Fort Bend Christian Academy

God and Reality: An Excursus on Transcendental Methodology

A Thesis Submitted to

the Teacher and Students of the Advanced Apologetics Class

Department of Worldviews and Apologetics

by

Luke Thurston

Sugar Land, TX

May 2017

Table of Contents

Acknowledgments

In completing this thesis I have benefited from the conversations and writings of a number of people. First and foremost, I would like to thank my professor, Mr. Henderson. If not for him, I would have given up on the Transcendental Argument and Presuppositional Apologetics a long time ago. I have always exuded a great deal of skepticism and disbelief towards this matter, but through skull-cracking dialogues, Mr. Henderson pushed me to reconsider my positions time and again. I use the plural form of position because this was a feat that required multiple attempts to make correct. Secondly, I would like to thank Zach Richards. The main reason I mention Zach is that he helped me to see a parallel between the Transcendental Argument and the Moral Argument. This is an observation that most people are not able to see. Although it may seem like a minor point, it shaped the way I viewed the argument and helped me to transition from focusing on pure epistemology to incorporating elements of ontology and meta-ontology into the argument. Lastly, a man who I can truly say is one of the smartest individuals with whom I have enjoyed conversation, Ethan Walker. His positions on philosophy of time, and the theology of time for that matter, are brutally unorthodox. First off, he takes the maddening position that space and time can be separated. Before the conversation even begins, Einstein wants to swallow a Double Albert. Then, he has the nerve to say that only the present exists. In the philosophy of time, the insanity of this view is compared to that of modal realism in alethic metaphysics. As if both of these suggestions aren't bad enough, he severs the spine of nearly every theologian alive by arguing that God exists inside of time. If there is a more radical combination of academic theses, I am not acquainted with them. With respect to the Transcendental Argument he has influenced my thought on God's relation to time, and more importantly, the relations of the Trinity.

Introduction

Natural Theology is defined classically as "the practice of philosophically reflecting on the existence and nature of God independent of … divine revelation of scripture."[1] While this definition is satisfying to those who *shackle* themselves to merely Evidential measures of *defense*, it is not fulfilling to those who wish to take in the full scope of apologetic inquiry. Even Rationalists and Analytics, who claim to mold the minds of their victims from the comfort of an armchair, leave an empty void after they deliver their proofs from pregnancy.[2] The point is that both the Analytic and the Evidential approaches to Christian Philosophy make Apologetics sound like the mundane effort of simply offering the best arguments and walking away. By all means, arguments should be offered relentlessly up front, but after these battalions have been exploited, there is still a need to investigate the *foundation* upon which arguments rest. To discuss these matters in depth, there will inevitably have to be expeditions into the field of epistemology. The theory of knowledge is not, however, the final frontier. The real difference between the theist and the non-theist is, once more, *ontological* and not *epistemic*. Epistemology merely provides the vehicle for conversation. Unfortunately, the type of philosophical project sought out in this thesis is foreign to most Analytics and Evidentialalists because they do not encounter it in their day to day activities. Both camps are in unison, or almost in unison, with respect to their argumentative framework. Thus they never have to stop to think about their foundational starting points. Their proofs are exposited rapid fire without any deeper thought to

---

[1] Taliaferro, Charles. "The Project of Natural Theology." *The Blackwell Companion to Natural Theology* (2009): 1-23. Web.

[2] The terms Evidential and Rational are discussed separately because two types of Natural Theology need to be distinguished. Evidentialists pick out some feature in reality, say the design of the universe or the texts of the Bible, and argue that God must exist off the basis of these elements. Rationalists use *a priori* proofs, such as the Ontological Argument, to prove non-empirically that God exists. The method that follows is different from both approaches. It seeks to single out the foundations of reason itself, namely the Logical Absolutes, and ask for a proper account. In one sense it is a meta-apologetic.

grounding or first principles.[3] If this path is continually left untrodden by academics in the years

to come, Christian Philosophy will wane and theists will experience a dip in the efficacy of their

evangelism.

Plain and simple, arguments are built on the bedrock of reason. Reason is the process

that the mind carries out when proceeding through steps of logical argumentation. Logic is just

the set of rules that governs valid inference. Although it may seem absurd at first, this thesis will

try to explore the underpinnings of reason itself from a theist perspective. In other words, the

subject of investigation is the underpinnings of the Logical Absolutes.[4] The question raised will

be, "Do the Logical Absolutes have underpinnings, and if they do, can both theists and non-

theists accept those underpinnings?" Along the way one may discover that she is appealing to

the power of divine revelation. On the other hand, it is perfectly understandable that she may

choke on the first few doses of medicine and spit up appeals to the Almighty as extraneous or

circular. Regardless of the reaction, divine revelation cannot be altogether excluded from

apologetics as it is in the opening definition. This is because at some point, epistemic inquiry

will come about when philosophers talk of God.

In hot pursuit of this epistemic enlightenment, it is easy to conclude that the Logical

Absolutes are the ultimate foundation. By this, one is trying to say that no further explanation of

their metaphysical status is necessary because they are simply fundamental elements of the

---

[3] A notable exception to this is Alvin Plantinga's trilogy on Warrant. See also the work of William Alston and Nicholas Wolterstorff for divine Revelation, and Robert Audi for the specifics of Epistemology and Religion. Unfortunately, the fact is that Contential Philosophers are better at paying attention to epistemic issue than Analytics. While there have been massive works on Baysean systems and formal epistemology, they fail to strike at the heart of the issues and instead analyze probability factors.

[4] There are three primary Logical Absolutes or Laws of Logic. Designating them "laws" is done so hesitantly because of the metaphysical commitments that the term entails, but many academics are accustomed to this phraseology so it will be used intermittently. The three absolutes are Identity, Non-Contradiction, and Excluded Middle. They can be listed as follows: I.) $A = A$ II.) $A \neq \sim A$ III.) $A \vee \sim A$. The linguistic translations of these formulas can be put in sentence form as follows, "A equals A, A does not equal not A, and it is either the case that A or not A is instantiated."

universe.[5] If this is the case, theists have nothing to lose, and they may return to the business of giving proofs. Non-theists in this situation can breathe easily because they are not burdened with the task of giving an account of Logical Laws. The downside is that they still have to respond to the proofs from normal Natural Theology. If, however, there is more to the picture and the foundations of reason truly do have deep metaphysical relations, it is the job of both the atheist and the theist to give an account of these relations. If either side is unable to provide such an account, their worldview is invalidated by way of default.[6,7] To be clear, it is not the case that when evaluating epistemologies the philosopher abandons arguments. Instead, the initial purpose is to examine *the arguments* about epistemology. However, if at some point along the way it becomes clear that arguments themselves are lacking, other philosophical devices can be employed. At the most basic level, the Transcendental Method attempts to show that the non-theist is unable to appeal to any ontological or metaphysical principles in order to account for their epistemic foundations, i.e. the Laws of Logc.

The prime difficulty for most people is that its subject matter is brutally abstract. The issue is so high up in the Platonic Heaven that many think clouds surround it on a clear day.

---

[5] The term fundamental references a notion about explanation that is traditionally applied to philosophical baggage like *Time*, *Space,* and *Causation*. Namely, these elements are considered to need no explanation to underlie them. Therefore they are called fundamental. This is not the only usage the term implies, but it is the usage that I wish to single out. In recent years, David Chalmers has suggested that we conceive of Consciousness in this format. See Chalmers, David John. *The Conscious Mind: In Search of a Fundamental Theory*. New York: Oxford U Press, 1996. Print. Also, by listing out Time and Space in the above sequence, there is no preference to any particular view about the separation of Space and Time from the Spacetime Manifold suggested by Einstein and Minkowski.

[6] Here, the term of comportment needs to be understood. For a worldview to be internally coherent, it must offer an explanation of major metaphysical phenomena. This is to say, there can be no gaping holes in a worldview where explanation is just absent. It is important to note that the explanation does not have to be true to meet this requirement; it simply has to comport (fit) with the other axioms that are supported in the system.

[7] For this method to go through, it is not enough that the adherent fails to give an account of the logical absolutes. The particular individual may simply lack the knowledge required to give a proper account. The failure, therefore, must come as a result of an internal flaw. That is, a flaw that follows from some of the foundational axioms of the system.

Additionally, the vast majority of academic philosophers are unaware that this methodology exists. The select few who are lucky enough to wrap their minds around it typically get altitude sickness once they engage in the discussions. These types of conversations are infamous for intertwining massively complex schemas of work from all areas of philosophical thought. To spell out the complexity that underlies this issue, consider the following: It is one thing to nail down a position in the philosophy of language or to form opinions on the axioms that lie in formal epistemology, but when these topics are combined with modal metaphysics, theories of counterfactuals, and a slew of other weighty issues, the life of the argument can become depressive and hopeless.

