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The Half-Baked Loaf: Examining Hamza Andreas Tzortzis's Discussion of Science in *The Divine Reality*

Stefano Bigliardi, Associate Professor of Philosophy, School of Social Sciences, Arts, and Humanities, Al Akhawayn University, Ifrane, Morocco, s.bigliardi@aui.ma

This article scrutinizes the conceptualization of science advanced by the Muslim public speaker and author Hamza Andreas Tzortzis in his book *The Divine Reality*. The Islamic theistic outlook advanced by Tzortzis is based on extensive discussion of science, including a rebuttal of science-based atheism and the prescription for Muslims to practically accept the theory of evolution as a best-working model without in fact including it in their belief system. It is argued that Tzortzis's discussion suffers from six major and intertwined problems related to the consistency and accuracy of the epistemological framework within which he defends (Islamic) theism.

Introduction: Hamza Andreas Tzortzis and His Work

Hamza Andreas Tzortzis (b. 1980) is a prominent Islam apologist whose speeches enjoy great visibility. At the time of writing, the most popular video on his official YouTube channel (a debate with Dublin City University lecturer and political/religious speaker and writer Mark Humphrys on the current situation in Palestine) has nearly 127,000 views (Hamza Andreas Tzortzis 2024b). Additionally, his 2013 debate on Islam versus atheism with physicist Lawrence Krauss (b. 1954) at University College London has more than 5.3 million views (iERA 2013). Tzortzis, a British convert of Greek origin, exudes eloquence and self-confidence, projecting an aura of youthfulness, informality, dynamism, and modesty, apparently bestowing rationality and philosophical depth on the arguments he deploys while "sharing and defending the ways of God" (Hamza Andreas Tzortzis 2024a).

Religion and science scholar Shoaib Ahmed Malik (2018, 32) calls Tzortzis one of the "middlemen" in the Islam-atheism debate, which he describes as "a category of individuals in between the laity and fully established and recognised scholars; they have taken it upon themselves to fill a void that they think needs addressing." In his book *The Divine Reality: God, Islam and the Mirage of Atheism* (Tzortzis 2019), Tzortzis offers a collection of the arguments he uses in his debates on Islam and non-belief. So far, the book has undergone three editions, and readers have responded to it mostly enthusiastically.[1] It articulates a contemporary, philosophical understanding of Islam that draws on ancient as well as modern arguments in defense of God's existence in general and the Qur'an's divine origin in particular. While Tzortzis cannot be said to have advanced original arguments, their arrangement and the style in which they are presented, and the systematic confrontation of Western "new atheism" and Islam embodied by Tzortzis, can prove novel and intriguing, especially to young readers, and merit discussion based on Tzortzis's visibility and popularity.

This article offers an analysis of Tzortzis's book, focusing on his discussion of science. In fact, he advances a whole multifaceted, theism-informed understanding of Islam vis-à-vis atheism in which all elements are ultimately tightly intertwined; it is, however, only his conceptualization of science that I scrutinize here, leaving his defense of the Qur'an somewhat more marginal (at least as far as some arguments for it are concerned). I think a critical focus on Tzortzis's discussion of science is particularly important. On a first and general note, science is crucial in the discussion of, and in its concrete intersections with, contemporary Islam.[2] Second, and more specifically, I am convinced that any attentive reader can detect several tensions in Tzortzis's conceptualization of science that warrant attentive scrutiny in the interest of building consistent, well-informed, and logical debates on science and religion or theism versus atheism.

While approaching Tzortzis's work and ideas, one should keep in mind that he served as the CEO of, and was very active within, the missionary organization

iERA (Islamic Education and Research Academy) between 2017 and 2020. Ideally, Tzortzis's thought should be analyzed and understood in the context of said organization's objectives and strategies, as well as its development over time. In this regard, valuable scholarly work has been contributed by Mira A. Baz in the PhD dissertation "Online Islamic Daʿwah Narratives in the UK: The Case of iERA" (Baz 2016). Baz has the merit of advancing a comprehensive, thorough, and contextualized examination of Tzortzis's production; additionally, Baz often points out areas of opacity and imperfection in such work (e.g., Baz 2016, 80–82, 197–99, 206, 210, 212). The present study is prominently philosophical in nature, focusing solely on the ideas offered in *The Divine Reality* regarded as a system, specifically its conceptualization of science.[3] It is important to add, however, that Tzortzis no longer works with iERA. *The Divine Reality* is currently published by the Sapience Institute, an organization Tzortzis founded in 2020 and of which he serves as the CEO (cf. Hamza Andreas Tzortzis 2024a).

Tzortzis's book is divided into sixteen chapters (plus a preface and an afterword). Of those, one chapter (twelve) tackles the question of whether science has disproved God; it extensively discusses science and religion and ends with Tzortzis's prescription on how to deal with them. At least eight other chapters (1, 3, 4, 5, 6, 7, 8, 9) make extensive or important references to science. The structure of this article is as follows: first, I provide a summary of the references to science in chapters 1, 3, 4, 5, 6, 7, 8, and 9; second, I provide a detailed reconstruction of the twelfth chapter; third, I elaborate on six (entwined) problems that, in my opinion, are left open in Tzortzis's discussion of science and religion.

