

BOOK II OF THE GUIDE: MAIMONIDES' INTRODUCTION: The Twenty-Six Propositions of Aristotelian Science

Preface: What Drove Maimonides to the Study of Aristotelian Philosophy?

“Rava said: all that Ezekiel saw, Isaiah saw. To what may Ezekiel be compared? To a villager who saw the King. To what may Isaiah be compared? To a city dweller who saw the King.” Talmud, *Hagiga* 13b.

Ezekiel and Isaiah both were granted the vision of the divine chariot, the *Merkava*. Ezekiel's prophetic vision was longer and more detailed than the vision of Isaiah. The rabbis explained that Ezekiel wrote like someone who lived in the country, amazed at what he saw. Isaiah, however, arrived at this revelation as an urban sophisticate, someone who had seen a great many things in heaven and earth, who could portray his vision in a few deft strokes.

This is something like the different ways that Rabbi Yehuda ha-Levi and Maimonides portrayed our conviction of the truth of the revelation of the Torah, and why we should accept that revelation. R. ha-Levi emphasized our clear chain of evidence for the truth of the revelation at Sinai, since 600,000 Jews saw it with their own eyes, and retold it over generations. Maimonides took a different approach, based on the precept of prophecy.

Kalām Creationism versus Aristotelian Eternalism

As we saw in the Kalām chapters (Guide 1:71, 1:73 – 1:76), Maimonides established four bedrock principles of any religion worthy of the name, which any religious person must subscribe to in mind and heart. They were, *in order of importance*:

- The existence of God,
- His unity,
- His incorporeality, and
- His creation of the universe from nothing.

Maimonides' rejected the doctrine of the Kalām Muslim theologians, as well as the “Jewish” Kalām of rabbis Saadia Gaon and Bahya Ibn Pakuda, because they reversed this order. They put creation first. They thought that they could only prove the existence of God by first proving the creation of the universe: given creation, there must be a Creator. However, as we saw in Guide 1:74, since there is no lock-tight proof of creation, their method left the existence of God in the lurch. By basing God on the world, they premised the higher in terms of the lower. This undermined belief in God. But without belief in the existence of God there is no prophecy, no revelation, and no religion.

Maimonides thought that their situation was even worse. The believer who has the wrong idea of God really has no idea of God at all. He is not just wrong about God, but is completely ignorant of God, and unconscious of his own ignorance. Thus, Maimonides says, in a slightly different context, but also about the Kalām:

“I do not merely declare that he who affirms attributes of God has not sufficient knowledge concerning the Creator,...: *but I say that he unconsciously loses his belief in God,*” *hu shalal et mtziut ha-eloa mtokh emunato m'bli l'havkhin b'kakh* (Guide 1:60, Heb. trans.: Schwarz).

The mistaken believer is really an unconscious atheist. Bad belief drives out the good.

Aristotle, on the other hand, was driven to the existence of God by his recognition that all things are in motion. It followed that there must be an unmoved mover ultimately responsible for the continuation of all causal chains leading to those motions. But while the Aristotelians accepted the first three principles of religion, their rejection of that fourth principle, creation *ex nihilo*, destroyed belief in divine transcendence. Only a transcendent God, a God outside of and apart from the universe, could have created it from nothing.

Of these two dangers, the Kalām's basing God's existence on the creation of the world, and philosophy's rejection of divine creative transcendence, Maimonides recognized that the Kalām's danger was worse. There was no coming back if you undermined the existence of God.

He could, however, respond to the philosophers' claim that the world is uncreated and eternal, by noting that creationism and eternalism were both unprovable. But he saw that while they did not accept God's creation of the world, they at least accepted the existence of God, the most important requirement of religion.

Maimonides was able to show that the first three *desiderata* of all religions, divine existence, unity, and incorporeality, could be proved in ways satisfactory to both Jerusalem and Athens, as well as to both the creationists and the eternalists.

Thus, if the creationists were right, then there must have been a Creator, since the universe could not have created itself. If the eternalists were right, there must be a supreme unmoved Mover of the unceasing motion of their eternal universe. In either case, God must exist.

Creationism or Eternalism?

Still, the problem remained: creationism and eternalism were both unprovable, though the creationists and the eternalists could marshal very persuasive arguments for their claims.

But if conviction of the truth of God's creation really was the fourth requirement of religion, as Maimonides insisted, wouldn't the nearly equal persuasiveness of arguments on both sides make it impossible for any believer to truly accept all four bedrock doctrines of religion? Wouldn't that make them heretics, or, worse, unconscious atheists?

This was the problem that drove Maimonides to his study of Aristotelian philosophy. That was why he developed his system of twenty-six Aristotelian Propositions. He used them to establish the truth of the first three doctrines of religion, asserting that the first twenty-five Propositions were based on the real world using evidence available to anyone.

But the twenty-sixth Proposition, the one that made this structure hang together in the eyes of the philosophers, was their belief that the world was eternal and could not have been created. Thus their famous motto: *ex nihilo nihil fit*, “from nothing, nothing comes.” Judaism could never accept this doctrine.

The Significance of Prophecy

Maimonides realized that he had one critically important card left to play. The Athenian philosophers, Aristotle, Plato, and Socrates, apparently believed in prophecy. Indeed, the story of Platonic philosophy

begins when Socrates heard the prophecy that changed his life. The question was put to the famous Oracle of Delphi:

“‘Is anyone wiser than Socrates?’ And the Pythian priestess answered, ‘No one.’”

Socrates responded:

“Well, I was fully aware that I knew absolutely nothing. So what could the god mean? for gods cannot tell lies. For some time, I was frankly puzzled to get at his meaning; but at last I embarked on my quest. I went to a man with a high reputation for wisdom – I would rather not mention his name; he was one of the politicians – and after some talk together it began to dawn on me that, wise as everyone thought him and wise as he thought himself, he was not really wise at all. I tried to point this out to him, but then he turned nasty, and so did others who were listening. So I went away, but with this reflection that anyhow I was wiser than this man; for, though in all probability neither of us knows anything, he thought he did when he did not, whereas I neither knew anything nor imagined I did.” (Plato, *Apology* 21a-d, trans. D.F. Nevill)

Socrates questioned the politician, but not the prophetess. He accepted the prophetic pronouncement, although he struggled to understand it. Maimonides believed that the Athenian philosophers were committed pagan believers for whom prophecy was a reliable source of human knowledge.

(See Guide 2:32; note, however, that Maimonides lived in a Muslim philosophical environment which largely failed to register Aristotle’s critical view of prophecy. That tradition strongly supported the value of prophecy, which is central to Islam).

Since divinely inspired prophecy seemed to be recognized as a source of true knowledge, Maimonides, in the words of his early commentator R. Shem Tov, was able to call upon prophetic wisdom as a “third-party” to decide the perfectly balanced question upon which religion depended, the question of creation.

The reason that Maimonides could do this was that he had already determined what prophecy was, and which alleged prophets were true prophets:

“Not everyone who performs signs or wonders should be accepted as a prophet: only a person who is known to be fit for prophecy beforehand, i.e., his wisdom and his [good] deeds surpass those of all his contemporaries. If he follows the paths of prophecy in holiness, separating himself from worldly matters, and afterwards performs a sign or wonder and states that he was sent by God, it is a commandment to listen to him, as [Deuteronomy 18:15] states: *Listen to him.*” Mishneh Torah, *Ysodei ha-Tora*, 7:7, Touger trans.

However, at 8:3 Maimonides warns: “If a prophet arises and attempts to dispute Moses’ prophecy by performing great signs and wonders, we should not listen to him....Therefore, how could any wonder [cause us to] accept this [person] who comes to deny the prophecy of Moses which we saw and heard?”

Thus, an authentic and authenticated prophet could be the deciding “third-party,” and we should “Listen to him.” Could a prophet tip the scales toward the creationists and complete the argument for our conviction of the four necessary requirements of religion?

This is the way R. Shem Tov explains Maimonides’ turn to the study of Aristotelianism, but also his turn to the discussion of prophecy:

“And after this Maimonides goes on to discuss prophecy: what it is, its excellencies, its stages, and the fact that the Aristotelian philosophers believed in prophecy, despite *their* disagreement over whether the world was created (as it truly was) or eternal. *It is improper to doubt prophecy*. This is the whole point of the Second Volume of the Guide: prophecy must exist in order that that we will not be left in doubt over the question of creationism or eternalism. Were we to doubt prophecy, the entire Torah would topple.

“But Maimonides had already announced the possibility that philosophers would believe the results of prophecy despite their rejection of the truth of creation *ex nihilo*. And so, again, *it is improper to doubt prophecy*.

“This is the intention of the Second Volume of the Guide: to establish the truth of the [first] three requirements of religion, irrespective of whether the universe is created or eternal, but also to show that the philosophers had no logically demonstrable proof for eternalism, only strong arguments. (Guide 2:15 - 16).

“For we creationists have powerful arguments no less than they have. Therefore, Maimonides explained that the prophets can be a *third-party* to decide between creationism and eternalism, and that it is proper to accept *their* revelation [of the truth of creation *ex nihilo*].

“After this Maimonides writes that the universe is eternal *a parte post* (i.e., going forward), together with his explanation of *Maaseh Bereshit* [the account of the mystery of creation]. But the explanation of prophecy is the principal motivation for this Second Book of the Guide, despite that he also has chapters devoted to *Maaseh Bereshit*, as I will explain when we arrive to those chapters, with the help of God.” (R. Shem Tov to Guide II:Introduction, v.2, 1a, lines 36-50, my trans.)

This prophet could be R. Shem Tov’s “third-party.” The power of prophetic evidence is such that we must accept the direction of the prophet *al pi halakha*, as a command of the Torah, since, as [Deuteronomy 18:15] states: “*Listen to him.*” One prophet was enough, especially when that revelation came from the greatest prophet, Moses. This despite R. Yehuda ha-Levi’s multitude of witnesses at Sinai, who were as astonished by that revelation as the prophet Ezekiel was at the vision of the *Maaseh Merkava*.

R. Yehuda ha-Levi comes to many positions that resemble those of Maimonides, although he expresses them in a completely different fashion. However, he had doubts, and sought a strong source of evidence to resolve them. Regarding the core issue, he expressed those doubts:

“The question of eternity and creation is obscure, whilst the arguments are evenly balanced. The theory of creation derives greater weight from the prophetic tradition of Adam, Noah, and Moses, which is more deserving of credence than mere speculation. *[But] if, after all, a believer in the Law finds himself compelled to admit an eternal [hylic] matter and the existence of many worlds prior to this one*, this would not impair his belief that this universe was created at a certain epoch, and that Adam and Noah were the first human beings.” (*Kuzari*, Hartwig Hirschfeld trans., Schocken 1971, p. 54, 1:67).

Thus, even though Moses, the best of the true prophets, revealed through the Torah that the world was created from nothing, for ha-Levi, the believer could still justifiably retain doubt. R. ha-Levi continues:

“Although the people believed in the message of Moses, they retained, even after the performance of the miracles, some *doubt* as to whether God really spake to mortals, and whether the Law was not of

human origin, and only later supported by divine inspiration... God, however, desired to remove this doubt..." (p. 60, 1:87).

The doubt was removed, according to R. ha-Levi, by the mass witness of the Jewish people at Sinai.

Maimonides shows that only one witness was necessary, the witness of the true prophet, *Moshe Rabbeinu*. Anyone who needed more proof clearly did not "*Listen to him.*"

Why Did Maimonides Write His Twenty-six Propositions of Aristotelian science?

When I once told a great teacher about this project of explaining Maimonides' Guide of the Perplexed, he said that I would not have succeeded unless I could explain Maimonides' famous twenty-six Aristotelian Propositions which introduce Book II of the Guide.

Having already dispatched his Kalām opponents in the last several chapters of Book I of the Guide, Maimonides now turns to show how the first three bedrock requirements of religion could be proven from Aristotle's philosophy, while we could justifiably reject Aristotle's core doctrine of eternalism.

To make this case succinctly and summarily, and to spare his readers from years learning the intricate arguments of Aristotle and his successors, Maimonides compressed that doctrine into his twenty-six Aristotelian Propositions. He tells us that we should be confident that these Propositions truly represent the Aristotelian arguments for the existence, unity, and incorporeality of God. He means by this that he had accurately articulated them, just as he had accurately articulated Kalām theology in the Twelve Kalām Propositions of Guide 1:73, and faithfully articulated the oral and written law of Judaism in the Mishneh Torah.

But Maimonides went further than that. At least for the first twenty-five of those twenty-six Propositions, we are to accept his say-so that they were all proven beyond doubt. Only the last of those Propositions, by which Aristotle affirmed the eternity of the uncreated universe, does Maimonides hold to be unproven.

The creation of this remarkable structure of twenty-six Propositions is a *tour de force*, one of the greatest of Maimonides' career. If the entire subsequent history of Jewish philosophy and theology is a series of footnotes to the Guide of the Perplexed, most of those footnotes would be concentrated in this chapter.

