the first two groups and the two parts of Aristotle’s demonstration. It is perhaps even more obvious that there is a connexion between them and Philoponus’ criticisms in \textit{Contra Aristotelem} VI. For Simplicius’ refutation is so extensive that we can gain through it a pretty clear idea of Philoponus’ arguments: Philoponus first refuted the fact that the moved thing is temporally prior to its motion, and then what he understood as \textit{three} Aristotelian arguments in favour of the eternity of time.\(^{30}\) One of them, disproving time’s \textit{infinity}, is al-Fārābī’s obvious target in the second group of texts.


1. First group of testimonies: there is a motion prior to every motion

Averroes, in his commentary on Physics VIII 1, informs us that he had first followed al-Fârâbî’s interpretation, according to whom Aristotle in this chapter aimed at proving that before every motion, there was a motion. Because, according to him, this interpretation was not entirely satisfying, Averroes reflected continuously on the problem, until the true meaning of the text at last appeared to him: Aristotle’s sole concern here was to prove the eternity of the whole motion, i.e. the motion of the celestial sphere. Prima facie, the difference seems rather tenuous, all the more so since al-Fârâbî’s ultimate goal, as we shall see, was to infer from the eternal succession of finite motions the existence of an everlasting continuous motion. The first text where Averroes describes al-Fârâbî’s position, in a somewhat general way, is the following:

I say that the exposition which I have just presented is the one which is understood at first sight, and this is what al-Fârâbî has understood, to judge from what he has said in his book On Changing Beings. And Avicenna, as well as Avempace the Andalusian, have understood the same thing, namely that Aristotle’s intention in the first chapter of this book was to explain that before every change, there is a change, and that change never ceases according to the genus – so as to proceed from that to the explanation of the fact that there is a first eternal motion – either one or many – which contains everything. But there is some doubt on this issue. This is why al-Fârâbî in his book On Changing Beings attempted to deal extensively with this question, examining in how many ways it is possible to imagine that before every motion, there is a motion, what can be true in this and what not. For this reason, his inquiry into this is intricate.31

After alluding to his own attitude towards al-Fârâbî’s interpretation – from acceptance to reservation →, Averroes reassesses his point, which, paradoxically enough, found its first expression in Philoponus’ criticisms: it is false, even for Aristotle, that prior to every motion, there is a motion, since this is not true of the celestial motion:

For Aristotle attempts to explain (1) whether the first motion containing the world (or the first motions, if they are more than one) is created in such a way that before, there was no motion at all; motion would then be created out of nothing according to the genus, and everything would have begun to move after nothing was previously moving; (2) or whether the first motion which contains everything, present in the first thing moved (or in the first things moved, if motions are more than one) is eternal, having never ceased

and never going to cease, being, as he said, “a sort of life for the things existing by nature” (250b 14–15). And if he has proposed the explanation of the motion’s above mentioned definition, it was in order to show that motion is such <i.e. eternal> and not, contrarily to what al-Fārābī and others have thought, in order to explain that before every motion, there is a motion. The inquiry he is here engaged in applies universally to the whole world; it is not true, according to Aristotle’s opinion, that before the motion containing the whole, there may be a motion, or that before the change which is the first change, there may be a change. Therefore, their opinion was false. For this opinion is particular: it is something true of the particular motions which are contained by the universal motion, insofar as that <property> follows from the universal motion and not because it exists in them primarily and essentially. That for it <i.e. the first motion> it is impossible <i.e. to have a motion before itself>, shall appear clearly later. Therefore, he could not have assumed the eternal continuation present in these motions accidentally as a sign of the eternal continuation in the first motion itself (or in the first motions), to say nothing of the fact that it has not yet been explained here that they<sup>32</sup> are so accidentally – but this is manifest and will appear more clearly later.<sup>33</sup>

Averroes nowhere appears to be more explicit on al-Fārābī’s position. However, the fact that the latter examined as fully as possible the different types of relation between a mover and a moved is transparent from Ibn Bāγγā’s quotations.<sup>34</sup> It is obvious that Ibn Bāγγā, in his commentary on the two last books of the Physics, borrows many distinctions from al-Fārābī’s treatise, which he mentions by its title half a dozen of times. Al-Fārābī’s aim was very probably to show that in each one of the distinguished cases of motion, there was a motion prior to the motion considered. The method employed is what he himself calls a perfect induction.<sup>35</sup>

Now, this way of arguing is obviously not a demonstration of the eternity of the world. It is the demonstration that according to some Aristotelian principles, the world is eternal. That is, if we dismiss the idea of a demiurgic God who creates being and motion at the same instant, if we accept only natural processes deprived of every kind of volition, then Aristotle was correct in maintaining that there is a motion prior to every motion. Philoponus held that it is false, even for Aristotle, that there is a motion prior to every motion. One must be very careful about this distinction: At this stage, Philoponus proved not that the world had a beginning, but that according to the principles of Aristotelian dynamics, it might have had a beginning. Of course, this first result prepared the way for an assessment of the

<sup>32</sup> reading eos for ens Junt.
<sup>33</sup> Averroes, In Phys. 339C–F.
<sup>34</sup> See the full list in Puig Montada, “Zur Bewegungsdefinition im VIII. Buch der Physik”, p. 151, n. 25.
Christian version of creation. But it did not constitute, as such, this assessment. Al-Fārābī, symmetrically, did not prove the eternity of the world, but the fact that on some Aristotelian assumptions pertaining to physics, motion had to be viewed as taking place eternally. Thus, we must interpret al-Fārābī’s argument as a mere counter-argument directed against Philoponus’ attack.

2. Second group of testimonies: the unreality of time

What now about the second tenet of Aristotle’s proof, time? In his Epitome of the Metaphysics, Averroes mentions al-Fārābī’s On Changing Beings in the following terms:

If time is generated, there will be a determinate “now”, before which there was no past time; but it is impossible to imagine a “now” determined in actuality and present which is not preceded by a past, all the more to have the representation of it when time is imagined according to its very essence. Error can occur in this only if we are to imagine time with the help of what imitates it, namely the line. For the line, inasmuch as it has a position and exists in actuality, is necessarily finite [. . .]. When, then, we represent time to ourselves in this way, as if it were a straight line, it is impossible for it not to be finite. This kind of deceit belongs to the Deceitful Topoi, under the topos of transposition and substitution (taḥta mawdī‘ī al-nuqlatī wa-al-ibdāl). Abū Naṣr has dealt at length with this notion in the Changing Beings.36

The straight line, so al-Fārābī, is only an image of time. This image is imperfect because the relation between the parts and the whole is not identical in both cases. In the case of the line, all the parts exist in actuality; in the case of time, no part exists in actuality. The impossibility of an infinite line is only due to the actual existence of all its parts, as soon as one recognizes the impossibility of an actual infinity. Since time does not share this distinctive feature, the impossibility of an infinite time has not been demonstrated.

It is very probable that al-Fārābī himself, in On Changing Beings, described the case as a particular type of sophism. For one passage of his Deceitful Topoi (Fī al-Amkina al-muğliṭa) elaborates on “transposition and substitution” as a sophistic category, itself divided into many subspecies:

Among these topoi, there is also the transposition (al-nuqla) into that which can be substituted (yubdala) to the thing and play its role: either word, or similar, or universal, or particular, or prior, or posterior, or conjoined, or things opposed, or imagination we have of the thing in the soul, or its sensible tokens.37

In the course of his discussion, al-Fārābī gives some examples of these “imaginations” that we may substitute to the thing itself:

As to the imaginations of the things in the soul, they are deceitful insofar as many things, at many times, can be represented only under the form of something else. To these things pertains what cannot be, or can hardly be, represented under its proper form, such as [our representation of what is before the world – for it immediately occurs to our souls an infinite time before it – and] our representation of what there is outside the world – for it immediately occurs in our souls either an infinite void, or an infinite body.38

The example of time, which I have put between brackets, must be interpolated. Otherwise, we would have nothing but a statement of Philoponus’ and al-Kindī’s creational creed,39 so that the whole project of al-Fārābī would become unintelligible. This textual conjecture receives some confirmation from a parallel passage in the Qiyās, where the problematic illustration is not to be found:

For example, we know by demonstration that the sun is bigger than the earth. But such as we see it, we imagine that its size is one foot on one foot, so that what we imagine about the sun is opposed to what we know about it. And similarly,40 we know by demonstration that there is no infinite body or infinite line outside the world. But when41 we imagine the world’s sphere, it immediately occurs to our soul either an infinite void, or an infinite body – so that what we imagine to be outside of the world is contradicts what we know.42

There is not mention in the Qiyās of what there was “before the world”. I take it for legitimate, therefore, to excise this illustration in the first passage. Averroes’ allusion in the Épitome of the Metaphysics argues for the opposite idea: time being eternal in both direction, it is meaningless to speak of a “before” of the world.

