Chapter I -- Introduction

“Philosophy is written in this grand book — I mean the universe — which stands continually open to our gaze, but it cannot be understood unless one first learns to comprehend the language in which it is written. It is written in the language of mathematics, and its characters are triangles, circles, and other geometric figures, without which it is humanly impossible to understand a single word of it; without these, one is wandering about in a dark labyrinth.” Galileo Galilei

“God used beautiful mathematics in creating the world.” Paul Dirac

The remarkable success of physics in using mathematical language to describe the universe has naturally inspired philosophers to use similar methods. This influence is evident in the rise of analytic philosophy, which finds its roots in the pioneering mathematical work of Frege and Russell. Since then, the application of formal techniques has become a cornerstone of philosophical methodology. This book contributes to this formal approach to philosophical concepts by presenting a novel mathematical theory concerning the nature of God. The idea that mathematics can illuminate the nature of God is undoubtedly a contentious one, particularly for those within certain mystical traditions. However, such skepticism need not preclude the exploration of this possibility. As famously articulated by Galileo and Dirac, the universe itself appears to be written in the language of mathematics. If we suppose that the divine force responsible for this mathematical universe also possesses the capacity for self-description, then the potential for mathematics to describe God becomes more compelling. To suppose that mathematics can describe God, one need only posit the existence of a universal language encompassing both the cosmos and its creator.

One reason to think math might be suitable for describing God lies in the theological view that the abstract realm, including mathematical objects, exists within God's mind. If the language of mathematics can capture the contents of that mind, then describing its very structure with the same language seems like it might be a genuine possibility. Admittedly, this intriguing possibility comes with significant challenges. A purely mathematical object, built on abstract relationships and devoid of physical embodiment, struggles to encompass the aesthetic and moral qualities traditionally associated with God. Concepts like love, compassion, and beauty seem ill-suited to the cold logic of mathematical formulas. Similarly, a mathematical theory grappling with God's mentality, as traditionally conceived, faces hurdles. For consciousness seems far removed from the nature of objects describable by a mathematical language. And something as alien as God’s consciousness seems even further removed. Finally, describing God with a mathematical language would seem to place God, like any abstract object, outside space and time. This makes it difficult to see how God could be related to the concrete world, especially if that relation is thought to be one of creation or emanation. These are significant roadblocks that any mathematical theory of God must attempt to overcome.

In this book, I present an axiomatic approach to God that overcomes these difficulties while maintaining the connection between God and the abstract mathematical realm. The conception of God that I axiomatize is first introduced by Aristotle in his *Metaphysics*. Following Aristotle, I call the God in question *noesis noeseos*, ‘Thought Thinking Itself’ (TTI).

For both thinking and the act of thought will belong even to one who thinks of the worst thing in the world, so that if this ought to be avoided (and it ought, for there are even some things which it is better not to see than to see), the act of thinking cannot be the best of things. Therefore, it must be of itself that the divine thought thinks (since it is the most excellent of things), and its thinking is a thinking on thinking (noesis noeseos).

**The TTI conception of God had a significant influence throughout history and was adopted by many philosophical theologians.**Notably, Plotinus integrates TTI within his concept of the **"second hypostasis" or "Divine Mind."**Aquinas, mirroring arguments from both Plotinus and Aristotle, explicitly argues that God is TTI. And Hegel's concluding discussion of the Absolute's self-representational nature in his Encyclopedia and his discussion of the Absolute in various parts of his Phenomenology show that he thinks the Absolute is TTI.

The engagement with TTI by preeminent Western philosophers operating within highly articulated theological frameworks suggests the potential for a formal characterization of TTI itself. This possibility gains further credence from the successful application of formal treatments to another prominent theological concept, the Greatest Possible Being (GPB). In recent decades, the GPB conception of God has benefited from very sophisticated treatments. **Modal logic and semantics have proven fruitful in analyzing both the GPB concept itself and Anselm's ontological argument. (Adams 1971, Plantinga 1974, Tooley 1981, Lewis 1983, van Inwagen 1987, Chandler 1993, Oppy 1995)** In addition, Gödel axiomatized Leibniz's understanding of God and his ontological argument within a second-order modal logic framework. This has sparked further analysis by philosophers and logicians. (Sobel 1987, Fitting [Year Needed], Anderson 1990, Oppy 1996, Hazen 1999, Kovacs 2003, Maydole 2009, Pruss 2009) **Computational tools have also been applied to both Anselm's and Gödel's versions of the ontological argument. Oppenheimer and Zalta (2011) used the theorem prover Prover 9 to simplify Anselm's argument to its simplest form. Similarly, Benzmüller and Woltzenlogel-Paleo (2014) employed the Coq and Isabelle proof assistants for a computational analysis of Gödel's reconstruction of Leibniz's argument.**

While the Greatest Possible Being (GPB) concept of God boasts a well-developed formal framework, the TTI concept, despite its rich philosophical background, lacks a rigorous formalization. This book aims to fill this gap by introducing a novel axiomatic approach to TTI. The axioms aim to capture the essence of God as understood in the TTI tradition. One might anticipate that any axiomatic system describing such a being would be highly complex and require an unfamiliar mathematical framework. This is only partially true. In terms of the framework, the presented axioms reside within the familiar realm of contemporary foundational mathematics, specifically first-order extensional set theory. However, they deviate from the standard formulation of set theory by allowing the set-membership relation to be non-well-founded, which relaxes the requirement that sets (properties) have no infinite descending chains. The methodological implications of this non-well-foundedness are significant and will be a recurrent theme in this book.

In terms of complexity, the presented axioms are, in ways that can be exactly specified, very simple. The simplicity of the axioms is important enough that it merits further discussion in a subsequent chapter. For now, it suffices to say that considerations of simplicity form the cornerstone of the book's main argument. The argument is not intended to be definitive and certainly includes contestable assumptions. However, it leads to an intriguing conclusion by way of a familiar type of inference. The conclusion is that the TTI God is more likely to exist than the GPB God. It's important to note that this conclusion is consistent with both the possibility and even the high probability that no conception of God characterizes an existing being.

The core of the argument involves comparing the proposed TTI axioms with successor axioms to Gödel's axioms for the Leibnizian version of the GPB concept. This comparison assumes the adequacy of both axiomatizations in representing their respective conceptions of God. The argument hinges on the notion that the proposed TTI axioms are simpler than Gödel's axioms while enabling a more philosophically robust theory. The simplicity claim is directly supported by the mathematical properties of the two axiomatic systems. The claim regarding philosophical power, however, requires a detailed philosophical elaboration of the proposed theory, which shall be the focus of subsequent chapters. The main argument of the book, then, is of a familiar form: the TTI conception is simpler and more powerful than the GPB conception. Hence, the TTI conception is more likely to describe an existing being than the GPB conception.