On top of the previous pitfalls, one must overcome the large amount of stigma that surrounds the contemporary scene over "meta-analyses" of the Logical Absolutes. Most academics will conflate this effort with appeals to faith or purely revelational epistemologies.[8] If not, they are likely to say that the academic is "revising logic." To be clear, there is nothing *inherently* wrong with revelation and faith, but these approaches will only receive intermittent illumination in the following discussion. There is no preference toward them. Moreover, this thesis is not of the persuasion that logic, as an enterprise, needs to be revised. There may be some parts that need to be updated or exposited with more clarity, but on the whole, classical logic is a success.[9]

---

[8] By the use of the word, pure, I am following Kant and mean non-empirical.

[9] The biggest counter to this claim would be a multi-valued logic of the style of Putnam in order to accommodate the Van Tilian notion of Presupposition. Also, because of some of the anti-realist positions that will be pushed throughout the remainder of the paper, it will be enticing to drop Frege's notion about the truth value of logical laws and the existential quantifier. On this matter, Frege believed that a sentence is only true if the domain of the sentences can be placed after an existential quantifier. This means that the tautological sentence, "Zeno = Zeno" is false under a Fregean syntax. Clearly, this sentence is true because it is a tautology. There is no need for one to try to read their ontology off of language. Lastly, there might be an effort to appeal to God in order to fix some of the problems with logical paradoxes found in the work of Gödel, Church, Turing and so forth.

The last matter that needs some clarity before moving on with the paper is that of origins. Most advocates of the Transcendental Method draw their wisdom from the writings of Cornelius Van Til. Van Til was a brilliant theologian, the likes of which are difficult to reconstruct.[10] However, Van Til made use of the Transcendental Method under the framework of his broader Presuppositional Epistemology. Many lay people, as well as academics, conflate the terms and use them synonymously. Presuppositionalism is an apologetic epistemology that states that without the presupposition of God's existence, reasoning in science, morality, and logic cannot proceed coherently. On the other hand, the Transcendental Method is an attempt to show that the non-theist has failed to give a coherent account of their foundational principles of reasoning. In other words, one does not need to presuppose the existence of God in carrying out the Transcendental Method. Presupposition is only necessary should one chose to adopt specific epistemological vulgarities that Van Til advanced.[11] To help understand this point better, one may observe the differences in positive apologetic models and negative apologetic models. In positive models, an attempt is made to show the inconsistency of the non-theist's worldview. In negative models an attempt is made to show the consistency of the theist's worldview. Most Evidential and Analytic camps are construed by using positive models, while most attempts at the Coherence of Theism are construed using negative models. The Transcendental Method appears to be an example of a positive model because it shows the inconsistency of the non-theist's epistemological commitments. Uniquely, the Presuppositional Epistemology of Van Til

---

[10] I say this only because it takes a great deal of creativity to combine the subjects that Van Til mixed together, and then argue for theism. Even if one rejects Presuppositionalism and the Transcendental Method, one can still learn a great deal from hammering out their academic or corrected their interpretations of Van Til. It is a rare feat that correcting a person and agreeing with them both can spur substantive new thoughts and dialogue.

[11] I do not want the reader to get the wrong idea. Most of Van Til's system is sterile, but some of its tenets need surgery.

shows signs of both positivity and negativity. It both attacks non-theism and defends Christian Theism.

A concluding note on the Transcendental Method is its implications. If it should turn out correct, the practical application of the non-theistic worldview is unintelligence. That is to say, logic governs the rules of valid inference, but valid inferences are used in all domains of life. Mathematics, Science, History, Ethics, and even Language are governed by valid inference. Therefore, the dispute over the Transcendental Method is really a giant game of Jenga. If the non-theist loses, all of her blocks fall tumbling down. She cannot consistently add, subtract, multiply, or divide because these are processes that make use of logic. She cannot consistently think under a historical framework without thinking under a non-historical framework in the same time and in the same respect. At a rudimentary level she is not even able to consistently speak, let alone speak consistently about morals. This is why some proponents of the Transcendental Method will sometimes say, when properly construed, their approach is immune to criticism. Now that the situation has been properly spelled out, analysis of the argument may proceed.

A Simple Van Tilian Framework

Before moving into the more intense academic analysis, I would like to take a moment to outline simply my views on topics that concern this thesis.

Stage 1: Transcendental Argument

1) Part 1

    A. If it is the case that the Laws of Logic exist and the Laws of Logic are abstract, there must be an explanation for the combination of these properties.

    B. The Laws of Logic are abstract.

    C. The Laws of Logic exist.

    D. Therefore there must be an explanation of the Laws of Logic.

2) Part 2

    A. Apart from the Logical Laws, every non-divine object, whether it is abstract or concrete, cannot explain the existence of the Laws of Logic. (This is because the existential order of magnitude of the Laws of Logic transcends the existential order of magnitude of every non-divine object.)

    B. The Laws of Logic cannot account for their own existence because there is nothing in their nature which would entail that it is possible for them or anything else to be both abstract and existent. (Interestingly, the Laws of Logic even apply to themselves. For example, A=A *equals* A=A.)

    C. Therefore the explanation of the Laws of Logic must be divine.

3) Part 3

    A. Because of His omnipotence, God can make it the case that there is an abstract object which exists.

B. Because God serves as the explanation of the Laws of Logic, His existential order of magnitude is higher than the Laws of Logic.

4) Part 4

A. Objection: "Omnipotence is a vague explanation." Response:

    a. The term "God" is not well defined. Different religious traditions use it to reference different concepts, and academics use it as an umbrella term to catch all of these concepts. Christians use God to mean the Trinity, Muslims use God to mean Tawhid, and atheists reject them both.

    b. This thesis argues that the triune God can explain the existence of the Laws of Logic.

    c. Details of the Explanation

        i. Not any one member of the Trinity is fully omnipotent. It is the combination of the divine persons in the Trinity which constitutes the omnipotence of divinity.

        ii. In this way, the Trinity itself is abstract and the particular members of the Trinity are concrete. The Trinity is a divine trope, but because all power flows from the divine substance (trope), it must be causally efficacious and thus it must exist.

        iii. Therefore, the existing abstract divine trope of the Trinity can serve as a model for the existence of the abstract Laws of Logic. Because the divine substance is the fount from which all power flows, the trope can allow it to be the case that the Laws of Logic are abstract and exist.

B. Objection: "Why must the concrete particulars be persons?" Response:

    a. From Anselm it seems that God must be defined as the greatest being possible.

b. Power, however great it is, is always greater when it is driven by order and purpose than when it is the byproduct of chaos and a lack of control. (Imagine the power of a hurricane on its own and then imagine a force harnessing the power of a hurricane to achieve an objective. Even if the objective is ignoble, the second scenario presents a greater use of power because the power is guided with purpose.)

c. Through the use of intentionality or about-ness, personhood allows for the ultimate expression of order, control, and willful purpose in the face of power.

d. Therefore to be the greatest being possible, there must be personal aspects of God which comprise His omnipotence. Namely, the concrete members which are collectively responsible for His omnipotence must be persons.

C. Objection: "Why must it be the case that God is three persons?" Responses:

a. Argument A from Analogy - I am less convinced of these arguments from the Trinity. Therefore I have titled them in red.

   i. In the same way that space is isomorphic and time is relativistic absent an objective observer, the Trinity is not personal without a third divine observer to ensure the objectivity of personhood in the divine relationship.

   ii. This is to say, there is a metaphysical principle in the Trinity that operates similarly to the physical principles of relativity and isotropy in time and space. This should not be altogether surprising if it is said that reality models logic and logic models the existence and nature of God.

   iii. If there are only two persons that constitute the divine substance, then their relationship appears within an impersonalist void. There is no overarching observer to give a personal perspective to the divine relationships.

iv. With three persons there is always a third person to personally observe the other relationships.

v. If there are more than three persons that constitute the divine substance, then parsimony comes along to create a clutter of confusion. If only three are needed, why posit more beings beyond necessity?

b. Argument R from Relations -

i. In the Trinity, each of the members is not completely *a se*. However, they are not technically *ab alio* because they do not depend on anything apart from divinity to exist. They are dependent on the divinity for their existence. They exist *ab divino*.

ii. If God were to stop thinking about an object in reality, it would go out of existence.

iii. In the same way, the members of the Trinity would cease to exist if they stopped thinking about each other. Each person's thoughts give definition to the existence and relationships of the other two members of the Trinity.

iv. There has to be more than one member to achieve unity in the abstract realm.

v. If there are only two members of the Trinity there would be no third divine person to affirm their relation.

vi. If there were more than three, there would be un-parsimonious-ly many members to ground these existences and relations.

Stage 2: Epistemic Implications[12]

1) Part 1

    A. Every human agent has a set of beliefs which constitute their cognitive framework. Van Til calls this set of beliefs a "worldview" or a "system."

    B. In order to justify any particular belief in one's system, he will isolate the belief and then use the other beliefs in his system to help criticize and weigh out the truth value of the belief in question.[13] The beliefs that are not in question are called pre-commitments.