What, then, is exactly the status of past and future things? Ibn Maymūn tells us that they were “imaginative and not real”:

---

39 See Philoponus, In Phys. 613.19–27, who also alludes to the ἀφανσία of the πολλοί in the same context and Kindī, First Philosophy, ed. Rashed-Jolivet, p. 21, ll. 13–18. For an English translation (less accurate than the French one, ibid., p. 20), see A. I. Ivry, Al-Kindī’s Metaphysics (Albany, 1974), p. 63: “. . . whatever has no matter and is not joined to matter is not represented in the soul at all, and we do not think that it is a representation. We acknowledge it only because it is a necessity to affirm it, as when we say that outside the body of the universe there is neither void nor plenum i.e., neither emptiness nor body. This statement is not represented in the soul, for ‘neither void nor plenum’ is something which the sense has not apprehended, and it is not attached to a sense so that it could have an image in the soul, or be believed to have an image. It is something which only the intellect necessarily perceives, in accordance with the premises which will be set forth”.
40 Reading κα-δαλικα instead of λ-δαλικα.
41 Reading lammā instead of kamā.
They are things exclusively imaginative and not real \(<\textit{wahmiyya lā wağādiyya}\>\). Abū Naṣr al-Ṭabarī made this contention and discovered the \textit{topoi} of imagination in all its particular cases, as will clearly and manifestly appear to you, if you reflect without bias on his book known as \textit{On Changing Beings}.

This discussion is interesting not only because it shows how al-Ṭabarī answered Philoponus’ and al-Kindī’s temporal finitism. It may also attest al-Ṭabarī’s sensitiveness as regard to the fundamental problem of time: time being intrinsically tied to motion, the eternity of time presupposes the eternity of motion. At \textit{Physics} VIII 1, Aristotle as interpreted by Philoponus developed three arguments in favour of the eternity of time.\(^4\) He sees the first in the presence of a “before” and an “after” with respect to any event. The second in the fact that all Physicists, except Plato, have assumed time to be eternal. The third in the fact that time includes the “now” in its definition; but the “now” is nothing else than a mean between two periods; there can be, therefore, neither a first “now” nor a last one.

We can of course dismiss the second argument, for it is merely confirmative. I shall come back later to the first and third arguments. For the moment, I shall confine myself to two difficulties, the first arising from the relation between time and motion, the second from the relation between time and the “now”.

The first difficulty is this: if time is nothing but something our intellect apprehends in motion, then there is no sense to speak of a temporal “before” of the universe: there was no \textit{motion} before the universe, because there is simply no “was” correctly refering to such an ahistorical period. Time is not to be thought of independently of the world taken as a set of things in motion. Time is an epiphenomenon arising from a phenomenon of the world, namely motion. There is something naive, and un-Aristotelian, in arguing for the impossibility of a time before motion and concluding from there to the necessity of the motion’s eternity. For the supposition of a time before motion is absurd.\(^5\)

The second difficulty lies in the danger of vicious circularity in arguing for the relation between time and the “now”. When we say that the “now” is a limit between two periods of time, isn’t it the case that we define the “now” by time? But time is notoriously defined by

\(^5\) Cf. above, p. 30.
the “now”. Furthermore, even if it is not a vicious circle, we have to explain why it is not a *petitio principii*. For if time and the “now” are not to be dissociated, it is plain that in using the “now” in order to demonstrate something about time, we may be suspected to make use of our conception of time in order to prove our conception of time. This is precisely the reproach Philoponus addresses to Aristotle.

It is evident that al-Fārābī was aware of these difficulties, which were certainly not new when he wrote his treatise. A concrete hint can be find in a passage of his treatise *On Deceitful Topoi*, where he explains the error of the “definitions” which take as a *definiens* some part of the representation we have of the *definiendum*. By way of example, al-Fārābī mentions “the one who has defined motion as the body’s passage and time as the period that the motion counts”.

These two cases must be understood against their Aristotelian background. In the case of time, we should note that Aristotle has not defined time by a period of time, but with reference to anteriority and posteriority: “time is the number of motion according to the before and the after”. Hence, al-Fārābī implicitly rejects Galen’s (and others’) criticisms against Aristotle’s definition of time as implying circularity.

I conclude this section by pointing out that the sole references to the treatise *On Changing Beings*, in the context of a discussion of time, are dialectical: al-Fārābī attempted to explain why temporal infinity must not be counted as a case of actual infinity, hence his defense of the *possibility* that time be eternal. Here again, we find a counter-argument opposed to Philoponus, but not a real – *i.e.* positive – demonstration of the eternity of some part of the world (namely, the heavens).

3. Some further remarks on the demonstrability of eternity

At this stage, our initial task seems to be complete. According to the transmitted testimonia, it is plain that al-Fārābī refuted two arguments of Philoponus. But no more than that. In particular, there is no evidence that al-Fārābī tried to give a *positive* proof of the eternity of the heavens. When we try to account for this curious absence, the first explanation which presents itself to us is the general structure...
of al-Fārābī’s system, i.e. the relationship between physics and metaphysics. Let us first say a word about this possible explanation.

In the Great Book of Music, after a classification of sciences according to the way they bear upon their principles, al-Fārābī deals with analysis and synthesis. The former proceeds from the last consequences to the principles, the latter from the principles to the last consequences. In some cases, synthesis follows the order of existence: the principle of explanation, there, coincides with the principle of existence. That this idea is of paramount importance for al-Fārābī’s cosmology is confirmed by two texts. First, in the Philosophy of Plato, al-Fārābī identifies the whole philosophical method with division (qisma) and composition (tarkīb, also the Arabic word for “synthesis”), which is a radicalization of what we find in his Greek predecessors. Secondly, the Attainment of Happiness devotes some lengthy pages to explaining how, after having regressed upward to some first principle, we then use this principle in our way downward to prove some facts which were unknown until then. To anticipate, I think that the motion’s eternity pertains to this category: taking motion as a fact, we go “upward” and prove the existence of some mover; but the existence of this mover will explain in turn the fact that motion is eternal.

Thus, one may hazard that for al-Fārābī, the assumption of nature’s existence in II 1 is a condition for establishing by analysis the eternity of motion in VIII 1 and the existence of the Prime Mover, but that the assumption of the Prime Mover is necessary for demonstrating by synthesis the reality of nature. The first move seems relatively uncontroversial. It consists in assuming that the analytic progression of the Physics is not limited to book VIII, but begins much earlier in the treatise. As to the second move, it is grounded on the assumption that the full justification of the “naturalism” of book II can be given only after the regressive method has reached its highest point (the Prime Mover). Until then, the “evidence” of natural motion, as it is affirmed in Physics II 1, is to be considered as only probable. The “synthesis” will start with a consideration of the Prime Mover and then prove some facts about the natural world. It is only when we examine God’s attributes such

---

50 See al-Fārābī, Kitāb Tahsīl al-sa‘āda, ed. Ġ. Āl Yāsīn, in al-A‘māl al-falsafyya (Beirut, 1981), vol. 1, pp. 124–9. English translation in Mahdi, Alfarabi. Philosophy of Plato and Aristotle, pp. 16–19. It is very interesting to note that according to this text, the role of synthesis is not only to reconsider the data discovered by analysis, but to use them in order to discover new facts. The whole method of analysis-synthesis, then, far from being a mere didactic way of exposition, has a deep heuristic value.
51 See below, p. 43.
as unicity, simplicity, etc. that we shall demonstrate some of the nature’s features – which, of course, will not contradict the truths of the Physics.

Briefly put, we shall demonstrate that divine emanation entails the different kinds of motion we know and, pari passu, that our basic conception of nature as expressed in Physics II was correct.\(^{52}\) That may be what al-Fārābī wanted to emphasize in the numerous passages where he alludes to the fact that after having ascended to the highest part of physics and reached some beings which pertains to metaphysics, we have then first to theorize them in the frame of the metaphysical discipline and, subsequently, to go downward and examine again, under this new perspective, physical objects. In the Book of Letters, he says that in this second move, we have to examine the physical objects “insofar as these things <i.e. the metaphysical, non-categorial, beings> are their causes”.\(^{53}\) It is plain that the new element is the idea of a hierarchy between beings. Here one might appeal to the idea that the celestial beings, being “nearer” to the First Principle, must have stronger unitary features – such as temporal, material and kinetic continuity – than the sublunary items. This move appears also, albeit briefly, in the summary of what al-Fārābī knows as the two last books of the Metaphysics. According to him, book XI ( = Λ) is devoted to “the principle of substance and being as a whole, as well as the assessment of its essence and of the fact that it is essentially knowing the truth of the essence”.\(^{54}\) It is also devoted to “the separate beings which are after it and to the modality of the hierarchy of beings out of it”.\(^{55}\) As to book XII ( = M), it is concerned with “the principles of the physical things and of the mathematical things”,\(^{56}\) i.e. two kinds of being which have helped us to prove the existence of the First Principle and which will be now ontologically justified as being caused by this Principle. I shall not engage here in the distinctions which ought to be made between two apparently different models, one where analysis corresponds to physics and synthesis to metaphysics, and the other where both analysis and synthesis belong to metaphysics. Such a task would need a thorough discussion of the summary of the Metaphysics.