Although I am primarily concerned in this book with the formal and philosophical elaboration of the TTI conception of God, the theory I articulate as well as Gödel’s axiomatization of Leibniz’ God have deep historical roots. In the remainder of this chapter, therefore, I discuss in an admittedly cursory way some of the historical predecessors to the two theories. **My aim isn't to provide an exhaustive historical account. Rather, I have three main goals. First, I use these discussions to introduce philosophical concepts crucial for comprehending the TTI conception and to contrast that conception with the GPB conception of God. Second, I use the discussion of the philosophical viewpoint behind the TTI conception to motivate the central axioms of the theory that I present in the next chapter. Finally, a discussion of the historical progression of TTI will allow me to articulate a fundamental metaphysical hypothesis framed as a mathematical theorem about the relationship between two distinct characterizations of TTI, which I prove in the next chapter.**

**I begin by examining Aristotle's discussion of God in the *Metaphysics*. I then explore the views of four prominent historical proponents of TTI: Plotinus, Aquinas, Hegel, and Royce. This analysis lays the groundwork for what I call the *God Axiom*, the central principle of the mathematical theory, as well as what I call the *Representation Axiom*, which expresses the fundamental metaphysical structure underlying the theory. It also lays the groundwork for the statement of a fundamental metaphysical hypothesis. After examining the historical foundation of the TTI concept, I shift focus to the historical basis for the GPB conception. This will involve discussions of Anselm's *Monologion* and *Proslogion* in which I highlight what I take to be important differences between his and Aristotle's approaches to God's nature. Brief discussions of Descartes and Leibniz will then provide the rest of the historical context for Gödel's axiomatization, which provides the main point of mathematical comparison to the axioms that I propose. Here again, the goal is not to be exhaustive but to bring out key philosophical ideas and connect the historical discussions of TTI and GPB to the two axiomatizations that are central to this book.**

Section I

Thought Thinking Itself

Subsection -- Aristotle

 Aristotle's Metaphysics XII presents his most elaborate exposition of a divine being. Chapter 6 utilizes considerations of change to posit a foundational principle that is an actuality whose essence is actuality. (*Met. ???)* This principle, Aristotle clarifies, transcends mere possession of actuality. Rather, its essence is actuality. (*Met. ???)* This conception of a fundamental being emerges from a rigorous methodology. Aristotelian inquiry begins with the most specific entities and progresses by abstraction towards the highest science, first philosophy, which centers on essence and actuality. Essence represents the core concept within one of the two senses of being studied in first philosophy (categorial being), while actuality is central to the other (being as actuality and potentiality). Thus, in the Aristotelian framework, understanding God as an actuality whose essence is actuality unifies these two fundamental senses of being. This unification yields the concept of a being such that what it is for it to be is simply to be. Within this framework, such a being is the most real type of being.

After characterizing the unmoved movers as an actuality whose essence is actuality, Aristotle argues that these divine beings must be without matter. (*Metaphysics* ???) This explicit exclusion of matter stems from the Aristotle’s introduction of the concept of actuality in the *Physics,* where he defines change as the actuality of a potentially existing thing in so far as it is potential. (Citation needed) In the *Physics,* actuality is tied to potentiality, and hence matter. Since the unmoved movers are by definition unchanging and eternal, the concept of actuality used to describe them must be an abstracted form of the concept used in the *Physics*. Indeed, Aristotle employs a double abstraction. The concept used to describe the unmoved movers is the concept that results from first abstracting potentiality (matter) from the concept of actuality as it appears in the *Physics* and then synthesizing the resulting concept with the concept of essence.

Aristotle's methodology for reaching his concept of God resembles a process of purification, akin to that practiced by alchemists. In the alchemical tradition, purification occurs in two ways: removing unwanted elements (purging) and elevating an element to its highest form (refining). Aristotle employs both methods with the concept of actuality. First, he purges matter from the understanding of actuality used in physics. This leaves a concept purified of its physical associations and applicable to the realm of pure being. Second, he refines this purified actuality further by connecting it to the concept of essence. By claiming God's essence is actuality, he elevates the concept to its ultimate form.

**Following his exploration of God's nature in Chapter 6, Aristotle introduces an intriguing, though difficult, concept in Chapter 7: the idea of thought being its own object. He argues that thought can become an object of thought by thinking its object, in a sense becoming one with what it thinks. (*Met. ???).* Soon after, Aristotle lists several divine attributes, including life, eternality, and being the ultimate good. These characteristics don't explicitly reference the concept of self-thinking thought introduced earlier. However, in the penultimate chapter of Book XII, Aristotle revisits God's thought process. Here, he presents arguments that directly connect back to his initial claim in Chapter 7. Through these arguments, he ultimately concludes that God is "Thought Thinking Itself" (TTI).**

**Aristotle offers two arguments in support of the claim that God is *noesis noeseos*. The first appears in the previously cited passage and is fairly straightforward. The first premise states that the best object must think the best object. The second premise asserts that the unmoved mover is the best object. From these two premises, it follows that the unmoved mover must think itself. While both premises seem plausible, Aristotle does not provide explicit justifications for them. Of the two premises, the second directly connects to the Anselmian tradition, where God is defined as the greatest conceivable being. However, unlike Anselm, Aristotle’s conception of God does not explicitly involve axiological concepts. Instead, as mentioned earlier, Aristotle understands God as pure actuality—an entity whose essence is actuality itself. Therefore, an inference to God as the best object must involve a bridge principle that connects Aristotle’s metaphysical characterization of God with the axiological concept of being the best. Without delving too deeply into this issue, one can introduce such a bridge principle by invoking the Aristotelian doctrine of the convertibility of Being and Goodness. According to this doctrine, the most real object—or, equivalently, the object with the most perfected being—must also be the best possible object.**

**Aristotle’s second argument does not rely on axiological claims but rather on the assertion that God is immaterial. His reasoning proceeds as follows:**

**"Since, then, thought and the object of thought are not distinct in the case of things that lack matter, divine thought and its object must be the same; that is, thinking must be identical with the object of thought." (Metaphysics XII)**

**This argument moves directly from a fact about God’s nature—namely, that God is immaterial—to the conclusion that God’s act of thought is identical with its object. Like the first argument, this one is also enthymematic. If one accepts that God is pure actuality, then one must also accept that such a being is devoid of matter. As suggested earlier, Aristotle’s notion of pure actuality implies immateriality. Moreover, the argument assumes a substantive claim about thought: in cases where there is no matter, thought and the object of thought are identical. While Aristotle discusses this idea in various contexts, the underlying rationale for this claim is not entirely clear.**