Before I delve into the discussion, I want to specify that the present pages are written from the perspective of a moderate and hopeful agnostic, who is genuinely convinced that, as far as some crucial debates at the interface of science and religion are concerned, the jury is still out. I also think, however, that Tzortzis, in some cases, has failed to see that very point, creating for his religious readers (or potential converts) the illusion that some issues have been rationally settled once and for all; yet, in other cases, he himself suggests that the jury is still out, while in fact the verdict has already been reached and released. Additionally, I want to emphasize my appreciation of several prescriptions directed by Tzortzis to his readers (or the concrete good example he sets), in particular when he humbly points out his own past mistakes (Tzortzis 2019, 15), when he emphasizes the value of compassion (Tzortzis 2019, 15), and when he teaches that one should "debate," not "hate" (Tzortzis 2019, 299–301).

Science in *The Divine Reality*

The first chapter of *The Divine Reality* discusses the history of atheism; here, Tzortzis raises a point that he returns to multiple times: atheism is often embraced along with (or as a consequence of) philosophical naturalism, or

"the view that all phenomena within the universe can be explained via physical processes" (Tzortzis 2019, 22). He points out that some "intriguing discoveries of the mid-20th century," including the Big Bang or the discovery and study of DNA, "progressively brought theism back onto the intellectual and academic discussion table" such that it currently is "a perfectly respectable position" (Tzortzis 2019, 28–29). In the third chapter, Tzortzis argues that atheism is irrational. One of his arguments is that "rationality cannot come from blind, non-rational physical processes" (Tzortzis 2019, 47; cf. also 51–52). More specifically, Tzortzis suggests that evolution cannot explain the emergence of reason. The fourth chapter makes a case for atheism being "unnatural." Here, Tzortzis reports that belief in divine creation, God, design, and mind-body dualism has been observed in children. In this regard, he cites distinct research and publications authored by experts, mostly in psychology and the neurosciences, such as Olivera Petrovich, Paul Bloom, Deborah Kelemen, Elisa Järnefelt, and Caitlin F. Canfield. Such observations, suggests Tzortzis, show that theism is natural. A complementary idea advanced by Tzortzis in this context is that atheism or non-belief is acquired and "intellectually exhausting" (Tzortzis 2019, 71–73). In the fifth chapter, Tzortzis tackles the origin of the universe, writing that he does not discuss scientific research in this regard "because the data is currently underdetermined" (Tzortzis 2019, 84). In this chapter, however, he advances some criticisms of science (Tzortzis 2019, 87) and starts a discussion of causality (Tzortzis 2019, 88–90) that he refers back to, and elaborates on, throughout the book. Additionally, he discusses several science-related arguments or topics (Tzortzis 2019, 90–91, 96, 98–100). In the sixth chapter, Tzortzis elaborates on the idea that the universe must depend on God, which he suggests is a conclusion one can rationally draw; here, he delves into the limitations of science, a topic he explores further later (Tzortzis 2019, 111–12). In the seventh chapter, Tzortzis discusses neuroscience, arguing that no matter how sophisticated it may become, it will not solve the "hard problem" of subjective consciousness. In the eighth chapter, Tzortzis discusses the idea that the universe is designed, referring to multiple scientific observations and topics.[4] In the ninth chapter, elaborating on the divine authorship of the Qur'an, Tzortzis discusses the epistemology (and science) of testimony, touching on the open questions in such a field (Tzortzis 2019, 217–19).

The twelfth chapter of *The Divine Reality* contains a rebuttal of the idea that science disproves God. Tzortzis starts off illustrating science's limitations with a comparison: if one visits a palace and sees that its first room is a classroom, they cannot legitimately conclude that all its rooms are similar or that further investigation is worthless (Tzortzis 2019, 193); similarly, the reader is to conclude, one should not stop at the scientific observation of the world. Tzortzis (2019, 193) writes that "God, by definition, is a Being who is outside

the physical universe," so science can never negate his existence. He then proceeds to summarize the "assumptions" via which (some) atheists claim that science denies God: (1) the idea that science is the yardstick for truth and has all answers; (2) the idea that since science "works" it must be true; (3) the idea that science leads to certainty; (4) the idea that since science cannot investigate the supernatural, the supernatural does not exist (Tzortzis 2019, 194–96). Tzortzis dedicates the subsequent pages to refuting such points one by one.

Tzortzis objects to the first point, that science has all the answers, by referring to six subpoints: (a) science is limited to observation (Tzortzis 2019, 198); (b) "science cannot be a basis for meaningfulness and objectivity of morals, since it cannot tell us what is right and what is wrong"— here, drawing on his previous discussion (Chapter 9), he points out "the innate and undeniable fact that some morals are objective" (Tzortzis 2019, 199); (c) science cannot test the "personal," e.g. individual emotions (Tzortzis 2019, 201–2); science cannot answer "why" questions (he emphasizes this point with an analogy: if someone bakes another a nice cake, science can analyze its composition but not the intentions of the person who baked it (Tzortzis 2019, 202–3); (d) science cannot answer multiple metaphysical questions, including the reason conclusions in deductive reasoning necessarily follow from the premises, if there is an afterlife, or what subjective consciousness feels like (Tzortzis 2019, 203); (e) necessary truths such as mathematics and logics cannot be proven; (f) "science cannot justify other sources of knowledge, such as testimony"—and reliance on testimony, Tzortzis points out, is pervasive, even in the case of truths such as that the Earth is round (Tzortzis 2019, 204–5).

To the idea that, since science works, it must be true, Tzortzis levels two objections. First, there are examples of scientific theories that were proven false but still useful in coming up with new scientific truths, like the discovery of nitrogen in 1772 by Dan Rutherford while relying on the theory of phlogiston (Tzortzis 2019, 206). Second, facts that are held to be undeniable can be overturned. "All scientific theories," points out Tzortzis, "are 'work in progress' and 'approximate models'" (Tzortzis 2019, 206–7).