To destroy the arguments of an opponent, one must first state them clearly. Only then would you have a justified basis to attack them. In subsequent chapters, Maimonides will use these Propositions to sustain his first three requirements of religion. He will then turn against the philosophers' rejection of God's creation of the universe.

Maimonides would assume that you, like any good medieval student, will have memorized these Propositions, so that he could call them out by *number* when he makes those arguments. Modern students, fortunately, can print these out or review them online in the Friedländer translation. I will restate them when we come to them in my own words.

R. Hasdai Crescas 'Explains.' When we first confront these twenty-six statements, no one of which is longer than a few of lines, they seem daunting. It's one thing to memorize them, but rote memorization would not reveal the thousand plus years of their development. That is why we will pay attention to Rabbi Hasdai

Crescas (1340-1410), who pulled back the curtain in his *Or Adonai*. (For access to that work we owe a debt of gratitude to Harry Austryn Wolfson's critical edition, translation and illumination, *Crescas' Critique of Aristotle*, Harvard, 1929, available in the *Links* section of my website *maimonides-guide.com*).

Like Maimonides, R. Crescas also wanted to destroy the argument of the philosophers, but in a more thoroughgoing way. He used Maimonides' Propositions as the means to confront Aristotle and his later commentators. Crescas locates and summarizes the vast argumentative structure underlying each one of Maimonides' Propositions, the better to dissect them. Crescas was not interested in establishing a new system, but only in destroying the physical and cosmological worldview that had reigned supreme for over a millennium.

What drove R. Crescas to his acts of demolition? Crescas' *Or Adonai* represents the most sophisticated version of the rabbinic reaction against the Guide. He was only the latest of a succession of the Guide's rabbinic opponents who reacted against philosophy, sometimes violently, in what came to be known historically as the "Maimonidean Controversy."

(The reader can quickly get a sense of this historical moment from Rabbi Dr. José Faur's essay "Anti-Maimonidean Demons," *Review of Rabbinic Judaism* 6:1, 2003, on my website *Links* page. The essay is one-sided and provocative, but just for that reason, clarifying. For balance, see Daniel J. Silver's *Maimonidean Criticism and the Maimonidean Controversy*, Brill, 1965; and materials collected in Fred Rosner's translation of Avraham Maimonides' *Wars of the Lord*, Haifa, 2000).

As we journey through these Propositions, the perceptive reader should notice that each one of them is itself a small proof for the existence of God. Some of them go well beyond the words of Aristotle, picking up contemporary developments in medieval thought. In Guide 2:1, the next chapter, Maimonides will combine these notes together in a grand symphonic coda which compels mind and heart to embrace the conviction of the first three truths of all religions: God, divine unity, and incorporeality.

The animating idea behind the Propositions is that the universe gives evidence, available to anybody, that there must be one incorporeal God keeping everything going, who is the necessary and sufficient reason for the continued existence of everything.

THE TWENTY-SIX ARISTOTELIAN PROPOSITIONS

Although R. Crescas will not be the focus of this study, I will briefly recount the most important of the Aristotelian arguments that he outlined, and a few of Crescas' attempted refutations. We will see how they fit into the subsequent history of physics and astronomy. I will also explain why I think that, in most respects, Maimonides ends up getting the better of those arguments.

I will also emphasize the ways that Maimonides will employ these Propositions in his grand proof for divine existence, unity, and incorporeality in the next chapter, Guide 2:1.

To address the Propositions, I divide the first twenty-five into six conceptual groups (following R. Yehuda Even-Shmuel's division). The last Proposition is the one that Maimonides only accepted tactically. They are:

- A. The *Infinity Propositions*, I – III;
- B. The *Motion Propositions*, IV – IX;
- C. The *Force Propositions*, X – XII;
- D. The *Propositions of Continuity and Discontinuity*, XIII – XVI;
- E. The *Causation Propositions*, XVII – XX; and
- F. The *Propositions of Form and Matter*, XXI – XXV.
- G. *Eternalism, Proposition XXVI*: Where Maimonides introduces the great debate.

☛ *Guidance for the reader*: The following explanatory material is unavoidably complex, but it is the necessary background concealed by Maimonides' textual summarizations. Readers should study each of these seven groups *separately*, not in one sitting, and frequently review this material. Doing so will reinforce their grasp of the meaning of the Propositions and deepen their comprehension of Maimonides' strategy. The force of these Propositions will become evident in the way he uses them in the following chapters. The reader should also understand that Maimonides' commentators and interpreters have fought over nearly every word of these Propositions. In this analysis, I will address an identical set of four questions regarding each Proposition: 1) *How will Maimonides use the Proposition?* 2) *Why does he think that the Proposition is true?* 3) *What is the problem with the Proposition?* And 4) *How should we resolve that problem?*

Introduction to the Infinity Propositions: Propositions I-III

Aristotle taught that the infinite is *unknowable*, whether it is an infinite number, an infinite magnitude, or an infinite variety of forms or principles. Things *composed* of infinities are also unknowable. "The point is that knowledge of a compound is taken to depend on knowing what things, and how many things, it is composed of." (Aristotle, *Physics*, 1:4:187b 7–12). Those things must be finite for us to understand them. Reflecting on the deeper meaning of this, Rabbi Dr. Yehuda Even-Shmuel wrote:

"Aristotle taught that the infinite is not subject to understanding, for if our world were infinite, we could never know anything about it. If there is a science of the world as a whole, it must acknowledge the finitude of the world. Maimonides was right to commence his presentation of the Aristotelian system with the problem presented by this hypothesis of infinity." (R. Even-Shmuel's *Introduction* to Book II of the Guide, p. 70, my translation.)

Are we really committed to learning about our world? That commitment requires that we assume that it is something we *can* learn about. Otherwise, if we assume that it is infinite, our science cannot be optimistic. It follows, for Maimonides, that our inquiry must assume the finitude of the world, restricting whatever infinite there may be to a well-defined class of unknowable things. (On the infinite, generally, and on why the ancients tended to reject the notion of infinity, see my explanations at Guide 1:73 and 1:74).

PROPOSITION I: *The existence of an infinite magnitude is impossible.* (☛ My versions of these Propositions draw on multiple sources, guided by the desire to make them readable and accessible.)

How will Maimonides use Proposition I? In the next chapter he uses the Infinity Propositions to show that:
(Prop. I) Since the celestial bodies are corporeal, they could not be infinite;
(Prop. II) There must be a finite number of celestial bodies in the causal chain leading to earthly motion; and,
(Prop. III) No causal series could go on *ad infinitum*. Being finite, the chain must commence with a First Mover responsible for all those motions. This mover must be God.

Why does Maimonides think that this Proposition is true? What does the word “infinite” mean? If there is an infinite it must be something which is *capable* of being finite. In other words, whenever we talk about the infinite we are talking about an extension or magnitude which could, in principle, be *measured*, but which is, nonetheless, infinite. With this definition we eliminate certain common metaphorical uses, like “my love for you is infinite but my patience is not” – love and patience are not measurable magnitudes, since no emotion can be quantified. One consequence of this definition is that unquantifiable incorporeal entities, like minds or souls, could not be properly be called “infinite.”

An infinite magnitude is impossible. An actual infinite magnitude cannot exist in this system, for any magnitude must have 1) *boundaries*, i.e. a definite figure, 2) *weight*, in the sense of gravity or levity, or it must have 3) a *spherical figure*, in which case it 4) *revolves about its center*, and, finally, in either case, it must be 5) *surrounded* by exterior perceptible objects to which it is moved by attraction or repulsion. No infinite magnitude could satisfy those requirements, since all of these conditions imply limits, and an infinite would, by definition, be unlimited.

An infinite must be in place. Every physical thing must, in the Aristotelian system, occupy a *place*, defined as the *surrounding, equal, and separate* limit of the surrounded body: equal to the body surrounded, but separate from it. An infinite could have no such limited place. An infinite could also never be measured since there would be no limit to its measurement. It could not be measured because, as we showed in Guide 1:69, *an infinite cannot be traversed*.

An actual infinite body could never move in any direction. That is because it would always rest in its infinite place, if it could conceivably have such a place. The whole or any part of its homogenous body would always have to occupy its “proper” place. But, if that were so, the infinite would take up *all* places, and could not move. But this would be absurd, since we see that everything in our world moves. Therefore, we must reject the existence of an actual infinite.

Is there a problem with this Proposition? R. Crescas agreed that there could be no infinite magnitude *in our world*. Instead, he proposed that outer space could be an infinite *vacuum*, moving in *random* rotation. Crescas further proposed that an infinite magnitude could be measurable and traversable, to some extent, since he viewed the infinite as *indefinite*. Crescas argued that when we really think of an infinite, we think of it as being *indefinite, undefined, potential, provisional and partial*. His critics argued that this redefinition of the term “infinite” was pure fantasy (Shem Tov).

How should we resolve this problem? With respect to Crescas’ outer space vacuum, the truth is that no real vacuum has ever been observed nor will likely ever be observed. Maimonides had rejected the existence of any vacuum in Guide 1:71-76, especially in 1:73 Proposition II. Crescas’ concept of an infinite universe, whether a vacuum or a plenum, also falls before Newton’s Second Law of Thermodynamics, which expects an entropic limit to any imagined infinite expansion of the universe. All God’s creations are finite.

PROPOSITION II: *The coexistence of an infinite number of actual finite magnitudes is impossible.*

How will Maimonides use Proposition II? Propositions II and III assert the impossibility of an infinite number of *actual* (as opposed to potential) beings in *simultaneous* existence. Proposition II is about multiple *corporeal* beings, while Proposition III is about multiple *incorporeal* beings. Maimonides used Proposition II in Guide 2:1, the next chapter, to show that only a finite number of celestial bodies could exist in the causal chain leading to motion on earth. This demonstration leads to the proof of the existence of God at the commencement of that finite chain.

Why does Maimonides think that this Proposition is true? There are three reasons why an *infinite number of finite magnitudes is impossible*:

- 1) Numerables are always finite, in that they compose a numerable set. In other words, if you were to say that there were an actual infinite number, it would be as though you had said: “I have completely *counted* that which is infinite and have come to the end of it, despite its being infinite.” Such a statement is absurd. (R. Avraham Ibn Daud, quoted in Wolfson, *Crescas* 476).
- 2) Any set of numbers must be divisible into odd and even, but a set of infinite numbers could never be divided into odd or even.
- 3) A numerable infinite series in actual existence would have no end, but *anything that has a beginning must have an end, and vice versa*. On this logic, since we are always looking at the latest member of such a causal progression, like the last falling domino in a row, and since we are aware of that last occurrence, then there must have been a first occurrence: the first domino. But that would make the chain finite. Since we see that there is a last member, there must have been a first, and therefore no causal chain is infinite.

Is there a problem with this Proposition? *The Accidental and Potential Infinities*. The language of Proposition II serves to clarify that there could indeed be certain types of infinities: those that are 1) *not* in actual existence, 2) *not* numerable, 3) *nor* simultaneously coexisting. Maimonides had two types of possible infinities in mind, called the “accidental infinite” and the “potential infinite.”

I discussed those types of allowable infinities in Guide 1:74, under “Kalām Arguments Against the Successive Infinite.” We saw there how the Muslim Kalām theologians wrongly used the notion of the *untraversability* of infinite causal chains to assert the absurdity of *any* infinite. But there were, in fact, several types of *non-causal* infinite multitudes which Maimonides and the Aristotelians accepted as being possible infinities.

With the “*potential*” infinite, for instance, were it not for your mortality you could keep dividing a line forever. That is why it is only a “potentially” infinite division: you could never live to complete it. Another was the so-called “*accidental*” infinite. This term described *successions* of accidents in matter. It could refer to the succession of *forms* in matter, the succession of *moments* in time, the succession of *accidents* occurring to a substance (like change of *hair* color), the succession of human or animal *generations*, and the successive *rotations* of the finite spheres. These successive actions could conceivably go on forever.

The Kalām, however, made no distinction between causal chains and non-causal successions, declaring all of them to be absurd impossibilities.

How should we resolve this problem? Both the potential and the accidental infinities are *non-causal* successions. Such non-causal successions need not be traversed. They could, according to Maimonides and Aristotle, conceivably go on forever. And this is really what we see. Maimonides intended that Proposition II would only disallow *causal successions in actual existence*.

PROPOSITION III: *The existence of an infinite number of causes and effects is impossible, even if they were not [corporeal] magnitudes: if, e.g., one Intelligence were the cause of a second, the second the cause of a third, the third the cause of a fourth, etc., the series could not be continued ad infinitum.*

How will Maimonides use Proposition III? Maimonides used Proposition III in Guide 2:1 to show that a causal series with non-corporeal members, for example, angels, could not go on *ad infinitum*. Being finite, the chain must commence with an actual mover ultimately responsible for all those motions. He then shows that this mover must be God.

Why does Maimonides think that this Proposition is true? Proposition III is about an array of *incorporeal* beings, despite that Maimonides has phrased it in terms of “an infinite number of causes and effects.” He quickly clarifies that these are not the normal numerable things that we spoke of in the last two Propositions. Instead, the example he gives is about causation involving a set or array of higher intelligences.

