God, Human Memory, and the Certainty of Geometry: An Argument against Descartes

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Abstract

Descartes holds that the tell-tale sign of a solid proof is that its entailments appear clearly and distinctly. Yet, since there is a limit to what a subject can consciously fathom at any given moment, a mnemonic shortcoming threatens to render complex geometrical reasoning impossible. Thus, what enables us to recall earlier proofs, according to Descartes, is God's benevolence: He is too good to pull a deceptive switch on us. Accordingly, Descartes concludes that geometry and belief in God must go hand in hand. However, I argue that, while theism adds a layer of psychological reassurance, the mind-independent reality of God would ensure the preservation of past demonstrations for atheists as well.

Introduction

Can an atheist know geometry? The first thing to remark is the relative strangeness of this question. What could a religious issue like belief or disbelief in God possibly have to do with the stark topic of geometry? For René Descartes, the two matters are intimately connected. In fact, Descartes thinks that, if you do not believe in God, you cannot really carry out geometrical proofs.

Cartesian philosophy makes the unassailable self-evidence of first-person experience a pivot whence to (re)build certain knowledge. Unfortunately, the very feature which makes the "thinking thing" beyond the reach of any possible deception also entails a constraint on its scope. Strictly speaking, one is only thinking then and there. This makes recollections of one's former mental states dubitable

objects on par with any other. Short of some further support, then, the project of extracting a worldview from the nondescript veracity of the *Cogito* would seem hopeless. This is the potentially fatal lacuna that God's existence is intended to fill. God is not a deceiver, so He ensures that when a geometer recalls an earlier proof, the recollection is not deceptive.

In the fifth part of his *Meditations on First Philosophy*, Descartes maintains that God provides him with "knowledge . . . of all matters which I remember ever having demonstrated, in geometry and so on" (1984, 48). So, on this view, believing in God is not only salutary from a spiritual standpoint, it actually serves a crucial epistemological function, since it allows the human mind to spread beyond its temporal finitude and secure ownership of whatever was previously achieved by deductive reasoning.

This is Descartes's positive claim. He also makes a negative claim, namely that an atheist is prevented from attaining a full hold on the truths of geometry. Descartes does not deny that "an atheist is clearly and distinctly aware that the three angles of a triangle are equal to two right angles" (1984, 89). But, since truths like these only guarantee their veracity while they are being contemplated, Descartes insists that the geometrical demonstrations of an atheist "will never be free of this doubt [of possible deception] until he [the atheist] *acknowledges that God exists*" (ibid., 101; my emphasis).

I want to challenge this last contention. Taking God's existence for granted, I will call into question the supplementary contention that a *belief in* His existence is needed to reap His mnemonic benefits. Taking theistic commitments seriously and redirecting them towards my argumentative purpose, I will try to show why atheistic geometers can draw their inferences in a manner identical with their God-fearing colleagues. My goal, in sum, will not be to overhaul the Cartesian system, but rather to plead for a minor revision which, ironically, might be more consistent with the idea that God enjoys mind-independent existence: if God truly exists, then by definition He does so with or without our apprehension of that fact, such that we can reap the epistemological benefits of His divine existence with no further contribution on our part. If this main claim is correct, then atheists are equally entitled to the robust proofs of geometry. So, at any rate, I shall argue.

Trying to Recapture a Lost Certainty about a Lost World

The question of whether an atheist can have a genuine knowledge of geometry is discussed in the *Second Set of Replies*, but the reasons that support Descartes's negative answer are deployed mainly in the last four paragraphs of the fifth meditation. By the time we reach this portion of the text, several tenets have been proven, most of them pertaining to God, matter, and the narrator's thinking self. Yet, what has proven that the proofs themselves are tenable? Consider for example the truism that 'All things triangular are trilateral.' This entailment is readily ascertained; in Cartesian parlance, it exhibits the requisite clarity and distinctness. But what, asks Descartes, does this prove, other than that these two properties of triangularity and trilaterality are joined at the hip, so to speak? Saying that A and B must exist together is not quite the same as saying that A and B must exist. As Descartes writes: "From the fact that I cannot think a mountain without a valley, it does not follow that a mountain and a valley exist anywhere, but simply that a mountain and a valley, whether they exist or not, are mutually inseparable" (1984, 46). Descartes's goal in the fifth meditation is to tie pristine entailments like these to something beyond mere logic. Rationalism may eschew empiricism, but it still needs a world.