\(^{52}\) I agree with H. Zghal, “Méthaphysique et science politique: les intelligibles volontaires dans le Ṭabṣīl al-sa‘āda d’al-Fārābī”, Arabic Sciences and Philosophy, 8 (1998): 169-94, p. 176, n. 16, that the first chapters of the Ṭabṣīl Ahl al-Madīna al-Fāḏīla and some other “political” works of al-Fārābī are examples of this divine knowledge of beings.


\(^{55}\) Ibid.: wāšt kayfiyyati tartībī waṣūḏī al-maṣuqūdūti ‘anhu.

\(^{56}\) Ibid.: fī mabā‘ī al-ṭabī‘iyyatī wa-al-ta‘īmīyyatī.
emanationist cosmology, obviously not furnished by Aristotle’s synthetic part—than that of its physics. The “metaphysics” we lack is in fact an

more ready to accept the completeness of Aristotle’s Metaphysics and his interest for analysis and synthesis as such. It may be suggested that al-Fārābī was

perhaps in Book M as interpreted in the summary. Thérèse-Anne Druart has collected a great deal of evidence showing that al-Fārābī was conscious of this insufficiency, from his point of view, of Aristotle’s writings. It would seem that he conceived of his philosophical task as to supply the incomplete system with its lacking part.

57 See in particular her article “Al-Fārābī and emanationism”, in J. Wippel (ed.), Studies in Medieval Philosophy (Washington, D.C., 1987), pp. 23–43. The author, however, does not establish any connexion between al-Fārābī’s dissatisfaction with Aristotelian metaphysics and his interest for analysis and synthesis as such. It may be suggested that al-Fārābī was more ready to accept the completeness of Aristotle’s Metaphysics—Book M being its synthetic part—than that of its physics. The “metaphysics” we lack is in fact an emanationist cosmology, obviously not furnished by Aristotle’s De caelo.

58 To the texts discussed by Druart, I would like to add an unnoticed reference in Averroes’ Great Commentary on the Physics (181C–E, ad Phys. IV 11, 219a 30-b 3), where we find attributed to al-Fārābī a recurrent criticism of some Aristotelian procedure. Al-Fārābī is said to have repeatedly (multotiens) objected to Aristotle for his simultaneous use of (i) the “method” of “finding something through some other thing found” (via . . . aliquid invenire per alius inventum) and (ii) “the method of suppression” (via ablationis). Averroes does not agree with the Second Master and sides with the First: true, the first method, taken alone, is deficient (diminuta = nāqṣa); but if it is associated with the second, then, contrary to al-Fārābī’s opinion, we have the correct proof we were in search of. For example, the recognition of time as “the number of motion according to prior and posterior”, which proceeds along this double path, is correct. What, now, was Aristotle’s method with which al-Fārābī repeatedly expressed his dissatisfaction? I think that the remote background is furnished by A. Po. I 5, where we find associated the twin concepts of ṣūţāx and ṣanqāx in the discussion of essential predication. In the Arabic translation of Abū Bīr Mattā ibn Yūnus, these words are rendered by ṣuţāda / ṣuţād and ṣirta‘a / ṣirta‘ī, and it seems very likely that we have here the Arabic words lying behind the Latin inventire and ablatio. But I do not think that what is intended here is exactly the doctrine set forth by Aristotle in A. Po. It is much more reminiscent of criticisms addressed by al-Fārābī to the theologians (cf. al-Fārābī, Kitāb al-Qiyās, ed. R. Al-’Aqām, in al-Manṭiq ʿinda al-Fārābī, vol. 2, pp. 49 ff.; on this text, see Lameer, Al-Fārābī and Aristotelian Syllogistics, pp. 204–32, in part pp. 219–27). The first of these is directed against their habit of spelling out what property is conjoined with some other in every hyparctic subject minus the one under consideration, to conclude that it belongs also to the one under consideration. Al-Fārābī objects that every inductive procedure, in order to be valid, must be complete. The second criticism is focused on their use of suppression. Because of their nominal conception of a “cause” (ʿilā), the theologians contend that if the suppression of the cause from a subject implies the suppression of some attribute, then the presence of the cause in it implies the presence of the attribute. But as al-Fārābī notes, according to an Aristotelian understanding of the “cause”, we would rather have to conclude that the presence of the attribute implies the presence of its cause. Interestingly enough, al-Fārābī goes on to remark that the simultaneous use of both methods is redundant. Now, it is obvious that al-Fārābī cannot have in mind, when dealing with Aristotle, exactly what he objected to the theologians. It is more likely that he felt some dissatisfaction even with the use of the amended methods such as he explains them. The reason is obvious: neither method can go beyond the level of the mere fact. They are unable, by themselves, to give us the cause of the phenomenon under consideration. In other words, they are typically Aristotelian in so far as they allow analysis to proceed, but they have to be supplemented by a synthetic demonstration.
The synthetic proof would run as follows: the eternal beings are not in time in the sense that their being is not strictly included in the whole of time, but they are in time in the sense that their permanence is coextensive with time. In the *Opinions of the Inhabitants of the Virtuous City*, al-Fārābī insisted from the outset on the First’s eternity, understood as an infinite time. And in the *Political Regime*, he begins by stating the doctrine that “*when (matā)* the First exists according to the existence which belongs to Him, then it follows necessarily that all other natural existents exist out of Him . . .” The fact that al-Fārābī establishes a *temporal* connexion between God’s and the creatures’ existence is striking. One may object that *matā* need not to have temporal connotations here and could just introduce the first half of a conditional. But the temporal connexion appears clearly one page later, where al-Fārābī goes so far as to affirm: “and for this reason, the existence of what comes out of Him is not at all temporally posterior to Him (*gāyra muta’āhhirin ‘anhu bi-al-zamān*), even if it is posterior to Him in every other acception of posteriority”. Thus, even if God is not *circumscribed* by time, He exists at every time. Even if He creates time, God exists at every “now”.

If God, accordingly, is temporally eternal, *i.e.* eternally temporal, we easily understand why the first result of emanation should be eternal. The argument is the following. Actual infinity is to be excluded from the chain of causation, *i.e.* at every moment, the chain between any event and its first efficent cause must be finite, otherwise there would be no event at all. On the other hand, temporal eternity, or even eternal regularity *a parte ante*, is no explanation of the fact that something exists here and now. Already Alexander of Aphrodisias, in his *De providentia*, had briefly explained away the domino effect, which was more than an elusive temptation of Aristotle’s biology. I have tried elsewhere to show that in the latter’s well-known motto “A man begets a man and the sun”, Alexander attempted to reduce the role of man and emphasize that of the astral principle. All this leads to the following alternative: either (i) every event is a sort of miracle directly produced by God’s particular volitions – the mutakallimūn’s solution, with variants – or (ii) there must be at least one *physical* cause of everything in the world, which is itself under God’s direct influence.

---

59 See the passage quoted below, n. 62.
62 As it is affirmed in the *Ārā’,* p. 27 Karam-Chlala-Jaussenn: *fa-li-hādā huwa azalā, dā’im al-wuğād bi-ğawharihi wa-dā’thi.*
63 See *De providentia*, 93.8–95.16 Ruland.
The fundamental character of this alternative has been noted by Maimonides. After having presented in the Guide numerous arguments for the eternity of the world, he rejects this thesis because it leads to the negation of miracles. To understand this assertion, one must in fact address the problem the other way round. Philosophers in the Aristotelian and Neoplatonist tradition, because of their conception of emanation, are sceptical about all forms of perturbation affecting the uniformity and continuity of God’s way of acting on the world, in particular miracles. It is because of some conception pertaining to God’s simplicity, permanence and changelessness that miracles, according to them, are better avoided. The case of motion is only a particular instance of a more general claim regarding uniform causality. Therefore, whatever may have been stated in the Changing Beings, it is clear that the physical proof as such was incomplete. It is true under the condition that we accept that motion is not a perpetual, or a least indefinitely repeated, miracle occurring in the world. But in this case, provided that the item discovered by analysis is eternal, unchanging, efficient and simple, we can legitimately infer that the world is eternal.

Things, however, are not so simple. For it is plain that in the Philosophy of Aristotle, al-Farabi holds both that Physics VIII conforms itself to some sort of regressive pattern leading to the First mover and that it proves the eternity of motion. Let us quote the relevant passage:

(A = chap. 1–3) Then he investigated, among other things, what the quiddity of motion implies for the motion’s succession in time, in terms of infinity.

(B = chap. 4–5) Then he gave many rules in the case of bodies, rules which are entailed by their motion and by the principles moving them: the moved bodies around us are moved by other bodies which are next to and in contact with them, and these again by others which are next to and in contact with them, and these again by others next to and in contact with them. The bodies which move other bodies are near to them in their positions, or in contact with them, successive to one another; but that does not reach infinity in number.