**We can see then that there are three distinct aspects of Aristotle’s theory of God. First, God is understood by way of a concept that is a purified version of a concept that appears in his physics. Second, the fact that God is TTI can be inferred from such an understanding of God. There is a third important aspect of Aristotle’s theory that is important to emphasize, which is that God is a form. Now, the claim that God is a form according to Aristotle is not supported by a direct quotation. Nonetheless, it follows straightforwardly from his identification of form with actuality and matter with potentiality. (citations ???) With such identifications, an actuality that is entirely devoid of matter must be, to use slightly metaphorical language, pure form. The implications of the view that God is a form are far reaching and will be discussed at length in this book. For now, it suffices to point out that Aristotle is committed to such a view and that** Aristotle's conception of God thus crucially includes three core principles. First, God exists as Thought Thinking Itself (TTI), pure thought eternally engaged in self-contemplation. Second, this understanding of God ultimately derives from a process of metaphysical refinement of a fundamental concept in Aristotle’s physics: actuality. Finally, God is a form, akin to Plato's the Good and the Beautiful, and so is an unchanging and perfect being.

Subsection -- Plotinus

It is a mark of the influence that an idea has that one can see it in the works of subsequent thinkers. In the case of the claim that God is TTI, Aristotle’s view can be seen quite clearly in Plotinus. As is well-known, Plotinus has two conceptions of the divine, the first and second hypostases. The first hypostasis is beyond Being and is for Plotinus not capable of characterization. By contrast, the second hypostasis, is an intelligible principle. An initial thing to note about Plotinus’s second hypostasis is that it is a form. Such a fact is directly supported by many passages and is most obvious from his referring to the second hypostasis as the form of the beautiful. So, there is no question that with respect to the second hypostasis Plotinus accepts Aristotle’s characterization of God as a form. It is also entirely clear that he thinks that the second hypostasis is TTI.

Plotinus’s commitment to the TTI tradition can easily be inferred from the third Tractate of the fifth Ennead, which is devoted entirely to the issue of God’s self-knowledge. Plotinus begins his discussion with a statement of the problem that the TTI thesis raises.

Either we must exhibit the self-knowing of an uncompounded being- and show how that is possible- or abandon the belief that any being can possess veritable self-cognition.

The first thing to note here is that Plotinus explicitly takes the possibility of thought thinking itself to be in question and in needing of some demonstration. Second, he claims that if such a being is not possible, then nothing can have self-cognition, something that Plotinus rightly rejects elsewhere. He says:

‘It would be already absurd enough to deny this power to the soul or mind.’

So, Plotinus’s discussion of TTI already shows two things. First, the coherence of the doctrine is not obvious or trivial. Rather, it is something to be demonstrated. Second, the stakes are conceptually high. If such a principle is not possible, then nothing can have self-cognition. This shows that for Plotinus, self-cognition essentially involves standing in a relation to God. This is consistent with the Platonic view, that forms are ideal exemplars of some attribute and other objects exhibit those attributes by way of resembling the exemplar. The divine mind, according to Plotinus, is the exemplar of self-awareness – perfect self-awareness, as it were. Hence, ordinary self-awareness of the sort that humans exhibit is an image, to use metaphorical language, of God. Less metaphorically, human self-awareness is a finite, spatio-temporally bound, resemblance of God’s self-awareness.

What, then, is Plotinus’s solution to the possibility problem? The answer to the question – how is self-cognition of this sort possible? – is on the surface surprisingly simple. However, there is much depth beneath that apparent simplicity. In order for self-cognition of the sort being considered to be possible, the object grasped and the grasping of the object must be identical. Plotinus says, ‘seeing subject and seen objects must be present as one thing’. A bit later, he says, ‘the object known must be identical with the knowing act’.

This claim, as simple as it is, contains an important logical form. Let us suppose that we distinguish between an act and the object of the act. Moreover, let us go beyond Plotinus’s presentation and introduce the idea of a function that takes an object to the act that grasps the object. And let us introduce a further idea and suppose that in the realm that Plotinus is discussing, what he calls the realm of ‘Primal Realities’, which as he says are necessarily existing, the acts that grasp an object are the essences of those objects, what Plotinus, following Aristotle, calls the actuality of the object. One can suppose that the essences in question contain complete specifications of the objects of which they are the essence. They are, perfect representations of their objects. Then, the kind of self-knowledge that Plotinus is envisioning has a simple logical form. Let E(x) be the essence of x. And let us call the Divine Mind Plotinus is discussing ‘God’. Then the kind of perfect self-knowledge exhibited by God requires the following to hold:

1. God = E(God).

When stated in this way, the kind of entity that Plotinus is describing is indeed a very unique and interesting one. In mathematical terms, it is a fixed point. More specifically, it is the fixed point of the essence function. If one supposes that in the Divine Mind every object is represented by a perfect representation, what can be considered the object’s essence, then self-knowledge, or what might be called self-representation, requires there to be a representation that is identical to its own representation, or to use the terminology of essence, it requires a being that is identical to its own essence.

It is important to note Plotinus doesn’t simply assert that God has this structure. Rather, he thinks that such a conclusion can be drawn from his understanding of God as an actuality whose essence (being) is actuality. He says: ‘As an act- and one whose very being is an act- it must be undistinguishably identical with its act’ This inference mirrors the inference that Aristotle draws in the second argument we examined above. For Aristotle, the fact that the being in question is devoid of matter necessitates that it is identical to its object. For Plotinus, such a fact can be inferred from the fact that the being is an act whose very being is an act. As I argued above, for Aristotle the removal of matter from the concept of actuality leads to the concept of an actuality whose essence is actuality. So, the two lines of argumentation dovetail.

We can see from this brief discussion, then, that Plotinus accepts the core theses that constitute Aristotle’s account of God as those theses pertain to the second hypostasis, the Divine Mind. He considers at length the possibility of the claim that God is TTI. He accepts that the Divine Mind is a form. And importantly, Plotinus’s discussion has provided a logically simple answer to how such a being is possible – it requires the object of the being’s act and the act itself to be identical. Lurking under such a simple logical form is a mathematically rich idea, namely the idea of a fixed point. In order for such a being to be possible, there must be a being that is identical to its essence. If one allows that there is a function from objects to their essences, such a being would be the fixed point of the essence function. Assuming that an essence is a complete representation of an object such a being would be an act that is perfectly self-representational.

In addition to offering insight into the mathematical structure needed to express the nature of God, Plotinus advances a thesis that is of central importance to the philosophy of mind. He claims that the type of awareness characteristic of human consciousness—and possibly all consciousness—should be understood as resembling God's perfect self-awareness. If one accepts the view that consciousness is fundamentally defined by self-awareness, then comprehending the nature of God is essential for understanding the nature of consciousness.