Descartes claims that, to discover what the world is like, we must focus our attention on clear and distinct ideas. Ronald de Sousa remarks that Descartes's reliance on clarity and distinctness represents "the first explicit use of something like a criterial feeling of rightness to justify a knowledge claim" (2008, 189–90). This Cartesian strategy of equating maximal salience and truth may seem bizarre to naturalist eyes, but it has some promise. After all, if one were to come face to face with a hard-boiled metaphysical verity, would not its reality translate into a felt lucidity when cognized?

Even so, the fact remains that the beliefs "of dogmatic, opinionated people may not be knowledge even when held with certainty in the complete absence of doubt. Those of irresolute, indecisive people are often knowledge despite their dithering about and feeling terribly unsure" (Daniels 1999, 207). Descartes is aware of this. Yet, he nevertheless holds that some ideas present themselves so forcefully that the mind simply cannot be wrong about them. God is supposed to be one of those self-authenticating ideas:

> From the fact that I cannot think of God except as existing, it
> follows that existence is inseparable from God, and hence that he
> really exists. It is not that my thought makes it so, or imposes any
> necessity on any thing; on the contrary, it is the necessity of the thing
> itself, namely the existence of God, which determines my thinking
> in this respect. For I am not free to think of God without existence
> (that is, a supremely perfect being without a supreme perfection)
> as I am free to imagine a horse with or without wings. (1984, 46)

To simplify things, I will assume that this Anselm-like argument
succeeds in proving God's existence (for a discussion, see Tweyman
1988). I am interested only in the epistemological or cognitive service
which a contemplation of His benevolence is supposed to accomplish.

Descartes is convinced that God would never deceive us. Proceed-
ing from that conviction, we can be confident—indeed certain—that
the clear and distinct ideas we contemplate in formal disciplines like
geometry obtain. On the further assumption that the external mate-
rial world is nothing but extended geometrical space (see Descartes
1985, 90–92), this non-deceptive recollection ensures that we can
know matter as well. Alas, according to Descartes, the epistemological
benefits that God's existence affords extend only to theists. I disagree.

The starting assumption about non-deception is already wobbly.
Descartes affirms that God "cannot be a deceiver, since it is manifest by
the natural light that all fraud and deception depend on some defect"
(1984, 35). However, Descartes's talk of a "defect" depends on a very
selective reading of the notion of "deception." Strictly speaking, decep-
tion occurs whenever interpretation takes a sign-vehicle to stand in a
relation to an object, when in fact that relation binds the sign-vehicle
to another object. Deception can therefore be a benign semiotic pattern
devoid of intention and malice. For instance, an insect fortuitously
profiting from inherited twig-like camouflage is deceiving its predator,
but it is not obvious that a privation or moral flaw is involved (see
Mitchell and Thompson 1986). Likewise, a parent who knows that a
child will inevitably perish from a fatal disease can deceive the child
into thinking that all is well—and do this out of love. Hence, more
needs to be said in defence of the (supposedly "manifest") claim that
an omnipotent/omniscient Being would necessarily be non-deceptive.

The predator that mistakes an insect for a twig may be "deceived"
in an amoral way, but this deception still comes at an epistemologi-

cal cost, since it makes the predator miss something that it sought. Likewise, when a human mind is deceived, its search for knowledge is curtailed. In the *Fourth Set of Replies*, Descartes emphasizes that "I must understand the thing well enough to know that my understanding is *complete*" (1985, 156). Even if we allow that God might fool us in the name of paternalism, a sliver of deception would suffice to ruin this aspiration of complete understanding.