    C. Pre-commitments are the beliefs that one brings to the table when trying to evaluate a belief.

    D. The point of bringing these beliefs to the table is for logical coherence. One is trying to make the belief in question logically cohere with the pre-committal beliefs. Van Til uses the term "comport" to reference a set of beliefs which is logically consistent.

    E. In addition to pre-committal beliefs, there are pre-suppositional beliefs. Pre-suppositional beliefs are beliefs that cannot be called into question in any given framework.

---

[12] Unfortunately, I was not able to completely spell out my views on the Epistemology of Van Til in this thesis. Thus, this summary will have to suffice for the current work. I will say, however, that my biggest beef with his methodology is that he says humans cannot autonomously reason without God, and that to reason at all they must start with God. I would be more of the opinion that humans can reason logically by themselves, but if they try to combine any logical belief about science, mathematics or the like with the belief that 'God does not exist' they will end in contradiction. This is because I think the Transcendental Argument can prove that the belief that 'God does not exist' is illogical when God grounds the Logical Absolutes. In this case, the combination of a logical belief (any belief about the natural sciences) with an illogical belief (the belief that God does not exist) will result in contradiction. Thus, it is not so much about starting with God as it is about combining other rational beliefs with the correct rational belief about God's existence. I will say that the drawback to this Epistemic Approach is that it cannot stand alone. One must be convinced of the Transcendental Argument before it becomes effective.

[13] This obviously is a statement of the validity of Internalism. For an interesting discussion of Interanlism see Leite, Adam, 2004. "On Justifying and Being Justified," *Philosophical Perspectives* (Noûs Supplement), 14: 219–253.

a. For example, the belief that the Laws of Logic are true cannot be called into question because the way they would be called into question would be to ask, "Does the belief that Logical Laws are true logically comport with the pre-commitments in my system?" or "Does the belief that Logical Laws are false logically comport with the pre-commitments in my system?"

b. The answer to the first question should obviously be "yes" and the answer to the second question should obviously be "no."

c. The reason that this is so evident is that the element of self-reference is coming into play. Even those who reject the Laws of Logic will try to give logically persuasive *reasons* to do so. This is because it is the Laws of Logic that govern *their* reasoning. These rules act as a type of glue by which all beliefs are held together.

d. It is therefore impossible for any agent operating in this manner to step back and question the very standard by which they test questions, their belief in the Laws of Logic. Their validity is pre-supposed, and the agents cannot help but do anything except affirm it.

e. The best cases of trying to deny logical laws are convoluted examples where the antagonist thinks ironically that it is logical to say "Logic is false just in case that P." Regardless, self-reference is the element that sinks the "Let's question the Laws of Logic" ship.

2) Part 2

A. Once one accepts the truth of the Transcendental Argument, it makes more sense to say that the belief in God is a pre-suppositional belief.

B. If the belief in logic is a pre-suppositional belief, and the existence and nature of God serve as a model to ground the existence and nature of logic, it makes sense to say that in the same way that one cannot question the validity of logic, one cannot question the validity of the existence and nature of God. In one fell swoop this entails that one cannot logically support atheism or heresy.

C. This does not mean that one cannot give reasons that they think are logical to support atheism or heresy. It just means that God grounds logic and thus correct logical reasoning cannot allow us to reach the conclusion that God's nature is non-existent or existent in a way that aligns with heretical beliefs. For us, the only problem is differentiating the set of beliefs which are heretical from the set of beliefs that are not heretical.

D. To this end, I believe the Transcendental Argument can help us ascertain a good chunk of the classical attributes and properties that we wish to ascribe to God.

Stage 3: Theological Implications

1) Part 1- Possible Divine Properties

   A. Omni-Properties: Omnipotence; Omniscience; and Absolute Benevolence or Impeccability (the in-ability to sin)

   B. Spacetime Properties: Timelessness and or Temporality; Eternality and or Omni-temporality; In-corporeality and or Corporeality; Omnipresence (equal access to all points in Spacetime); Transcendence and or Immanence; and Sovereignty/Providence.

   C. A Priori Properties: Abstract and or Concrete; Causal Efficacy; Immutability (unchanging) and or mutability; Simplicity (No body, parts, or passions); Impassability (No negative emotions); Personality; Aseity, existence *Ab Divino*, or existence *Ab Alio*.

   D. Second Order Properties: Infinity (descriptor of attributes) and Incomprehensibility (inability to grasp the full depth of the Godhead, but the ability to grasp the basic structure)

2) Part 2- Property Ascription by Parts[14]

   A. Trope- Abstract, Causally Efficacious, Omnipotent, Impeccable, Timelessness, Eternal, Immutable, Incorporeal, Simple, *A Se*, Transcendent, and Omnipresent.

   B. Father- Concrete, Causally Efficacious, Omniscient, Absolutely Benevolent, Temporal, Eternal, Muttable, Corporeal, Personal, Existent *Ab Divino*, Immanent, and Sovereign.

   C. Son- Absolutely Benevolent, Temporal, Eternal, Muttable, Corporeal, Personal, Existent *Ab Divino*, and Immanent.

   D. Holy Spirit- Absolutely Benevolent, Temporal, Eternal, Muttable, Corporeal, Personal, Existent *Ab Divino*, and Immanent.

---

[14] Elaboration of why it is the case that these properties have been so ascribed can be seen in more detail in the body of the thesis.

Stage 4: A New Transcendental Argument from Propositions

1) Many prominent naturalistic theories of propositions say that if they are not conceived by a mind, propositions do not exist or are not true.[15]

2) There are some propositions, like the Laws of Logic, that must exist eternally or be true eternally. (This is modified from Lorraine Keller's premise that there must be some propositions, like Choice Only Sets, that must be true but cannot be grasped by finite minds.)

3) Therefore, there must be an eternally existing mind to ground the existence of eternally existing true propositions.

---

[15] For prominent and detailed naturalistic accounts see Hanks, Peter, 2009, 'Recent Work on Propositions', *Philosophy Compass*, 4(3): 469–486; King, Jeff 1996, 'Structured Propositions and Sentence Structure', *Journal of Philosophical Logic* 25: 495–521; and Soames, Scott 1987, 'Direct Reference, Propositional Attitudes and Semantic Content', *Philosophical Topics* 15: 47–87.

Part 1: A Cosmo-Transcendental Argument from Abstracta

Preamble: The Logical Absolutes

Essence

Central to the Transcendental Argument are the Laws of Logic commonly quoted from Book IV of Aristotle's Metaphysics. While it is true that modern logic would not have developed without the work of The Philosopher, these mental constructs can be traced back to a time before his writings. For example, in Book IV of the Republic, Plato states that "The same thing cannot act or be acted upon in the same part or in relation to the same thing at the same time, in contrary ways."[16] As most historians see it, this is a basic statement of the Law of Non-Contradiction. One of the few points on which Plato and Aristotle agreed upon was the veracity of these logical laws. They both contested their predecessors who tried to deny this content.[17] The area of divergence lay in how they would convey these ideas. Seeing as Aristotle would always wrap his mind in the *a priori*, and Plato would always worship the *a posteriori*, the ordering of Time, Place, and Relation would differ in both accounts. In the case of propositional logic, Aristotle's *a priori* starting point would allow him to have a strong foundation for classical and non-classical systems that made use of predicate calculi accessible. Henceforth, each logical law will be explicated in detail.

The most fundamental of the Logical Absolutes is the Law of Identity. This is by no means a commonly shared conception in the philosophical literature. In fact, most scholars would say that Non-Contradiction is the most basic out of the three Logical Absolutes because

---

[16] Plato, Chris Emlyn-Jones, and William Preddy. *Republic*. Cambridge, MA: (Harvard University Press, 2013) 293.

[17] Notably, Aristotle remarked that "This is the most certain of all principles, since it possesses the required definition; for it is impossible for anyone to suppose that the same thing is and is not, as some imagine that Heraclitus says- for what a man says does not necessarily represent what he believes." Allen, Reginald E. Greek philosophy: thales to Aristotle. (New York: The Free Press, 1996) 327.

the Laws of Logic are content agnostic.[18] By this, I mean to say that an agent can know that A ≠

~A without knowing the truth value that A exemplifies or the proposition that A corresponds to

in reality.[19] Additionally, they do not have to know the propositions that ~A corresponds to or

the truth value of such propositions because there are an infinite amount of propositions

referenced by the variable ~A. From this epiphany, scholars have allowed themselves to become

drunk in the idea that the irrelevance of A's noetic value entails the fundamentality of

contradictory propositions over the fundamentality of their meaning. In other words, because

content has nothing to do with the Logical Laws, Non-Contradiction is more fundamental than

Identity. This would be a valid conclusion if Identity was a statement about meaning or

definition. However, A = A is not synonymous with the proposition "A is defined as A" or the

proposition "A means A." Instead, the corresponding proposition to the Law of Identity is "A is

equal to A." The idea is that the Law of Identity involves one object, namely A. On the other

hand, Non-Contradiction involves at least two objects, namely A and ~A.[20] Therefore, the Law

of Identity is necessarily more fundamental than the Law of Non-Contradiction. Moreover,

because Identity is a logical law, it is every bit as content agnostic about the truth value and

corresponding proposition[s] as the Law of Non-Contradiction. In very much the same way that

one must understand the concept of 1 before she is able to understand the concept of 2, one must

come to terms with A = A before they come to terms with A ≠ ~A.