(C) And after he has laid down in what precedes (i = Bk VII, chap. 2) in how many ways and according to how many types the natural body moves by its nature another body, and having said (ii = chap. 7) that the last body which moves some moved body successive to it is also moved, but only according to local motion at the exclusion of the other types, (iii = chap. 8) that its local motion is not straight but circular, (iv, cf. chap. 6) that it moves around all other moved natural bodies, and (v, cf. chap. 9) that it is impossible that there be behind this another body moving it; and since he

65 Ibn Maymun, Dalalat, pp. 350–1.
had previously shown that it is impossible that there be an infinite body; therefore, it follows from that that there is some finite body which moves all the natural bodies and that the last thing which is contained by this body is moved circularly around the others.

(D = chap. 6?) Then, he investigated this body which is moved circularly: is it moved without mover, or has it a mover? And he showed that it has a mover.

(E) (i = chap. 10) Then he investigated the principles moving the bodies moved circularly by nature: are they bodies or not, are they incorporeal essences, even if they are in matter and body? After having carefully investigated this point, it appeared to him that what gives these bodies which are at the extremity their circular motion is some being, which can be neither a nature, nor natural, neither body nor in a body. It is never and in no way in matter. (ii) We must examine it in another investigation and examination, different from the investigation and examination proper to natural philosophy.67

This summary reveals how al-Fārābī reshapes the content of Physics VII and VIII in order to underline the basic analytic character of the argument. It would take me too long to enter into all the details here, but we can note the partial suppression of chap. 6, one of the most important and difficult of Book VIII. To put it roughly, this chapter relies on the arguments for the eternity of motion as they appear in the first chapter,68 in order to prove the continuity of motion, hence its unicity,69 hence the existence and unicity of the mover.70 That means that for Aristotle, the proof for the eternity of motion is an important step in the general demonstration of the unicity of the Prime Mover. But if we turn to al-Fārābī’s text, we see that continuity does not appear at all, whereas eternity is mentioned only at the beginning of the presentation and seems to play no role afterwards. Al-Fārābī presents it rather as if it were a result in itself, perhaps important for our comprehension of the world, but with no bearing upon the demonstration that follows. As a corollary, we can note that the introduction of the circularity of motion in al-Fārābī, compared to what we find in the Physics, is feeble – which is not very surprising, since it was for Aristotle a direct consequence of the continuity of motion. To sum up, al-Fārābī neglects all that pertains to the “horizontal” axis of Aristotle’s proof, i.e. time’s infinity, and concentrates exclusively on the “vertical” one, i.e. the necessarily finite regression from effect to cause at every instant. We can even say that for al-Fārābī, the demonstration of the Prime Mover would be exactly the same even if the world was temporally finite.71

68 Cf. in particular Phys. VIII 6, 259a 15.
69 Ibid., 259a 16–18.
70 Ibid., 259a 18–20.
71 Whether by influence or coincidence, al-Fārābī adopts here a strategy already used by Alexander in Quaestio I 1. Alexander puts forward what he baldly calls a “showing” (διακάτε)
I think that the two peculiarities of al-Fārābī’s summary of *Physics* VIII, i.e., its stress on the regressive character of the whole book and its presentation of chapters 1–3 as if they bore no relation to the rest of the book, are two tenets of the same fundamental interpretation: physics as such is incomplete, and we have to wait until the “metaphysical turn” in order to be able to demonstrate, by way of synthesis, the world’s eternity. But that does not imply that the demonstration of eternity *as a mere fact* is incomplete.

Let us explain this. It is plain that according to al-Fārābī, book VIII represents the achievement of the whole *Physics*. In the previous books of the *Physics*, Aristotle spelled out motion and its concomitants, so that when starting our reading of book VIII, we already know that motion exists, how it must be conceived, and its relation to place and time. Thus, we can safely aim at establishing something on the ground that there is sublunar motion, and that each sublunar motion (i) is continuous and (ii) has a beginning and an end.

Of course, the knowledge of “nature” we acquire through *Physics* II is (dialectically) well-grounded. But can it be considered as “certain knowledge”? In the *Conditions of Certitude*, al-Fārābī mentions, among the six criteria that must be met in order for “absolute certainty” to obtain, the fact that the knower must know that the proposition *p* he knows is true, that it is impossible that *p* not be true and that there is no time at which *p* can be false. But even if I believe that there is no direct divine agency in the world and the fact that there is no direct divine agency in the world is true, how can I know that this proposition is true, that it is impossible for it not to be true and that there is no time, past or future, at which it may be false? How to convince Plato, Galen, Philoponus, the Mutakallimuṣ, that it is not a *petitio principii*? Of course, Aristotle wrote at *Physics* II 1:

> What nature is, and the meaning of the terms “by nature” and “according to nature”, has been stated. That nature exists, it would be absurd to try to prove; for it is obvious that there are many things of this kind, and to prove what is obvious by what is not is the mark of a man who is unable to distinguish what is self-evident from what is not. (This state of mind is clearly possible. A man blind from birth might reason about colours.) Presumably therefore such persons must be talking about words without any thought to correspond.}

of the existence of the First Mover, which, because of its analytical character (καὶ ἰδιαστατικαὶ), he considers not to be a demonstration (ὑποδοθεῖε). Interestingly enough, Alexander, like al-Fārābī after him, proceeds from sublunar motions to celestial motion to the First Mover.

---

72 See *Falsafat Aristâtâllûs*, p. 93.
73 On this text, see D. Black, “Knowledge (*‘ilm*) and certitude (*yaqûn*) in al-Fārābī’s Epistemology”, *Arabic Sciences and Philosophy*, 16 (2006): 11–45.
74 *Phys.* II 1, 193a 1–9 (ROTA translation).
But it is evident that in al-Fārābī’s time, there were people talking about words, but with thoughts to correspond – these thoughts being the entire conceptual edifice of kalām – who were convinced that nature was, if not a mere *flatus vocis*, in any case no more than a designation of God’s habits. And this point was crucial in the demonstration of the eternity of the world from the succession of motions. Unlike Aristotle, al-Fārābī cannot have considered as scientifically sufficient merely to affirm the existence of nature (*i.e.* motion) as we know it.

To conclude this section, we have to distinguish between two kinds of proof for the world’s eternity. The real proof is taken from the general cosmology of al-Fārābī, and is as such ‘‘metaphysical’’ (in the sense of the *Book of Letters*), or synthetic: it derives the heavens’ eternity from the First Principle’s eternity, simplicity, etc. But this does not preclude that there may be some physical (or analytical) proof of the fact that the heavens are eternal.75 A consideration of time, motion, place, would give us the analytical necessity of time’s beginningless. The rather clumsy allusion of the *Philosophy of Aristotle* would point to this second proof.

4. A physical demonstration of the eternity of the world?

(a) *On time’s definition*

The last part of the present paper is more speculative. I would like to use some fleeting allusions scattered in the Arabic tradition in order to reconstruct al-Fārābī’s *physical* proof of the eternity of motion. I think that this proof may stem from the considerations about the instant in Aristotle’s *Physics*. As already said, Aristotle presented as an argument in favour of time’s infinity the fact that by its very nature, the instant is an intermediary, or a mean, between the past and the future. Thus, it is by definition impossible that there be a first instant. Therefore, time is infinite. But the phrase ‘‘by definition’’ in the previous sentence is ambiguous. If we can argue that a first instant is physically absurd, Aristotle is of course correct. But if the sole absurdity is that it contradicts our verbal definition of an instant, itself grounded on time’s infinity, then, as Philoponus remarked, it is a blatant *petitio principii*.

What about al-Fārābī? Time, for him, seems to be perfectly intelligible in terms of being coextensive (*inṭībāq*), a concept which...
would be perfectly applicable even if time were finite. Let us quote a passage appearing in the *Book of Letters*:

The particle “when” is used as a question about the relation between what occurs and the time determined, known, and coextensive with it, as well as a question about the two extremities of this time which are coextensive with the two extremities of the existence of what occurs – be it a body or bodiless –, once it has been at rest or moved, or in something at rest or moved. No being requires a time in which its existence takes its shape, nor <a time the existence of which would be> the cause of the existence of any being whatsoever (1). For time is something (2) which necessarily surpervenes upon motion. It is a plurality which is counted by the intellect in such a way that by means of it the [intellect] estimates and determines the existence of what is either moved or at rest.76

(1) au <iți zamānın yakına uğradı̄> sababan li-uğûdî mağûdîn aşлан added by me (cf. Ḥurūf 83.18: fa-inna sababa uğûdî al-zamân huwa an etc. and Falsafat Aristotēlēs 96.3: layya yuşturğu īlayhi [i.e.: al-zamān] fi uğûdî mağûdîn aşlan): au <iți yakına> sababan li-uğûdî mağûdîn aşlan added by Mahdi (2) say‘un my proposition: matā MS, Mahdī.