Descartes's goal, then, is to "show how it is possible to lead the mind, step by step, away from its usual way of knowing to a kind of knowledge that is very difficult to achieve but, once realized, is such that its benefits last a lifetime" (Clarke 2003, 88). To achieve this, Descartes recommends that we make one inference at a time.

This step by step approach is meant to foster coherence. It is coherent, for example, to hold that 'Lucy loves John' and 'John is loved by Lucy.' Of course, propositions like these must cohere with other propositions as they come into view. However, demanding holistic coherence would be too much, since human minds simply cannot fathom the whole of their knowledge—much less the entire body of truths that holds in the universe. Presumably, God alone is capable of taking in this totality at a glance. Descartes's seventh rule for the direction of the mind nevertheless requires that everything one knows be "surveyed in a continuous and wholly uninterrupted sweep of thought" (1985, 25). When we try to implement this rule, though, we hit a wall, since our non-inferential intake is limited to 7 ± 2 items in most humans (Miller 1956). This means that, if one glances at objects placed atop a table, one can notice between 5 and 9 items; but beyond that, one needs a notepad. We might debate the exact number, but the very notion of "memory" seems to imply that the class of things known is greater than the class of things (currently) thought.

Descartes's introspective investigations bear this out, as in the sixth meditation he reports that he can imagine three-sided figures but not thousand-sided ones (1984, 50–51). Thus, as an accomplished geometer who routinely used pen and paper to carry out lengthy proofs, Descartes was sensitive to the fact that the human mind must employ semiotic aids in order to overcome its cognitive limitations. Descartes's eleventh rule asks us to "run through [simple propositions] in a continuous and completely uninterrupted train

of thought, to reflect on their relations to one another, and to form a distinct and, as far as possible, simultaneous conception of several of them" (1985, 37). The qualification "as far as possible" hints at our mnemonic restrictions. It thus became crucial for Descartes to ensure that established conclusions not be thrown back into doubt every time they are recalled. A leash that would let the *Meditations*' narrator roam only seven steps away from the core axioms of the self and God would be too restrictive.

In the end, Descartes secures the reliability of memory (and thus the free range of thought) by invoking God's non-deceptive nature. Descartes reassures himself that "as long as I remember that I clearly and distinctly perceived [that God exists], . . . I have knowledge not just of this matter, but of all matters which I remember ever having demonstrated" (1984, 48). We can label this the "mnemonic function of God" or MFG thesis. Thanks to the MFG, one can employ a proven conclusion in isolation.

For Believers Only?

Human minds cannot consciously view all of their knowledge at once, so God extends our intellectual reach by guaranteeing that our recollections are reliable. This does not spare humans the argumentative toil. Indeed, Descartes stresses that "when I said that we can know nothing for certain until we are aware that God exists, I expressly declared that I was speaking only of knowledge of those conclusions which can be recalled when we are no longer attending to the arguments by means of which we deduced them" (1984, 100). Yet, given that God exists and could not be anything but benevolent, one can safely recall previously established proofs without fear of deception. God renders complex disciplines like geometry possible.

Descartes denies that an atheist could have access to the resources afforded by God. Responding to objections raised by Martin Mersenne in the *Second Set of Replies*, Descartes maintains that an atheist geometer would not really possess a firm grasp of the field she professes to study. This makes theism into an essential commitment of geometry. A practioner of that craft who fails to appreciate God's self-evident existence, whether by willful disregard or lack of perspicuity, can have access only to "moral" certainty, not "absolute" certainty.