Subsection -- Aquinas

Aquinas’s theology stands as one of the great contributions to Western philosophy. While my purpose is not to explore its intricacies in full, it is important to emphasize how thoroughly and robustly Aquinas adopts the core tenets of Aristotle's conception of God. To be sure, Aquinas’ final judgement about God, that God is existence, is a step beyond Aristotle’s conception. Nonetheless, he accepts the core components of the Aristotelian conception. First, Aquinas consistently invokes the concept of actuality in his description of God, often characterizing God as pure act. So, he like Aristotle characterizes God in terms of actuality. His affirmation that God is form is implicit in this claim as it is in the claim that God is (identical to his) essence. When either of these claims is combined with the subsidiary propositions that actuality is form, or that essence is form, the conclusion that God is form becomes unavoidable. If any doubt remains regarding Aquinas’s adherence to the view that God is form, it is dispelled by the following passage from the third question of the \*Summa Theologica\* (Part I), where Aquinas explicitly asserts this position:

Thus, in every composite, there is something which is not itself. But, even if this could be said of whatever has a form, viz. that it has something which is not itself, as in a white object there is something which does not belong to the essence of white; nevertheless, in the form itself, there is nothing besides itself. And so, since God is absolute form, or rather absolute being, He can in no way be composite.

In addition to thinking of God in terms of actuality and as form, Aquinas clearly affirms the TTI conception of God as well. In Summa ???, he presents the following argument for the conclusion:

Since, therefore, God has nothing in Him of potentiality but is pure act, His intellect and its object are entirely the same; so that He neither lacks intelligible species, as is the case with our intellect when it understands potentially, nor is the intelligible species distinct from the substance of the divine intellect, as it is in our intellect when it understands actually. Rather, the intelligible species itself is the divine intellect itself, and thus God understands Himself through Himself.

Here, Aquinas first infers that God is pure act based on the premise that he contains no potentiality. In making this claim, Aquinas, like Aristotle, excludes matter from the concept of actuality used to describe God. He then infers, on this basis, that God is TTI. This line of reasoning mirrors Aristotle's second argument for the same conclusion.

In addition to accepting the Aristotle’s core characterization of God, Aquinas addresses an issue that has plagued Aristotle’s conception from its very beginning. Indeed, it is an issue that is addressed in a famous passage in the *Magna Moralia*.

It follows that He will contemplate himself. But this too is absurd. If a man makes himself the object of his own research, we stigmatize him as a dullard. God in contemplation of himself is therefore an absurdity.

This objection, one that any account of TTI must address, accuses the view that God is TTI of being vacuous. A thought thinking itself, such an objection runs, must have no content. If it is directed at itself and nothing else, then it is a thought thinking nothing but a thought thinking itself. Like a dog chasing its own tail, such a thought could catch nothing outside itself. This sort of objection has been raised and defended by a number of notable scholars in the 20th century. Aquinas addresses this concern in a manner consistent with the approach taken by many commentators, both preceding and following him. Aquinas’ principle could be stated as: “The principle of all things knowns them all through knowing himself.’ To quote Aquinas: *intelligendo se, intelligit omnia alia*.

This claim by Aquinas is to be sure an initial response to the objection. If through knowing himself God knows all things, then clearly God is not a dullard. But such a claim does raise the question: how does this happen? How is it that the structure of TTI enables this kind of expansive knowledge? We can put the question as follows: Is it the case that an entity that satisfies the description – G=E(G) –has contact with, i.e., knows, all of Being in all its manifold possibilities? Aquinas has his own elaborate answer to this question. In the course of this book, I will provide a different answer. The beginning of that answer, however, requires leaving the confines of scholastic philosophy and moving to German Idealism.

Subsection – Hegel

Hegel is of course temporally far removed from Aquinas, Plotinus, and Aristotle. And he is also rather far removed from them in terms of his fundamental conception of the philosophical project and the conceptual apparatus needed in order to complete it. It is thus a significant testament to the enduring and widespread appeal of the TTI conception of God that Hegel adopts the TTI thesis with respect to the Absolute.

Hegel's commitment to the TTI conception of the Absolute is evident in how he structures his *Encyclopedia*. Hegel echoes Aristotle from the very beginning of the *Encyclopedia*, stating in Section 6: “For their philosophic sense, we must presuppose intelligence enough to know, not only that God is actual, that He is the supreme actuality, that He alone is truly actual.” Hegel thus begins the *Encyclopedia* by embracing Aristotle's concept of God as supreme actuality. At this point in the *Encyclopedia*, Hegel has not yet introduced the concept of the Absolute. But the Absolute comes to play the kind of foundational role for Hegel as the unmoved mover does for Aristotle. And Hegel very clearly never loses sight of Aristotle’s unmoved mover. This becomes overwhelmingly clear from the fact that Hegel concludes the *Encyclopedia* with a quotation from chapter 7, Book XII of Aristotle’s metaphysics in which Aristotle both introduces the idea of a thought’s being its own object and discusses various attributes of God.

Moreover, in the preceding sections in which Hegel discusses the Absolute, he makes clear references to TTI. In the penultimate section (§574), he writes: "This notion of philosophy is the self-thinking Idea, the truth aware of itself (§ 236)." Further emphasizing this point, the final section (§577) states: "The eternal Idea, in full fruition of its essence, eternally sets itself to work, engenders and enjoys itself as absolute Mind." **This deliberate framing showcases Hegel's debt to Aristotle.**

While not as central to Hegel's scientific framework as in Aristotle's physics, the concept of actuality still plays a role. Notably, it appears in Hegel's definition of organic nature, studied by physiology.

The idea as nature is: (1) as universal, ideal being outside of itself space and time; (2) as real and mutual being apart from itself particular or material existence, - inorganic nature; (3) as living actuality, organic nature. The three sciences can thus be named mathematics, physics, and physiology.

The inclusion of actuality within organic nature suggests, similar to Aristotle, a conceptual connection between a concept within physical science and his characterization of the Absolute. Furthermore, the association of actuality with living nature supports the claim that God/the Absolute is a living Being.

Similar to Aristotle’s attitude about actuality and the unmoved mover, Hegel believed a form of conceptual purification is necessary to reach the Absolute. This is evident in the closing lines of his *Encyclopedia* where he removes immediate nature from the concept of spirit, analogous to Aristotle’s removing matter from the concept of actuality. Hegel argues that nature is merely a posited entity, not inherent to spirit itself.

Thus, immediate nature is only a posited entity, as spirit is in itself not a presupposition, but rather totality returning into itself. In this way the middle term, the self-knowing concept, has as its reality primarily conceptual moments and exists in its determinacy as general knowledge, persisting immediately by itself.