---

[18] For support of the fundamentality of the Law of Non-Contradiction, see Duns Scotus and Francisco Suarez in *Quaest. sup. Met.* IV., Q. 3 and *Disp. Met.* III., § 3.

[19] By the use of the phrase "corresponds to in reality" I am not committing myself to a realist ontology about properties, nor am I committing myself to a correspondence theory of truth. I am simply using an example to help conceptualize the underling point.

[20] On a more philosophical level, the proposition ~A has a domain that extends over all of reality. Thus the proposition ~A is a generic proposition that includes every proposition that is not A.

Another interesting note about dialogues on the Logical Laws is that there have been historical attempts to deny the Laws of Non-Contradiction and Excluded Middle, but there has not been a genuine attempt to date that truly *denies* the use of Identity. For example, there are those who try to use Paraconsistent Logics to deny Non-Contradiction and Many-Valued Logics to deny Excluded Middle, but there is not even a class of logics that would dare to mess with the truth value of Identity. This is radical because it proves the fact that people are able to think of contradictory situations once they have clear cut constituents. To be fair, there was a superficial effort to deny Identity on the basis of a thesis that Nietzsche proposed about abstract objects, but this was not genuine in the same way as the "about-logics" of inconsistent sets.[21] Because of its priority in the logical sequence, there is no feasible way that thought can proceed absent of the existence of the truth value of Identity.

The next metaphysical principle that guides the course of reasoning is the infamous Law of Non-Contradiction. Out of the Logical Laws, this construct is the most well known and widely respected. Perhaps this law is so conceptually attractive because it utilizes a principle which philosophers call self-reference. In this context, self-reference points out the fact that when one tries to deny the law of non-contradiction, they will end up affirming it because they will have to say that it is both true and not true in the same time and in the same respect. That is, reality is such that reality both exemplifies and fails to exemplify the Law of Non-Contradiction. For most people, this is too much.[22] For this reason, it is vital that the Law be stated correctly. When Plato affirmed the law, he was able to get all the right components in the wrong order.

---

[21] See Steinhart, Eric. Nietzsche on Identity. Revista di Estetica (2005) 28 (1), 241-256. In reality, Nietzsche was trying to do away with the idea of universals. This is very different from doing away with the Law of Identity. He was objecting to the thesis that there were abstract identicals in the Platonic Heaven, a claim which a modern anti-realist might find pleasing.

[22] There is, however, the ever eager writings of Graham Priest which I will discuss later in the paper.

When Aristotle explicated the law, the ordering was correct, but some of the parts were missing. Fortunately, Kant was able to combine the best of both worlds in his first Critique. He maintained that,

> "There is, however, still one formula of this famous principle, although denuded of all content and merely formal, which contains a synthesis that is incautiously and entirely unnecessarily mixed into it. This is: "It is impossible for something to be and not to be at the same time." In addition to the fact that apodictic certainty is superfluously appended to this (by means of the word "impossible"), which must yet be understood from the proposition itself, the proposition is affected by (B 192) the condition of time, and as it were says: "A thing = A, which is something = B, cannot at the same time be non-B, although it can easily be both (B as well as non-B) in succession." E.g., a person who is young cannot be old at the same time, but one and the same person can very well be young at one time and not young, i.e., old, at another. Now the principle of contradiction, as a merely logical principle, must not limit (AI53) its claims to temporal relations."[23]

This emphasis on time is a critical component of Non-Contradiction that Kant felt had been carelessly left out of the picture prior to his writings. Once this piece was amended, he believed that it was absolutely impossible to reject its truth value. Little did he know, the philosophical epoch that spanned after 1910 would be riddled with attempts to "revise logic." Shortly before this menagerie of madness, however, the English mathematician and master of probability, George Boole, penned his 1854 piece, *An Investigation into the Laws of Thought,* in which he used the basic Logical Absolutes as the foundation of his Boolean Algebra. Part of this study involved the derivation of the Law of Non-Contradiciton from the text of Aristotle. Before

---

[23] Kant, Immanuel, and J. M. D. Meiklejohn. *The Critique of Pure Reason*. United States: (Create Space Independent Publishing Platform, 2015) 280.

translating this law into a formal framework, he first needed to lay out a system in which the formalities would make sense. Compared to today's exploits in logical formality, these Boolean constructs will seem facile, but the reader must keep in mind that only the relevant constructs are being presented and that these constructs are incredibly basic in his overarching project. First Boole distinguished between two types of formalities,

> "1st. *Literal symbols as x, y, etc representing things as subjects of our conceptions*,
>
> 2nd. *Signs of operation, as +, -, x standing for those operations of the mind by which conceptions of things are combined or resolved so as to form new conceptions involving the same elements.*"[24]

For Boole, these "*Literal symbols*" represent an entire class of beings or "the name of a thing, or some quality or circumstance belonging to it."[25] That is to say, the variable F may represent the class of frogs, or it may represent "frog-ness" or it may represent green. The point is that it cannot represent a particular frog in the same way that a normal variable, F, can correspond to a particular proposition about a frog. Next, Boole wanted to spell out the jargon for combining classes. He used commutativity to illustrate,

$$\text{"}xy = yx \qquad\qquad (1)$$

> In the case of x representing white things, and y sheep, either of the members of this equation will represent white sheep."[26, 27]

The last principle that Boole needed to explicate before deriving Non-Contradiction is one that is more familiar to students of probability theory. Namely, Boole contended that 1 is

---

[24] Boole, George. *The Laws of Thought*. Amherst, NY: (Prometheus Books, 2003) 27.

[25] Boole, Laws of Thought, 27.

[26] Ibid, 29.

[27] This will later entail that $x^2 = xx$.

synonymous with the universe and 0 is synonymous with nothing.[28] In terms of classes, this means that 1 comprises all of the classes in the universe and 0 comprises none of the classes in the universe. The formality entailed from this is that (1-F) is equal to a universe without frogs.[29] From here, it is now possible to reconstruct the derivation of Non-Contradiction from Identity using the notion of classes,

  1.) $X = X^2$ [Identity in a *Class*]

  2.) $X - X^2 = 0$ [Subtraction]

  3.) $X(1-X) = 0$ [Factorization]

The conclusion from 3 is the formal derivation of the Law of Non-Contradiciton from the formal Law of Identity in a class. 3 is a universe in which there is a conjunction of the class X and a universe without the class X. As the formula indicates, the result is nothingness, 0. This means that it is impossible for there to be both the class X and not the class X at the same time, i.e. the content of Non-Contradiction.

After the large body of proofs offered in support of Non-Contradiction, the third axiom traditionally associated with the Logical Absolutes has not come out as pretty. It is looked upon as the easiest of the three to try to violate. The Law of Excluded Middle restricts the truth value of propositions to be either true or false. This is a maxim which seems rock solid at first and in need of no revision. However, the post 1910 era took apart this logical law before proceeding to any other conundrums. The plethora of Many Valued Logics that took up this task ranged from Jan Lukasiewicz's three valued system of uncertainty to Stephen Cole Kleene's strong logic of

---

[28] In formal epistemology 1 is usually equated with absolute certainty and 0 is equated with absolute uncertainty.

[29] That is, unless one assumes a theory under which abstract classes do not relate to the world. Another alternative would be to deny a correspondence theory of truth for propositions.

indeterminacy.[30] These systems are far too advanced to unpack at this point, but they will be

discussed in more detail at other points in the paper. Before moving on, it is important to clear

up a common confusion about the Law of Excluded Middle, namely the reason for the term

"Excluded Middle." Obviously the Law of Identity is so named because it makes use of the

concept of identity. Likewise, Non-Contradiction is so named because it states that there cannot

be contradictions, but what "Middle" is excluded in the Law of Excluded Middle? In the Law of

Logics, there are two truth values for a proposition. The proposition is either True or False. This

means that reality will either exemplify A or ~A. The "Middle", or more properly the

"Middles," would be "Neither" and "Both." The Law of Excluded Middle states that a

proposition cannot have the middle value of "Both True and False" or "Neither True nor False."

In proper sentence form, the following "Middle Propositions" are excluded,

      1.) A is both true and false.
      2.) A is neither true nor false.[31]

While it is difficult to say for sure whether this law is true in every case, it is for sure that this

will continue to spark debate in philosophical literature among trained propositionalists and

logicians.

      With scant exception, the preceding axioms have unquestionably stood as the foundation

of reasoning over the scene of antiquity. With the passing of years, however, some philosophers

have voiced the opinion that a fourth absolute need be added to the "laws of mind." The

candidate for such a position is Leibniz's Principle of Sufficient Reason. This is a risky move

because many believe that the law in itself has been stated in many forms. Moreover, there is

thought to be lack of agreement on which logical shape the principle should presume. For

---

[30] Kleene's system is closely related to what is now known as Intuitionism.