I can understand why Descartes would maintain this. Still, I think that the remarks he makes in the *Second Set of Replies* about the epistemological shortcomings of atheism miss their target. Specifically, I question whether an acknowledgement of God's existence is truly needed to reap the benefits of the MFG. Had Descartes maintained that God's existence is necessary for the truths of geometry to go through, his argument would have been more solid. There is, however, a supplementary claim being made, namely that a thinking subject must in addition assent to that Godly existence for its powers of confirmation to come into play. Let us call this supplementary constraint the "doxastic clause" (or DC). The DC stipulates that *belief* in God's existence is a necessary condition of the MFG.

The tension at hand can become more tangible when we recast it in the following terms. What Descartes is saying, in effect, is that God's existence is capable of letting us transgress the cognitive limits of what we can immediately apprehend. Yet, this Godly existence is somehow impotent to minister its beneficial effects unless a humble subject adds to it the affirmation "It is so." The issue, then, turns on the atheist's acquiescence, since it is only when she decides to acknowledge with sincerity that God exists that His mnemonic function becomes operative.

Given the all-powerful scope attributed to God, there is something peculiar about letting a single person's refusal veto one of God's features, in this case His ability to facilitate the non-deceptive recollection of deductively-drawn conclusions. The DC essentially lets the atheist have the last word on whether or not the benefits of MFG can be deployed. This seems to imply a privation in the Person of God, but such failings are said to be proscribed by the very idea of an all-powerful deity. In lieu of this, a more prosaic stance would be to say, in effect: "It's a good thing that I have found out *why* geometry is indubitably true, otherwise geometers could not have been credited with knowledge. Now I know why this science is so fecund, even when performed by atheists."

Since, according to the theist, God is not a mere figure of lore but is supposed to exist regardless of whether or not anybody recognizes the fact, there is no contradiction in supposing an atheist to be capable of profiting from God's munificence while refusing to credit Him for it.

The very presence—nay, conceivability—of such a thing as an atheist fruitfully going about her daily life should compel the theist to recognize that God Himself is not bothered by the idea of free riders. What I recommend, then, is a removal of Descartes's tendentious contention which says that in order for a person to avail herself of the mnemonic resources afforded by God's existence, she must in addition pledge allegiance to theism. All geometers, on this revised view, can successfully recall their proofs without fear of deception. Stated otherwise, I think the MFG thesis can stand on its own, without the DC.

When It Is Not Up to Us

In order to expand on this way of viewing the situation, it might be helpful to explore an example less controversial than God's existence. Consider Christian Goldbach's famous conjecture. Goldbach, an eighteenth-century German mathematician, surmised that every even number greater than two is the sum of two primes. Goldbach's conjecture has attracted the attention of philosophers because, even though his claim is intuitively plausible, no one has yet produced an ironclad mathematical demonstration that it is true.

Suppose, then, that in some not-too-distant future, a brilliant mathematician manages to prove, through rigorous deductive reasoning, that Goldbach's hypothesis indeed bears out for every even number greater than two. This would be rightly prized as an important discovery. Yet, the term "discovery" here raises an interesting ontological question. Specifically, we may ask whether the proof of Goldbach's conjecture exposed something that was in principle available all along, or whether it introduced something genuinely new.

In a sense, the latter response is trivially true: the proof is novel. What's at stake here is more substantial. The issue concerns the domain—whatever it is—modeled by the proof. Did our imaginary mathematical genius simply devise an ingenious algorithmic rule allowing us to churn out, for any determinate input, a corresponding determinate output? If so, it would seem that the sole merit of the accomplishment lies in its ability to spare us tedious case-by-case computations. Yet, does not the very fecundity of the law-like regularity—the shorthand formula where there was once only counting—attest to the fact that Goldbach's conjecture latches onto something which, in some suitable

sense of "exist," existed *prior* to its discovery? Answering this in the affirmative is tantamount to saying that, however one wants to gloss the metaphysics, the proof of Goldbach's conjecture is currently with us, even though we have not yet discovered it.