Maimonides calls here upon the history of Neoplatonic philosophy, with its view of the way the Platonic ideal of the Good manifests itself through creation. The basic idea was that the Good cannot help but shed its goodness upon all things, the way the sun sheds its light on all creation, or a fountain necessarily pours forth its life-giving waters. Oversimplified, and viewed schematically, the first emanated *Idea* reflects upon itself, and in that very act of self-reflection creates another Idea together with a celestial sphere as its material objectification and reflection. The second Idea goes through a similar process of reflection to create a third Idea and sphere. In the Avicennan version that Maimonides was familiar with, this “emanation” ultimately creates an array of ten minds and ten spheres. It stops at ten 1) because the world is finite, 2) because of our observational experience of the existence of ten planetary bodies, and 3) because an infinite causal chain is untraversable. (A brief clear account is *Stanford Encyclopedia of Philosophy*, online, “Avicenna’s Metaphysics,” 5:4. Avicenna was the Latinized name of the philosopher Ibn Sina: c. 980 – 1037). Although Maimonides was familiar with Avicenna’s emanatory system, and sometimes refers to it with the name of “emanation,” he never entirely commits to it. In any event, Proposition III clearly rejects any *infinite* array of such ideas, minds, souls, angels, or any other incorporeal entities, though it would allow a limited causal chain of ten (or some other real number) of them.

Is there a problem with this Proposition? *The Infinite Array of Departed Souls.* This position was tested by a famous problem advanced by Avicenna (980-1037) and Al-Ghazali (1058-1111). The problem became a part of the Kalām argument against the Aristotelians’ eternal uncreated universe. They posit that the soul of every individual remains in existence after that person’s demise. If the universe were eternal, an infinite number of people would have died, though their disembodied souls would remain in existence eternally and simultaneously. The Kalām argued that since an infinite number of numerable entities could not exist simultaneously, the existence of such an infinite set would be absurd, and, therefore, the universe must have been created (Wolfson, *Kalam*, 452-455).

How should we resolve this problem? Maimonides’ reaction to this speculation was to regard it as pure fantasy. How could we know anything about the existence of disembodied souls? Could they even be numbered? Maimonides cited the Muslim philosopher Ibn Bājja (d. 1138) who controversially argued that all incorporeal entities must form a single non-numerical unity, since *numerability is an attribute of physical bodies only* (See my note on him, Guide 1:74). Maimonides’ actual view regarding the numerability of souls is debatable, but the better reading is that he thought this speculation to be beyond our abilities. Can souls be differentiated? Souls could be distinguished, according to him, as causes and effects of each other. Also, the intellectual acquisitions and virtues acquired over a lifetime could distinguish excellent souls. We discuss this problem further under Proposition XIV.

B. THE MOTION PROPOSITIONS (IV – IX)

PROPOSITION IV, Change: *There are four categories of change: substantial change is the creation and destruction of new substances; quantitative change is the growth or diminution of existing substances; qualitative change alters the characteristics of existing substances; and change of place is from one location to another. The term "motion" usually specifies change of place but can be used for all changes.*

How will Maimonides use Proposition IV? In Guide 2:1, Proposition IV will be used to show that the action that is keeping everything in our universe moving, and “enabling things to acquire form,” must fall into one of these four categories of change: *substantial, quantitative, qualitative, and locational change.*

Why does Maimonides think that this Proposition is true? He is thinking here of Aristotle’s *Ten Categories* of what can be said of other things, i.e., that are *predicable* of them. Those predicables are Substance, Quantity, Quality, Relation, Place, Time, Position, Property, Actualization, and Receptivity to actualization. (See my essay, Guide 1:52). He selected only *four* as categories of actual change, by exclusion:

- *Relation* involves no change between the *relata*, as long as the relation obtains.
- *Time* is defined as the measure of motion. It is inconceivable without motion. It is *not* change itself: change occurs *in* time, but change is *not* time.
- *Position* is the relative position of the parts of an object, as of the nose on your face. There can only be a change of place if your nose were moved surgically. Importantly, the spheres’ rotation was considered positional, *not* a change of place, since its rotation is *in one place*. The rotation commences from a starting point and *returns to it*, unlike change of place, which is from a starting point to a completely *different endpoint*, e.g., from where your nose was before surgery to where it is now.
- A substance comes to have a *Property* when it acquires a characteristic. Once it has that property, it has reached the end point of that change. The possession is itself a state of *rest*, *not* of change.
- When anything is *Actualized* it has changed from a state of potentiality to reach that state of rest. That final actualized state of rest is *not* a change but has the potentiality for further change.
- If the substance is *Receptive* to that actualization, it is nonetheless at rest and *not yet* changing. It has the potential to become what it will be after that change.

In none of these cases is there a *change*, i.e. a *passage* from one state to another. There are only the four *changes* that Maimonides listed.

Is there a problem with this Proposition? The commentators struggle with the question of whether *substantial change* should be counted as a change or motion. What occurs in substantial change when new things emerge? For there are different kinds of new things. These range all the way from the acquisition of characteristics, like a cut on the skin or a new hair color, to the imperceptible growth of plants, the replacement of old forms in matter, up to creation *ex nihilo*. These *inceptions* can be sorted into three different kinds of problems: Whether there is change or motion in 1) *imperceptible* transitions, or 2) those that take place in *no-time*, or 3) those without any common *substrate* or intermediary, as in creation *ex nihilo*.

How should we resolve this problem? The answer, generally, to the problematic of substantial change seems to be that all three of those inceptions are motions. They are motions because they describe a *transition from what was not to what is*. Even imperceptible motions are a sort of motion, as they hold on to what they are, e.g., a rock at the bottom of the sea is in motion holding on against forces of change. Sometimes Maimonides says that when things arise that are wholly *new*, or in *no-time*, or which have no *common substrate*, these are *changes* but not *motions* (Guide 2:12), prompting commentators to apply the formula “all motion is change but not all change is motion.” Still, Aristotle and Maimonides insist on those changes being *called* “motions” in some sense, especially in our physical world, since they are a motion to *something new*. The next proposition carries this discussion further.

PROPOSITION V: *Every motion is change, and is the transition from potentiality to actuality.*

☛ **Note to the reader:** Maimonides' grand proof of God's existence stems, in part, from the antique cosmology of the divine unmoved mover inducing the celestial spheres to move everything on earth. I discuss the relevance of this cosmology of the spheres in Guide 1:72. I make no attempt to defend it. If readers wish to substitute for the nonexistent spheres a general universal motion, they are encouraged to do so.

How will Maimonides use Proposition V? In Guide 2:1, Maimonides uses Proposition V to show that all motion is change, and therefore *divisible*, and that everything divisible is a physical body. It follows that everything in motion is a physical body (Proposition VII). But the Mover of the spheres must be unmoving and incorporeal (to avoid infinite regress). Taken together with several other considerations, it follows that this mover must be God.

Why does Maimonides think that this Proposition is true? The explanation of *motion* and of *change* is a major problematic in philosophy. The impasse was to some extent due to Aristotle's various attempts to define them, but also to their innate difficulty. Simply put, the problem is that it we cannot grasp something that is moving while it is moving. Additionally, the entire discussion in the six *Motion Propositions* founders upon the problem of *substantial change*, i.e., those changes in which a new individual independent substance comes into existence or loses its existence. It is very hard to frame a definition of the process of transition, but even more so with the inception of new creations. Still, Maimonides insists that motion is the most comprehensive category, following the Heraclitean maxim that "Everything is in motion" (πάντα ῥεῖ: everything flows). Even substantial change, the flow from potential existence to actual existence, would appear to qualify under this broad interpretation as a "motion."

Is there a problem with this Proposition? The problem is that neither Maimonides nor Aristotle stays with this view of motion. Proposition V is Maimonides' succinct restatement of one of Aristotle's definitions, that *motion is the actualization of that which is potential inasmuch as it is potential* (*Physics* III:1, 201a10-11). Pierre Gassendi (1592-1655) famously remarked: "Great God! Is there any stomach strong enough to digest that? The explanation of a familiar thing was requested, but this is so complicated that nothing is clear anymore ... The need for definitions of the words in the definitions will go on *ad infinitum*," (*Exercises against the Aristotelians*). Aristotle's definition would make motion equal any change or transition, no matter how *sudden*, and could presumably include the instantiation of new *form* in matter taking place in *no-time*. It could even include creation, if we were to conceive, as Plato did, that the universe comes from an existing material potentiality. On the other hand, in Guide 2:12, Maimonides surprisingly rejects such formal transitions, which "do not change gradually, and, are, therefore, *without motion*," *ayn tenua behan*. He also says there that the term "*Motion* does not apply to incorporeal beings, namely to God and to the intelligences, or to the angels."

How should we resolve this problem? There are two points to consider. When Aristotle makes motion the *actualization of a potentiality inasmuch as it is a potentiality*, the key term is "inasmuch." The term signals the existence of a relationship. But to have a relationship there must be a relation, and there is *no* relation with *nothingness*. Therefore, Maimonides rejects the application of the term "motion" to the inception of new beings. Hence, creation of anything from nothing cannot be included under motion. The second point is that moving things only exist in our world of motion and time, not in the atemporal higher worlds, including the divine worlds and the worlds of higher thought. Thus, the generation of new rabbits is the *motion* of a transition, even though it is an imperceptible transition, it is still a transition in *matter*. But we could not so characterize the instantiation of human minds. Changes in the world of thought, including the creation of thought itself, takes place in *no-time*, in the higher world of mind and soul, which is not governed by Proposition V. That is why he reserves that *divine science* discussion till Guide 2:12.

PROPOSITION VI, The Four Modes of Motion: *The motion of a thing is either substantial, accidental, externally forced, or partial, i.e., of a part: this partial motion is a type of accidental motion. Substantial motion is from one place to another. An accidental motion occurs when a thing's black color is moved with it. A forced motion is like the motion of a rock thrown upward. Partial motion is like a nail in a ship: the nail moves with the ship. When the whole moves, every part moves.*

How will Maimonides use Proposition VI? Guide 2:1 uses this to show that the motion of the spheres is not like human motion, though both are moved by their souls. In both, the soul bears an “accidental” relation to the body. Prop. VIII will show that all *accidental* motions must eventually come to rest. As the soul's motion is accidental, the soul must come to rest. But we see that heavenly motion is continuous. If the motor of the sphere were merely an accident the sphere could not move *eternally* but must come to rest. It follows that there must be a *separate* mover behind the spheres' eternal motion. This mover could only be God.

Why does Maimonides think that this Proposition is true? The distinction between Proposition IV and Proposition VI is that the former is the fourfold classification of all *changes*, while the latter describes the four modes in which *motion* takes place. The modes of motion break down into two broad categories, *substantial* motion and *accidental* motion. *Substantial* motion is the motion of the independent substance itself from one place to another, while *accidental* motion describes the motion of any qualities of that substance which move when that substance moves, such as its coloration.

Partial or participative motion is a “type” of *accidental* motion. It is different from accidental motions proper since in true accidents, like the motion of black color carried along by a black cloth, the color does not have independent existence. But partial motion, as with the nail in a ship, only occurs because the nail could be separated from the ship and move as a substance on its own. Nonetheless, both the blackness and the nail are called “types” of accidental motion because they are both *carried along*. The difference is that in the case of partial motion the nail could move on its own (perhaps, by falling) except for its affixation in the ship. Similarly, the soul moves with the body in participative motion.

Forced motion, by contrast, is a *substantial* motion, except that it is against the substance's nature or will.

In our world below the lunar sphere, most motions are accidental. On the other hand, when we typically speak of “motion” we mean substantial motion, the movement of a substance from here to there.

Is there a problem with this Proposition? R. Crescas' problem is precisely his antique understanding of the “motion” of the spheres, which does not fit this classification at all. The classical “spheres” were always changing their *position*, a constant circular transposition in *one* place. Since this rotation does not go from here to there, but from here back to *here*, how can it be called “motion” at all? It is unique. Indeed, Maimonides' Proposition XIII holds that no type of change can be continuous and eternal except, uniquely, rotation. But Crescas argued that if spherical motion really is unique, Proposition VI could not be of universal application, and should not be used in a general proof of the existence of the Unmoved Mover.

How should we resolve this problem? In Guide 2:4, Maimonides emphasized spherical motion: “For in the first instance it moves toward the same point from which it has moved away, and *vice versâ* it moves away from the same point towards which it has moved....The circular motion of the sphere must be due to the action of some *idea* which produces this particular kind of motion; but as ideas are only possible in intellectual beings, the heavenly sphere is an intellectual being.” Its *idea* is its eternal *desire* for the Unmoved Mover. Maimonides purposely excluded this *divine science* topic from this public discussion, a point which eluded R. Crescas.

PROPOSITION VII, The Divisibility of Change: *Anything changeable, movable or corporeal is divisible, but anything immovable or incorporeal is indivisible.*

How will Maimonides use Proposition VII? In Guide 2:1, he uses this to show that since God is unchangeable, He, therefore, must also be immovable, incorporeal, and indivisible. Maimonides then applies the Infinity Propositions (I – III) to deny an infinite causal regress, leaving God as the final Unmoved Mover.