With this purification process, Hegel adopts the theses we previously associated with Aristotle. Similar to Aristotle's God, Hegel's God is described as a purified form of a concept found in his understanding of physical science, namely actuality. Moreover, like Aristotle’s claim that God is a form, Hegel’s Absolute is a concept. The Absolute is TTI. And finally, Hegel believed the fact that the Absolute is TTI can be inferred from its nature.

The prominence of TTI in Hegel's system showcases the enduring influence of Aristotle's concept of God. It also suggests that TTI aligns well with, and perhaps finds its best expression within, an idealistic framework. While the specifics of Hegel's idealism are complex, it quite clearly doesn't make reality dependent on human representation. Instead, his idealism posits that everything is a representation of the Absolute. This objectivity of both the Absolute and its representations makes Hegel's system an ***objective idealism***. This is significant. For, according to the most nuanced interpretations of Aristotle, so too is Aristotle. As Lear (20??) argues:

For Aristotle, by contrast, objects must conform to our knowledge not because they must conform to the human mind, but because they must conform to God or Active Mind. Aristotle is thus, one might say, an objective idealist. He is an idealist in the sense that the order of the physical world is ultimately dependent on mind. Yet there is no subjectivity in his idealism…since for Aristotle there is nothing distinctively human about the mind to which objects are conforming, there is no basis for saying that the essences we contemplate are mere appearances.

The claim that the world must ‘conform’ to the ideas in God’s mind is not as strong as the claim that everything is represented by an idea in God’s mind, which is much closer to Hegel’s form of idealism. But it is certainly a step in that direction. The mathematical theory in this book incorporates this stronger type of objective idealism as its underlying metaphysical framework. One of the five core axioms of the theory presented in this book, called the *Representation Axiom*, explicitly asserts an objective idealist perspective.

The representation axiom asserts the existence of a property-theoretic representation for any object. Though property theoretic, such objects can most easily be described in set-theoretic terms. A property-theoretic representation of X, I shall suppose, is a set that contains all the sets that contain X. Such a set contains every property of X and so contains as it were all the information there is about X. Such a property can be construed as an essence of X. In this book, therefore, I vacillate between calling the objects in question representations, where that is meant to convey the kind of objectively existing representations of the sort within Hegelian idealism, and essences. The representation axiom, then, asserts that for any set, x, (property) there is a set that contains any set that contains x. Formally stated,

1. $∀x∃y∀z(z\in y≡x \in z)$

It is straightforward to prove from extensionality and the representation axiom that any object only has one representation. Hence, it is possible to define a representation, or essence, function, E(x), that takes every object to its essence/representation. With such a function in place, it is possible to assert the logical structure of the divine mind, which I discussed above: G = E(G).

Subsection – Josiah Royce

Josiah Royce occupies what might be considered a pivotal role within American philosophy. In his case, however, the pivot was away from the kind of neo-Hegelianism for which he argued. What came to dominate instead were largely the concerns and viewpoints of a handful of philosophers, most influentially Russell, Moore, and Wittgenstein – the three knights of analytic philosophy -- who chased the idealism to be found in the followers of Hegel into the dark forests of neglected ideas. What is really quite intriguing about Royce, however, is that he combined his neo-Hegelianism with an appreciation for and an adeptness at formal mathematics. In this way, Royce would methodologically have been right at home within the analytic tradition.

Royce’s description of the Absolute depends on the mathematical idea of a *Kette*. Royce, like Hegel, explicitly adopts the view that the Absolute is self-representational. What he adds to TTI is the idea that such self-representation implies that the Absolute is a *Kette*. Royce writes,

In the work by Dedekind already cited, the general name, *Kette*, is given to any self-representative system, whether of the present type or any other self-representative type. In the most general terms, a *Kette* is formed when a system is made to correspond, whether exactly, and element for element, or in any other way, either to the whole, *or* to a part of itself.

It is clear from this passage that Royce is concerned to characterize self-representative systems. And that is because he thinks the Absolute is one: ‘Our own view, then, also implies that the Absolute is a *Kette* of the type now in question.’

Now, the mathematical nature of a *Kette* as Royce understands it differs from the mathematical structure of God defended in this book. Nonetheless, both incorporate a fundamental idea about the nature of self-representation, which is that it involves a whole’s being present in (to use an informal term) its parts. In the case of Royce’s *Kettes*, the whole is mapped into its parts, which themselves contain elements that correspond to all the parts of the original whole. In this way, the whole, so to speak, reappears within its part. And of course, such a fact leads to an infinitely repeating pattern: the whole appears in a part and so the part contains the whole which contains it, and so on. Such a notion is very similar to the concept of a fractal, which is a self-similar object. Although Royce did not use the term ‘fractal’, he saw clearly that the concept of self-representation is equivalent to the concept of an object’s having a fractal-like structure.

The incorporation of the concept of a fractal into the understanding of the Absolute, or what I have been calling God, is of significant theological interest. The work of mathematicians and physicists has shown not only that fractals are an exceptionally beautiful type of mathematical object but that they are abundantly present in the physical world. Coastlines, clouds, leaves, proteins, heart sounds, lightning bolts, snowflakes, mountain ranges, rings of Saturn are just a few of the many physical phenomena that have a fractal structure. So pervasive are fractals that some physicists have proposed that spacetime itself is a fractal. (Nottale 1993, Benedetti 2009, Ho, 2014) Moreover, it is known that there are two biological structures that are deeply entwined with fractals: health, and life. (citation) According to the Platonic tradition, objects in the spacetime world gain their goodness and beauty by resembling the Good and the Beautiful, which are themselves perfect exemplars of beauty and goodness. The existence of a Roycean God would thus provide an objective ground for aesthetic and axiological judgements about the world, judgements that many people share such as: coastlines, clouds, and leaves, are beautiful. Health and life are good. And snowflakes too. If a Roycean God exists, all of these features of the physical world bear an objective resemblance to God and so are objectively good and beautiful.

The fractality of God not only grounds these kinds of axiological claims but also offers an approach to understanding God’s omniscience. If God truly exists in all of its parts, then God’s presence must extend infinitely within whatever God contains. The task remains, then, to consider what constitutes the parts of God. I shall discuss this in detail in the next chapter. For now, I will simply propose that if Being and all its perfections can be considered parts of God, then God’s presence permeates every part of Being.

Now, fractals are a rich and complex mathematical topic. For our purposes, however, we can focus on the notion of a set-theoretic fractal, which is a very simple idea. If a fractal is an object that is present in each of its parts, then a set-theoretic fractal would be a set that is contained by all the sets that it contains. Such a set would be in all its parts. Let, G, then be some such set. It is not hard to see that the following claim, (where $\in $is the set-membership relation) must be true of G:

1. $(x)(x \in G ≡ G\in x)$

Notice, that this axiom entails that G is universally symmetrical with respect to the set-membership relation. For *any* object x, G is in x *if and only if* x is in G. To use another turn of phrase, according to this assertion G is perfectly symmetrical. Set-theoretically, the kind of entity that Royce is envisioning the Absolute to be is equivalent to the Absolute’s being perfectly symmetrical. From here on, I shall call the conception of God captured by this axiom, the *Symmetry Conception*.