On the day when a mathematical genius presents to the world her proof of Goldbach's conjecture, we don't want to say that she produces a mere parlor trick that owes its expediency only to the cleverness of its maker. No, we will want to frame the event as a discovery that gives us access to a firm truth. To be sure, alternative interpretations are available. But, it seems right to say that one cannot hold that (1) a priori inquiries like geometry and mathematics are paradigmatic exemplars of knowledge, and (2) Goldbach's conjecture was untrue until the day it was proven. Surely the rationalist will want to endorse 1 and reject 2.

Descartes's philosophy strives to emulate geometry and mathematics. To say that the truths of geometry and mathematics are eternal is to affirm that their existence stretches in both diachronic directions, past and future. They are thus in principle available to anybody in any epoch, so any failure to grasp them must be attributed to us. Failing to see clearly and distinctly that something is necessarily true is a shortcoming that leaves the truth in question singularly unaffected. The relevance of this example for the MFG is obvious. I maintain that this mnemonic function does not depend on whether or not the person profiting from it actually believes in the existence of God. Of course, it doesn't hurt the MFG to augment it with the DC. But, I submit that, just as the rationalist must hold that Goldbach's conjecture is in itself true or false regardless of our ability to produce a satisfactory proof or disproof of it, so the MFG is operative irrespective of any personal conviction that it is operative.

If we ask what God's existence accomplishes, the answer is straightforward: according to Descartes, He safeguards deductive demonstrations via His non-deceptive nature. If we ask what *belief* in God's existence does, we get a much less substantial answer: at best, it brings the believer a sense of peace and confidence, insofar as she knows why her past demonstrations still have sway. That's not a bad thing. But, the presence or absence of belief does not alter the first consideration, which obtains either way. Read the other way round, we can say that one need not know something in order to use it. So,

the atheist can call on her memory of prior geometrical demonstrations, even though she may have a different account (or no account at all) for why this recollection is trustworthy.

To offer a further analogy that none of us can escape, it may be helpful to note that no one has any inkling where the species-specific faculty of language comes from. Even so, we routinely use language with great profit. Should we hold that the entire body of fictional and non-fictional world literature is not legitimate until and unless we get a satisfactory explanation of where our scribblings came from? Unlike Goldbach's conjecture, there is clearly an answer to this query. We need not know the actual origin of language to know that it must have an origin.

Now, if a linguist did discover how human language arose yet didn't share her findings with anyone else, this lone discovery would merely confirm that there was a real basis all along—even though no one but that linguist would be privy to it. But, what would we make of this same linguist if she, in a manner akin to Descartes, thought that only those who know the origins of language can truly use language? Surely we would scoff at such a suggestion. The DC should be viewed in the same light.

We Can Depend on the Mind-Independent

Descartes characterizes the atheist as someone who thinks that "he has demonstrations to prove that there is no God" (1984, 101). Yet, the atheist can also be someone who simply does not experience the compelling power that others feel when contemplating a proof of God's existence. She may also be someone who would assent but has not yet come into contact with such an argument. In the first instance, we would have the equivalent of someone who is taught the newly-discovered proof of Goldbach's conjecture yet fails to "get it." In the second instance, we would have someone who simply does not know how to prove Goldbach's conjecture—which is our shared predicament at the moment. In neither instance do we find an active attempt to "disprove" Goldbach's conjecture. Maybe there is a militant fringe of atheists that looks for inventive proofs of God's inexistence, but the stance itself is not defined by this.

As the Descartes scholar Georges Moyal (2005, 278) notes, in the end, atheist and theist geometers go about their business in

exactly the same way. So, the conclusions recollected by the atheist geometer are not in the least occult or controversial. What is at stake is the speculative fear that, when recalled at a later time, a source of deception might intervene. According to Descartes, one party's lack of religious conviction gives it access only to adulterated epistemic goods, while the other party enjoys a monopolistic hold on a method of mnemonic preservation. Given this, one would expect atheists who undertake geometry to founder at some point. Yet, many different geometers with many different beliefs have surpassed Descartes in their achievements. Some think that they are merely agreeing with a group of initiated practitioners about how to manipulate empty symbols. Still others think they are communing with incorruptible Platonic verities. Euclid certainly was not a Christian. The archaic terminology of "moral" and "absolute" certainty is thus a particularly unhappy one, since the stances of atheistic and theistic geometers are absolutely identical when rigorously considered, such that whatever excess the theistic stance manifests is moral.