Why does Maimonides think that this Proposition is true? In change as in motion, there is a beginning of the change, which will be followed by the end of the change. At the beginning and at the end, the changing object is at rest. But the whole change includes and unites both states of rest. In the initial state, the *potential* for the change exists, and in the final state, that potential has been *actualized*. These two states are *different* things, even though the whole change contains both. That is why in any change a *division* exists between its initial state and its final state. Thus, Proposition VII states, *anything changeable is divisible*. The same is true of any motion, since every motion is a transition from here to there, and thus divisible.

Corporeal bodies constantly change, and, therefore, must also be divisible. Even the inanimate objects, like rocks, reveal types of change, since the rock must constantly, though imperceptibly, resist forces which would force it from its place of rest. The rocks are changing, decaying, resisting, and holding on, and, therefore, divisible at any point in those changes.

On the other hand, those things that are not subject to division are not in motion and are not physical bodies. These are the incorporeal entities, including God, souls, minds, and the forms that in-form material things. Thus, God is indivisible, motionless and incorporeal: The Unmoved Mover of all causal chains in our world.

Is there a problem with this Proposition? *Change Without Division*. Rabbi Hasdai Crescas lists as exceptions things that appear to change, yet do not involve division: they fall into three groups: mental changes, creation *ex nihilo*, and formations of new things. By mental changes, I mean the “moment” when we grasp a new concept, comprehend the meaning of a sensation, or pass from one emotion to another: these occur in no-time, and are free of division. The mind, which is incorporeal, is indivisible. R. Crescas’ analysis also applies in the case of the formation of new things: though that which is about to change goes through *preparation* enabling it to cast off its form and accept a new form, the “moment” of that instantiation is in no-time. Thus, what was not previously a rabbit now is a rabbit: The final point occurs atemporally and without division. In Guide 2:12, Maimonides agrees: “No temporal terminology can be attached to that ‘change,’ nor can we explain it in any way: it is the perfect case of a ‘change’ without division.” Similarly, with creation, he says there: “The paradigm case [of change without division], and the most striking, is creation *ex nihilo*.”

R. Crescas argued that if there can be these exceptional changes without division, then this Proposition, that *everything changeable is divisible*, cannot be of universal application, since it only applies to physical changes. Maimonides should therefore not be able to use this Proposition to prove that the First Cause of motion is free of any kind of change and division.

How should we resolve this problem? The problem resolves when we notice that Maimonides did not use the word “unchangeable” in the second half of Proposition VII. If he had it would include a parallel clause that said that *anything unchangeable is indivisible*. That would obviously describe God as the unchangeable, indivisible, unmoved mover of all causal chains *in our material world*, and need not be said. But those unchangeable *transitions* that Crescas listed (like mental changes and the inception of form) were purposely excluded from this Proposition. They do not occur in our material world of motion and time, but in higher incorporeal levels. Maimonides saves these *changes without division* for discussion in Guide 2:12.

PROPOSITION VIII, Accidental Motion: *Anything that moves accidentally must come to rest since its motion is not essential to it: it cannot go on moving forever.*

How will Maimonides use Proposition VIII? Guide 2:1 uses this to show that the heavens must come to rest unless an eternal mover moves them, since they have no internal source for their eternal motion.

Why does Maimonides think that this Proposition is true? Any accident of a substance could either exist or not exist. One of these two possibilities must be realized in infinite time. Someday either possibility will be realized. Thus, whatever moves accidentally will come to rest, since this possibility must someday be realized. Its motion will eventually be interrupted. That means that the accidental motion of the cosmic spheres would also someday cease unless some other force keeps them moving. But we observe that the heavens continue to move and have never ceased moving. Therefore, there must be a separate, external force that keeps them going.

What is it that makes the spheres move at all? According to Maimonides, they move for the same reason we do, because both humans and spheres possess a source of motion, which his tradition called a “soul.” The question is whether that soul itself is moving. The answer given is that while the soul is unmoved *essentially*, it is nonetheless moved *accidentally* in the process of its causing its subject physical body to move. Since this motion is accidental it must eventually come to a halt. As an example, when you drive, the car must come to a stop since you will eventually go to sleep or run out of gas. The car does not have its own principle of motion. You are the driver, but you are also along for the ride, and so you must stop when it stops. Similarly, you could be walking. While you walk your soul moves with you as an accident of your body’s motion, moving accidentally with that motion. Since it is *possible* that you will come to a stop, you and your soul will *eventually* come to a stop, as all possibilities will, in time, be realized. On the same logic, unless some *other* mover is present, the cosmic spheres and the souls of those spheres would also have to come to a halt. That unmoved mover is God.

Is there a problem with this Proposition? R. Crescas argued that the rotation of the element of fire is an exception invalidating the universality of Proposition VIII. According to the ancient four-element physics, the element of fire is a band moving around the earth, forced along by the motion of the spheres. Fire does not have a soul causing it to rotate, since its only internal principle of motion is to return to its “proper place” above the band of air. Proposition VIII says that the elemental fire should come to a stop since it has no internal principle to keep it rotating. But we see that it does not stop: the sun comes around each day. Crescas explained that the *surfaces* of the elemental fire are moved accidentally by the celestial sphere above it. The Proposition suggests that those surfaces will come to rest because their motion is merely an accident of the motion of the cosmic sphere. But that is absurd, since the element of fire, in diurnal rotation, never comes to rest, barring a miracle (as in Joshua 10:12).

Wouldn’t this accidental but apparently eternal motion invalidate the universality of the Proposition, since it asserts that all accidental motion must come to rest?

How should we resolve this problem? The problem dissolves when we recognize that the motion of the elements is not an accident of the motion of the spheres, but a byproduct of them. The Aristotelian spheres remain in eternal orbit due to the interaction of their souls with the Unmoved Mover (by their desire for the Unmoved Mover). But the unsouled things, like the elements, which are set in motion by those spheres, will remain in motion so long as those spheres continue to move them, even if that means they will rotate eternally. Otherwise, as the Proposition states, they must indeed eventually come to a halt. The eternal spheres acquire their perpetuity of motion from the eternal Unmoved Mover and convey that motion to everything within those spheres as a byproduct of their own motion, resulting in the motion of our world.

PROPOSITION IX: *Any physical body that moves another body can do so only when it is itself already in motion.*

How will Maimonides use Proposition IX?

Maimonides, in Guide 2:1, cites this Proposition to show that for the celestial spheres to move our world *they must already be in motion*. But to find the cause moving those spheres, without going through an infinite regress of prior causes (Propositions II and III), you must ultimately come to the existence of an Unmoved Mover.

Why does Maimonides think that this Proposition is true?

Aristotle explained that motion occurs in the moved when it comes in *contact* with its mover, “so that at the same time [the mover] is also acted upon” (*Physics* 3:2 202a8). All causes of motion must be in contact with and reciprocally acted upon by their effects. The system never ceases its motion. This is the rule for all physical things.

It is important, however, to recall that these “efficient” or “effective” causes are only one of the four types of causes in the causal theory that Maimonides accepted (*the four causes*: efficient, material, formal, final). The “final” or “teleological” cause, which provides the final *purpose* for the motion, does not act through contact. Since God is the final purpose for the motion of the spheres, He is not Himself in motion, which is why He is the ultimate Unmoved Mover at the inception of all causation.

Is there a problem with this Proposition?

The ancient world was at an impasse when it came to explain how magnets work. The magnet appears to move iron filings without itself moving, in violation of Proposition IX. Plato, in the *Timaeus* (80c), denied that magnets have an attractive force, however, in the *Ion* (533d) he says that the magnet has a force which it imparts to the iron.

Maimonides adopts this latter view in Guide 2:12 when he says that “a magnet exerts an attraction upon iron through a force spreading out from it (*hamitpashat mimenu*) in the air, which encounters the iron.” (see Kafih Hebrew translation, p. 197 note 9, rejecting Wolfson’s attribution to Maimonides of a “corpuscular” theory of magnetism).

R. Crescas proposed, in opposition, that the iron moves in accord with some peculiarity in its own nature.

How should we resolve this problem?

Magnetism is one of the universal basic forces. The earth itself has a magnetic field. Magnetism and electricity work with one another through the physical structure of materials; in particular, the polarity of the electrical forces of those materials. Magnetism in magnets can be enhanced or induced through the application of electrical current, inducing their electron domains to line up in the same direction.

In certain ways, both Maimonides and Crescas are correct in their interpretation of magnetism, but neither possessed sufficient understanding of the relationship between electricity and magnetism to fully explain the phenomenon. That explanation did not begin to emerge until 1820 with the work of Hans Christian Oersted (1777-1851).

Today we see that the electrical forces within the magnet and the iron are both in motion during the attraction. We can, therefore, allow Proposition IX to stand. The phenomenon of magnetism does not invalidate the Proposition. Moreover, Maimonides deals with the problem of motion induced from a distance, as with magnets, or the tides caused by the moon, in Guide 2:12, not in these 26 Propositions.

C. THE FORCE PROPOSITIONS (X – XII)

☛ X: The *types* of forces in bodies, XI: Their *distribution* and *division*, XII: Their *finitude*.

PROPOSITION X, Force: *Everything said to be in a physical body either subsists through the body, such as accidents, or the body subsists because of it, as with its natural form. Both are forces in the body.*

How will Maimonides use Proposition X? In Guide 2:1, he used the *Force Propositions* to show that the infinite force causing the cosmic spheres to move in infinite motion cannot be *in* the spheres. All bodily forces must be finite since the body itself is finite. They must come to rest. Even the human soul and mind, which move accidentally with their finite body (Proposition VIII) must come to rest. Therefore, only God, not the accidents, nor the natural forms, nor the soul/mind could cause the perpetual motion of the spheres.

Why does Maimonides think that this Proposition is true? Everything that exists is said to exist *in itself* or *in another*: the former are *substances*, the latter are the *accidents*. Those accidents are again subdivided into those which exist only *through* another (*also* called *accidents*), and those that, although they exist in the other, *confer existence* on it, which are called *forms*. Thus, there were two types of “accidents”: the form which confers substantiality on the being, and the accidents proper that subsist through that substance. To simplify this nomenclature, Maimonides calls both “*forces*” in a body, whether they are forms or accidents.

Maimonides’ introduced here the *natural form* to counteract pre-Socratic theories, like atomism. The pre-Socratics believed that qualities were accidents which change every moment, *e.g.*, there was no stable human nature. The Kalām embraced those outmoded theories. Maimonides instead argued that everything was composed of matter and form, and that the natural form of a thing (*e.g.*, iron) conferred all its usual properties and qualities upon it, like hardness. Thus, the natural form of humans (*i.e.*, as “rational animals,” *zoon logikon*) confers upon its constituent matter the usual stable qualities of animation and rationality.

Is there a problem with this Proposition? Rabbi Hasdai Crescas, following the proposal of the Muslim philosopher Averroes, rejected the concept that the celestial spheres were composed of matter. He held that they were just “corporeal forms,” which were nothing other than their *physical dimensions* or *dimensionality*. Crescas went further than Averroes, arguing that the so-called “matter” in *every* substance, not just the spheres, was nothing but its *dimensions*. Part of the reason for these proposals was to make Aristotle more “Aristotelian” (*i.e.*, less Platonic) by removing from his physics abstract “matter,” defined as a universal *potential* for things to *be* with all their potential properties and qualities.

Aristotle’s reinterpretation of Platonism regarded the supernal, intangible and universal *Platonic ideas* as philosophically indefensible because they had no home, no definition and were beyond any explanation. Instead, Aristotle located the *universal* in *actual things*, and made that universal part of their definition. But, despite that naturalism, he placed at the center of his physics an entirely non-physical principle, the *dynamic* potential of “matter.” Late scholasticism sought to remove potentiality from his physics. Whether this was a fair interpretation of Aristotelianism is open to question, especially since it removed its dynamism.

How should we resolve this problem? Maimonides’ followers rejected Crescian dimensionality because they regarded dimensions only as *accidents* of substances. The Aristotelian “form” was not the dimensional *shape* of beings, but rather what they *are*, what caused them to *be*, and how they are what they *are*. Their dimensions were merely an accident of substances, like coloration. Underlying all the changing forms of things there must be a universal substratum of pure potentiality. Whatever this dynamic element is, it is what Maimonides called “matter.” (See my treatment of Guide 1:72, Proposition V, for the modern return to this dynamic, especially in the writing of Werner Heisenberg).

PROPOSITION XI, Division and Distribution: *Some things that are said to subsist in the physical body divide accidentally when the body is divided, e.g., coloration and the rest of the forces distributed throughout the body, while some that cause the body to subsist are not divisible at all, such as the soul and mind.*

How will Maimonides use Proposition XI? In Guide 2:1 he used this Proposition and the next to show that since the body is finite, any force *distributed through* it must be finite as well. But the human soul and mind, forces that cause the body to subsist, are *not distributed through* it. They are also unquantifiable, and therefore could not be infinite (Proposition I). That is why the infinite force required to produce the infinite motion of the world must come from somewhere outside the physical bodies and their souls.