These lines, despite two textual corruptions, are clear: al-Fārābī explains, as in the other texts referred to in my apparatus, that time...

---

76 Alfarabi’s *Book of Letters*, ed. M. Mahdi, 2nd edition (Beirut, 1986), 62.2–10. This text seems to me interpolated. For immediately after having dealt with the letter matā, “when”, and immediately afterwards, it devotes some two pages to the categories, including the “when”. From the outset, such a disposition strikes me as arbitrary and redundant. It is arbitrary because “when” is the only category dealt with before the passage about the categories. It is redundant because “when” will appear also at the beginning of the treatment of the categories. Moreover, this paragraph on “when” breaks the natural progression of the text. It would have been perfectly understandable if the author had dealt first with being in general and, immediately afterwards, with the beginnings of being. Al-Fārābī is not Heidegger, there is no reason for him to distinguish the kind of time that is treated separately from the rest. My suspicion of interpolation is strengthened by some problematic elements in the sentence immediately following (I give first a literal translation of the Arabic such as it appears in the single manuscript used by Muhsin Mahdī): “Its case is not similar to that of place, since the kinds of bodies necessarily require the places in/about the things he has enumerated previously”. It seems to me that the transmitted Arabic cannot be construed. Three problems arise. First, the meaning of the preposition fi is not clear, whatever be the sense retained (in or about, i.e. in the case of). A second difficulty, the subject of the verb ahşāṭ, “he (?) has enumerated”. Since it cannot be the “intellect” mentioned before, who has “enumerated” something? Aristotle? Al-Fārābī? Someone else? Thirdly, the reference of the words min qa‘bī, “previously” is puzzling. In the *Book of Letters* such as we have it, there is only one paragraph before the text we are dealing with, and it makes no mention of the question of place or of things in place. The only way of ending this sentence, then, is to add something like “as he/we said” immediately before “in/about the things” and perhaps to change allāt ahşā‘ānāhā (“which we have enumerated”, cf. Ṭurā‘ ahl al-ma‘ādha al-fālāla, chap. 11, p. 51: wa-hādhii al-mawgūdāt allāt ahşā‘ānāhā) or allāt ahşā‘āhā, (“the enumeration of which <i.e.>”) so as to allow the subject (either grammatical or ad sensum) to be al-Fārābī. Both corrections are paleographically slight. “Its case is not similar to that of place, since the kinds of bodies necessarily require the places, <as we have said> in the case of the things that we have enumerated previously”. In both cases (subject Aristotle or al-Fārābī), the reference to the previous passage makes no sense in the *Book of Letters*. 
is coextensive with the existence of the thing, but that time is not necessary in order for the thing to exist. It is supervenient upon motion and, above all, it is only for our intellect that it is so. Al-Fārābī, or Aristotle according to al-Fārābī, would have opposed, to the objective existence of place, the subjective character of being-in-time. In confirmation, we may note that against Alexander, and in agreement with Themistius, al-Fārābī considered that the celestial sphere itself has a place.\footnote{77 Cf. Averroes, In Phys. 141Kff. (for al-Fārābī 142B–C). For a discussion of this problem, see my “Alexandre d’Aphrodise et la Magna Quaestio. Rôle et indépendance des scholies dans la tradition byzantine du corpus aristotélicien”, Les Études classiques, 63 (1995): 295–351 [now reprinted in M. Rashed, L’héritage aristotélicien. Textes inédits de l’Antiquité (Paris, 2007), pp. 85–141].}

If, however, there were no time, but only motion, without an intellect to “count” motion,\footnote{78 The idea of interpreting place and time in terms of being coextensive (intībāq) is interesting. True, we find the word a century later, in the treatise On Place of al-Ḥasan ibn al-Haytam (cf. R. Rashed, Les mathématiques infinitésimales du IXe au XIe siècle, vol. 4: Ibn al-Haytham, Méthodes géométriques, transformations ponctuelles et philosophie des mathématiques [London, 2002], pp. 666–85, in part. pp. 675–7). It is however also used by al-Fārābī, with a different connotation. Cf. Book of Letters §39, p. 83: ‘‘when’’ is posterior to ‘‘where’’, for the cause of the existence of time is that the body is translated in some ‘‘where’’, so that time does occur then. Time is coextensive with (yanṭābiq) the thing and is related to it because of its being coextensive with its existence. This relation is similar to that one, – I mean to the thing’s relation to its place”. This passage is translated into French by Ph. Vallat, Farabi et l’École d’Alexandrie. Des prémisses de la connaissance à la philosophie politique (Paris, 2004), pp. 374–5, who is certainly correct in emending nisbata into sobaba and yantāqilu into yantāqilu. However, his reading (p. 374, n. 7) yuhḍaṭa (“is produced”) instead of yahḍaṭa (“does occur”) is questionable, since in the presentation of the same doctrine, al-Fārābī describes time as being “supervenient upon motion” (Ḥurāf 62.6–7: ‘‘āridūn ... an al-ḥaraka, cf. Falsafat Aristatīlīs 96.2–3) – and obviously, the primary function of modal distinction is to allot some sort of ontological status to supervenience and / or concomitance apart from efficiency. Perhaps more importantly, his discussion (ibid.) and translation of yantābiq by “être approprié” or “être placé au même degré d’être” are philosophically misleading. Al-Fārābī surely has in mind the coincidence of two extended magnitudes.} how could we refute Philoponus? Suppose that we were to cut off a temporal slice of cosmic history, a year for example, or a day. Physical motions will have a beginning and an end, exactly like in a Christian cosmology. Even if we agree with Aristotle that there is no \footnote{79} first smallest interval of motion (for their can always be some smaller interval), there will be a time point after which motion takes place. There is no contradiction in considering exactly a year, or exactly a day. The contradiction, if any, affects dynamics (the cause of the first motion), not kinematics (the description of the first motion). And dynamics, as already said, reflects only our presuppositions about nature, the thesis, for example, that there is no divine miracle taking place in the world.\footnote{79 Peter Adamson draws my attention on a similar thought experiment in the text On Metaphysics ascribed to al-Rāzī. See Abū Bakr al-Rāzī, Rasā’il falsafyya, ed. P. Kraus (Cairo, 1939), pp. 128–9.}
A possible solution

We have just spoken of a “temporal slice of cosmic history”. As a model for a Christian world, this image seems prima facie adequate. But this is an illusion. For it does not take into account the peculiar character of the first instant of the world, that is of creation properly understood. Something more than simple “being” happens at the first instant: namely, an instantaneous leap from not-being into being, for which God alone can be responsible. The first instant of being is not only a first instant of being, it is an instantaneous transformation of non-being into being.

Thus, I presume that al-Fārābī presented his creationist adversaries with the following dilemma: in the temporal segment OM, where nothing temporally precedes the point O, you must either say that O belongs to the continuum OM like any other temporal point of it or that it has some special status, due to the fact that some transition from non-being to being individualizes it (this last thesis, as we shall see, constitutes the tacit model of al-Fārābī’s adversaries, and in particular of al-Kindī’s doctrine of creation). The first assumption means that O is only potential, like any temporal point: the vōv, according to Aristotelianism, is like a point in a continuous motion: it is simple, not made double by some state of rest. If the temporal point O is to be distinguished from the other points of the continuum OM, it is because there is some kind of break occurring at it. But this is contrary to the hypothesis that there was nothing before it. Therefore, we must consider the existence of O as merely potential, according to Physics VIII 8, 263a 11–29 and Aristotle’s admitting

\[80\] That al-Fārābī accepted this conception of motion is testified by a quotation in Ibn Bāḍā’a (ed. M. Ziyādeh, Šūrūhāt al-Sand’ al-tabī’ī dī-Ibn Bāḍā’a al-Andalusī [Beirut, 1978], p. 236): “If we suppose some distance AB equal to the distance BC and we suppose D moving from A and E moving from C with motions of equal velocity, they will arrive simultaneously at B. Let us suppose that D returns to A and that E moves continuously. Then, E will reach A before D reaching A. For it is plain that when D reached B, it was at B during some time, equal to the time by which E precedes D. For without rest, there would be no reason for D to reach the end after E, since the distance is the same and since the motions are of equal velocity. It is clear that the mobile which came back uses the point <B> as a beginning and as an end, at two instants, whereas the one which moved continuously was at B in a single instant. And that gives Aristotle the solution to Zeno’s aporia known as the dichotomy from the point of view of the thing itself, not in a verbal way. And he declared that what he has said in the sixth Book was only verbal and not from the point of view of the thing itself. And that is what Abū Naṣr made use of in his Book On the Demonstrative Discourse. For Aristotle has admitted in the sixth Book only that there is an infinite number of divisions in the continuum, as well as in the time. For he divides the finite inasmuch as it is infinite in a finite <time>, but inasmuch as it is infinite. However, the division of the infinite is impossible altogether. And he admits in the finite line, in an absolute way, an infinite number of halves. It is for this reason that the aporia was dismissed; but when he considered the thing as it is in itself, he proved that there are absolutely no divisions in the continuum, neither finite in number nor infinite, for when it possesses divisions, then it is not a single continuum, but numerous continua. Divisions are in it only potentially, and they are necessarily infinite in number, according to what he proved in the sixth Book, i.e. that the continuum is what is divided into a continuum’.