Discussing the issue of science and certainty, Tzortzis (2019, 209) relies on a "Humean" criticism of induction, pointing out that the assumption that "the future will resemble the past" is circular. Additionally, Tzortzis remarks that the history of contemporary science testifies to science's "dynamic nature," with the replacement of the Newtonian model with the Einsteinian model (Tzortzis 2019, 209–10). The author also argues that since "there are no Moses tablets in science" (Tzortzis 2019, 210), science cannot be used to claim that the Qur'an is wrong. "If the Qur'an conflicts with limited human knowledge," he writes, "it should not create massive confusion" (Tzortzis 2019, 211). Here, he also provides the example of how, with the Big Bang model, "science came into line

with the Qur'an" (Tzortzis 2019, 211). He adds, however, that "the Qur'an does not give any details concerning natural phenomena" (Tzortzis 2019, 211). Then, in what are perhaps the most significant passages of the chapter, he writes that:

> both well-confirmed scientific theories and the revelational truths should be accepted, even if they contradict each other. Scientific conclusions can be accepted practically as working models that can change and are not absolute, and the revelational truths can be accepted as part of one's beliefs. If there is no hope of reconciling a scientific conclusion and a statement of the Qur'an, then you do not have to reject revelation and accept the science of the day. . . . [One should not] mak[e] massive epistemic leaps of faith and conclud[e] that the evidence we have acquired and the conclusions we have made are *gospel truth*. (Tzortzis 2019, 211–12)

At this point, Tzortzis spells out what he calls a "strategy" for dealing with science and revelation:

> We can accept scientific conclusions practically and as working models, but if anything contradicts revelation (after attempting to reconcile the two), you do not have to accept the scientific conclusion into your belief system. This is why Muslims should not need to deny Darwinian evolution; they can accept it practically as the current best-working model, but understand that some aspects of it cannot be reconciled with orthodoxy. Remember, just because something is the current best-working model, it is not the absolute truth. It is also important to note that scientific knowledge and Divine revelation have two different sources. One is from the human limited mind, the other is from God. (Tzortzis 2019, 211)

Finally, Tzortzis explains that those who preserved the Qur'an and the prophetic traditions were not making use of induction, so they cannot be criticized along the same lines as science (Tzortzis 2019, 212–13). The chapter ends with his refutation of the conflation of methodological naturalism with philosophical naturalism, which he defines as a "faith" (Tzortzis 2019, 213–14).

One can identify at least six main problems in Tzortzis's discussion of science and theism/Islam. In what follows, I try to elaborate on each one in sufficient detail.

"Scientific Miracles": Where Did the Alternative Approach Vanish?

One popular idea among Muslims is that the Qur'an contains accurate notions regarding the natural world that have only been ascertained by modern science. This idea is known as *iʿjāz ʿilmī*, or the "scientific miraculousness/precision" of the Qur'an (but "miraculous scientific content" of the Qur'an is a more accurate

expression for it). The discourse built on *iʿjāz ʿilmī* has nourished (and keeps nourishing) countless books, articles, videos, and conferences. Various Muslim authors, including some with a solid understanding of science and epistemology, have advanced arguments against the understanding of science (and scripture) underpinning such discourse (see, e.g., Sardar 1985; Guessoum 2018; cf. also Naguib 2019 for earlier critical positions). Such critique and criticism, however, have not made it to the masses, and *iʿjāz ʿilmī* is also commonly used to argue for the superiority of the Qur'an in comparison with other scriptures.

Tzortzis, too, takes a critical stance towards this trend, with an article titled "Does the Qur'an Contain Scientific Miracles? A New Approach on how to Reconcile and Discuss Science in the Qur'an" (Tzortzis 2013b). In the article, Tzortzis states that "[r]egrettably, the scientific miracles narrative has become an intellectual embarrassment for Muslim apologists" and reports that the criticism he received about his own research regarding (allegedly) accurate Qur'anic verses about the human embryo provided him a clear perception of the flaws in the discourse about scientific miraculousness, even resulting in him withdrawing a paper he had written on the topic. (Incidentally, this is a commendable example of integrity on behalf of Tzortzis.) He also points out that if people convert to Islam due to the supposed scientific accuracy of the Qur'an, they may well abandon it once they realize the flaws in such discourse. In the same article, Tzortzis states that he is offering "a new approach to the topic that is nuanced and bypasses the intellectual hurdles and problems faced by the scientific miracles narrative." After identifying and discussing six fallacies (or weaknesses) that afflict the discourse on the "scientific miracles" of the Qur'an, Tzortzis advances this "new approach":

> 1. The Qur'ān allows multiple and multi-level meanings. 2. Our understanding of natural phenomena and science changes and improves with time. 3. The Qur'ān is not inaccurate or wrong. 4. In the case of any irreconcilable difference between a Qur'ānic assertion and a scientific one, the following must be done: Find meanings within the verse to correlate with the scientific conclusion. If no words can match the scientific conclusion then science is to be improved. Find a non-scientific meaning. The verse itself may be pertaining to non-physical things, such as the unseen, spiritual or existential realities. (Tzortzis 2013b)[5]

In his 2019 book, Tzortzis does not really engage with "scientific miracles." Indeed, in the book, Tzortzis seems to have given up on the mission he identifies in the article: "It is hoped that the readers of this essay will adopt the new approach so a new narrative emerges in the public sphere. This new narrative will be able to withstand scientific criticism while bringing to light the timeless nature of the Qur'ānic discourse" (Tzortzis 2013b).