[31] In this case, "A" is the value of a variable which represents a proposition. (When I use the term "represents" I do not mean to invoke any harsh theories about intentionality. Such theories will be addressed later.)

example, Leibniz stated that the Principle entailed that "we hold that no fact can ever be true or existent, no statement correct, unless there is a sufficient reason why things are as they are and not otherwise—even if in most cases we can't know what the reason is."[32] On the other hand, Alexander Pruss has restrictively defined the axiom as "every fact, or every contingent fact, has an explanation, and this is the standard tool in Leibnizian arguments for handling the Glendower and Regress Problems."[33] Most philosophers would argue that the idea here is that every fact has an explanation for its existence except the fact pertaining to God's existence. In other words, every being has a reason for its existence except for the being of God.[34] While this seems to be a reasonable conclusion to take, there actually is a sufficient reason for the existence of God, namely God himself. Because God is a necessary agent, he is His own sufficient reason. This means that it is not the case that either the Principle of Sufficient Reason is a Law of Thought and the Leibnizian Cosmological Argument fails or the Principle of Sufficient Reason is not a Law of Thought and the Leibnizian Argument has a chance of survival. The Principle of Sufficient Reason can be stated in an all inclusive format, and still be considered a Law of Thought.[35] In fact, figures such as Sir William Hamilton argued that without the Principle of Sufficient Reason, proper inference could not take place. He argued that it is "in virtue of it, [that] thought is constituted into a series of acts all indissolubly connected; each necessarily inferring the other. Thus it is that the distinction and opposition of possible, actual and necessary

---

[32] Leibniz, Gottfried Wilhelm., and Robert Latta. *The Monadology*. Alex Catalogue: (NetLibrary, 2000), 5 section 32.

[33] Pruss, Alexander R. "The Leibnizian Cosmological Argument." *The Blackwell Companion to Natural Theology*, 2009, 24-100. doi:10.1002/9781444308334.ch2, 1.

[34] Interestingly, Schopenhauer used this attack, but also suggested that PSR become a fourth axiom. See Schopenhauer, Arthur. *On the fourfold root of the principle of sufficient reason*. La Salle, IL: Open Court, 1990.

[35] I hesitate to say "all inclusive" because in reality there are stronger forms of Leibniz's PSR that would not be acceptable for the purposes of a law of thought, but for the purposes of this paper there is good reason to think that the above definition is sufficient for such terms.

matter, which has been introduced into Logic."[36] In virtue of this reasoning it seems acceptable

to recruit PSR as one of the Logical Laws. If this is true, however, there must be deep

metaphysical relations that underlie logical absolutes. Even if tautological, there must be a

reason for logic to exist.

Paradox

In 1910, Bertrand Russell and Alfred North Whitehead published their first edition of

Principia Mathematica, a three volume work which sought to elucidate the commonly held

intuitions of mathematicians and philosophers. Previously, math geniuses had simply assumed

the truth of principles that seemed intuitively obvious. Perhaps the most prominent example is

Euclid's Propositions.[37] Only those axioms which were not patently apparent were explicated by

way of proof. For the Transcendental Argument, it appears that the success of Russell and

Whitehead is critical to the consistency and completeness of first-order logic, but keep in mind

that the object of this reasoning is the nature of the Logical Absolutes. It is not necessarily the

first-order axioms. This is not to say that we should remain desensitized to the inconsistency or

incompleteness of first-order logic, but we should come to terms with the fact that this body of

work is not being discussed because it bears a strong relation to the Logical Laws. The purpose

of inserting this axiom first is to pad later conversations that pick up on the nature of paradox.

For reasons that will be explained later, paradox is a notion that occurs quite frequently when

discussing the Transcendental Argument.[38] Back to the point, Russell and Whitehead wished to

---

[36] Hamilton, William (Henry L. Mansel and John Veitch, ed.), Lectures on Metaphysics and Logic, in Two Volumes. Vol. II. Logic, Boston: (Gould and Lincoln, 1860) 61.

[37] This is of course with the exception of proposition 5. Proposition 5 was left as a mystery by most mathematicians, and C.F. Gauss was one of the first to infer non Euclidian Geometries from this principle. Sadly, he was scared out of publishing his work because Kant had maintained that space must necessarily be Euclidian.

[38] At certain points there may be contexts in which the Transcendental Argument is abbreviated TA. This will mainly be used to boost productivity in formal settings.

get around the nonsense of accepting valid schemas without the support of strict logical rigor.

The Principia was their major outlet for this desire. Another outlet for their formal fury to spark

flames was an earlier 1902 letter sent from Bertrand Russell to Gottlob Frege. Frege laid the

foundations of naïve set theory, and much of his work inspired the work of Russell.[39] However,

in this particular field, his progress turned Russell's stomach. As a result, Russell weakly wrote

a letter which would decimate the flimsy floodgate separating purely logical and practically

mathematical paradoxes. From here forward, the paradoxes that ensued from work on the Letter

from Russell to Frege and the *Principia* will be discussed in detail.

In the world of set theory prior to the innovations of Russell, the informal definition of a

set was *any* collection that could be defined. Frege had used this broad and all including

principle in his work, *The Foundations of Arithmetic,* to make sense of the definition of a

number. In a contemporary setting, he would have been seen as exploring realist and anti-realist

solutions to abstracta. It just so happened that the abstracta that Frege was trying to sort out was

tied to the set theoretical paradoxes that arose from Cantor's talk about actual infinites. In fact,

Frege was almost finished when he received the rather drab letter that would destroy the last few

years of his career. In essence, Russell had formalized a logical paradox that had plagued

philosophers for millennia into mathematical set theory. This problem was known as the liar's

paradox. It proceeds as follows,

The Liar's Paradox: This sentence is false.

Stepping through the situation logically, a sentence can either have two truth values - true or

false. This is just derived from the Law of Excluded Middle. For mental exercise, arguments

---

[39] Naïve set theory is almost synonymous with the earlier Class Theory explicated by George Boole. It is important to note, however, that George Boole's Class Theory is not the same as Von Neumann-Bernays-Godel Set Theory, henceforth NBG, which allows for classes. In Boole's context, he used the term 'class' interchangeably with the term set, however in NBG classes can almost be thought of as 'sets of sets.' Usually theses 'sets of sets' in NBG refer to actually infinite 'sets of sets.'

will be constructed to evaluate the results of each truth value assigned to the sentence, "This sentence is false." Because of the confusion that can follow, crude instead of formal reasoning will be used.

In the case that the sentence is true, the following obtains,

1. It is the case that "This sentence is false" is true.

2. It is the case that "This sentence is false."

3. Therefore, "This sentence is false" is false.

   a. Contradiction on 1 and 3 via the Law of Excluded Middle

In the scenario that the sentence is false, the following obtains,

1. It is the case that "This sentence is false" is false.

2. It is not the case that "This sentence is false."

3. Therefore, "This sentence is false" is true.

   a. Contradiction on 1 and 3 via the Law of Excluded Middle

Clearly, the liar's paradox results in contradictions. The genius of Russell was that he was able to translate this paradox formally into naïve set theory. Before understanding his translation, the definitions of vital strokes and axioms must be understood.

Most basically, there are two types of notation:

1. Roster Notation- A = {1,2,3}

2. Set Builder Notation- A = {x I x=insert mathematical formula}

To assign or exclude membership to a variable in a set we say,

3. A ∈ B = A is a member of B

4. A ∉ B = A is not a member of B

Next is the idea of empty and universal sets,

5. Empty Set: {} = Ø

6. Universal Set: {The set of all sets} = U^{40}

Finally, various binary concepts need explication,

7. Union: AUB = {15,16,17,18,19,20}

    a. if A={15,16,17,18} and B={17,18,19,20}

8. Intersection: A∩B = {17,18}

    a. if A={15,16,17,18} and B={17,18,19,20}

9. Subtraction: A-B = {1,2}

    a. if A={15,16,17,18} and B={17,18,19,20}

10. Subset: A ⊂ B

    a. if A={17,18} if B={17,18,19,20}[41]

Now that these basic parameters are secured, the axiomatic explanation of the Liar

Paradox may begin. First is the principle Frege pushed that ruffled the feathers of Russell,

Unrestricted Comprehension: ∃ A ∀x {x I x ∈ A ←→ insert a proposition that involves x}

In words, this principle essentially states that every proposition has a corresponding set which

enumerates all of the objects that possess the properties ascribed in the original proposition. For

example, if the proposition is "x is blue and a barn." there is a corresponding set that

encompasses all of the objects that fit into the category of being blue and barn-like. As stated

above, x is a set if it is a definable collection. To understand Russell's problem with this

concept, the idea of inclusion must be explained. For the set Y= {x I x exemplifies a number on

the open interval (2, 10)}, the numbers 3 and 4 are included in the set, and married couples are

included in the set. The set is not included as a member of itself because the number that the set

---

[40] Cantor argued that there was no such set. For a splendid introduction to some of his other thoughts see Cantor, Georg, and Philip E. B. Jourdain. *Contributions to the founding of the theory of transfinite numbers*. LaVergne, TN?: Nabu Press, 2012.