there that his former answer (i.e. in the sixth Book) was not entirely adequate: there is no “creation” at O, only existence, as at every “normal” point of OM. The only escape would be to posit some kind of temporal atomism, according to which every instant is distinct from every other, and may be said to correspond to some divine “pulsation”, really subsistent on its own (i.e. not potentially embedded in some continuum).81

Needless to say, the question of God’s acting on the world has already had a long and rich history by the time of al-Fārābī. To mention only some (eternalist) Platonists, Proclus is in deep disagreement with how Plotinus seems to equate eternity and being as such. According to him, a hypostazied eternity (αἰωνί) must be located at a higher place than the intelligible realm and is only participated by the eternal Ideas.82 The Plotiniana Arabica are in agreement with this Greek tradition in its decision to locate the first principles – the One according to Plotinus, certain transcendent principles according to Proclus – beyond eternity.83 The Arabic Plotinus holds two significant and mutually connected thesis with regard to the creation of the world. First, the Creator is beyond eternity and stands to it as a cause to its effect;84 secondly, creation is something which happens “all at once” and “in no time” (dūf’atan wāḥidatan, bi-lā-ḥamān).85 The two theses are not independent from one another because the Creator’s being beyond time prevents His act of creation from needing some period of time in order to be fulfilled. It is much more natural, in this case, to hold that God’s act of creation takes place in no time and all at once. There is a necessary gap between God’s atemporality and the world’s extended

81 Accordingly, the “atom” of time will be defined as the basic component of God’s acting upon the world. The world is nothing but the series of all the “pulsations” of God’s creative activity. There is no basic difference between the world’s duration and a continued creation, occurring at instants so near to one another that they produce, if not continuity, at least the cinematographic illusion of it. The most famous (and disputed) example of such a doctrine is that of Descartes. For such an interpretation, see in particular J. Wahl, Du rôle de l’instant dans la philosophie de Descartes (Paris, 1920) and M. Gueroult, Descartes selon l’ordre des raisons, 2 vols. (Paris, 1968), vol. 1, pp. 280–1 in particular. For a long reply to this view, see J.-M. Beyssade, La philosophie première de Descartes (Paris, 1979).


83 For more details, see d’Ancona Costa, ibid., pp. 63 sqq.

84 See the edition of the text in A. Badawi, Aflaṭūn ‘inda al-‘Arab, 3rd edition (Kuwayt, 1977), p. 114 (“you must remove from your imagination every generation in time if you want to know how the true, abiding, noble beings were originated from the first originator, because they are only generated from Him atemporally, and between the origination and the originator, and the making and the maker, there is no intermediary at all”) and p. 130 (“the first cause is standing still, resting in itself, and is not in eternity or time or in place, but rather eternity and time and place and the rest of the things are only supported and fixed through it”). I borrow both English translations from P. Adamson, The Arabic Plotinus. A Philosophical Study of the Theology of Aristotle (London, 2002), p. 143.

eternity, which seems more readily preserved by supposing an instantaneous creation than by submitting God to the world’s way of being in time (i.e. to eternity).

Al-Kindī, in a passage of his epistle On the Quantity of Aristotle’s Books very likely known to al-Ḥarīrī, had underlined the fact that divine creation takes no time. Only “‘unbelievers’” (kāfirūna) may be tempted to assign a period of time to it. Let us translate this important text:

Then <Aristotle> said – in reason of the negation of the creation of the heavens which is rooted in the heart of the unbelievers, because of what they believe about the period of time pertaining to their creation in reason of the analogy they draw with human acts, since according to them, the most considerable work needs the longest period of human work, so that according to them, the most considerable sensible realization takes place in the longest time – that God, may He be praised, does not need a period of time for His creation, in reason of what he made clear, since he established “‘it’ out of ‘not it’”; so that the one whose ability reached such a point as to produce bodies out of no bodies and to extract being out of not-being, he does not need, since he has the power of producing out of no matter, to produce in time. For since the human act is impossible without matter, the act of the one who does not need matter in order to produce what he produces does not need time.86

It is clear that al-Kindī here rejects the idea that the divine act of creation is some continuous process. Divine creation must be understood as something temporally unextended, exactly like a geometrical point. An instantaneous creation is the direct consequence of God’s instantaneous volition, associated with His omnipotence. To deny this philosophical creed amounts to no less than siding with the unbelievers. Unfortunately, we do not know how al-Kindī managed to reconcile this doctrine with the Aristotelian claim of time’s continuity, ultimately grounded on the isomorphy of time, length and motion.87

According to al-Kindī’s typology, many Aristotelian philosophers are certainly “‘unbelievers’”. There is a strong tendency, exemplified by Ammonius, but already attested in Aristotle, to interpret God’s behaviour as some sort of action on the world.88 It is probable that al-Ḥarīrī accepted this label. But what is action? Here again, we are


confronted with a discussion engaged by Iamblichean neoplatonism against Plotinus. Whereas Plotinus took action and passion to belong to the general category of motion and assimilated motion to some punctual activity, his adversaries did their best to maintain the separation between extended and as such partially unrealized motion and pure activity, which is an instantaneous and perfect state. At an exegetical level, this discussion is rooted in the difficulties, already faced by Alexander, of reconciling two seemingly opposite statements of Aristotle’s *Physics*: whereas at *Physics* I 3, 186a 11–16, Aristotle charges Melissus for not having recognized the possibility of a change “all at once”, he emphatically asserts in Book VI (see esp. VI 4, 234b 10–20) that every change must be progressive. Even if the sources are not as clear as we may wish, it seems that Alexander sided with *Physics* VI, *i.e.* held every motion to be continuous. This at least is the thesis we find attributed to him by some anonymous commentators mentioned by Averroes, and this would allow us to understand better Iamblichus’ strategy in Simplicius’ commentary on the *Categories*. For the idea expressed here that even when some change takes place all at once, like the illumination of some space, it is actually produced by some motion (the *rising* of the sun), is more or less the same as Alexander’s compromise. It is very probable, then, that in order to reply to Plotinus, his neoplatonist successors made use of some Peripatetic distinctions.

That continuity was a crucial feature of motion also for al-Fārābī is attested by an unparalleled testimony in Averroes’ commentary on *Physics* VIII 3, where we are told that al-Fārābī insisted on it at the beginning of his lost book: And since things are as we have said, it is conspicuous that what al-Fārābī has affirmed at the beginning of his book *On Changing Beings*, *i.e.* that in the definition of motion in general appears continuity, is not true.

Unfortunately, Averroes does not spell out the reason why al-Fārābī wanted to make explicit this relation between motion and continuity. It would have been all the more interesting, since we find no hint in this direction in Aristotle’s first chapter. It is possible that al-Fārābī

---

89 See below, n. 92.
91 See Simplicius, *In Cat.* 299.1 sqq.
92 See in part. 308.29–32.
93 Averroes, *In Phys.* 360E.
94 Et cum ita sit sicut narravimus, bene apparret quod illud quod dixit Alfarabius in principio sui libri *De entibus transmutabilitibus*, scilicet quod de definitione motus in uniuersali apparret continuatio, est sermo non verus.
took the reference to Empedocles’ alternating phases of motion and rest as an implicit target, Aristotle’s idea being *a contrario* that it is impossible for motion to be interrupted by periods, or even instants, of rest. If rest does occur, then some other motion is required in order to bring about another motion. In other words, the sequence motion–rest–motion implies at least three (different) motions: the two under consideration, and a third one to initiate the second.