Why does Maimonides think that this Proposition is true? *Divisibility.* All the accidents which subsist through the body are divisible with the body, even if those accidental qualities are in specific parts of the body. Thus, the accidental color of hair is divisible with that hair, despite that hair does not cover all the body. The general coloration of a body stays with any division of that body, so long as that division is not so thoroughgoing as to completely crush or grind up the substance. Thus, if you were to cut an emerald into two parts both could be polished to a brilliant green color, but if you smashed it with a hammer the resulting powder would be white. The former is merely an accidental division, while the latter represents a substantial change.

The animal soul, or better, the *animating* soul, which causes the animal's body to move itself, posed a more difficult problem. The animal souls of the lower animals were said to be divided with the division of the animal, such that, for example, severed snakes continue to move. On the other hand, the human soul that grants us freedom of movement is not divided with the division of human beings. Neither could the mind be divided with the body like the accidents, such as coloration.

The human mind and soul are, thus, not distributed through the human body such that they would be divisible with it. They have a formal, substantial, relationship to the body. Maimonides, however, did think that they moved accidentally with the body, in the same way that you move with your automobile when you drive, and, when you walk, your mind and soul goes with you.

In the grand analogy that Maimonides made between the macrocosm of the celestial spheres and the microcosm of each individual person in Guide 1:72, the souls of the spheres also stayed with the spheres, and were also not distributed through the spheres or divisible with them. Since these souls moved *accidentally* with the spheres, they should at some point come to a halt (Proposition VIII). But we see that they keep rotating. It follows that some other mover must cause this rotation, which can only be God, the only unmoved mover.

Is there a problem with this Proposition? The commentators were disturbed by the notion that the souls of the spheres were physically connected with the matter of those spheres, even if that matter was the indefinable intangible "quintessential" matter of the fifth element. In their drive to eliminate spherical *matter* they also sought to disengage the souls of the spheres, to make them *separate immovable* "final" causes of the motion of those spheres. Wouldn't all of this undermine Maimonides' entire proof that God alone was the unmoved mover, the first cause of all the motions of the universe?

How should we resolve this problem? Without trying to defend the cosmology of the Ptolemaic/Aristotelian invisible spheres, we can still appreciate Maimonides' point, that eternal motion cannot have its source in a finite corporeal substance. The explanation of eternal motion must ultimately transcend the world of physical beings.

PROPOSITION XII, Finitude: *Every force distributed through the body is finite because the body is finite.*

How will Maimonides use Proposition XII? Maimonides, in Guide 2:1, cites this Proposition to argue that no corporeal force can produce perpetual motion, since finite bodies only have a finite force. The perpetual motion of the universe must ultimately be due to God as its first cause. This *finitude axiom* is critically important to all the Force Propositions.

Why does Maimonides think that this Proposition is true? This is simply a corollary of Proposition I, that there could be no infinite corporeal magnitude. Since all corporeal forces occur in finite corporeal bodies, it followed that none of those forces could be infinite. Only an infinite incorporeal force could keep them in infinite motion, the unmoved mover.

There is an argument in Aristotle's *Physics* which clinched the truth of this Proposition. The argument is that any time the forces in a finite body cause another finite body to move, its speed will be a definite number, e.g., 50 mph. But if some other finite body were to have an infinite force it would obviously move that body further or faster than the 50 mph body's lesser force. Aristotle concluded "surely the time [of the infinite force] would not admit of being anything at all" (i.e., it would take place in *zero time*: *Physics*, 8:10:266a30, Joe Sachs trans.).

His proof: Make *A* the time in which an *infinite* force in a finite object could move another object *50 miles*, as against the time that a *finite* force *B*, going at 50 mph, would take to do the same work. Obviously, *B* would take longer. But if you add more finite forces to *B*, putting in more horsepower, you should at some point move the object the same 50 miles in the same amount of time it took infinite force *A* to move it. But that would be absurd, that the finite total of those finite forces would move the object at the same velocity as the infinite force. No matter how many finite forces you add, they could never equal an infinite force. Therefore, nothing finite or corporeal could have an infinite force.

Is there a problem with this Proposition? Recall that R. Crescas rejected Proposition I (that no infinite magnitude exists), contending instead that outer space is an infinite vacuum moving perpetually in random non-rotational motion about the earth, even without an unmoved mover to cause its inertial motion to persist. If true, the entire Propositional system that Maimonides summarized would fall.

How should we resolve this problem? Since Maimonides did not accept the existence of any vacuum, much less one of infinite magnitude, he remained convinced that the ultimate source of motion could not be found within our own physical universe. Only God could be its transcendent ultimate cause.

Later developments: The Jewish scholastics recognized that the force of Prop. XII would gut the Aristotelian/Maimonides model of philosophical astronomy. Here is why. In that model the spheres are composed of matter and form which move through volition and desire in eternal rotation. But how could the matter of the finite sphere move eternally, if it is a finite composite of matter and form? The problem was with Aristotle's interpretation that the sphere was an ensouled combination of matter and form. Since matter always engenders the interruption of its motion (Prop. VIII), the sphere could rotate eternally only if it were without matter. Still, the visible heavens seemed to be physical in nature. Such problems moved astronomy toward the great Copernican paradigm-shift, which relocated the universe's center away from the earth, and replaced the crystalline ensouled spheres with simple planetary orbits moving through inertia, as we accept now. Nonetheless, nothing in the new paradigm explains the origin or persistence of motion.

D. THE PROPOSITIONS OF CONTINUITY AND DISCONTINUITY, (XIII – XVI)

☛ XIII: The *Continuity and Discontinuity* of Change, XIV: of *Motion*, XV: of *Time*, and XVI: of *Number*.

PROPOSITION XIII, Continuity: *None of the types of change can be continuous, except the motion from place to place, and only when it is rotation.*

How will Maimonides use Proposition XIII? Guide 2:1 uses this to explain why the finite spheres could rotate eternally in continuous motion. Still, this motion requires a cause. To avoid an infinite regress of causes, the ultimate cause of the motion of the sphere must be something incorporeal and separate from the spheres.

Why does Maimonides think that this Proposition is true? Maimonides uses this Proposition to show that there is no *continuity* possible except in the motion of rotation, specifically the rotation of the heavenly spheres. Rotation is the only motion that could persist uninterruptedly. None of the discontinuous motions or changes could do so. It follows that all the discontinuous motions existing in our world depend upon the eternally continuous rotation of the heavenly sphere.

When Maimonides says here that “*None of the types of change can be continuous, except the motion from place to place*” he has in mind the four types of change that we met in Proposition IV: substantial, quantitative, qualitative, and change of place. None could be continuous, with the sole exception of *rotational* change of place.

All other types of change are between opposites: from being to nothingness and *vice versa* (substance); from larger to smaller and *vice versa* (quantity); from hot to cold or white to black and *vice versa* (quality). Change of place is also between opposites, e.g., from here to there, *except for rotation*, which is from a starting point back to itself, i.e., from here back to *here*.

In any change between opposites the motion or change must *halt or turn back*, and so there must be a moment of rest. That moment of rest is the discontinuity inherent in any change between *opposites*. But there is no inherent need for rest in continuous rotational change-of-place.

You might ask why a qualitative change from one color to another or one temperature to another must be regarded as a change occurring between *opposites*. Harry Wolfson cogently explains: “By taking the *limit* between the two [qualities] as the *point of departure*, the one will always move toward it, and the other will always move away from it.” That *opposite* limit, or point of departure, is itself the discontinuity.

Is there a problem with this Proposition? Rabbi Crescas rejects the idea that motion from here to there must always be discontinuous. Imagine a small stone tossed upward which meets a descending meteor (his actual example involved a descending mountain). It would be absurd to say that the meteor must pause when it hits the stone causing the stone to turn back. There is no discontinuity. Secondly, Crescas argued that there could be an *infinite* outer space *vacuum* in which *continuous* non-rotational motion could go on indefinitely. In all of this, he sought to expand continuous motion beyond mere rotation.

How should we resolve this problem? The example of the stone and the meteor are not compelling since the stone and the meteor would both have to *halt* or turn back once they hit ground. Neither the motion of the stone nor the motion of the meteor can be continuous. There could be no continuous motion apart from the rotation of the finite spheres. And Crescas’ infinite outer space vacuum in continuous nonrotational motion could not go on, but must suffer entropic dissipation, per Newton’s Second Law of Thermodynamics.

PROPOSITION XIV, The Priority of Motions: *Motion from place to place is primary [in time] and first by nature. Generation and corruption are preceded by alteration, which is preceded by the approach of the cause of change to the object of change. There can be no growth or diminution without prior generation or corruption.*

How will Maimonides use Proposition XIV? Maimonides, in Guide 2:1, cites this prioritization of motions to illustrate how the celestial sphere moves all by change of place. It is the first of several kinds of motion: all other motion is the indirect byproduct of the sphere's rotation. He concludes that this whole system is "due to a certain design," whose ultimate cause can be traced to the motion of the sphere and its Mover.

Why does Maimonides think that this Proposition is true? Maimonides understands that the continuous motion of the sphere is the *reason* for all motion in nature (conceptual priority) and *precedes* all the other discontinuous motions (temporal priority). But even it must have a cause. To avoid regress, that cause must be single, unmoved, and incorporeal: God. We come to these conclusions based on our determination of the order of priority of the four species of change (Proposition IV: *substantial* change, *quantitative* change, *qualitative* change, and change of *place*). All change is *translocation*: from *one place to another* or from *one status to another*. Change of place/translocation is both temporally and conceptually prior to all other motions.

The very first of these motions would be the continuous motion of the sphere. It is the ultimate cause of and background for all other changes and motions in the world. Those other motions are all discontinuous, just because they are from here to there or from status to status. They must *halt or turn back* once they reach the limit separating those two locations or states. All such change must be preceded by the *approach* of the agent of change to the object of change, and that approach is a *change of place*.

In this system, the original spherical motion *precedes* the *substantial* generation of new material beings and their ultimate corruption. Generation and corruption then *precede* all *quantitative* growth and diminution, as well as all *qualitative* alterations affecting the changing substance. Working back through all of those changes must bring us to the existence of the single incorporeal unmoved Mover.

A major point for Maimonides is the absolute priority of the persisting original heavenly motion. He stresses several times that it is the *sine qua non* of all other motions: i.e., even if those other motions disappeared it would still exist, and without it those other motions could not exist (see, famously, the first sentence of Mishneh Torah together with Guide 1:64). God is, however, the ultimate distant cause underlying all the nearer causes.

Is there a problem with this Proposition? This prioritization only works based on Aristotle's doctrine that the universe is uncreated and eternal. Maimonides does not believe it. He, nonetheless, used it provisionally and tactically in these Aristotelian Propositions to prove God's existence, unity, and incorporeality.

If we proceed, however, on Maimonides' own understanding that God creates the universe from nothing, this order of priority must be *reversed*: creation precedes growth, which precedes the motion of place and the motion of the alteration of qualities. For example: an infant's birth precedes its growth, which precedes its physical motion and all its other subsequent accidental changes.

How should we resolve this problem? There is no problem if we keep in mind that these are the Propositions of Aristotle's eternalist philosophy, not of creation and providence (*Maaseh Bereshit* and *Maaseh Merkava*). He develops the principles of that divine science later in Volume 2 of the Guide.

PROPOSITION XV: *Time is an accident attached to motion and implying its existence. Neither can exist without the other. Motion cannot exist except in time, and time is unintelligible without motion. Therefore, things which do not move have no temporal existence.*

How will Maimonides use Proposition XV? Maimonides, in Guide 2:1, cites this Proposition to show that since God has no relation to motion, He has no relation to time.

Why does Maimonides think that this Proposition is true? Time is an unbroken *continuity* because of its necessary connection to motion: the continuous motion of the heavens makes possible continuous time.

Proposition XV yields four sub-Propositions:

- 1) Time is an *accident*, not a substance, i.e., it does not have independent existence. Time is a composite of three different elements, none of which have independent existence: the past, which is already gone, the future, which is not yet, and the present moment, the “now,” which is not in time or measured by it.
- 2) Time is always *connected* with motion in such a manner that it cannot exist without it, for where there is motion, there is simultaneously time.
- 3) Time is *unintelligible* without motion. Without motion we would not sense time: as Aristotle said, “No time is insensible.” *Time is the enumeration of any motion from its starting point to its endpoint*, in countable units of time, like minutes or hours. Maimonides says here that time is “attached to motion,” or, in some translations, “consequent upon motion.” He uses these words to modify his initial statement that time is an “accident.” His problem was that motion is itself an accident of the moving substance. But you cannot have *an accident on an accident*, since an accident is not an independent existence that could carry another accident. Motion, an accident itself, could not be subject to another accident. The peculiar “accident” of time is, therefore, like no other accident: it is an irreducible predicable. It is undefinable in any other terms. That is why Aristotle made time one of the ten ultimate *categories* of things that can be said of other things.
- 4) Anything that *does not exist in motion* also does not exist in time. These are the entities that are not in motion, matter, or time: the *incorporeals*, including God, the angels, and what he calls the “separate intellects,” i.e., “separate” from corporeality. This includes our mind when it is “active intellect,” which is when it attains the state of active cognition. Otherwise, when such incorporeal “forces” are *attached* to our physical bodies those forces are subject to time, just as our bodies and their souls are subject to time.