By maintaining that an atheist cannot possess genuine knowledge of geometry, Descartes has ostensibly been carried away by his personal sense of having grasped an important fact about God and His relation to human knowledge. However, when Descartes requires each of us to experience a revelation similar to the one he arrived at in the *Meditations*, he effectively undermines his contention that God is not a mere social construct but enjoys *independent* existence. Indeed, Descartes states in no uncertain terms that "It is not that my thought makes it so" (1984, 46). So, if thinking of X is not what makes X real, then those not thinking of X can enjoy the fruits of X. Placebo and nocebo effects show that conviction has a distinctive sort of efficacy. But, it is vitamin C, not our knowledge of vitamin C, which has health benefits.

Conclusion

In a way, the stance that I have advocated takes theism more seriously than Descartes does. Mind-independence is indeed the hallmark of the real, but endorsing the oft-repeated declaration that "God exists" means owning up to the fact that His government over human affairs—in this case the quest to systematically understand spatial extension—can proceed just fine without anybody adding to it an

extra layer of religious sentiment. Moyal (2005, 281) remarks that the atheist geometer can make the following move: the belief of my theist colleague(s) secures my proofs too. Moyal dismisses this as a mere jest ("*boutade*"), but I am suggesting that the move is viable.

Of course, the geometer who thinks that her work is protected by a non-deceptive Overseer likely goes about her business with extra zest. However, it is not a matter of whether the theist holds her belief with conviction or not, but of whether what the theist refers to by "God" in point of fact exists or not. If that expression indeed picks out something real, then the Godly benefits will be there, with or without the extra gratitude.

Works Cited

Clarke, Desmond M. 2003. *Descartes's Theory of the Mind*. Oxford: Oxford University Press. http://dx.doi.org/10.1093/0199261237.001.0001

Daniels, Charles B. 1999. "A Theism-Free Cartesian Analysis of Knowledge." *Noûs* 33(2): 201–13. http://dx.doi.org/10.1111/0029-4624.00150

Descartes, René. 1984. *The Philosophical Writings of Descartes*, vol. 2, trans. John Cottingham, Robert Stoothoff, and Dugald Murdoch. Cambridge: Cambridge University Press.

Descartes, René. 1985. *The Philosophical Writings of Descartes*, vol. 1, trans. John Cottingham, Robert Stoothoff, and Dugald Murdoch. Cambridge: Cambridge University Press.

de Sousa, Ronald B. 2008. "Epistemic Feelings." In *Epistemology and Emotions*, ed. Georg Brun, Ulvi Doguoglu, and Dominique Kuenzle. Aldershot: Ashgate, 185–204.

Miller, George A. 1956. "The Magical Number Seven, Plus or Minus Two: Some Limits on Our Capacity for Processing Information." *Psychological Review* 63(2): 81–97. http://dx.doi.org/10.1037/h0043158

Mitchell, Robert W., and Nicholas S. Thompson, eds. 1986. *Deception: Perspectives on Human and Nonhuman Deceit*. Albany: State University of New York Press.

Moyal, Georges J. D. 2005. "Deux notes sur 'l'imparfaite science' du géomètre athée." *Journal of the History of Philosophy* 43(3): 277–300. http://dx.doi.org/10.1353/hph.2005.0143

Tweyman, Stanley. 1988. "Descartes' Knowledge of God in the Fifth Meditation." *Southern Journal of Philosophy* 26(2): 263–73. http://dx.doi.org/10.1111/j.2041-6962.1988.tb00456.x