I confess that the texts are not as explicit as one might wish. However, I think that there is at least one text in the genuine corpus which testifies that al-Fārābī, in the *Changing Beings*, was implicitly criticizing al-Kindī’s creationism. It is Averroes again, in the sentence immediately following the one we have just translated, who gives us the decisive clue. After criticizing al-Fārābī for his assumption that continuity primarily belongs to motion,95 he adds:96

And similarly what al-Fārābī says in the *Categories* about the definition of action and passion is not true. For it is plain from the definition put forward there that every action and passion is continuous [. . .].97

Let us open al-Fārābī’s *Kitāb al-Maqūlāt*. The stress laid by him on the notion of continuity appears already in the opening words of the section devoted to passion. Al-Fārābī writes that “passion is the passage of the substance from an item to an item and its change from a thing to a thing; and what proceeds between the two things according to a continuous path (‘ālā al-ittiṣāl), is subject to passion.”98 In the course of his discussion, al-Fārābī insists heavily on the same idea. Let us translate this important text:

And this process can take place from a quality to a quality, as in the case of the body’s passage from blackness to whiteness, which is a whitening, and its passage from coldness to heatness, which is a heating. When it undergoes passion, what was in it at the beginning withdraws from it little by little, and what it is proceeding to takes place in it, little by little and part by part, according to a continuous path, until the process breaks off and stops. And at each time of its passion, the body is at some indeterminate part of what takes place in it and at some indeterminate part of what withdraws from it. For what is heated proceeds to heat little by little, according to a continuous path, one part of heat after another, whereas the parts of coldness withdraw from it one after another. However, we cannot determine, as long as the process persists, which part of heat took place in the body, neither what amount of them took place in it, nor which part of coldness ceased neither which amount of them. For every time you wish to determine a part of heat that took place in it or a part of coldness that

95 See above, p. 50.
96 Averroes, *In Phys. 360F*.
97 Et similiter illud quod dicit Alfarabius in Praedicamentis de definitione eius quos est agere et pati non est verum. Ex illa enim definitione apparat quod omnis actio et passio est continua . . .
ceased, or some amount of them, you find that it is no more at this part nor at this amount. And this happens until the process reaches its end and stops. Only then can you determine which part took place and what amount what was produced in it.\textsuperscript{99}

Al-Farābī could not be more explicit. Every passion is a continuous process. Even if the subject, at each instant of the process, is in some state, the nature of a continuous process makes it impossible to determine its state. The same, of course, must be said for action. Immediately after these lines, al-Farābī says that ‘‘there is no difference between our saying ‘it is subject to passion’, ‘it changes’ and ‘it moves’’’.\textsuperscript{100} That leads him to affirm that the species of passion are identical with the species of motion as Aristotle spells them out in the \textit{Categories} (chap. 14, 15a 13–14):

The species of this genus are the species of motion, \textit{i.e.} generation, corruption, augmentation, diminution, alteration and translation.

Generation is the passage from non-body to the production of body, or from non-substance to the production of substance”. Corruption is the passage from body to the production of non-body, or from substance to the production of non-substance, like the generation and construction of the house little by little, thing after thing and part by part according to a continuous path, until the house is realized [. . .].\textsuperscript{101}

There is not the slightest allusion, in the \textit{Categories}, to the continuity of passion. But the example of the “house” reveals what al-Farābī has in mind: the doctrine of \textit{Physics} VI 6, where Aristotle affirms that all changes – which are to be identified with the motions of the \textit{Categories}, cf. \textit{Physics} III 1, 200b 33–34 – must be continuous, illustrating this by the example of the house.\textsuperscript{102}

Al-Farābī thus adopts a theory of his own, which implies a reorganization of the Aristotelian table of the categories. Superficially, he may seem to mirror the ambiguity, in Arabic philosophical terminology, between \textit{al-fīl} in the sense of \textit{ἐνέργεια} (\textit{bi-al-fīl} = \textit{ἐνέργεια}) and \textit{al-fīl} in the sense of \textit{ποιεῖν} (\textit{al-fīl \textit{wa-al-infīl} = τὸ ποιεῖν καὶ πᾶσι χειν}), and even to side with Plotinus in the old debate of the commentators.\textsuperscript{103} But that is not the whole story: for against Plotinus and with Alexander (and neoplatonic authors who followed him), al-Farābī insists on the fact that every motion is in fact continuous. Concerning the terminological question, al-Farābī is second to nobody in noting possible discrepancies between usual

\textsuperscript{99} \textit{Ibid.}, pp. 113–14.
\textsuperscript{100} \textit{Ibid.}, p. 114.
\textsuperscript{101} \textit{Ibid.}, p. 114.
language—even usual translators’ language—and philosophical significations.

I think that if al-Fārābī decided to reorganize Aristotle’s categories and insisted on the fact that continuity should be considered as the prominent feature of action and passion, it is probably because he was willing to rule out the possibility of an action all at once. In other words, al-Fārābī aimed at purifying Aristotelianism from a heterogeneous concept introduced in order to explain the existence of the world: that of divine creation, or ʿibdā’. We have already seen its central position in the text of al-Kindī translated above. This is confirmed and explained in ʿal-Imṭā’ wa-ʿal-Muʿānasa, where Abū Sulaymān al-Sīḡistānī is asked about the number of species of “motion”.104 He first answers by listing, like Aristotle and al-Fārābī, the six items of the Categories: translation, generation, corruption, augmentation, diminution, alteration. He then adds:

Al-Kindī said: and there is here another motion, i.e. the motion of creation (ḥarakatu ʿal-ʿibdā’). Note that there is between it and the motion of generation a difference, because creation does not take place out of a substrate, whereas the motion of generation occurs by the corruption of some substance which appeared before it. For this reason, it was said that generation is the passage from some low state to some high state.105

Two features of al-Kindī’s description, when compared with al-Fārābī’s text, are striking. The first one, of course, is that he felt the need to add a new kind of motion to the Aristotelian list.106 We know from the text of the Epistle On the Quantity of Aristotle’s Books that God’s first creative act happened all at once in no time, which contradicts the main attribute of motion according to al-Fārābī.

The second feature is that when describing generation, al-Kindī insists on the fact that a substance must come out of a substance, whereas al-Fārābī affirms that “generation is the passage . . . from non-substance to substance”. This necessity, felt by al-Kindī, of distinguishing two types of generation was already felt in Patristic circles of late Antiquity. I have thus drawn attention in a previous paper to a passage in Pseudo-Dionysius taken over by Maximus Confessor where real ʾγένεσις (where something is created out of nothing) is opposed to Aristotelian elementary transformation (τροπή), where for example fire comes to be out of air.107 Al-Fārābī’s

105 Ibid.
106 See also al-Kindī, Epistle on Definitions, p. 190 al-ʿAʾsam: “the creation is the manifestation of the thing out of non-being” (al-ʿibdā’u huwa izḥāru al-ṣayyīʾ an laysa).
Aristotelian puritanism may well be then a response to such ideas upheld by al-Kindī. We do not have to posit another type of motion. Al-Fārābī’s God, unlike al-Kindī’s, falls under the jurisdiction of the Aristotelian continuum.108

CONCLUSION

In conclusion, I would like to return to the passage from Maimonides’ Guide of the Perplexed. The Moderns, he tells us, have adduced new proofs, from God’s nature, to the stock of physical arguments explicitly recognized by Aristotle. It seems to me that this remark, important as it is, misrepresents the whole movement of al-Fārābī’s philosophy. The goal was not to pile up arguments, but to understand the twofold articulation of a unique demonstration: first “upwards” from the effect to the cause, and then “downwards” from the cause to the effect. Only thus, is it possible to reassess, against all the criticisms, Aristotle’s claim of the eternity of the world. And the interpretation of Physics VIII 1 as ascending from partial motions to the eternal motion of the celestial sphere is part and parcel of this general progression. But at another level – this one being perhaps more speculative –, I think that there was a physical proof of eternity according to al-Fārābī, i.e. of the simple fact that motion is eternal.

This proof, specifically directed against al-Kindī, was based on the fact that every action is a continuous motion, i.e. that the idea of an instantaneous creation of the world is self-contradictory. There is no clear evidence that this physical proof was put forward in the treatise On Changing Beings. But it was, so to say, latent in the

108 Let us note that this kind of considerations on the continuum is perhaps not altogether absent from the “synthetic” demonstration of the eternity of the world. Since creation seems to be an action of some sort and action, according to al-Fārābī, is to be assimilated to the bestowal of motion, which is always continuous, we cannot conceive of divine creation as an action in the usual sense. For it is impossible for divine creation to take place in a finite interval of time, because its length would be arbitrary, therefore contradictory to God’s omnipotence. Indeed, for each time-interval we wish to assign to the act of creation, it is legitimate to think that God could have achieved exactly the same result in half the time. And so on ad infinitum. Nor can we suppose that God has created something in a very small time interval, since this interval would be “very small” only for us. As Leibniz accurately notes, it is as if God had wished to hide beyond the threshold of human perception the constraint imposed on Him to create everything in some period of time (see G.W. Leibniz, Pacidius Philalethi [in Philosophische Schriften VL3 (Berlin, 1980)], p. 560, ll. 21-24: “... perinde esset ac si Deus incongruitates quasdam, quas in natura scilicet evitare non poterat, tegere tantum nobis ac dissimulare voluisset, transferendo scilicet illas in minutiora rerum, ubi animadverti non possint”). Therefore, since an instant is per se nothing, emanation must be punctually eternal (or eternally punctual). Emanation implies eternity, it is not conditioned by it. Eternity is not something already given when emanation comes to the fore. Even if this continuity somehow pluralizes divine unity, it is an analytic condition of God’s effusion out of Himself. Averroes was perfectly right in suggesting a close relation between the beginning of the treatise On Changing Beings and the definition of action and passion in al-Fārābī’s Categories.
refutation of Philoponus’ attacks against the Aristotelian notion of
an instant as a mean between the past and the future.