Is there a problem with this Proposition? R. Crescas rejected Aristotle’s definition of time as the measure of motion. He redefined it as the abstract concept of “duration.” Such Crescian duration could exist with or without motion: there could even be duration without motion, and duration “before” creation. Here, once again, Crescas turns to abstractions, trading Aristotle’s relational time for “duration.”

Another problem: If time is the measure of a moving object from *before* its motion to its *conclusion*, how could you clock the speed of the *eternally* moving sphere? Where would you start? Time must “transcend” motion “on both ends” (Aristotle, *Physics* 229a10). But there is no beginning or end to the eternal sphere’s rotation!

How should we resolve these problems? The answer to the second problem is that the sphere does not exist in time *as a whole*, but *any part* of its rotation is in time. The *whole* is not in time, but only *with* time.

R. Abraham Shalom (16th C.) complained of Crescas’ redefinition of time as *duration*, that “if we had no conception of motion, we could have no perception of time” (Wolfson, *Crescas*, 649). Space and time are not abstract *containers* for bodies, as Newton, like Crescas, thought. Newton’s critic Leibniz reasserted the Aristotelian view that space and time were *relations* between moving bodies. Maimonides was right to insist that time and place are *systems of relations* between real things, not merely conceptual containers of things.

PROPOSITION XVI, Number: *Nothing incorporeal can conceivably be numerable, unless it is a force in a body. Such forces are numerable due to the multiplicity of their matter or the multiplicity of the substances in which they exist. Conversely, since the incorporeal things cannot be physical bodies or forces in bodies, they cannot conceivably be numerable, except when they are causes and effects of each other.*

How will Maimonides use Proposition XVI? Maimonides, in Guide 2:1, cites this Proposition to show that there cannot be two ultimate unmoved movers, i.e., two Gods, since incorporeal beings are not numerable. Since God must be incorporeal, God must be One, a unity beyond number.

Why does Maimonides think that this Proposition is true? Maimonides relies on this Proposition to demonstrate that nothing which is corporeal or numerable can be *continuous*. It is one of the threads of his proof that the chain of universal motion must look back to a divine mover that is incorporeal, innumerable, and continuous. Proposition XVI distinguishes four types of existents with respect to their numerability:

1. Existences can be divided into those that are three-dimensional (and therefore affected by time, motion, and number), on the one hand, and those that are non-dimensional. Only the former are numerable.

2. The non-dimensional existences are the incorporeals. They are divided into the “separate” existences, *nivdalim* (which are “separate” from physical bodies), and those that Maimonides calls “forces in a body,” *kokhot ba-guf*. The *embodied forces* are only numerable due to their connection with their bodies.

3. Those *embodied forces* are divided into those forces that are accidents, and those forces that are forms, e.g. the universal forms embodied in matter (like your *humanness*, i.e., your participation in the forms *zoon logikon/khaim m’daber*, “discoursing animal”). Both accidents and forms are numerable, temporal, and subject to motion, *due to their connection with bodies*.

4. Those incorporeal entities that are called “separate existences,” i.e., the *nivdalim*. My *general rule* is to classify these as non-numerable, *unless* we can articulate a good reason to make them numerable.

Maimonides here allows that ten of these *nivdalim* can be considered numerable as causes and effects. He thus seems to assent to the emanation theory of his day, that an initial intellect gives rise to a second, which causes a third, and so on until we reach ten, i.e., the number of the souls of the planetary spheres.

Maimonides’ language in this *philosophical* Proposition does not venture further to speculate upon *differentia* that might obtain among human minds or souls, but in Mishneh Torah, *Ysodei* 2:5-7, he suggests a distinction of *degree*, not just of cause/effect, as of one sage being on a higher spiritual level than another. In his essay “*Helek*” he discussed how to secure an individual place in heaven for the soul of each Jew. That type of speculation, however, is out of place in the context of these purely philosophical Propositions.

Is there a problem with this Proposition? R. Crescas, however, remains troubled by Maimonides’ failure to include the *differentia* between individual human minds/souls in this Proposition. Those souls connected with physical bodies would be classed as such “separate existences,” *nivdalim*, *subsequent to their bodies’ demise*. Since their numerability was only due to their embodiment, it seemed as though they could not be numbered having departed this mortal coil. Could religion countenance this philosophical assertion that all mind is one? Didn’t Maimonides think that souls after death could be differentiated?

How should we resolve this problem? R. Crescas’ objection was misplaced, as the special existence of the soul is a topic of the Divine Science, subject to the Mishnaic prohibition of public instruction, and not part of the open, public treatment of Aristotelian physics. Moreover, Maimonides called for *educational humility* (see my explanation of this core Maimonidean principle in Guide 1:33) with respect to the problem of the *enumeration of the souls of the departed* (see Proposition III). Maimonides had said, in Guide 1:74, objecting to a failed Kalām argument based on the numerability of departed souls, that we should not try to frame proofs based on “such intricate disciplines, which our mind can scarcely comprehend, [and which] cannot furnish any principles for the explanation of other subjects.”

E. THE CAUSATION PROPOSITIONS (XVII – XX)

☛ XVII: Causation and The *Mover*, XVIII: The Change Agent, XIX: *Contingency*, and XX: *Necessity*.

PROPOSITION XVII, The Mover: *Everything that moves must have a mover. It is either external, as a stone moved by a hand, or internal, as a living being composed of its mover and what is moved. Thus, when it dies, and its mover, the soul, has left the body, the thing moved remains momentarily as it was, but does not move as it did. An animal's moving agent is concealed and imperceptible, so it seems as though it moved itself without a mover. But while anything that has a mover in it is called "self-moving," that just means that the moving force of the moved being exists in its composite whole.*

How will Maimonides use Proposition XVII? In Guide 2:1, he cites this Proposition to show that the motion of the cosmic sphere must be caused by a separate agent residing either within or without the sphere. All these agents must lead back to God, the unmoved mover, to avoid infinite regress.

Why does Maimonides think that this Proposition is true? Motion does not cause itself. There must be: 1) a *separate mover* that starts it and continues it, 2) which *mover* is either *internal* or *external* to that which is *moved*, and a 3) *moved object* which is either *inanimate* or *animate*. Regarding *inanimate* objects, a stone which is moved by a hand is a *forced* motion, while the motion of an *animate* being, a complex of body and soul, can be either *accidental* or *essential* (see Proposition VI – the four modes of motion).

As we do not see or sense this soul or its action, Plato seems to suggest that it is "self-moving." Aristotelians, convinced that all motion was divisible (Proposition VII), scorned the idea that the moved could be its own mover. Such self-motion was absurd because the actualizing agent and the potentially changed object would be identical, e.g., the doctor would be the patient, *etc.* This absurdity arises because those examples involved physical bodies. Physical bodies require a separate mover. But the incorporeal forms of Plato are *self-actuating*. They would not properly be called *self-moving*: ideas don't move, bodies move. Nonetheless, the jargon of the "self-moving" being stayed fixed in the vocabulary of philosophical physics. That is why Maimonides explained that whenever any being moves, though we commonly *call* it "self-moving," we only mean that it has a separate mover as part of the whole motion.

Is there a problem with this Proposition? Are the *elements* self-moving in the Platonic sense, or is their movement governed by a separate force? In the antique four-element conception of physics the pure elements move in four separate bands around our planet in descending order by their specific *weights*: fire, air, water and, finally, the heaviest, earth. When forced *from* these "proper places" they immediately returned to them, such that if water were forced below earth it would immediately rise back to the water level. Why? Avicenna (c. 980 – 1037) argued that the elements *contained* a motive principle ("inclination") in their natural forms, causing them to move back to their proper places. Their action is involuntary and unidirectional. Against this view, Averroes (1126 – 1198) contended that the impetus for movement was *external* to the elements, which *received* external motion from the spheres or other sources. R. Shem Tov thought that Maimonides accepted the Averroist conception, but chose not to discuss it, showing "his great virtue and superiority in wisdom," for his "intention [was] to state only well-established views."

How should we resolve this problem? R. Shem Tov goes beyond the evidence, for Maimonides probably remained conservatively Avicennist. But the truth is that the *pure* elements as such only manifest themselves *conceptually* as creative factors (*i.e.*, you do not see "pure" fire). That is why this is a topic of *Maaseh Bereshit*, and out of place here (See Guide 1:5), since this is not the proper location for any profound discussion of the divine creative elements, which are sometimes called in Jewish esoteric tradition *the Sefirot*.

PROPOSITION XVIII, The Change-Agent: *Everything that passes from potentiality to actuality has a separate external change-agent. Were it internal, with no obstacle preventing this passage, it would never be potential but always be actualizing itself. And if it were internal, but an obstacle blocking it was removed, the agent that removed the obstacle would, of course, be the cause of the actualization of that potential. Recognize what this means! (havein ze).*

How will Maimonides use Proposition XVIII? In Guide 2:1, he cites this to show that whenever anything passes from a state of *potentiality* to a state of *actualization* there must be a cause for that transition. That cause must be separate from and external to the changing object. This is true no matter how far down the causal chain it is. But no such chain is infinite. You must “At last arrive at a cause of this transition... which is constant and admits of no potentiality whatever.” The reason why the object had remained in a state of unrealized potentiality could be any of three factors: 1) an *internal obstacle*, 2) a general *external condition* disrupting the realization of the potential, or 3) a change in the nature of the *agent*. God can effect change without a direct positive act merely by willing the conditions that will lead to the removal of the *internal obstacle* or the *external condition*. *He causes change without changing Himself.*

Why does Maimonides think that this Proposition is true? This Proposition is about “change,” which always means the actualization of a potential resulting in something new. It differs from the prior Proposition, about “motion,” in several ways, despite the close relationship of change and motion.

One difference is that the change-agent must always be *external* to the changing object. If the agent were internal to the object it would never cease to actualize itself, which is not what we see in nature.

R. Even-Shmuel provides an illustration of this principle. A tree has an internal agent of change which is its natural form. The tree would never stop growing if this agent were unobstructed. Certain external conditions, like the onset of winter, prevent such continual growth. The springtime sun removes this wintry obstruction. You can easily think of other external factors hindering or enhancing the natural growth of the tree.

That brings us to the second difference between motion and change. Although the chain of *movers* may be long, each link in that chain of motion is actual and does not require actualization. It follows that each mover is an actual mover directly moving the following one as in a row of dominoes. It is different with *change*. The change-agent, unlike the mover, need not act positively and directly. It need only involve the *removal* of the *external condition*, or the *internal obstacle*, or change the *agent's relation* to the object. These do not require direct action. Since nature does not require direct action to effectuate change, it follows that God also does not, though we have no conception of how God does this. The implication, which Maimonides demands we draw, is that God also acts with no change in His nature. (The formulaic statement at the end, usually translated “note this,” or “understand this,” *havein ze*, warns that this divine act is a mystery of creation, *Maaseh Bereshit*, prohibited by the *Mishnah Hagiga* from public instruction. Its further clarification would be out of place here.)

Is there a problem with this Proposition? The Proposition forestalls the eternalists' objection to creation *ex nihilo*, that God would have to change to make such a change as creation. Thus, they say, “God must have passed from a state of potentiality to a state of actuality” (Guide 2:14), which is absurd. Since God never changes, the universe also must be eternal, uncreated, i.e., if God were a Creator, He would not be God.

How should we resolve this problem? Maimonides rejects the eternalists' argument by this very Proposition. Just as the change-agent in nature need not undergo change to cause the creation of the new, so God need not change to effectuate His will. Moreover, “We are utterly ignorant of the ways and methods of divine wisdom,” and, “The term *will* (e.g., to create) is homonymously used of man's will and the will of God, there being no comparison whatsoever between God's will and that of man.” (Guide 2:18).

PROPOSITION XIX, Contingency: *Anything whose existence is caused has only a contingent existence with respect to itself, i.e., it only exists if its causes are present. But if they are not present, if they are absent, or if the causal relationship necessary for the thing's existence changes, it cannot exist.*

How will Maimonides use Proposition XIX? In Guide 2:1, he uses it to show that although all contingent existences have immediate causes, their proximate and indirect causes all must lead back to God. Maimonides divides existences into 1) those contingent, possible things which exist because of some external causal force, and, 2) God, who exists only because of Himself alone. All contingent existences ultimately depend for their existence on His absolute existence. This is Avicenna's version of the "Cosmological Proof" for God, which became Leibniz' (1714) *Principle of Sufficient Reason*: "Why is there something rather than nothing? The sufficient reason is found in a substance which is a necessary being, bearing the reason for its existence in itself."

