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# **Cosmology and the Koran: A Response to Muslim Fundamentalists (2001)**

**Richard Carrier**

Muslim Fundamentalists are fond of claiming that the Koran miraculously predicted the findings of modern science, and that all of its factual scientific claims are flawless. There are two important objections to this claim that I will make, one pointing to a general problem, the other a specific example of the failure of the claim.

## **1. There is Nothing Miraculously New in the Koran**

Much of the fundamentalist's evidence for this alleged miracle is actually moot, since it represents scientific knowledge that had been known in both the Mediterranean and Middle East for centuries before the Koran was written. Things like this have proven hard to explain to fanatics who are more practiced at pious denials than in actual historical research. For what follows, I am repeating common knowledge in the field of medieval history, and I refer doubters to the bibliography at the end of this essay.

The works of the Greeks were known in the Arab and North African world for a thousand years before Islam, and Islam

began translating Greek texts into Arabic within a century of its military conquests. Greek Hellenic culture had long since spread into and affected popular beliefs, even among illiterate peoples, throughout and beyond the Roman Empire, even down the East Coast of Africa, in many cases reinforced by the introduction of the new Romano-Hellenic philosophy of Christianity. Jews and Christians were extensively Hellenized, and Islam sprung from these very same religious traditions. Even India knew about Greek astronomical works in the first century A.D., having partially translated them into royal languages. Anyone who knows the history of the conquests of Alexander the Great and his successors knows that Greeks and their culture had been firmly rooted and spread throughout the world all the way to Afghanistan, the Ganges river, especially Syria and Persia, but even to Arabia itself. Greek influence on Egypt and Carthage, and even direct colonization, was extensive and spread throughout North Africa over a millennium before the rise of Islam. Oral culture, begun from the speeches of philosophers and rhetors, the songs of poets, and the sermons of preachers and holy men, transmitted a simplified Hellenic-Zoroastrian cosmology throughout the peoples of the Western and Middle-Eastern world at the time.

Many of the first Muslims would have been very familiar with Greek language and Greco-Roman education long before they decided to translate texts. The Muslims used Greek for all their administrative documents until the beginning of the 8th century. By the time the Koran was written, all of the Arabic world had been under the domination of the Greek Byzantine Empire for centuries, and had been settled by Greeks since the invasion of Alexander the Great a thousand years before. Indeed, it would have been impossible for Arabs in the 7th century *not* to know of Greek ideas, since they would already have known many Greeks, they would have traded and worked

and gone to school in Greek cities, and served in Greek armies and administrations, for centuries. Just as Europeans learned and read from Latin and Greek, despite speaking other languages, for over a thousand years before anyone thought to start translating books into local languages, so the Arabs used Greek as the language of the educated administrator until their devotion to the native language of their holy book, and the destruction of Greco-Roman power, drew them to transform the written tradition they had inherited. Hence, Arabs knew many Greek ideas, and had known them for many centuries before Islam arose. This is why the burden is on the Muslim to show you *anything* in the Koran that was not already standard knowledge or educated belief in the Mediterranean world when the Koran was written. Until they do so, and do so competently, we are fully justified in ignoring their assertions to the contrary.

Of course, it is claimed that Muhammad was uneducated, and thus the fact that he knew sophisticated ideas, or even writing itself, is miraculous. Besides the fact that this cannot be even remotely proven (the historical documents concerning Muhammad are murky at best), from what we do know the claim is implausible. He was born to a rich and powerful family who controlled the influential trade city of Mecca, which had major and regular connections with Byzantine Egypt, Syria-Palestine, and Persia, all bastions of ancient Hellenized cultures. It is inconceivable that a child of a powerful and wealthy mercantile family, even raised by relatives, would not have received an education. Moreover, Mecca was already populated with large quarters of Hellenized Jews and Christians, with whom Muhammad would have had ample oral contact. Not only is it more than possible for Muhammad to have learned writing and many other Greco-Persian ideas, it is almost certain. There really is no way to

prove otherwise, for legend has all but buried the facts.

## 2. The Koran Gets Cosmology Predictably Wrong

I will address the one example of the claims of "scientific accuracy" in the Koran that I have examined. One [Fundamentalist Muslim website](#) declares that "the Koran mentions that the universe originated from a 'gaseous material'. (Koran 41:11)." This is a paradigm example of the type of "evidence" that is offered, and one hardly needs to point out why it is unpersuasive--the ambiguity of it is astounding. But in detail:

- The idea that the universe began as some sort of gaseous vortex was ubiquitous throughout Persian and Greek ideology. That the Koran says the same thing is thus not at all surprising. Greek philosophers guessed a lot of scientific details correctly--they anticipated atoms, other solar systems, evolution, the laws of thermodynamics, the rain cycle, you name it. That doesn't make them supernaturally prescient, nor does it do so for the Koran.
- The Koran fails to say anything about specific gasses, or that there was more than one (helium and hydrogen), or anything scientifically specific at all, like why or how the universe originated or evolved, no mention of scientific-mathematical laws or relationships or physical constants. It thus makes no scientific statement at all. It says something hopelessly vague and unoriginal for its time. Thus, any future scientific finding could be retrofitted to suit what it says. It is thus scientifically useless, and would be even if it were true.
- The universe did not begin as a gas. If current Big Bang

science is correct, the universe began before any matter of any kind existed--it began as pure energy. It took several moments for any matter to form, and then it was a plasma, not a gas. Gases only came later, after the plasma cooled, and yet gasses were still not the only constituent--much of the mass-energy at even that point, as before, was comprised of electromagnetic radiation--light. The fact that the Koran fails to mention any of this or any other crucial scientific information is precisely why its claim to "scientific accuracy" is to be dismissed. It is making vague metaphysical statements, and that is not science.

- The passage in question actually does *not* say "gaseous material," and here we find the familiar case of the fundamentalist playing fast and loose with language, to twist things into saying precisely what they do not. The Arabic word used is *dukhan*, "smoke." This is claimed to be a "perfect analogy" for gas and particles in suspension, and the gasses being hot. Is it? Not really. Smoke is made of ash, predominantly carbon, and is produced from burning (oxidation), not plasma condensation. Smoke looks nothing like heated hydrogen or helium, does not share its elemental mass or other properties, and does not even possess many of the general properties of a gas. Thus, it is the wrong word. Arabic does not lack the vocabulary to simply say "hot gases" or "hot gases expanding in a vacuum" or anything even remotely relevant to the truth. Instead, the author chose the least accurate word, "smoke." If you can change the meaning of a word at will, and convert a word for "carbon-based ash" into "two basic gases," then you can change the meaning of any word in any book to prove any theory you want. Far from being scientific, that is the very antithesis

of science.

- The very passage in question is neatly quoted out of context, disguising the fact that the whole section actually clearly and flatly *contradicts* known science. This point must be driven home in some detail for Muslim deniers to understand it.

So now the real problem: the Koran gets science completely wrong, and does so in a way that makes perfect sense as an idea borrowed from other pre-modern cultures of that place and date. These two facts combine to eliminate any possibility that the Koran is miraculously scientifically prescient, or anything other than the natural product of human imagination. Here is a literal translation, with commentary in parentheses, from a [mainstream Muslim website](#):

**[41:9] Say (O Muhammad SAW): "Do you verily disbelieve in Him Who created the earth in two Days and you set up rivals (in worship) with Him? That is the Lord of the *Alam*" (mankind, jinns and all that exists).**

**[41:10] He placed therein (i.e. the earth) firm mountains from above it, and He blessed it, and measured therein its sustenance (for its dwellers) in four Days equal (i.e. all these four 'days' were equal in the length of time), for all those who ask (about its creation).**

**[41:11] Then He *istaw* (rose over) towards the heaven when it was smoke, and said to it and to the earth: "Come both of you willingly or unwillingly." They both said: "We come,**

**willingly."**

**[41:12] Then He completed and finished from their creation (as) seven heavens in two Days and He made in each heaven its affair. And We adorned the nearest (lowest) heaven with lamps (stars) to be an adornment as well as to guard (from the devils by using them as missiles against the devils). Such is the Decree of Him the All-Mighty, the All-Knower.**

The Koran repeats throughout that Allah created everything in six days, just as the Old Testament says, and here we have those six days broken down into three units of two, and placed in chronological order. Though attempts to "reinterpret" the word "day" in ways that fit scientific knowledge never work (inserting any uniform duration into the story is still incapable of fitting the facts), we will put that aside here and address what is irrefutable: the order of creation clearly given above soundly contradicts firmly-established scientific fact. Verse 41:9 states in no uncertain terms that the earth is made "in two days," and this is the first two days in the list. Verse 41:10 describes the next two days of creation, completing the first "four days equal," in which mountains and plants are made. Thus, we are seeing a clear temporal order: for mountains and plants could not be made before the earth is made, thus 41:10 follows 41:9 in time, so it is only reasonable to conclude that 41:11 and 41:12 continue the temporal progression.