Appendix: the Kitāb al-Ḡam‘ and the 9th Question

In the Kitāb al-Ḡam‘, al-Fārābī seems to favour some kind of
temporal creationism. I translate the most representative
passage:

And what has led <the people according to whom Aristotle thinks that the
world is eternal> to this opinion is also what he has mentioned in the book
On the Heavens and the World, i.e. that the All does not have a temporal
beginning. According to that, they have the opinion that he upholds the
eternity of the world. But this is not so, since he has already shown, in this
book and in other physical and theological books as well, that time is
nothing else but the number of the celestial sphere’s motion and that it
proceeds from it. And what proceeds from a thing does not comprehend this
thing. The meaning of his saying that the world does not have a temporal
beginning is that the world is not generated little by little with its parts, in
the way plants or animals, for example, are generated. For what is
generated little by little with its parts is such that its parts are prior to one
another according to time. But time proceeds from the celestial sphere’s
motion, so that it is absurd to attribute to the latter’s own proceeding a
temporal beginning. Hence it is plain that <the celestial sphere> comes to
be by its creation ex nihilo from the part of the Creator – may He be
magnified –, occurring all at once, without time, and that it is from its
motion that time proceeds.109

The author explains that it is an error to ascribe to Aristotle the view
that the world is eternal. Aristotle has only shown, in the De caelo,
that its beginning occurs all at once. It is not a natural, continuous
process, but a timeless initiation. The underlying idea is of course
that the temporal length between today and the first instant of the
world is finite. It consists in a finite amount of time units.110 Such a
view is an expression of the difficulty we have stressed above: if time
proceeds from motion, it appears hopeless to try to settle the question
of the being-in-time of the world: if the world is eternal, so is time;
if the world is non-eternal, so is time. Nothing can allow us to
infer something about the eternity of the world from our mere
apprehension of time.

However, the solution of the Ḥam‘ deeply contradicts some
obviously genuine passages of al-Fārābī on the question of eternity a
parte ante. We have seen above how he rebuked Galen in his

109 Ḥam‘, §55, pp. 128–9 Najjar-Mallet.
110 It goes without saying that if this text adequately represents al-Fārābī’s view on the
question, the whole enterprise of the treatise On Changing Beings must be interpreted as
merely exegetical (exactly as if one of our contemporaries commented upon the same
passage of the Physics).
commentary on the *Topics*. My entire interpretation of the Treatise *On Changing Beings* rested on the impossibility that any motion be punctual. That was the crucial argument which, according to me, led to the conclusion that the celestial motion is eternal. Given this evidence, it seems impossible that al-Fārābī would have implied, even in an exoteric piece of writing, that the period of time during which there have been some celestial bodies is finite and, above all, that some action can occur “all at once in no time”. But this is exactly what the author of the *Gamʿ* does. Even if al-Fārābī had tried to present as harmonious the views of Plato and Aristotle on the subject, he would have said, rather, that the creation of the world is taking place perpetually, and not that divine creation, being instantaneous, implies the non eternity of the world, which is an obvious *non sequitur*.

The text of the *Gamʿ*, however, is not the only one to ascribe to al-Fārābī the denial of the infinity of time. The answer to the ninth Question seems also to entail temporal finitism. Let us translate this text:

– He was asked about the world: is it subject to generation and corruption, or not? And if it is subject to generation and corruption, are its generation and corruption similar to the other bodies’ generation and corruption? Or is it of some other kind, and if so how? – He said: generation, in fact, is a composition of some sort or similar to composition; and the corruption is a dissolution of some sort or similar to dissolution. And if one were to say, instead of “composition” and “dissolution”, “association” and “dissociation”, this would be licit as well. For everything, then, whose composition takes place out of more numerous parts, the time of its composition is longer; and everything whose dissolution takes place out of more numerous parts, the time of its dissolution is longer. And for each one of these processes, when the parts of the thing are less numerous, the time required by its composition and dissolution is shorter. The least number of things which can be affected by composition and dissolution is two, since the thing which is one is not subject to composition and dissolution. Moreover, composition and dissolution can happen only in time; and time has a beginning, which is the pure “now”; and the beginning of the thing is different from the thing. Then, the composition and the dissolution which happen to two things take place in the pure “now” and those which happen to things more numerous than two take place in time. And the length and shortness of this time is in accordance with the multitude and the paucity of these things. The things in the world, such as animals, plants etc., are always composed out of things more numerous than two. Therefore, their generation and corruption due to the multitude which is in their parts and elements take place in time. But the whole world, according to the truth, is composed out of two things, its proper matter and form. Thus, its generation takes place all at once without time, according to what we have shown, and

111 A project which he did not share, see M. Mahdi’s introduction in *Alfarabi: Philosophy of Plato and Aristotle*, pp. 3–10.
similarly its corruption. It is clear, then, that everything that is subject to generation must be subject to corruption. And we have shown that the world in its entirety is subject to generation and corruption and its generation and corruption do not take place in time. But the parts of the world are subject to generation and corruption and their generation and corruption take place in time. God, may He be praised and exalted, is the one who has given the world its existence, He is the true One, Creator of the universe, unaffected by generation and corruption.  

It seems very unlikely that this text is a faithful testimony of al-Fārābī’s views on the eternity of the world. This is not just because it is introduced by the verb qāla, “he said”, which reflects a redactor’s intervention. The whole argument seems un-Farabian: its crypto-atomism, as well as its willingness to ascribe to the world as a whole one form and one matter, are probably too scholastic to be attributed to the Second Master. Moreover, the argument that the time required by a process of composition / dissolution is proportional to the number of parts is problematic, to say the least: for which reason isn’t it possible for a plurality of associations linking together the parts of some physical object to be created or destroyed simultaneously? However, it is interesting to note that its sphere of argumentation more or less coincides with the passage already quoted from the Gam’. In both cases, the author tries to explain that the fact that the world is not generated like other beings does not amount to saying that it is eternal, but only that its ”punctual” generation bears some very peculiar features: for both authors, it occurs “all at once”, i.e. ”not in time”. The solution given in the Question appears to be nothing but a (scholastic) elaboration on the doctrine expressed in the Gam’.

J. Lameer has supposed that the Gam’ and the Questions were not genuine. I cannot enter here into the many details of his argumentation, which I find entirely convincing. I shall only stress that the two cases are rather different, according to Lameer. Whereas he considers that the Gam’ has nothing to do with al-Fārābī, he takes the Questions to include a great deal of Farabian material compiled by some later scholar or group of scholars. Our own reflections fit pretty well with this reconstruction. In all likelihood, the compiler of the answer to Question 9, by drawing from the Gam’, thought that he was excerpting an authentic work of al-Fārābī. In doing so, he sided

113 Cf. Lameer, Al-Fārābī and Aristotelian Syllogistics, p. 26. This was also the conviction of R. Walzer, “The rise of Islamic philosophy”. Oriens, 3 (1950): 1–19, esp. p. 16.
115 On the neoplatonizing antecedents, see Mallet-Najjar, L’harmonie, p. 177, n. 4.
117 But see above, n. 110.
with one of the four ancient lists of al-Fārābī’s writings,\textsuperscript{118} with some manuscripts still at our disposal (but not the most authoritative witness from Diyar Bakr)\textsuperscript{119} and, above all, with Avicenna, who in his \textit{Answers} to al-Birūnī’s \textit{Questions} unequivocally presents as belonging to “‘Abū Naṣr al-Fārābī’s Kitāb al-Ǧamʿ bayna raʿyay al-Hakīnayn”\textsuperscript{120} a thesis actually to be found in the existing treatise.\textsuperscript{121}

In conclusion, I must express serious doubts as to the authenticity of the \textit{Ǧamʿ}. If taken as genuine, its doctrine would contradict not only what appears to have been the very subject of the \textit{Changing Beings}, but also two important passages from al-Fārābī’s logical corpus. True, my position may seem weakened by the fact that I am obliged to excise a line in the summary of the \textit{Sophistical Refutations} which affirms (in a very Kindian way) the non eternity of the world – but I think that apart from doctrinal considerations, the close parallel in the \textit{Qīyās} speaks in favour of that choice.

\textsuperscript{118} The title appears only in the list transmitted by al-Qīṭī, under the slightly different form (\textit{Fi ittiḥāqi ard‘i Aristā Vallisa ʿwa-Afliʿahun}); in Ibn Abī Ṣaybi‘a, we find \textit{Fi ittiḥāqi ard‘i Abuqrāṭa ʿwa-Afliʿahun} (see Steinschneider, p. 133 and the list p. 217 [no 49]). The title is absent from the list preserved in MS Esc. 884 (Casiri 879, ed. in Steinschneider, pp. 214–20) and from the list of Ibn al-Murahhīm I shall publish in the next issue of this Journal.

\textsuperscript{119} See Mallet-Najjar, \textit{L’harmonie}, p. 45.


\textsuperscript{121} Cf. \textit{Ǧamʿ}, §§35–41.