[41] A is a proper subset of B if it does not equal B.

exemplifies is one. Formally, it would be Y = {3, 4, married couples, ~Y…}. However, the set

Z = {x I x exemplifies a number on the open interval (1, 9)} is a member of itself because it

exemplifies the number one. One is on the open interval of (1, 9). Formally, this is Z = {1, 2, 3,

Z…}. Using the notation in lines 3 and 4 above,

Y ∉ Y and Z ∈ Z

Let us label sets that make use of propositions such as Y ∉ Y, quagmire sets, Q. Russell

observed a flaw when sets made use of such propositions. Consider the following notation for

this set type,

Q = {x I x ∉ x}

    Clearly this notation is problematic. The pitfall is not merely that the set Q is *not a

member of itself*, but the proposition "this set is not a member of itself" is in the set itself. As one

may observe, this is the equivalent of the liar's paradox in Set Theoretic Language. To help

bring this down to a level that is more understandable, Russell conceived the Barber's Paradox.[42]

Imagine a town in which the laws state that every man must be shaved. In this town, aristocrats

shave themselves and peasants are shaved by the barber. The rules are that the barber only

shaves men who do not shave themselves. The question then becomes, "Who shaves the

barber?" The point of the story is that the rules are not constructed such that a decision can be

made. The barber cannot shave himself because he can only shave men who do not shave

themselves. Further, the barber shaves all men who do not shave themselves, and he does not

shave himself so he should shave himself. The end result is paradoxical madness. Out of

necessity, both A and not A must be the case. The real problem, however, is the system. The

rules of the system are such that the shaving of the barber is undecidable.

---

[42] "Likewise there is no class (as a totality) of those classes which, each taken as a totality, do not belong to themselves." Russell, Bertrand, "Letter to Frege." Bertrand Russell to Gottlob Frege, 1902.

On a fundamental level, solving the Liar's Paradox would result in solving both Russell's Paradox and the Barber's Paradox. This is because the former two are simply derivations of the latter. The difficulty in working through the basic formulation is that this Cretan query has plagued philosophers for millennia. One of the first places it appears is in the Bible in Titus 1:12-13. Paul states, "[12] One of the Cretans, a prophet of their own, said, 'Cretans are always liars, evil beasts, lazy gluttons.' [13] This testimony is true. Therefore rebuke them sharply, that they may be sound in the faith"[43] Paul was most likely referencing Epimenides, but there is some debate over whether he is serious about the statement "This testimony is true." Regardless, the ancient conundrum appears to have a rather obvious problem with self-reference. It might be argued that the demonstrative "this" has no referent. In this case, the statement, "This statement is false" is not a valid sentence in the English language because it is not well formed. If this obtains, the Russellian twist to the Liar's Paradox also fails because the property of "being well formed" is necessary to formal settings. Most philosophers do not consider this "argument from self-reference" persuasive. Instead, they think there are strategies for eliminating fallacies that involve ambiguous designators. For example, if one writes the statement, "The only statement on this paper is false." on a sheet of blank white paper, the context is clear and the problem of reference appears to go away. While there might still be an issue with the definition of "this paper," academics are convinced that elucidating context can take care of any residual reference problems.[44]

---

[43] Titus, 1:12-13. In *ESV: Study Bible: English Standard Version*. Wheaton, IL: Crossway Bibles, 2007.

[44] The reason for this consensus is that reference fallacies are usually dependent upon context fallacies. That is, if the context is well defined, reference conundrums disappear. Thus, the idea is that there can be a situation where the context is fully described such that reference problems evaporate.

Surprisingly, the groundbreaking solution to this problem came first in a formal fashion. Roughly a year prior to the publication of the rigorous query by Russell, Ernst Zermelo stumbled across a close variant of the "class …of those classes [that]… do not belong to themselves."[45] Seeing this kerfuffle, he immediately *set* himself to work. The result was a system which, along with the work of Abraham Fraenkel, established the Axiom of Choice as a valid alternative to the looming lesion of contradiction. The system of axioms built around this golden nugget became known as ZFC Set Theory.[46] This is opposed to the Naïve Set Theory originally conceived by Gottlob Frege around Unrestricted Comprehension. Formally, the Axiom of Choice, henceforth AOC, states,

Axiom of Choice: $\forall A \; \exists B \; \forall x \; \{x \in B \longleftrightarrow x \in A \; \& \; \text{some proposition involving x}\}$

In English, this is translated as "For any set A there must be a set B such that for every x, if x is a member of B, x is a member of A and some proposition about x obtains." In other words, for a set to exist, a proposition about the set must obtain and the set must be a member of another set that is already in existence. If the salubrious set Q is now inserted into the AOC, paradoxical ponderings will subside. Formally, AOC would make Q,

$Q = \{x \; I \; x \in A \; \& \; x \notin x\}$

In this situation the truth conditions are more understandable. If one asks whether $Q \in Q$, there will be an answer that does not end in contradiction. This is because the truth value of each subsidiary proposition determines the combined truth of the set. For example, the first proposition is plausibly true. There is nothing that bars the existence of Q in the set A. Thus proposition one checks out without trouble. The second proposition, however, asks whether Q is

---

[45] Letter to Frege, 1902.

[46] The abbreviation, ZFC, stands for Zermelo, Fraekel and the Axiom of Choice.

a member of Q. As seen before this proposition leads to contradiction and is therefore false.

Thus because the second proposition is false, Q is not a member of itself.

  With the help of ZFC, the paradox at hand was resolved temporarily. Shortly after,

however, old wounds would be reopened with the work of Gödel's First and Second Theorems

of Incompleteness. Even if ZFC had not offered a solution it is unlikely that mathematicians and

logicians would give up all of Set Theory. Granted, Russell's Paradox destroyed the life and

career of Gottlob Frege, but for most logicians set theory is too useful to reject completely. It

was simply a nice coincidence that there was a solution to mend the error of Russell. This is

almost the reality that has obtained in today's world of mathematics. Experts know that the

principle of explosion should entail the invalidity of mathematics post-Godel, but they continue

to do their work in hope of a solution.[47] That means that there may be a solution someday, but as

of now, progress must be made as if the field is valid. In essence, the only difference between a

paradox and a contradiction is that a paradox is ignored whereas a genuine contradiction is

invalid. In a similar way, most Van Tilians argue that the existence of God is practically useful

for arbitrating morality, logic, science, and knowledge itself. Thus paradox in the Trinity, the

incarnation, and the atonement must be ignored or set to one side. In other words, they exist to

point out the pity of the human condition. We must rely on God even if His nature leads to the

most insane of paradoxes. By way of analogy, it is like the wife who stays with her husband

even though he beats her. She needs him to survive. For money and economic status, the wife

stays with her husband. The alternative is to leave and starve.

---

[47] The principle of explosion states that the existence of a contradiction entails the falsity of every proposition in the system that contains the proposition. Denying this principle would be to say that the existence of a contradiction only entails the falsity of the contradictory proposition.

Introduction to the Argument

Causality

J.L. Mackie called it the cement of the universe, Ludwig Wittgenstein called it superstition, but regardless of the pet names that philosophers have assigned to it over the centuries, causality remains one of the most perplexing features of reality. Appearing in a plethora of different forms, questions over this topic have led to forays in infinite regress problems and principles of sufficient reason. For theists in particular, the notion of causality is often times manifested into argument style to prove the existence of a divine being. For this reason, atheists tend to construe causality as paradoxical at best and non-existent at worst. However, in scientific and metaphysical inquiry, the concept is usually presupposed so that progress can prosper. It is because of the widespread acceptance of causality by the average individual alongside the fact that philosophical arguments against the existence of causation have been largely dismantled that this thesis will presuppose its validity.[48]

Abstracta

For minds that enjoy pondering philosophical puzzles, the nature of abstract objects is particularly eluding. In one sense, everyone knows that they are non-spatiotemporal. Therefore the gut instinct of most is to say that they do not exist. Despite their immateriality, however, abstracta have a leery semblance of being able to interact with and exist in reality. The argument might go that abstract objects can be cognized by human minds. For example, the thought "blue flowers are poisonous" involves the abstract color "blue", and when it is processed by the brain it can help living creatures to avoid ingesting poison. Therefore, the abstract color blue exists in

---

[48] For a general introduction to the dispute on causation as well as some of the responses that have been offered to Hume and Russell, see Wilson, Fred. *Hume's Defense of Causal Inference*. (University of Toronto Press, Toronto Canada), 1997. For a more in depth analysis of why anti-causation arguments tend to be more directed toward rationalism and not causation itself, see Beauchamp, Tom L. and Rosenberg, Alexander. *Hume and the Problem of Causation*. (Oxford University Press, New York, New York), 1981.

and interacts with reality. On the other hand, the abstraction "blue" is simply based off of a wavelength. Perhaps the abstract color "blue" is not responsible for the causality, but it is the wavelength that is interpreted through the visual cortex that warns the creature to avoid poison. Regardless of where one falls on these issues, this thesis will presuppose that abstract objects do not exist, Nominalism, and that if there is an abstract object that exists or has causal power, that abstract object is an exception and needs to be accompanied with an explanation.