Why does Maimonides think that this Proposition is true? Whenever we see that something has come to exist, we recognize that it must have prior causes. It follows that anything that has prior causes for its existence has only contingent existence with respect to itself, even though with respect to that system of causes, and with respect its own ultimate cause, God, it exists necessarily. This means that the things that manifest themselves to us must necessarily be the way they are due to their nature and to divine providence. But even though things are the way they are, their existence "with-respect-to-themselves," is entirely dependent upon the necessary existence of God, and the continued existence of those causes.

Thus, for instance, it is only because of the sun that we experience daylight on earth. If we were to suppose that there *never* was a sun, we would have to conclude that there never was any daylight. If the sun existed but was eclipsed, the sunlight would not continue. If, finally, we were to assume that the sun directed its rays away from the earth rather than toward it, there would again be no light on the earth. This example (from R. Shem Tov) illustrates the three negative conditions set forth by this Proposition: that motion would not exist if its causes were *never present*, or happened to be *absent*, or existed in a *changed relationship* to the subject of motion. In these three cases the sun could not bestow its light since it has no internal cause of motion. There must be a *sufficient reason* for its continued rotation.

Is there a problem with this Proposition? In the archaic cosmology, the spheres revolved without change into an eternal future. Shouldn't we call them necessary rather than contingent existences? But Avicenna sharply distinguished the absolute existence of God and the contingent existence of everything else, including the spheres. Averroes rejected this difference just because he accepted the necessary existence of the spheres: their existence was not "contingent with respect to themselves." Nor did they require a force infinite in intensity to keep them going, since, according to R. Crescas, their initial impetus would keep them revolving in his outer space vacuum. Averroes and Crescas thus rejected the contingency of the spheres' existence and motion, invalidating the universal applicability of this Proposition.

How should we resolve this problem? Since we do not credit any aspect of the ancient cosmology, we don't have to provide an account for the allegedly eternal motion of the spheres. Note that this Proposition XIX doesn't even mention the spheres. The Proposition makes sense on its face. It is the same doctrine Maimonides famously enunciated in the first *mishnah* of his *Mishneh Torah*:

"It is the most basic of basic principles and the pillar of wisdom to know that there is an existent [namely God] that existed before anything else did and that He created everything that there is. *Everything in the skies, on the ground and in between exists only because Truth of His existence* [absolute existence]. If it were supposed that the Creator did not exist then nothing else would, for nothing can exist independently of the Creator."

PROPOSITION XX, Necessity: *Whatever necessarily exists with respect to itself has no cause for its existence in any way or under any condition.*

How will Maimonides use Proposition XX? In Guide 2:1, he wrote: “The existence of anything that has independent existence is not due to any cause....there must be a being with absolutely independent existence, a being whose existence cannot be attributed to any external cause...” Maimonides thus deploys Avicenna’s distinction between necessary and contingent existence as part of his elaborate proof of God’s existence. The concept has its little-noticed root in Aristotle (*Metaphysics*, 1015b10). Since everything beside God has only a contingent conditional existence (Proposition XIX), the sources and causes of those other beings must commence in a final cause whose existence is absolute, to avoid infinite regress. This is called a “cosmological proof,” (somewhat of a misnomer). It became Leibniz’ “Principle of Sufficient Reason.” Of it Maimonides wrote, in Guide 2:1, “This is a proof the correctness of which is not doubted, disputed, or rejected, except by those who have no knowledge of the method of proof.”

Why does Maimonides think that this Proposition is true? This proof goes beyond any deficiencies that we may think weaken proofs from design, or from causation, or even ontological proofs (i.e., from God’s nature alone), because it goes back to the most fundamental question, “Why does the world exist at all?” It does not presuppose design or orderliness. Confronted with the world of *conditioned* objects and occurrences we search for something *unconditioned* to avoid endless regress. This forces our acknowledgment of the one being whose existence is necessary, who is absolute being, and who is the unconditioned basis for all conditioned things. While this being is still not the God of religion it is superior to what is termed the “God of the philosophers,” a mere designer who leaves off once He is done designing. It is transcendent, unlike Aristotle’s “unmoved mover.” That is why Maimonides states the essence of this principle of sufficient reason in the first *mishnah* of his *Mishneh Torah*, quoted by us at the end of the last Proposition.

This transcendent being, God, is entirely causeless, which not only means that He is beyond any causal chain or cause, but also bears within Him no embryonic causes, nor any assemblage of causes whether actual, potential, material, incorporeal, manifest or notional. The necessary being could not be explained by Aristotle’s four causes (efficient, material, formal and final). The absolute being is not a combination of matter and form, nor does it have material or formal causes, for there is nothing that influences, prescribes, or explains its existence. Unlike everything else, it has no actualizing cause, since any unrealized potentiality in Him would be inconceivable. That is why the Proposition ends with the vague statement that this existent has “no cause for its existence...under any condition,” *v’lo b’shum panim*, Jud.Ar.: ולא עלי חזל. This catchall is meant to warn that we may not suppose that any particular state or special circumstances gave rise to this being. He is not dependent upon any moment, any place, or any state of affairs. Unlike anything else, His existence is identical to His essence. That is why He is called “necessarily-existent-with-respect-to-Himself.”

Is there a problem with this Proposition? The problem was that Averroes rejected most of what Avicenna had called contingent, especially including the cosmic spheres. Averroes argued that Avicenna did not understand the true Aristotelian meaning of possibility or contingency, which is the possibility of a thing *to be otherwise than it is*. Viewed from the point of view of nature’s final results, it is absurd to think that things could be otherwise than they are, unless, like the Kalām, we make imagination our touchstone rather than our intellect, such that things could be whatever they imagined them to be (Guide 1:7, Prop. X).

How should we resolve this problem? The result of the Averroist critique would be to make most everything necessary, just as Avicenna had made almost everything contingent. Maimonides avoids the problem by ignoring the classification of the spheres in Proposition XIX, and only speaking in Proposition XX of the one uncaused and unconditioned being, i.e., God.

F. THE PROPOSITIONS OF FORM AND MATTER (XXI – XXVI)

☛ XXI: *Composition*; XXII: *Matter/Form*; XXIII: *Potentiality vs. Possibility*; XXIV: *The Material Subject*; XXV: *The Proximate Mover*.

PROPOSITION XXI, Composition: *Every composition of two components necessarily has that composition as a cause of its present existence. With respect to itself, it has no necessity of existence. Its existence depends upon its parts and their conjunction.*

How will Maimonides use Proposition XXI? In Guide 2:1, Maimonides leaps to the unstated result of this Proposition. Inasmuch as every composite being “depends upon its *parts* and their conjunction,” and, “is *not* necessary-of-existence in itself,” the converse follows that the necessary existent, i.e. God, “does not include any plurality [i.e., of parts] whatsoever.” It follows that God’s absolute existence is *causeless*. He has no cause or causes internal or external to Him. God’s causelessness is important since there must be an uncaused cause at the beginning of all causal chains to avoid infinite regress (Propositions 1-3).

Why does Maimonides think that this Proposition is true? Since, as R. Bakhyā Ibn Pakuda (c. 1050-1120) put it, “Anything that is composite was brought into existence,” *ki kol m’khubar m’khudash*, there must ultimately be something non-composite which brings all composites into existence (*Duties of the Heart*, 1:5-6, 3rd Principle). As he explained, composites consist of more than one component. Those components must exist *prior* to the existence of the composite being. They must have existed *prior* in time to the composition’s existence since they are the components from which it was composed.

It follows that the composite being had a *beginning*. Whatever caused the composite to come together must have preceded it, both in *nature* and in *time*. Those causes cannot be part of an endless chain: they must commence with an actual first cause. What has no beginning has no end, but the converse is also true, that all beginnings must terminate in their final end, which, in this case, is the composite being manifest to us now.

Maimonides makes it clear that there must be two causes that constitute the composite being: 1) the *component elements* themselves, which always precede the composition, and which have prior independent existence, and 2) the composing of the composition itself, i.e., the *realization* of the potential for that composition which had existed in those elements.

Is there a problem with this Proposition? What, then, of the eternal spheres of the heavens in the outmoded cosmology? If these were eternal, how could they have proceeded from *parts*? Why would Aristotle say that they were a combination of the “matter” of their unique fifth element, and their unique “form,” the mover or soul of each sphere? (*Metaphysics* 1069b25).

How should we resolve this problem? Again, since the “matter” of the spheres has a purely conceptual existence, united in some unclear way with their incorporeal souls, the discussion of this problem must properly take place in the divine science of the *Maaseh Bereshit* [the account of creation], not in these open and public Aristotelian Propositions. This would explain why Maimonides avoids that discussion here, to take it up later in Volume 2 of the Guide. Another question is why he needs this Proposition at all, since in XXII he will discuss the basic composite, which is matter and form. The answer is that XXI is meant to answer the objection of those atomists, such as the Kalām, who did not accept the existence of matter and form, so that even any dubious composition of Kalāmīc atoms must have a Composer.

PROPOSITION XXII, Matter/Form: *Every body is necessarily composed of two components and must have accidents accompanying it. The two components constituting it are its matter and its form. The accidents that must accompany it are quantity, shape, and position.*

How will Maimonides use Proposition XXII? In Guide 2:1, Maimonides used this Proposition to show that God, as the uncaused and unconditioned reason for all motions and productions, could not possibly be composed of *multiple components*. There must be this absolute being, which “Cannot be a body, nor a force residing in a body... [It is] a being with absolutely independent existence [i.e., God], a being whose existence cannot be attributed to any external cause, and which *does not include different elements*; it cannot therefore be corporeal, or a force residing in a corporeal object; this being is God.” Also, at the end of that chapter, Maimonides suggests, again employing this Proposition:

“Another argument concerning the incorporeality of God. – Every corporeal object is composed of matter and form; every compound of these two elements requires an agent for effecting their combination. Besides, it is evident that a body is divisible and has dimensions: a body is thus undoubtedly subject to accidents. Consequently, nothing corporeal can be a unity, either because everything corporeal is *divisible*, or because it is a *compound*, it can logically be analyzed into two elements... But it has been proved that the Absolute admits of no dualism whatever.”

Why does Maimonides think that this Proposition is true? All changing things are a composite of matter and form. Why? When we observe the alterations in the elements themselves, we conclude that they must have two components, matter and form. Thus, elemental water, subjected to heat, can become elemental air [water vapor], and when subjected to cold freezes solid, joining the earth. Something, which we will call *matter*, must support these elemental transitions. Similarly, though all things are subject to cohesion and division, the division cannot be *in* the cohesion, or *vice versa*, because these are opposite states. Some constituent matter must underpin these changes.

We cannot touch or see elemental *matter*. Aristotle called it “intelligible matter” (ὅλη νοητή, *khiuli ha-muskal*), i.e., we know it but don’t see it. Its existence is conceptual but nonetheless real. Its relationship to *form* is ultimately the primal relationship of *not-being* to *being*. It represents the pure potential to *be* once prepared to accept the definition imposed by form.

Once it has achieved being, this composite must always have three accidents: *quantity*, in the sense of measurable dimensionality or solidity; *shape*, which is different from quantity, in that the same quantity can be manifested by different shapes; and *position*, which is the relationship of the parts of this being. No composite being exists without the accidents of quantity, shape and position.

Is there a problem with this Proposition? According to most interpreters, Maimonides followed Avicenna in arguing that the celestial spheres, though revolving forever, are nonetheless composites of matter and form. Averroes and R. Crescas, by contrast, argued that they were pure form untouched by composition.

How should we resolve this problem? R. Even-Shmuel explains that the celestial spheres were thought to be an “intelligible assembly,” *harkava muskalat*, i.e., an assembly of conceptual matter and conceptual form. Thus, even the eternal spheres had to be assembled. This Avicennan view harkens back to Plato’s *Timaeus*, which conceived of a heavenly chaos of preexisting matter, after which the demiurge put the cosmos in order. Thus, the heavens were contingent and composite in-themselves, though necessary-with-respect-to-this-cause. This view is comparable to the biblical creation after which the *created* heavens also had to be set in order. The heavens are an intelligible assembly of matter and form, contingent in themselves, but necessary with respect to their Creator, and subject to the inevitable accidents of dimensional *quantity*, spherical *figure*, and cosmological *position*.

PROPOSITION XXIII, Potentiality vs. Possibility: *Anything that exists potentially, and has any possibility attached to it, may, at some time, not exist as an actuality.*

How will Maimonides use Proposition XXIII? In Guide 2:1, he argues that the First Cause is entirely *actual*, with no potentiality. *Potentialities* might or might not attain actualized existence. If God possessed any such potentiality, it is *possible* that this potentiality might *not* come to exist. But the very idea would be absurd, since God's total absolute existence is necessary. Moreover, the realization of any such potentiality always depends upon an external cause. But when the action of such a cause ceases, the potential would be *without actual existence*, which, with respect to God, would also be absurd. God possesses no potentiality.