I contend that the 2019 book, which is otherwise concerned with scientism, does not sufficiently emphasize that the so-called "scientific miraculousness" of the Qur'an is irremediably flawed, as Tzortzis accurately described in 2013, nor that such discourse is an expression of very crude scientism placed at the heart of the contemporary understanding of Islam on behalf of countless Muslims.

Additionally, keeping in mind the difficulties of *iʿjāz ʿilmī*, Tzortzis does not seem to offer a perfectly consistent or pedagogically effective account when he mentions the Big Bang theory as an example of an instance in which the science "came into line with the Qur'an" (Tzortzis 2019, 211). Tzortzis gives this example while discussing the challenges of relating Qur'anic verses and science, addressing those critics who point out mismatches between the Qur'an and scientific information. However, to a Muslim reader used to appreciating the alleged "scientific miraculousness" of the Qur'an, the statement about the Big Bang may well sound like a promise of future "scientific miracles" in addition to the Big Bang one. I think it would have been helpful if Tzortzis had added a statement or two such as "but even a possible/future alignment with science should not be taken as a demonstration of the Qur'an's divine origin but rather an example of how science and the Qur'an sometimes seem to coincide and sometimes do not, a fact whose importance should not be overemphasized."[6] He did not.

Ultimately, if one embraces, fully and consistently, the idea that science is fluid, transient, and not representative of the truth (as opposed to the Qur'an, which represents permanent truth), then as difficult as such an idea may seem to an unsophisticated reader, science and the Qur'an become incommensurable. However, the notion of incommensurability defeats the whole idea of an "alignment" between science and scripture. Perhaps Tzortzis sensed a dreadful philosophico-exegetical challenge and chose to gingerly backtrack or suspend the discussion.[7]

Should One Use Science to Defend Theism?

The second problem is constituted by Tzortis's reliance on science to argue in defense of theism. In particular, Tzortzis contends that several scientists have concluded that a "theistic" understanding of the world is innate. This kind of argument opens a veritable Pandora's box. I will be leaving aside otherwise important questions such as those pertaining to the scientific solidity of the results appreciated by Tzortzis, the way in which they have been interpreted by their discoverers, and so on. This would require a separate and lengthy analysis; therefore, I am for taking Tzortzis's mention of such results at face value. Still, one cannot fail to notice a few major challenges here. To start with, considering the downplaying of science that permeates Tzortzis's book, one is automatically led to ask why he relies on science when it seemingly supports his views. If one genuinely and consistently subscribes to the idea that science does

not have solid answers, that it is essentially different from revealed knowledge, then it would perhaps be fairer to also abstain from any science-based defense of religious concepts.[8] Second, the "theistic" inclinations verified by the scientists Tzortzis discusses are far from lending support to a specific religious worldview or theology, let alone Islam. Those observations demonstrate at best that humans are born with an inclination to understand their environment in terms of agents and purposes; there is an immense gap between this and a specific theology. Third, as Tzortzis himself mentions while challenging the theory of evolution, there can be "natural" ways of understanding the world that are irrational or wrong (in terms of content) but functionally still useful for survival (Tzortzis 2019, 55). Finally, a fine-grained discussion of the concepts of "nature" and "nurture" definitely exceeds the scope of the present article, but I feel compelled to point out that, in addition to understanding the former as synonymous with "good," Tzortzis seems to perceive those very concepts in a strictly binary way, and such a perception is highly questionable. To summarize, Tzortzis has advanced his points about the naturality of theism quite hastily; it would be recommendable to elaborate on them in the context of a more detailed and nuanced discussion of the respective definitions and (possible) associations of concepts such as "natural," "cultural," "innate," "acquired," "rational," "irrational," and "useful/useless for survival."

What Is the "Science of the Day"?

A third problem concerns the way in which Tzortzis characterizes science in reference to time. I have discussed how he reassures his Muslim readers that they do not have to "reject revelation and accept the science of the day" (Tzortzis 2019, 211). To be sure, in other passages of the book, Tzortzis elaborates on some aspects of modern science and its methods and does so fairly accurately. However, the emphasis he places on time, as well as on the shift from one theory to another over time (Tzortzis 2019, 209–10), is potentially misleading, especially for an uneducated reader. Obviously, in everyday parlance, it is perfectly meaningful to critically point out that a theory or idea is "obsolete" or "outdated" (or similar); this is particularly valid when talking about statements about the natural world that were advanced before the emergence of the modern scientific method. In such cases, however, adjectives like "obsolete" (and the like) should not be taken as indicating that an idea or theory is invalid just because it is "old"; they are short form for "meanwhile, the theory in question has been *scientifically* disproven/superseded" (or similar). While it is true that scientific theories change over time, it is also important not to characterize such shifts as merely erratic or governed by matters of marketing, taste, and mutual imitation on behalf of consumers (as happens in the world of fashion). Scientific theories can succeed one another, but (as in the very example of the Einsteinian model and the Newtonian model provided by Tzortzis) older theories are rather

integrated by new ones, and, in any case, to be accepted, a new and alternative model should abide by criteria of consistency and experimental verification. In summary, in the interest of a fair and balanced conceptualization of science, the reference to a shift over time should be balanced by a description of the logic followed by such a shift, else one also loses sight of what distinguishes science from other kinds of activity and knowledge. To put it differently, the use of expressions like "science of the day" provide science with an unwarranted aura of capriciousness and evanescence.