There is a longstanding connection between God and symmetry across various religious traditions. Islamic art, for example, is highly symmetrical and is often thought to reflect God’s perfection. While the notion of God as perfectly symmetrical is not typically stated outright, it does appear in Mary Baker Eddy’s conception of God. She writes, “Is he deformed? He is wholly symmetrical; the one altogether lovely.” (Miscellaneous Writings 1883–1896, p. 167:1–6) Although this symmetry-based conception of God differs from the original understanding in the TTI tradition, which is couched in the language of actuality, its suitability as a characterization of God in that tradition is supported by a theorem that I demonstrate in the following chapter.

The theorem addresses the two distinct assertions about God that we have seen emerge within the TTI tradition. The first, derived from Plotinus and echoed by Aquinas and implicitly present in Hegel and Royce, is an assertion about the fundamental structure of TTI: G=E(G). The second is the above set-theoretic expression of Royce’s view about God’s fractality. These two assertions frame the TTI tradition, prompting a natural question: what is the relationship between them? The central theorem of this book, demonstrated in the next chapter, establishes the equivalence of these two assertions. Being identical to one’s essence—that is, being self-representational—is equivalent to being a set-theoretic fractal. Formally,

1. $\left(x\right)\left(x \in G ≡ G\in x\right)≡E=E(G)$

This theorem justifies adopting (III) above as the God Axiom. Moreover, because the theorem establishes that being universally symmetrical is equivalent to being self-representational, the TTI conception of God *must* incorporate God’s universal symmetry. Although the symmetry conception of God diverges from the TTI tradition as it has traditionally been articulated, this theorem establishes that the symmetry conception of God is in fact a logically necessary part of an articulation of TTI.

Like the fact that God is a fractal, the fact that the TTI God is perfectly symmetrical has significant theological implications. First, it establishes a conceptual link between God and contemporary physics. Previous proponents of TTI, with the exception of Royce, characterized God in terms of the concept of actuality—a concept central to Aristotle’s physics. But physics has advanced, and the notion of actuality is no longer in use. By the 20th century, symmetry emerged as a foundational concept. That a great deal of physics arises from various symmetries is well-known. To give a sense for this connection, it is worth quoting theoretical physicists. David Gross (1996) describes symmetry’s role in Einstein’s work, noting:

“Einstein’s great advance in 1905 was to put symmetry first, to regard the symmetry principle as the primary feature of nature that constrains the allowable dynamical laws. Thus, the transformation properties of the electromagnetic field were not to be derived from Maxwell’s equations, as Lorentz did, but rather were consequences of relativistic invariance, and indeed largely dictate the form of Maxwell’s equations.”

And Richard Feynman says the following.

“So, our problem is to explain where symmetry comes from. Why is nature so nearly symmetrical No one has any idea why?”

Although the set-theoretic symmetry implied by the God axiom differs from the symmetries fundamental to physics, it can be viewed, like Aristotle’s purified concept of actuality, as a refined version of the concept of symmetry in physics. I shall discuss this in greater length in the next chapter. For now, I shall simply note that the theoretical continuity between physics and metaphysics inherent in Aristotle’s conception of God is preserved in the symmetry-based conception.

There is also an axiological implication of these facts about the resemblance between the physical universe and God. Although physical laws are deeply rooted in symmetry, as Feynman’s quote above shows the physical universe itself is not perfectly symmetrical, only nearly so. The physical universe thus resembles, imperfectly, God. As mentioned above, according to the original form of Platonism, objects gain axiological value by resembling the Good. So, the physical universe, in resembling God, is good, though not perfectly so. The imperfect goodness of the physical world has profound theological implications, which we will explore in later chapters.

*Section II*

*The Greatest Possible Being*

Subsection -- Anselm

In this book, I argue that the Greatest Possible Being (GPB) conception of God, introduced by Anselm in his *Proslogion*, represents a fundamentally new idea compared to the TTI conception. This difference might be likened to an idea-theoretic substantial change. Ideas can appear in various theories with different accidental features, like details surrounding the universe's origin in the works of Aristotle, Plotinus, Aquinas, and Hegel. However, these variations don't necessarily signify fundamentally different conceptions of the divine (the Absolute). As shown previously, the core elements of TTI are present in each of these thinker's system. Anselm's GPB concept, however, deviates significantly from TTI. The shift from TTI to GPB constitutes a substantial change in the realm of ideas, marking a distinct break from the earlier tradition.

While I argue for a fundamental difference between the TTI and GPB conceptions of God, there's also a significant continuity between them. If one imagines ideas not as fixed entities, but as evolving arrangements of components, much like how David Hume envisioned persons, one can see Anselm's GPB conception as a natural evolution from the TTI conception. Despite their fundamental differences, undeniable historical and conceptual links remain between the two. In the preface to his *Monologion*, Anselm explicitly acknowledges his debt to Augustine, revealing his connection to the intellectual tradition that birthed the TTI conception of God.

And, after frequent consideration, I have not been able to find that I have made in it any statement which is inconsistent with the writings of the Catholic Fathers, or especially with those of St. Augustine. Wherefore, if it shall appear to any man that I have offered in this work any thought that is either too novel or discordant with the truth, I ask him not to denounce me at once as one who boldly seizes upon new ideas, or as a maintainer of falsehood; but let him first read diligently Augustine’s books on the Trinity, and then judge my treatise in the light of those.

Both Augustine and Plotinus openly acknowledged their intellectual influences: Augustine indebted to Plotinus, and Plotinus to Plato. By embracing the Augustinian concept of God, Anselm aligns himself with this very tradition.

The Platonic origin of Anselm’s conception of God in the *Monologion* becomes immediately evident in his argument in the first chapter.

But no good which is [good] through something other [than itself] is equal to or greater than that good which is good through itself. Hence, only that which alone is good through itself is supremely good; for that is supreme which so excels others that it has neither an equal nor a superior. Now, what is supremely good is also supremely great. Therefore, there is one thing which is supremely good and supremely great—i.e., [which is] the highest of all existing things.