Why does Maimonides think that this Proposition is true? Maimonides, in a written reply to his translator, R. Shmuel ibn Tibbon, discussed this problem at length, writing that "To grasp the distinction between *potentiality* and *possibility* requires great subtlety, and is a matter of utmost difficulty even to trained philosophers." A fair reading of this letter finds this distinction in the difference between the *subject* and the *object* of the potentiality. Thus:

1) Potentiality: *Some thing or characteristic exists in a state of potentiality (b'koakh) with respect to its subject.* For example, a piece of iron is potentially a sword, and a seed is potentially a tree. The *subjects* are the iron and the seed, while the sword and the tree are the *objects* to be actualized. The subject has a potential existence *as something else* (sword, knife, fork, *etc.*). Their potentiality is the *opposite* of their actuality. Potentiality always looks to the future, striving to be realized, when it will no longer be a potential. But while it is still potential its existence is only embryonic. Only its future possible actualization brings about its *complete* reality. The potentiality is *determinable* being, while the actualization is the *determined* being. Though the sword has not yet been actualized, its potential existence in the iron is a *real* possible existence.

2) Possibility: *Any potentiality within an existing thing has possible existence as the object to be actualized.* "It contains a possibility, *efsharut*, of becoming *something else*" (*Letter to R. ibn Tibbon*). The sword can possibly come from the iron, and the tree from the seed, meaning that the sword and the tree *might or might not* be actualized as *objects*. The actual existence of the object can only be said to be a *possibility*. This possibility exists *in the mind* of the swordsmith who will bring forth the object from potentiality to actuality, as when he imagines the possible sword that could be crafted from the iron. Thus, the distinction between the possible and the potential is that the *possible* is a *mental* determination, a choice. By contrast, the *potential* has a *real* though unactualized embryonic existence, not just a possibility. Thus, this object could just as well have been made a knife rather than a sword, for neither is impossible to the mind of the craftsman. Nothing compels the craftsman to choose one or the other. A future knife is not the opposite of a future sword, only one of a range of possibilities.

3) Everything that is potentially something else will not actually be that something else at some time. *Potentialities persist, but possibilities will at some point not exist.* Both the sword and the knife are potentially in the iron, but if it is made into a sword the knife will not then exist. "For a given piece of iron cannot be called potentially a sword unless it is *not* a sword *at some time*. Otherwise, its being a sword would not be potential, but it would rather be actual *all the time*" (*ibid.*). This is because its potentiality is the *opposite* and the *contradictory* of its actuality. It must be one or the other. Only God is actual *all the time* and only because He possesses no potentiality.

Is there a problem with this Proposition? If the spheres are eternal, with no *potential* to be otherwise, (Proposition XIX), how could they have a possible existence as anything else?

How should we resolve this problem? One plausible solution is that since the Proposition is about things that exist potentially *and* have possibility attached to them, Maimonides must have intended to exclude the spheres from consideration, inasmuch as the spheres are possibly existent with respect to God, but were not thought to have *any potentiality* to be anything else.

PROPOSITION XXIV, The Material Subject: *Anything that is potentially something is certainly a material subject (baal khomer). Matter is always subject to possibility.*

How will Maimonides use Proposition XXIV? In Guide 2:1, he says “A series of causes [in our universe] cannot go on *ad infinitum*; we must at last arrive at a cause of the transition of an object from the state of potentiality to that of actuality, [a cause] which is constant, and admits of no potentiality whatever. In the essence of this Cause nothing exists potentially, for if its essence included any possibility of existence it would not exist at all (Prop. XXIII). It cannot be corporeal, but must be incorporeal (Prop. XXIV); and the immaterial being that includes no possibility whatever, but exists actually by its own essence, is God.”

Why does Maimonides think that this Proposition is true? Writing to his translator, he says “Possibility and potentiality are mutually dependent, a unified continuity, and this possibility never departs from matter or anything generated from it.” That which is generated from matter is called the “material subject.”

Material subjects are things that have a potential to be something else. They consist of matter and the forms that could be realized in that particular type of matter. *The material subject is the last step in any causal chain.*

The *material subject* could be an *actually existing subject* –*davar b'poel*, which can change to anything that *can potentially occur* in that type of matter. Because water is potentially hot, the water *can receive* heat. The iron can potentially be made by the smith into a sword. This matter also has a possibility of being a *recipient* of a potential change, its **object**. Thus, this water has not yet been heated (*i.e.*, heat is *nonexistent* in the water-*davar sh'aino poel*). But it is *possible* that the water could be heated. The smith could possibly make a sword *from* the iron. Thus, this last step in the causal chain possesses inner dynamism.

Any *material subject* is subject to a range of possibilities. But the First Cause could not be subject to possibility. If it were, there would have to be a cause prior to the First Cause to actualize it, leading to infinite regress, which Proposition III ruled out.

Matter can never exist independently. It must always be joined to form. Yet it always strives to realize another potential connection to some new form. That is why Maimonides compared matter to the “Married Harlot” of Proverbs 7:6-27 (see my commentary on the *Introduction* to the Guide, “Through the Lattice: The Parable of the Married Harlot.”). God strives for no such possibilities or potentialities. He lacks nothing.

Potentialities in matter always come with *privations*, since you cannot potentially have something unless you *lack* it. In Guide 3:8 Maimonides wrote: “The true nature of matter is such that it never ceases to be associated with privation (*heider/steresis*). It is for this reason that matter does not retain permanently any single form but is always taking off one form and putting on another.”

Is there a problem with this Proposition? The problem, as we have repeatedly seen, is the allegedly eternal unchanging character and motion of the spheres. But even Aristotle held that the spheres had *some sort* of matter, which was the *material subject* of rotation, for he says that “Matter belongs to those everlasting things [heavens/spheres] that are not generated but moved by change of place, though it is *not* matter for coming into being, but for [motion] from somewhere to somewhere,” (*i.e.*, rotational motion. *Metaphysics* 12:2:1069b25, Sachs translation, altered somewhat).

How should we resolve this problem? Maimonides was wise to avoid discussion here of the dubious nature of the spheres. In any event, the subject of the heavens was not a matter of philosophy but of Jewish esoteric discussion, prohibited from public airing by the Mishnah.

PROPOSITION XXV, The Proximate Mover: *The component principles of a composite substance are matter and form, but there must be an agent, i.e., a mover, that will move the material substrate until it is prepared accept the form. This proximate mover prepares the matter of this substance. This speculation, demanding inquiry into motion, the mover, and the moved, Aristotle clarified, writing, “Matter does not move itself” (Metaphysics 12:6:1071b29). This is the great premise which arouses our search for the existence of the Prime Mover.*

How will Maimonides use Proposition XXV? Maimonides uses this at the beginning of Guide 2:1 to show that “A moving agent must exist which has moved the substance of all existing transient things and enabled it to receive form.” This is the underlying meditation for his proof of God’s existence. Starting from the recognition that all things are composites of matter and form, there comes a further recognition that there must be a *third cause* which prepares the potentialities in that matter to accept the form which it could potentially have. We view this third cause in its larger sense as a *mover*, especially as the *proximate mover*, the last in any chain of causes, motions, productions, and preparations leading to the final physical substance that is manifest before us. This meditation on the *Motion Propositions* reminds us of why we need this proximate mover, for matter cannot prepare itself to accept a potential form. Matter has no internal principle of self-preparation or movement. Once we conceive of this proximate mover, the end of the chain of movers, we realize that everything that has such an end must also have a beginning. That beginning is the Prime Mover, the object of the Maimonides’ philosophical pursuit in Guide 2:1.

Why does Maimonides think that this Proposition is true? All substances are, at bottom, conceptual composites, in that they are composed of the four pure elements (fire, air, water and earth), as well as the conceptual principles of matter and form, which resolve themselves into the universals and particulars that constitute genres and species. These notions are all real even though they are conceptual. The physical substances that our senses register, that we see, touch, hear and smell, are themselves composed of those conceptual elements, whether we recognize them or not. These are the principles underlying all things, their true immediate sources (*m’korot*; Gr.: *archés*, ἀρχές), their real causes. If the physical substance lacks either matter or form, it cannot exist. But while there *is* such a thing as a *separate* form, meaning the conceptual entity that we refer to as a “universal,” as expressed by a genus or a species, there is *no* such thing as *separate matter*, for even at a conceptual level matter has no existence without form. Matter is pure nonbeing, pregnant with potentialities striving for the realization of its form. It is the *substrate* for all the forms successively occurring in it, providing the necessary support for that succession.

The duality of form and matter suffice to explain the existence of the physical substance, but not its generation. How could the substance come to be if matter without form does not actually exist? We must find a third necessary principle, external to the substance itself, that produces the motion which results in the preparation of the material substrate to accept a new form, and which then causes matter to undergo the formal change resulting in the generation of new things. But this *proximate mover* owes its own motion to the great chain of motion, necessarily commencing with the motion engendered by the Prime Mover in the cosmos, God. God is the unconditioned *sufficient reason* for the conditional motion evident in our universe.

Is there a problem with this Proposition? No. The commentators unite in praise of this Proposition. R. Even-Shmuel said of it that “Still, remaining within the limits of natural philosophy, we ascend to the philosophy of the divine.” R. Hillel ben Samuel of Verona wrote (c. 1220–c. 1295), “This speculation on the existence of a proximate mover forces meditation on the Prime Mover and validates His existence. It is the foundation and key to this entire section of the Guide of the Perplexed.” R. Shem Tov noted how the Aristotelian notion transcends itself, saying, “Aristotle would not have known or arrived at intelligible substance (*etzem ha-muskal*), but through this idea of the beginnings of tangible substance.”

G. The Eternity Proposition (XXVI)

PROPOSITION XXVI: *Time and motion are eternal, always in actual existence.* (The first and last Propositions are the shortest, both eight words in the Judeo-Arabic original).

How will Maimonides use Proposition XXVI? The basic idea of this Proposition is that time and motion, are mutually dependent, and have never been created nor will ever be destroyed. This is the Principle of Conservation. Maimonides does not believe it. But Aristotle thought it was the basis for all the other Propositions. Still, Maimonides needed the other 25 Propositions to prove God's existence, unity, and incorporeality, since, as we saw in the last chapter, Guide 1:76, theology failed to do so. He, therefore, *tactically* accepted Aristotle's eternalism, at least for the moment, only so that he could wield the other 25 Propositions in Guide 2:1 to demonstrate the existence of God.

Why does Maimonides think that this Proposition is true? *Maimonides does not think that it is true.* Nonetheless, many of Maimonides' commentators agreed with Aristotle's eternalism, especially Jewish Averroists like his translator R. Shmuel Ibn Tibbon, who clearly accepted eternalism, and others like R. Narboni, who did so obscurely (see Even-Shmuel, note 57 to this Proposition, and Kafih, note 4, page 164). They assumed that Maimonides held a secret eternalist position. Many contemporary neo-Straussian commentators agree. Nevertheless, Maimonides' explicit statements clearly display an orthodox adherence to creation *ex nihilo*. Prof. Herbert Davidson, contending against such misreading of the Guide wrote, "In ascertaining an author's intent, even an author who indulges in esoteric expression, the starting point surely should be what he himself says." Kenneth Seeskin, in *Maimonides on the Origin of the World*, Cambridge, 2005, thoroughly rebuts any possible basis for saddling Maimonides with eternalism, but that has not stopped the regular production of essays to the contrary.

Maimonides makes no attempt to refute this Proposition here, reserving that argument for Guide 2:13 – 2:25, but only writes that Aristotle never proved it. Aristotle only accepted it because he thought it was the most fitting and appropriate of the contending theories of the origin of the universe. In Guide 2:14, Maimonides lists eight reasons why Aristotle came to eternalism. He writes, describing the first and most typical of those reasons: "*According to Aristotle, motion, that is to say, motion par excellence, is eternal. For if the motion had a beginning, there must already have been some motion when it came into existence, for the transition from potentiality into actuality, and from non-existence into existence, always implies motion; then that previous motion, the cause of the motion which follows, must be eternal, or else the series would have to be carried back ad infinitum,*" i.e., an absurd infinite regress. Aristotle makes this sort of argument, respectively, for the eternity of time, matter, and spherical rotation. Since, he argued, there could be no sudden emergence of a divine creative potentiality *prior* to creation, or of a *new* desire in the unchanging divine, or of a *prior* moment of divine inactivity, there could, therefore, be no such thing as creation *ex nihilo*. Maimonides rejects these claims in the chapters following Guide 2:14.

Is there a problem with this Proposition? The problem is that it hopelessly entwines God in a universe He did not create. Maimonides' God, in contrast to the "God of the philosophers," is a *transcendent* being possessed of total volition. This transcendent God can intervene miraculously in the natural order. God is beyond and completely different from that order. It is this recognition that brings Maimonides to reject eternalism, even though he recognized that this destroyed the foundation of the Aristotelian system.

How should we resolve this problem? Between the complete *acceptance* of Aristotelian eternalism by the Jewish Averroists, on the one hand, and its complete *rejection* by the Kalām (Guide 1:73, Proposition XI), Maimonides accepts the *possible* existence of "successive" infinities, like rotations and generations, but only going forward. There can be no simultaneously existing actual infinite (Propositions, I – III).

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