Selective Skepticism

Tzortzis seems quite fond of referring to some ideas advanced by David Hume (1711–76), and in fact, some of the criticism of science he advances is apparently built on Humean concepts.[9] In one passage of his book, Tzortzis (2019, 26–27) acknowledges that the Scottish philosopher "wrote a corpus of material on the issue of God and religion. He argued that the idea of God was incomprehensible. He also contended the idea of God's necessary existence and attempted to expose the weakness and limitations of the argument from design."

To begin with, Tzortzis does not seem to fully take into account the challenge historically posed by Hume to theism. Such a challenge is a major one, especially considering the power of Hume's objections to all theistic arguments that rely on analogies between the universe and human-made constructions or situations; Tzortzis's book uses this kind of argument multiple times.[10] In this regard, it is perhaps significant that Tzortzis engages with Hume's *Enquiry Concerning Human Understanding* (1748; cf. 218–19, 320 n. 341, 350, and 321 n. 360) rather than his *Dialogues on Natural Religion* (1779), which offers a sharp criticism of theistic views.

It is of course fully within Tzortzis's right to selectively read the works of a great author of the past. I have misgivings, however, regarding the selective interpretation of Hume's ideas that Tzortzis's book represents. It is true that Hume advances a form of skepticism and that, in at least some passages, such skepticism is pushed to extreme, nearly nihilistic, consequences. It is likewise true, however, that Hume mitigates such skepticism with empiricism, suggesting a way to navigate uncertainty and rank possible inductive inferences. To put it in basic terms, if one follows Hume's empiricism, an inductive inference regarding the future is reasonable if it is based on extensive evidence and precedents, and alternative inductive inferences about possible future outcomes can also be compared and ranked in reference to that very evidence and precedents.

It is clear to me that Tzortzis did not set out to offer a comprehensive account of Hume's thought and its different interpretations in his book, nor is the present article written from the perspective of a historian of philosophy. But it is important to point out that one may well pick and choose an idea among those advanced by Hume, yet such an idea should be elaborated on

consistently. If one wants to propose and embrace a selective and (epistemically) "nihilistic" version of Hume's philosophy, that is perfectly legitimate, but they should not fail to see or discuss the fact that opting for such an idea also results in casting mistrust and doubt on any form, and object, of knowledge, including, for instance, the continuity of oneself (as Hume in fact ended up doing).[11]

In other words, a partial reading of Hume exclusively drawing on his criticism of (causal) inductive inference, and thus resulting in hyperbolic skepticism, creates a dilemma for any thinker, including a religious one like Tzortzis. Either such criticism translates into a major disruption of trust towards all human knowledge—including the knowledge that any person, believers and non-believers alike, relies on in their most elementary, day-to-day operations[12]—or one finds a way to rein in such skepticism, mitigating it through empiricism. However, in such a case, (modern) scientific knowledge turns out to be far more reliable and rational than Tzortzis suggests. Retrieving Humean skepticism towards inductive inferences in order to direct it exclusively at scientific knowledge seems, to put it frankly, quite an opportunistic move.

At this point, a religious commentator might argue that sacred scriptures and religious beliefs could and should be shielded from such skepticism—in other words, sacred scriptures and religious beliefs may be posited as untouched and untouchable by radical skepticism given their divine origin. But then where does one even start to draw a line between what is subject to radical skepticism and what is not? Ultimately, sacred scriptures, come through specific interpretations; their understanding is mediated by non-sacred writings (including Tzortzis's), and writings, sacred and non-sacred alike, are perceived through our senses, since we read them on material objects like books or screens. Additionally, such perception occurs in the context of a specific existential situation and through one's cognitive makeup and equipment, including memory (which, incidentally, plays a pivotal role in Islam).[13] Philosophically, the reliability of a believer's very consciousness, self-awareness, memory, common sense, and everyday inductive inferences about, and interactions with, the world are all invariably disrupted by extreme skepticism.[14] In other words, unconditional belief in the truth of religious scriptures can be safeguarded by a leap of faith. This is surely an option, and I do not take issue with it. However, it should be noted that it defeats Tzortzis's very claim of rationality for his theism. To conclude, the "Humean" arguments offered by Tzortzis are, at best, half baked.

Mixed Signals and Inaccuracies about Evolution

The fifth problem is Tzortzis's (unsystematic) discussion of evolution; it betrays multiple and different weaknesses. Tzortzis argues that advanced rationality—including the ability to distinguish between truth and falsity, or the ability to investigate and discover—is not necessarily useful for survival, or is sometimes even detrimental to it (Tzortzis 2019, 54). In sum, he suggests that models

that emphasize the survival value of evolved traits are useless or insufficient to explain rationality. On the issue of evolution and rationality, Tzortzis also points out that "even Charles Darwin himself had his doubts about this matter. He understood that our ability to acquire truth could not be accounted for if it had only evolved from lower life-forms" (Tzortzis 2019, 54). On this point, Tzortzis cites a letter by Darwin (1881) that seemingly suggests Darwin entertained serious doubts about his own theory. In at least one passage, Tzortzis seems to rely on an argument, or cluster of arguments, classically used to discredit evolution, pointing out that "according to mainstream secular academics, it is based on assumptions, considered relatively speculative, and there are disputes about its core ideas" (Tzortzis 2019, 206). Elsewhere, as discussed previously, Tzortzis writes that evolution is "the current best working model" (Tzortzis 2019, 212). Considering that other passages of the book are devoted to criticizing or discrediting evolution, Tzortzis's approach comes across as confused and confusing.