But then we see that verse 41:11 establishes an undeniable context in which the universe exists as smoke *at the same time* that the earth already exists, since God "rose over towards the heaven when it was smoke" and spoke to it and *to the earth*, therefore no Muslim can rationally deny that this verse clearly

says the earth existed at the same time as the smoke. The earth *had* to exist while the heavens were smoke, or else this sentence would make no sense. So now we see the original claim fall flat on its face: the Koran *does not* say "that the universe originated" from smoke, certainly not in any way that matches the scientific theory that the universe was once in a gaseous state, since here the "gaseous state" co-exists with a fully-formed Earth. That is scientifically impossible: the elements of which planets are comprised did not exist until the gasses condensed into stars, and the stars exploded and recondensed over several cycles, generating the heavy elements that eventually condensed into planets around new stars. Verse 41:11 thus fails to fit any scientific theory of the origins of the cosmos: the earth long post-dated the "gaseous" state of the universe that Muslim Fundamentalists want the word "smoke" to refer to.

It gets worse. Verse 41:12 describes in no uncertain terms the last two days of the six days of creation, since it says in these two days creation was "completed and finished," yet it is *only then* that stars, the "lamps," are made. This completely reverses scientific reality: earth *could not possibly* have existed before stars--no planet could. We know that as a matter of firmly-established fact: for only stars can produce the heavy elements of which planets like the earth are made. Yet the Koran says, with no ambiguity and beyond any shadow of a doubt, that stars came *after* the earth. Any book that says that is simply wrong, and certainly not supernaturally inspired. This alone proves that the book is a human artifact, an ancient work of literature from an age of relative ignorance. It is thus a historical and literary curiosity, not the harbinger of the One True Religion. Consequently, the claims to the contrary by Muslim Fundamentalists can be dismissed without any fear of being unreasonable or irrational. It is they who are being

irrational and unreasonable if they deny the obvious.

For example, one Muslim tried the usual fundamentalist tactic of abusing and twisting language contrary to all sense and reason, telling me that the word translated as "then," *thumma*, in verses 41:11 and 41:12 means "and also" or "moreover" and thus does not denote temporal order, and so 41:9-12 is just a conceptual list given out of chronological order (for no particular reason, of course). But this argument is false, for *thumma* can in fact mean a chronological "then," and as I have shown the *context* makes no other interpretation logically possible. But this also entails his own refutation: for if there is no chronology here, then the claim that the universe "originated" as *dukhan* is not in the Koran at all. By denying the chronological nature of this passage, he denies the very claim he wants to make. It thus does *not* say anything about the whole universe *originating* as smoke. If there is no claim, there is no miraculous prediction of scientific fact. But as we have seen, not only is there no such prediction, the passage cannot be understood in any other way than as a plain *contradiction* of the facts.

We also see how the Koran's failure makes perfect sense in its milieu: the author was merely repeating the false order of creation given in the book of Genesis--earth and mountains and plants first, then the stars. The only variation is in the precise timing: Genesis has stars made on the fourth day, the Koran has it on the fifth and sixth days, etc., but otherwise the concepts are clearly related. Moreover, verse 41:12 repeats a popular superstition found throughout the Greco-Persian world of the day: the myth of the seven heavens. This was an inherent component of almost every pagan religion, and also of Judaism and Christianity, and a clear marker of cultural borrowing, with no practical scientific meaning. Thus, we

clearly see the Koran in error here, and we can easily account for this error in natural, human terms. There is nothing more to be said. Indeed, the "seven heavens" motif is a false count of the solar bodies, and even implies geocentrism, since "the seven heavens" are traditionally delineated by the seven "planets," i.e. the sun, moon, Mercury, Venus, Mars, Jupiter, and Saturn. No one yet knew of Uranus, Neptune, or Pluto, much less the asteroid belt. Nor did anyone yet know that the moon is the only body that actually orbits the earth, and that the sun doesn't orbit at all, and thus neither should be classified with the other planets.

Whether the Koran, or the Bible, or any other religious text contains noble ideas is not the point here. Noble ideas stand on their own: they do not need "holy" texts to support them, they do not need miracles, or religious systems or supernatural entities, in order to possess their nobility. Wisdom is wisdom, from wherever it comes, and for all practical utility we should seek it where it is most carefully and correctly and usefully described and explained. I do not find this to be the case in any religious text. Philosophy has been far more successful at this, with a better grasp of the concept of explanation, definition, and logical analysis and argument. Thus, there is nothing religious texts have to offer that is not better said in philosophical texts. If, then, religious texts like the Koran are all mere human and ancient works of mortal and fallible piety, we should not be obsessed with them, or revere them as anything other than they are: the cultural dogmas of ancient peoples. Instead, we should seek wisdom in reason and logical argument and scientific investigation. Thus, I reject the Koran only because it is a human, fallible, primitive work of a bygone age, ineloquent and inappropriate for our times. It may have other salvageable virtues, in its moral teachings or literary quality or historical interest, but they do not interest

me. I find my moral wisdom in better places, and have enough literature and history to occupy and entertain me. So, to all Muslim Fundamentalists out there, do not approach me with assertions of my irrationality. Examine yours instead.

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"We need humanity more than religion"