Anselm's approach to God in this passage is thoroughly Platonic. Both philosophers begin with the concept of good things and arrive at a single source of all goodness. However, Anselm names this ultimate source ‘God’ rather than ‘the Good’. This seemingly innocuous terminological difference reflects a very deep philosophical difference. Anselm’s reliance on the Platonic idea of the Good might lead one to believe Anselm, like other TTI proponents, views God as a form. But Anselm argues otherwise. In Chapter 26 of the *Monologion*, he clarifies that while God doesn't fit neatly into standard categories of substance, he is nonetheless a substance himself, and crucially an individual spirit. Anselm emphasizes this individuality by frequently referring to God as "this spirit." The use of "this" before "spirit" is significant, for it shows that Anselm views God as a particular being. His terminology aligns in this way with the way Aristotle referred to individual things. If Anselm considered God a form, he would have used a phrase like "the form of spirit," mirroring Plato's "the form of the Good."

The concept of God as a unique individual (a particular being) is a natural fit for theologians who believe God possesses properties. Anselm and his followers fall into this category. A common way to express the Anselmian view is that God instantiates all the perfections – properties that are inherently good to possess. For God to have all the perfections, God must be capable of having properties. Consequently, many philosophers argue God must be a particular. Alvin Plantinga, for instance, a prominent contemporary defender of an Anselmian view, uses this line of reasoning to reject the idea of divine simplicity. He argues that divine simplicity would reduce God to a property rather than something possessing properties. (Citation). And as we'll see later, Gödel’s axiomatization of Leibniz’s version of the GPB conception of God treats God as a particular as well.

Anselm's decision to refer to God as "this spirit" shows that while indebted to Plato's tradition, he wasn't bound by it. Like all great thinkers, he used past ideas as a springboard for his own philosophy. However, in the *Monologion*, his ambition is tempered by his commitment to the Augustinian view of God. In contrast, the *Proslogion* sees Anselm's ambition take center stage. As he himself states, he sought "one single argument that for its proof required no other save itself, and that by itself would suffice to prove that God really exists." Driven by this goal, Anselm defined God as the being greater than which nothing can be conceived, forming the foundation of his famous ontological argument.

Anselm's definition of God as that being than which nothing greater can be conceived might seem surprisingly aligned with Aristotle's view, where God is described as the best or noblest object. In fact, Aristotle argues that God, as the best possible object, must be thinking itself (TTI). However, this apparent continuity masks a crucial difference. Anselm's definition explicitly includes the concept of being the greatest conceivable being. By contrast, for Aristotle and his followers God's being the best stems from her being the most real – a pure actuality.[[1]](#footnote-1)

Unlike Aristotle, Anselm explicitly incorporates a concept of value, greater than, into his definition of God. Because Anselm clearly prioritized a single, self-contained proof for God's existence, he needed to avoid a complex conceptual apparatus like Aristotle's. Instead, Anselm's definition relies on the concepts greater than, being, conceivable, and not. None of these concepts stem directly from physics as understood in Anselm's time. Notably absent is the concept of actuality. In contrast to Aristotle's purified concept from physics, Anselm's definition of God employs concepts that belong to a conceptually independent domain.

Anselm’s definition of God diverges from Aristotle’s not only because it incorporates a value concept but also because it fundamentally alters the logical structure of God. By defining God as the “greatest conceivable,” which later philosophers often interpreted as the “greatest possible,” Anselm introduces a very specific structure, one that differs from the structure in the TTI conception. A clear indication of this shift is the absence in Anselm’s writings of any attempt to conclude that God is “thought thinking itself” (TTI). Given the significance of this inference for the TTI conception of God, it is notable that in neither the *Monologion* nor the *Proslogion* does Anselm assert, let alone attempt to deduce, that God is thought thinking itself.

This omission is not due to any hesitation on Anselm’s part to attribute qualities to God. Over the course of his discussion in the *Proslogion*, Anselm infers from his definition that God is the creator of the universe *ex nihilo*, just, truthful, blessed, omnipotent, merciful, impassible, infinite, eternal, harmonious, fragrant, succulent, soft, and ineffably beautiful; completely and supremely just; existing everywhere as a whole; beyond place and time; and before and beyond all things. Were Anselm reluctant to ascribe various attributes to God, one might downplay the absence of an inference that God is TTI. However, given this rather extensive list of attributes, it is difficult not to see the omission of this inference as a sign that Anselm’s concept of God fundamentally differs from the TTI tradition.

Now, one might reasonably argue that Anselm's concept of God still implies self-awareness. After all, if God has supreme knowledge, wouldn't that include knowing herself? From this perspective, an objector could claim that God being TTI is simply a logical consequence of God's perfection, a minor point not requiring explicit mention by Anselm. Perhaps he didn't make this inference because it seemed self-evident. While this argument has some merit, the ease of the inference reveals a crucial difference between the TTI tradition and Anselm's approach. According to the TTI tradition, the fact that God is TTI is a fundamental theorem of theology, akin to the demonstration that all triangles have two right angles. To relegate the fact that God is TTI to a trivial consequence of the definition of God is to demote the importance of such a discovery. It is to turn a fundamental theorem into a corollary, one that does not indicate any particularly special feature of God. For the argument that an Anselmian can give that God knows herself can be extended to anything. Just as God knows herself, she knows London, Hitler’s secrets, and Kennedy’s assassin. Within the TTI tradition, by contrast, the fact that God is TTI is a singular fact about God – the argument to that conclusion does not apply to London, Hitler, or Kennedy’s assassin.

The lesson to be learned from the deduction we have provided on Anselm’s behalf, however, is not merely that it turns what should be a fundamental theorem into a trivial corollary. The deeper lesson is that Anselm’s definition implies a fundamentally different structure than the structure of God according to the TTI tradition. To say that God is thought thinking itself is to impute to God a very specific structure. Stated in its most general terms, the structure of God is the structure of an F that is F-ing itself. That this is a very special type of structure can be seen by considering all the things that do not have it. A dog is not dogging itself. Humans are not humaning themselves. Happiness is not happinessing itself. By contrast, the fact that an Anselmian infers has the general structure of x R x: God knows herself. To be sure this requires the knowledge relation to be capable of reflexivity. But that says nothing particularly special about God except that she, like anyone who knows herself, is capable of standing in the knowledge relation to herself. What is distinctive about God according to Anselm’s definition is that God is a maximal being: God has *all* the perfections. Assuming that a perfection is a property, this requires God to have many, perhaps infinitely many, properties, unless of course all such properties are identical, in which case it requires God to have a single property. So, the basic metaphysical structure of God does not require a special type of property. Rather, it requires God to be a special type of particular, namely a maximal particular.