In order to tackle Darwin's "horrid doubt" (Darwin 1881), I am compelled to start on a preliminary, general note: picking parts of Darwin's books and private letters to emphasize his doubts and thus discredit evolution is bad practice (typical, for instance, of some forms of creationism.)[15] To be sure, I am not suggesting that Darwin's writings and ideas are uncriticizable or unobjectionable, but any citation from Darwin should be handled carefully, considering the context, the time (and, for private letters, the specific interlocutor), as well as the fact that modern evolutionary thought starts but does not end with Darwin and his work (on the contrary, it has been integrated into the study of genetics).[16] In the particular case mentioned by Tzortzis, Darwin responded to the Irish philosopher William Graham (1839–1911) regarding Graham's book *The Creed of Science* (1881): "You have expressed my inward *conviction*, though far more vividly and clearly than I could have done, that the Universe is not the result of chance." Such a conviction may sound supportive of a religious worldview (though not of a specific one). However, immediately after, Darwin adds, as cited by Tzortzis: "But then with me the horrid doubt always arises whether the *convictions* of man's mind, which has been developed from the mind of the lower animals, are of any value or at all trustworthy" (Darwin 1881; emphasis added). In other words, Darwin downplays that very religious-sounding conviction, pointing out that it ultimately stems from a fallible mind (like his own), which is fallible because of its very evolutionary origin. In sum, Tzortzis has Darwin's quote work in favor of a thesis that Darwin was not expressing in that very passage; Darwin was talking about one of the "big questions" for which his theory did not have a direct answer and doubted his own (nonscientific) intuition on the matter precisely on the basis of the evolutionary conceptualization of the human mind. To be sure, one may ask at this point why evolution itself

should be considered trustworthy if it is the fruit of the human mind that, by the admission of the very father of evolution, is fallible. But then again, as I have suggested while discussing Tzortzis's reading of Hume, it is not at all inconsistent to think that the human mind is fallible while still identifying and cultivating ways of guiding its use that ensure less-fallible reasoning; it is not inconsistent, in other words, to acknowledge the limitations of reasoning while elaborating on methods of reasoning that yield well-working models of reality (including the theory of evolution).[17]

Regarding the claim according to which mainstream scientists have challenged "core ideas" of evolution, in a note, Tzortzis (2019, 320, n. 338) directs his readers three volumes (Shapiro 2011; Pigliucci and Müller 2010; Godfrey-Smith 2014). Incidentally, the second is co-edited by Massimo Pigliucci, a well-known philosopher with a solid background in biology who combats pseudoscience and creationism. These volumes discuss how Darwin's ideas have been elaborated on and extended rather than radically challenged or replaced. Of course, it could be that Tzortzis has his own interpretation of (some of) the ideas contained in such volumes, but in order to conduct a fair and punctual discussion of his stance, one needs first to understand what he refers to by "core ideas" of evolution that, in his opinion, have been "disputed" by mainstream scientists.[18] In fact, in his book, there is at least one example of what he may be referring to: while discussing scientific change, Tzortzis (2019, 206) mentions the relatively recent discovery (based on DNA testing) that Neanderthals were another human species rather than our forerunners. But this is an example of a change within evolutionary thought that did not challenge, let alone replace, a "core idea" of evolution; not to mention that Tzortzis is here implicitly crediting evolutionary scientists. Since no further elaboration is offered by Tzortzis on such points, I shall avoid any speculation.[19]

Accepting without Believing—What Does It Actually Mean?

A sixth problem is related to the way in which a model like Tzortzis's may be received and implemented by his readers. I suspect that most Muslim readers of Tzortzis will already have their practical way of balancing science and religion according to their education, profession, and social role; therefore, such readers will mainly draw from Tzortzis's pages some kind of emotional reassurance, since the upshot of Tzortzis's discussion is, ultimately, "science does not harm your religion." And, quite simply, for someone who is not educationally or professionally concerned with science, this is more of a subject for casual conversation rather than a genuine concern.

That having been said, one could imagine an individual who sets out to follow Tzortzis's prescriptions verbatim, or a government in a Muslim country that sets out to design, promulgate, and implement educational policies in accordance with those very prescriptions. I suspect that if one, especially a curious and

educated person, tries to carefully think Tzortzis's prescription through, they will find it to be confusing, inconsistent, and unsustainable.[20]

The aforementioned hypothetical "Tzortzisian" (in things science and religion) may start wondering how to practically express and implement acceptance-without-belief in regard to (for example) evolution. Think of a Muslim science teacher. How would she or he express acceptance-without-belief of evolution in the classroom? Simply by stating that evolution, like all science, is subject to change? But, if properly understood (see earlier discussion), this is a platitude.

Should a "Tzortzisian instructor" insinuate religion-based criticism of evolution while teaching it, or teach evolution along with creationism? This technically represents an encroachment of religious beliefs on scientific ones rather than a coexistence, not to mention that not all theologians understand Adam, for instance, the same way. Then which theology will our teacher pick? In fact, should a science teacher be proficient in theology? Alternatively, should the "Tzortzisian teacher" refrain from teaching evolution or some aspects of it? This option may not be viable for university instructors interested in imparting complete and solid knowledge; and technically, this would not qualify as "acceptance." What about a professional "Tzortzisian biologist"? How would she or he be proficient in biology while ignoring evolution? Shall she or he simulate approval of evolution while dealing with colleagues who embrace it? This option opens a whole array of moral concerns. Additionally, from a practical viewpoint, what is the difference between effectively simulating belief in evolution in the context of scientific research and collaboration and actually believing in it?