Transcendental Argument

One of the problems with the Argument from Logic is that it has not been well defined by those who have promoted it. Instead the authors almost assume that their audience is familiar with its progression and work from there to talk about the implications of its validity. They spend more time writing about what will happen should the atheist not be able to account for logic, than why the atheist is not able to account for logic in the first place. The point of an outline is more for clarity, but it will also help to categorize concepts when they come up in conversation. In other words, the Transcendental Argument incorporates a dizzying array of complex concepts. Thus it is easy to confuse where these concepts are relevant in the argument. A simple outline will help to clear up exactly what the argument is and where related concepts should be discussed. Hopefully this will steer conversation in the right direction, but who knows?

Schematically, the argument form is simple,

The Transcendental Argument: Syllogistic Form

1.) If God does not exist, the Laws of Logic would not exist.

2.) The Laws of Logic exist.

3.) Therefore, God exists.

Obviously this format could apply to any two existents. For example, God could be replaced with parents and the Laws of Logic could be replaced with children to get an argument for anti-parthenogenesis.

Anti-Parthenogenesis Argument: Syllogistic Form

   1.) If Parents do not exist, children would not exist.

   2.) Children exist.

   3.) Therefore, parents exist.

Deduction is content agnostic; it does not care about what it quantifies over. The real argument comes in when the premises are expanded with further reasoning.

The Transcendental Argument: Expanded Form

   1.) If God does not exist, the Laws of Logic would not exist.

   1.1 An Observation about the nature of the Logical Laws.

      1.1.1   The Laws of Logic are abstract by nature. Abstract objects are by definition causally effete. That is, one should expect them to have no effect in reality because they are nominal laws.

      1.1.2   The Laws of Logic limit what can and cannot exist. In other words, they put constraints on the type of objects that can exist. Because they constrain reality in this way, they satisfy the requirement for interacting with it causally.

      1.1.3   Thus, there must be something that guarantees or makes it the case that the Laws of Logic are able to interact causally with reality. (Causally efficacious abstract objects are interesting to nominalists in particular, but really they are in need of explanation on any philosophical system.)

   1.2 Naturalistic explanations for the causal efficacy of the Laws of Logic are insufficient.

1.2.1 Alternative A: Fundamentalism- Because of their transcendence, the Laws of Logic ground themselves and thus they need no explanation. In the language of philosophers the Laws of Logic are "fundamental." Other fundamental philosophical devices like Space, Time, and Existence are not expected to be broken down in terms of deeper metaphysical relations. Likewise, devices such as Consciousness, Causation, and the Laws of Logic should not be broken down to yield theological conclusions.

1.2.2 Alternative B: Logical Platonism- This says the Laws of Logic are necessary and thus do not need an explanation. In other words, the explanation for the abstact-ness and causal efficacy of the Logical Absolutes is that they are necessarily the way they are and could not have been different.

2.) The Laws of Logic exist.

1.1 Objection A: Per Nominalism, the Laws of Logic do not exist.

   1.1.1 Pretense Theory

   1.1.2 Neutralism

   1.1.3 Free Logic

1.2 Objection B: The Laws of Logic can be falsified and therefore do not exist.

   1.2.1 Intuitionism

   1.2.2 Dialetheism and Paraconsistent Logics

3.) Therefore, God exists.

Objections

Before beginning with hardcore analyses of objections, I would like to start out with some preliminary problems that one might raise to the argument. Afterward, I would like to explore

the more detailed objections.

An Objection to 1.1.2

In the same way that the nominal essence of the Laws of Nature does not constrain reality,

neither do the Laws of Thought constrain reality.

Possible Response

At first, I was drawn to this objection, and used it to reject the Transcendental Argument

entirely. The Laws of Logic are abstract, and abstract objects do not exist. Thus, the laws of

logic do not exist, much less constrain reality. The only problem was that no matter how hard I

tried, I could not consistently construe the abstract nature of the Laws of Logic Nominalistically.

It seems that the motivation for Nominalism in general is to say that Reality shapes and forms

the Abstract Realm. That is, objects in the Abstract Realm are based upon objects in the

concrete realm, and not vice versa. On this view, reality is responsible for molding and

arbitrating the inhabitants of the sphere of being. For example, if one talks about the abstract

color blue, they are not really picking out an existent called "blue." They are just generalizing

from instances of "blue" that they have seen in reality. In this way, objects in the abstract realm

are dependent on objects in reality. This is not the way that all types of Nominalism come about,

but I do believe it is the motivation for a large portion of their rhetoric.

With respect to abstract laws, specifically laws like those of Physics, they are usually just

restrictions that are never violated in this universe. In some scenarios, however, it is conceivable

to think of universes where the Laws of Physics encompass different restrictions or where they

do not come about at all. The conclusion that some people draw from this is that the Laws of

Physics do not shape reality because if reality was different, the Laws of Physics would be

different. Therefore it is *reality* that shapes the physical laws.[49] The immediate temptation is to

apply the same reasoning to the Laws of Logic. In this situation, however, there is no different

way for Reality to be other than in accordance with the truth value of the Laws of Logic. This

means that there is no possible construal of reality such that the truth value of the Laws of Logic

does not obtain. Reality is not, therefore, the arbiter or "shaper" of the truth, falsity, or existence

of the Logical Laws. It is the Laws of Logic that give reality its truth value and allow its

contents to exist. It may seem counterintuitive to accept this inverse relation, but on this note,

they may be the only abstract objects to be causally efficacious in this way. To make this more

approachable, one could say that trying to negate the truth value of the Logical Laws is literally a

counter-possible whereas trying to negate the truth value of the Law of Physics is just a counter-

factual.[50] Therefore there is no reason to ascribe existence to the Laws of Physics, whereas the

Laws of Logic mandate more metaphysical weight due to their causal abilities.

Objection in 1.2.1 (See above)

Possible Response

There are two points that need to be addressed here. The first is over the argument that the Laws

of Logic ground themselves and thus need no explanation. In some respect it is true to say that

the Laws of Logic transcend all of reality. In fact, they apply to everything in reality including

themselves. They are tautologies, but the idea that they can "ground themselves free" of any

explanation suggests that there is something in their nature that can make sense of their abstract-

---

[49] The obvious response from the realist is that because the philosopher used different abstract conceptions of reality to conclude that it is possible for the Laws of Physics to be different, the concrete realm is modally dependent on the abstract realm. For this one case, maybe they are correct, but original objection was Nominalistic in nature. Thus it is pertinent to carry their reasoning through and not change in the middle. This objection from realism can be used only as a supplement.

[50] This talk is a bit confusing because negating a Law of Physics just amounts to negating its truth value. Negating a Law of Logic negates its existence and truth value. Laws of physics don't exist, whereas Laws of Logic do exist.

ness and causal efficacy. As such, I see nothing in the nature of the Logical Absolutes that

brings together these two features coherently and consistently. Thus, there is a need for

explanation of the Logical Absolutes apart from the Logical Absolutes. The second point that

needs to be discussed is that of their "fundamentality." It is tempting to use the term

fundamental as a catch-22 and say that because the Logical Absolutes are necessary for thought,

they cannot have an explanation. It is important to note, however, that the Logical Absolutes

differ from other fundamental philosophical objects. For example, there is no pair of attributes,

like abstract-ness and causal efficacy, in Space or Time that would lead philosophers to set out in

search of deep metaphysical narratives. These elements are fundamental for thought, but they do

not present any features that are seriously concerning in the way that the Logical Absolutes seem

to portray. That being said, just because Space and Time do not have external explanations, it

does not follow that philosophers do not bicker over the type of existence they exemplify. There

are huge debates about whether time is relational or substantival. There is extensive

metaphysical disagreement about consciousness and what theory of the mind philosophers

should accept. There are even debates about the different types of interpretations of Special

Relativity, one of the most scientifically verified theses in all of human history. The main point

is that scientifically or philosophically it is difficult to see how the Laws of Logic could escape a

need for explanation or find that explanation in and of themselves.