We have arrived, then, at a fundamental issue, one that is a central theme in this book: The TTI tradition and the Anselmian tradition require different approaches to the structure of forms, or to use terminology that is more modern and that I will use throughout the book, the structure of properties. God according to the TTI tradition is a form, i.e., a property. To say that God is thought thinking itself is to say that the property that God is bears a very intimate relation to itself. One might think that the relation in question is self-instantiation. How else can one understand the kind of reflexivity involved in the claim that God is TTI? As will become apparent, however, the relation is not one of self-instantiation. Nonetheless, as shall also become apparent, the relation in question requires the same kind of structure of properties that is required by self-instantiating properties: non-well-foundedness. The Anselmian understanding of God, by contrast, can be articulated without appeal to non-well-founded properties.

The distinction between well-founded and non-well-founded properties arose from the work of 20th century set theorists. It may thus be surprising that it would be a part of a historical interpretation of two competing theories of God, one posed in the 4th century BC, and one posed in the 12th century AD. Despite the potential for anachronism, however, the distinction is clearly a conceptually important one. An axiom asserting the well-foundedness of sets is part of the standard development of set theory. Requiring sets to be ‘built up from the bottom’, as well-foundedness does, not only avoids various paradoxes but also, when appropriately axiomatized, provides foundations, in some appropriate sense of foundation, for all current mathematics. This stunning success of well-founded set theories strongly suggests that well-foundedness is a central component of any correct understanding of sets. And there is no shortage of logicians and metaphysicians within analytic philosophy who, taking a cue from the mathematicians, have advanced well-founded theories of properties. To locate a fundamental difference between two historical conceptions of God in the distinction between well-founded and non-well-founded properties is thus to distinguish the two conceptions of God by way of a deep metaphysical issue. Moreover, Plato’s claim that the forms are self-instantiating shows that one of the phenomena that non-well-foundedness allows, namely self-instantiation, was part of the general philosophical milieu at the time Aristotle developed his theory of God. That his understanding of God would require non-well-foundedness, even though Aristotle rejects the self-instantiation of forms, is thus, first appearances notwithstanding, not altogether surprising.

This distinction between different structures of properties is important for a central argument of this work. One key argument for the fundamental incompatibility of the two different conceptions of God rests upon the notion of well-foundedness. The TTI conception necessitates non-well-founded properties. This follows from the fact that being TTI is equivalent to universal symmetry, and the fact that an axiom asserting a universally symmetrical set violates well-foundedness. Anselm's conception of God, on the other hand, can be articulated using well-founded properties. A second argument, one that is related to the first, is the fact that the mathematical concepts that best represent these contrasting views of God differ. The TTI conception is best understood as a fixed point. In contrast, Anselm's God requires the concept of an ultrafilter. An ultrafilter on a set X is a maximal filter on that set. The concept of an ultrafilter thus captures the maximality inherent in the Anselmian conception. Because a fixed point and an ultrafilter are two different types of mathematical object, the corresponding conceptions of God have fundamentally different types of structure.

With this brief examination of the GPB and TTI traditions, we have arrived at a point where we can articulate the main differences between the two. First in the GPB tradition, God is explicitly defined in terms of greatness: God is that Being greater than which none is conceivable (possible). In the TTI tradition, by contrast, God’s nature is articulated by way of a concept that is taken from physics and refined so as to be suitable for a metaphysical inquiry. Second, in the GPB tradition, God is treated as a maximal particular, whereas in the TTI tradition, God is a form, i.e., a property, of a very special sort. Third, in the TTI tradition, a fundamentally important inference is made from God’s nature to the fact that God is TTI. In the GPB tradition, such an inference is either not made or is a trivial consequence of God’s definition. Finally, whereas the GPB tradition can be articulated within a well-founded theory of properties, the TTI tradition requires a non-well-founded conception of properties.

Subsection -- Descartes and Leibniz

We now have a historical basis for an understanding Anselm's conception of God and its difference from Aristotle's conception. As it turns out, these differences continue to be manifest in the treatments of the GPB conception that occur after Anselm. Both Descartes and Leibniz build upon the foundation laid by Anselm's concept of God. They accept the core idea but refine it to strengthen the ontological argument.

In the *Meditations*, Descartes goes further than Anselm by incorporating the notion of necessary existence into his definition of God. This is evident in his responses to objections raised against his Meditations. He argues that by contemplating the nature of a supremely perfect being, we can see that its existence isn't just possible, but absolutely necessary. As Fitting’s beautiful analysis of the progression from Anslem to Descartes to Leibniz shows, the step from existence to necessary existence is a crucial one for the ontological argument. And it is a step that not surprisingly Gödel takes in his version of Leibniz’ God.

Although the inclusion of necessary existence marks a significant step in developing the Anselmian concept, Leibniz recognized that necessary existence alone wasn't enough for a cogent ontological argument. The concept of God might include necessary existence, but what if it also contains properties that are impossible for any being to possess? To ensure the argument's cogency, we need to establish the possibility of God's existence. Leibniz famously tackled this issue by defining a perfection as a simple, positive quality. His reasoning is that such a definition inherently excludes contradictions. Since contradictions require negation (absence of something), a being with only positive perfections wouldn't be contradictory. Therefore, it is possible for a being to embody all perfections simultaneously. With Leibniz’ conception of God, then, we can augment the general characterization of the GPB God: such a god is a maximally *positive* particular. Leibniz’s shift from the concept of a perfection to that of a positive property is a remarkably insightful move, one that enables him to argue for the possibility of God’s existence. Since, he takes the ontological argument to shows that if God is possible, God exists, this shift allows him to infer God’s existence.

The GPB conception of God thus appears in both Leibniz and Descartes. Moreover, it is clear from both Descartes and Leibniz that both were concerned to add to the GPB conception of God with an eye to bolstering the ontological argument. Both retain the essence of Anselm’s definition of God and augment it with increasingly nuanced understanding of the concept of a perfection. It is primarily Leibniz’s understanding of God that will be the focus of the comparison I make in subsequent chapters, since it is Leibniz’s view that Gödel axiomatizes. Before comparing the two traditions, however, I first turn in the next three chapters to developing an axiomatic treatment of the TTI conception of God.

1. A crucial aspect of Aristotle's philosophy is the connection between being and value. For him, being and goodness are convertible. This means that the most perfect form of existence will inherently be the best possible being. Therefore, defining God as the best is unnecessary – simply stating God as the most real being is sufficient. And this can be done with the concepts of essence and actuality: God is an actuality whose essence is actuality. The Aristotelian route to God’s greatness thus goes through his first philosophy. And, as I have argued above, one of the concepts involved in Aristotle’s understanding of God within first philosophy, i.e., actuality, is a purified concept from his physics. Aristotle’s understanding of God is the pinnacle of an elaborate system in which first philosophy is methodologically tied to the physical sciences. Mirroring the Platonic ascent up the ladder of love, Aristotle’s theoretical understanding of God ascends from the lower sciences through physics and then finally to first philosophy. [↑](#footnote-ref-1)