If Tzortzis's suggestion is impossible to implement in a consistent way, it can only function as a catchphrase, including in education. In fact, in a society in which evolution is constantly denigrated and neglected (as is the case in Muslim countries), it is hard to see how "accepting without believing" could inspire any pedagogic advancement. In such a scenario, "accepting without believing" may just be used as doublespeak to conceal and embellish deep-seated resistance to, and ignorance of, evolution.

Please note that I have constructed the whole argument around evolution specifically because it is evolution that Tzortzis seems particularly concerned about. But this may apply to any other "scientific conclusion" that is said to contradict scripture (cf. Tzortzis 2019, 212). Let us imagine any future scientific theory X that, for some reason, theologians may argue to be irreconcilable with revelation. How will Muslim teachers, schoolers, students, and public receive X if instructed to "accept" it "without believing"?

Alternatively, in suggesting "accepting without believing," Tzortzis may have simply meant that evolution should not be made a theological doctrine; then again, since he starts off by describing evolution as a scientific model, by definition different from revelational knowledge, such a reading trivializes all of

Tzortzis's "strategy" from his very viewpoint. Is his whole suggestion nothing but a big tautology? (Again, this applies to evolution as well as to any other scientific notion).

Concluding Remarks

It is difficult to deny that Tzortzis's 2019 book has some virtues and positive qualities. I have already pointed out the author's humbleness and invitation to dialogue. Furthermore, his very rationalistic stance may be regarded as laudable (not to mention that, due to the variety of his sources, his very book may be seen as a testimonial to interreligious and intercultural dialogue). That having been said, Tzortzis considers inconsistency a threat to faith (cf. Tzortzis 2019, 17) and is quite critical of "intellectual double standards" (cf. Tzortzis 2019, 148). I have specified that I do not consider this article a contribution to atheism but rather to a general, rationalistic refinement of the discussion in which Tzortzis engages. If the reflections I have offered are accurate, Tzortzis's arguments, although they are presented as guided and permeated by rationality, still betray important inconsistencies, inaccuracies, and double standards. In other words, Tzortzis's outlook on religion and science—similar to his discussion of Hume, as I previously argued—the loaf he offers to his readers, is half-baked. It is my hope that Tzortzis will prove able to convincingly solve such inconsistencies so as to bake a more digestible loaf for his readers.

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Notes

[1] Currently, Tzortzis's book (2019 edition) has 579 global ratings on Amazon.com, with an average of 4.9 out of 5 stars, and 72 reviews. On Goodreads.com, the book (all editions) has 802 ratings, averaging 4.48 out of 5, alongside 113 reviews. The vast majority of reviews on both websites are enthusiastic, usually referring to the book as a must read (for Muslims, but not exclusively), clear and well argued. Negative comments describe the book as repetitive, unoriginal, simplistic, and flawed. There are also mixed reviews, with some noting that while the book is interesting, it seems to focus more on refuting atheism than advocating for Islam.

[2] For an overview of the contemporary debates at the interface of Islam and science, see Guessoum and Bigliardi (2023).

[3] A detailed discussion of Tzortzis's originality compared to other Muslim and Christian authors presents an interesting topic. More generally, it has been explained that the Muslim rejection of atheism should often be understood through the lens of Judeo-Christian and Biblical literature (e.g., Daneshgar 2023c). However, all this exceeds the scope and ambition of the present article; readers seeking further insights on such matters may profit from reading Baz's dissertation.

[4] Due to the limitations imposed by my own expertise and background, I refrain from analyzing in detail the topics and arguments offered by Tzortzis in the seventh and eighth chapters. I suspect, however, that the shortcomings of Tzortzis's conceptualization of science highlighted in the present pages may have major implications for the discussions offered in such chapters as well.

[5] The last three are given in the article as bullet points.

[6] On close inspection, it turns out that the approach Tzortzis offers in the 2013 article conveys the idea that the Qur'an should guide (Muslim) scientists in their work (another principle typically held by the advocates of *iʿjāz ʿilmi*). Cf. the statements: "Find meanings within the verse *to correlate with the scientific conclusion*. If no words can match the scientific conclusion then *science is to be improved*" (Tzortzis 2013b, emphasis added).

[7] To integrate the present critique and reflections, readers are encouraged to read sections of Baz's dissertation that reconstruct and discuss Tzortzis's reference to "scientific miraculousness" in the context of iERA's activities (Baz 2016, 133–71). For a comprehensive historical discussion of this trend in the Muslim world, readers are strongly encouraged to explore Majid Daneshgar's studies (Daneshgar 2023a, 2023b, 2023c). Finally, for an analytical and brief overview of the "scientific miraculousness" of the Qur'an, readers may refer to Stefano Bigliardi (2014).

[8] To be sure, in at least one passage, (Tzortzis 2019, 71) does admit that the scientific results he mentions require more research; but, arguably, the rhetorical effect of inserting such references in his discussion is to support religion with science. And again, if science and religion should not mix, then seemingly positive associations should also be avoided.

[9] Famously, Hume deconstructed (and reconstructed) the concept of causality; however, Tzortzis (2019, 68) interestingly lists "the law of causality" among "self-evident truths." In another passage, he seems to be confusing the *a priori* existence of causality (as a concept human minds are equipped with) with the possibility of fruitfully applying causality itself to matters outside of one's experience. He also seems to forget that causality, in specific cases, can be misattributed (Tzortzis 2019, 88–90). Elsewhere, he states that "in philosophy there is no consensus on the definition and nature of causality" (Tzortzis 2019, 99).

[10] I feel compelled to add that such arguments are quite repetitive (admittedly, repetition may be pedagogically useful, but it may also be counterproductive in other ways). On at least one occasion Tzortzis offers an analogy that runs the risk having an opposite effect on his readers to what he

wishes, comparing the (re)discovery of faith in God to finding a toy he used to play with when he was five years old (Tzortzis 2019, 77).

[11] Namely, he elaborated on a "bundle theory" of the self, famously formulated in *A Treatise of Human Nature* (1739/40) I, IV, §VI.

[12] Notably, also Malik remarks that the criticism of evolution predicated on induction undermines basic human experience (Malik 2023b, 427–28).

[13] One of Hume's challenges concerns the reliability of testimony. This is particularly relevant to Islam, especially in regard to the claims traditionally made about the authenticity of the Qur'an and the prophetic traditions or *ḥadīth*, which are believed to have been transmitted intact. Tzortzis does take up such a challenge, at least to some extent. In a short passage, he argues that the criticism of inductive arguments does not impinge on "Islamic epistemology" since those who preserved the Qur'an and prophetic traditions made use of "inductive reasoning" as opposed to "inductive arguments"; the former "[state] the plain facts without making a conclusion for something that is yet to be observed" (Tzortzis 2019, 212–13). Tzortzis specifies that the criticism of inductive arguments does not apply to "inductive reasoning." I think he fails here to see the pervasiveness, in everyday life, of what he calls "inductive arguments" and the fact that humans also rely on previous experience to form a perception of past events they did not witness directly. Those who assessed the validity (or lack thereof) of verses or narratives surely relied on assumptions regarding human nature, human trustworthiness, information transmission, etc. that they must have inferred from their respective experiences and projected into the past that they had not experienced. Similar objections, I think, apply to Tzortzis's discussion of the epistemology of testimony (Tzortzis 2019, 218–19).

[14] Incidentally, hyperbolic skepticism also ends up disrupting one's reliance on indemonstrable principles (those used by Tzortzis in order to exemplify how science does not explain everything); their very "intuitive truth" is ultimately perceived by a subject on distinct occasions at different times, and they can only be appreciated by resorting to an inductive argument that projects their validity into the future. In other words, they cannot be defeated by empirical or scientific observations, but one may well imagine a scenario in which they simply disappear from one's mind. But again, we constantly rely on the assumption that they will not.

[15] *On The Origin of Species* contained, even in its first edition (1859), multiple chapters discussing possible difficulties for the theory of evolution. In the sixth edition (1872), Darwin added a new chapter written in response to criticism. In all such cases, Darwin did not limit himself to listing the difficulties, nor did he just mention them to suggest that they delivered a fatal blow to the theory—he responded to them.

[16] Also, evolution should be discussed on its own scientific merits rather than in reference to Darwin's statements (in particular, those contained in his correspondence as opposed to his essays and books).

[17] In his discussion of evolution, Tzortzis directs the reader to his 2019 essay "Can Evolution Adequately Explain Our Truth-Reliable Cognitive Faculties?" (Tzortzis 2019, 59 and 306, n. 78). Currently, the link provided in the book does not lead to any article. Another article on evolution, however, is still available (Tzortzis 2013a). In the words of Tzortzis, it "exposes the false assumption that the theory of evolution is a fact, or is certain." Here, he contrasts evolutionary conclusions with the conclusions of deductive arguments. The discussion he offers is reflected to a good extent in the book (where some passages seem to have been reused verbatim), but there are some points that Tzortzis seems to have softened, such as the suggestion that "[i]n situations where science and Divine revelation are irreconcilable, revelation supersedes science" (Tzortzis 2013a). In the 2013 essay, Tzortzis also writes: "For evolution to be certain, *all* phenomena related to the change in the inherited characteristics of biological populations over successive generations must have been observed. Including observing *all* evolutionary processes that give rise to diversity at every level including species and individual organisms." This of course raises the bar to an unattainable level. The consistent application of such a criterion would cause the collapse of any theory or argument about the world (including those outside of science).

[18] I have similar doubts regarding what exactly Tzortzis means when he mentions the "assumptions" of evolution and its "relatively" speculative character.

[19] For a Muslim approach to evolution that seems more well-informed about its historical development, refer to Malik (2023a). Malik writes, among other things, that "a fundamental problem with adamant critics of evolution, [is] that the slightest admission of debates in evolution seems to be understood as plus points for anti-evolutionary narratives when that is not necessarily the case" (Malik 2023a, 5). (While I appreciate this and similar points made by Malik, I must add, however, that I have strong misgivings as to his epistemology). A Muslim author who, before Malik, provided a positive survey of non-Darwinian positions on evolution, without misleadingly suggesting that such ideas constituted a full replacement or refutation of Darwin's views, is Nidhal Guessoum; he discusses them in the framework of a proposal for Islam and science that differs from Malik's perspective (see Guessoum 2011, 291–95).

[20] Here, I am inspired by Ian Barbour's (1923–2013) criticism of the suggestion to treat religion and science as separate (cf. Barbour 2000, 17–22, 36–37).

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