Objection in 1.2.2 (See above)

Possible Response

This is of the same stripe as the objection above, but it tries to give an explanation of the Logical

Absolutes by saying they are necessary. In other words, their existence is their explanation. It is

unclear how this explains or coheres with the existence of the Logical Absolutes. It is not like

the ontological argument where God's necessity is deduced from His maximal greatness. In that scenario it is clear how His necessary existence relates to His explanation or His reason for being. In this case however, it is not clear how "brute necessity" explains the existence of causally efficacious abstract objects other than just saying that it does. In this setting, the theist should not try to say that "They are necessary for sure, but the problem above seems to suggest they are necessary *ab alio* and thus require an explanation of their 'dependence.'" Instead it might be pertinent to point out that the same argument could be used for contradictions found in the nature of God. One could simply use God's necessity as an explanation for a proposed contraction, but no atheistic philosopher would be willing to accept that type of progression. Instead, the theist should try to give an explanation that makes sense of the supposed contradictory attributes.

From the above objections it is clear to see that the main focus was on whether the Logical Absolutes were in need of explanation and whether they could furnish that explanation solely from facts about their own nature. Henceforth, the more detailed objections that ponder problems over the existence and truth values of the Logical Absolutes will be analyzed.

Objections from Non-Classical Logics

Intuitionism - (Excluded Middle)

The thought of denying axioms in propositional logic or going against the grain of commonly held beliefs about syllogistic reasoning is an idea that most people find hard to take seriously. After all, most of the advocates of Classical Logic, henceforth Classicism, have been some of the most brilliant intellectuals to walk the face of the planet. Aristotle, Gottlob Frege, George Boole, Arthur Prior, and a whole host of others have made their case and reinforced their points so persistently that people like Van Til can't help but believe that thought itself is impossible apart from these specified frameworks. Therefore, it is somewhat of a surprise that there exist small groups of individuals who seek to oppose the truth of these long held traditions. For example, advocates of Intuitionism house the most active line of rebellion. They point out that ideas like the Law of Excluded Middle and Double Negation Elimination, which are accepted virtually across the board, need not be discarded whole sale, but they need simply to be revised, added onto, and spelled out more clearly. Hearing such talk along with other neighboring niches could lead some individuals to question the absolute dominion of the Logical Laws. This creates a problem because on one hand, it is impossible in the space below to detail all of the progress in these uncanny subjects, but on the other hand, the reader must be introduced to this content so that their mind is not taken and confused by the content of deviant logics. The point is to show the reader that when Intuitionism and its kin are properly understood they need not be taken as infringing on the power of the Logical Laws. In poetic fashion, the proceeding analysis will show why the preceding misconception is flawed.

In 1908, the spearheading logician and esteemed philosopher, L.E. Brouwer, jumpstarted Intuitionist thought with his notorious paper "The Unreliability of the Logical Principles."[51] Deriving his position largely from his readings of Philosophy of Mind, Brouwer saw the quantifiers and symbols in first order systems as nothing more than constructs of the human brain. This means that where normal logicians would say objective axioms can be generated from valid inference, true reasoning is really based on human intuition. Worse than that, this mind-based approach brought back to life some vexing Empiricist trends like, "there are no non-experienced truths"[52] The point of view expressed in Brouwer's work runs in direct opposition to that of the Formalism put forth by the great mathematician, Gottlob Frege.[53] Frege laid out a slew of anti-Intuitionist arguments to combat the idea that abstacta, specifically numbers, are based on the human brain. He keyed in on the fact that mathematical truths are not proved false because of a certain time metric. For example, if one is driving down the road, it might be illegal to continue driving at t_1 but not at t_2. This could simply be due to the color of the stoplight. However, in the actual world, $1+2$ will never be true at a time t_n. This is because mathematical proofs are not dependent on the material world.[54,55] Together with other noted objections, Frege

---

[51] Atten, Mark Van, and Göran Sundholm. "L.E.J. Brouwer's 'Unreliability of the Logical Principles': A New Translation, with an Introduction." *History and Philosophy of Logic* 38, no. 1 (2016): 24-47. doi:10.1080/01445340.2016.1210986.

[52] Brouwer, "Consciousness, Philosophy and Mathematics" in Collected Works, Vol 1, 488.

[53] In the Philosophy of Mathematics, Formalism is a variant of Realism about abstract objects that states that they are concrete physical objects. To be clear, there is some hackling that is done over the exact definition of a "physical object," but abstracta are so categorized nonetheless.

[54] To some degree this could be contested, but for most people it is valid. For example, if there was a possible world where objects combined in a 2+1 fashion had one of their members disappear, the proposition that corresponds to the statement 2+1=2 would be true. On another level, an extreme Nominalist would simply say that objects cannot be combined in a 2+1 fashion because aggregates are simply a mental construct that is imposed upon reality. The point, however, is that most people who abstain from belligerent reasoning would say mathematics is not based on the material world.

[55] It is worth noting that there are some modern theories of propositions that have revived the use of Brouwerian insights. I am not saying that theses theories are explicitly intuitionistic, but they would say for

concluded that "The basis of arithmetic lies deeper, it seems, than that of any of the empirical sciences, and even that of geometry. The truths of arithmetic govern all that is numerable. This is the widest domain of all; for to it belongs not only the actual, not only the intuitable, but everything thinkable. Should not the laws of number, then, be connected very intimately with the laws of thought?"[56] In the Brouwer-Frege division, two philosophical trends can be observed. On one hand, Intuitionism leans more towards the dogmas of Empiricism and Nominalism.[57] On the other, Classicism leans more towards Rationalism and Realism. To be clear, there are proponents of each view that break the trend, but for the most part these positions act as gateways or companions to the other positions.

It was in this context that Stephen Kleene, a leading figure in Theoretical Computer Science and Theories of Computation, stepped forward and tried to further the "logic of intuition." Kleene observed that scholars like Brouwer and Heyting were applying their doctrines to the Laws of Thought. In essence they were subjecting the Laws of thought to human instinct. The result was a denial of many basic principles of valid inference. For example, Brouwer aggressively tackled the Law of Excluded Middle by saying that it led to false propositions such as,

1. "The points of the Continuum form an ordered point species.

---

example that propositions are not true of propositions do not exist, unless they are cognized by a brain. For the Transcendental Argument this is not entirely relevant because the Laws of Logic transcend many of the rules that apply to propositions, but if it was there would be a quick route to an argument for God. There is no mind that could simply stop cognizing a Law of Logic and bring it into and out of existence except the mind of God. At this point bringing a Law of Logic out of existence is a counter-possibility, so the situation gets even more messy, but its counter-possibility would just be an immutable description of the static nature of God. More on the Nature of God and the Logical Absolutes will be explicated later in this paper. For more on theories that make use of Brouwerian insights on propositions see the work of Scott Soames, Jeff King and Peter Hanks.

[56] Frege, Gottlob. *The Foundations of Arithmetic: A Logico-Mathematical Enquiry into the Concept of Number*. Blackwell, 1968, XV.

[57] As a quick reference, Empiricism is commonly defined as the view that all knowledge comes from sense experience, and Nominalism is commonly defined as the view that abstract objects do not exist. Sometimes Nominalism is referenced synonymously as Anti-realism.

2. Every Mathematical Species is either finite or infinite."[58]

In ordinary common sense mathematics, these propositions are universally accepted. While it may seem obvious that the second sentence is unequivocally true, the first sentence needs some explication so that its obviousness does not appear elusive. In this context, the word continuum simply refers to all real numbers. It is important that this term is not confused with the *set* of all real numbers, aleph null ($\aleph_0$). From this definition, if all of the real numbers form an ordered point species and a $\neq$ b, then either a>b or a<b. This should be fairly elementary, but Brouwer rejects it in the following situation,

"Let d_v be the vth digit to the right of the decimal point in the decimal expansion of Π, and let $m = k_n$ if, as the decimal expansion of Π is progressively written, it happens at d_m for the nth time that the segment $d_m d_{m+1} \ldots d_{m+9}$ of this decimal expansion forms the sequence 0123456789. Further, let $c_v = (-1/2)^{k_1}$ if v $\geqq$ k_1, otherwise let $c_v = (-1/2)^v$; then the infinite sequence $c_1, c_2, c_3, \ldots$ defines a real number r for which none of the conditions r = 0, r > 0, or r < 0 holds."[59]

The reason that Brouwer is having trouble assigning a mathematical value to this problem is that he is inter-substituting variables that refer to different orders of magnitude. For example, in d_v, v is a number to the right of the decimal in Π. However, in d_m, m is used to refer to the number of times that the sequence 0123456789 appears. In other words, V is a first order variable corresponding to the numbers that appear right of the decimal in Π, and M is a second order variable that corresponds to the number of times that a certain pattern appears in that infinite set. Coincidentally, Brouwer is using Π, a transcendental number, so the numbers to the right of the

---

[58] Brouwer (1923b, 1954, 1954a) "On the significance of the principle of excluded middle in mathematics, especially in function theory. Addenda and Corrigenda, Further Addenda and Corrigenda." (From Frege to Godel)

[59] Ibid.

decimal will naturally form an infinite set. His last move is where he lays in the inter-

substitution. He makes $m = k_n$ and then uses it as an exponent in a new variable c_v where $c_v = (-\tfrac{1}{2})^{k}{}_1$ if $v \geqq k_1$ and $c_v = (-\tfrac{1}{2})^v$ in all other cases. The following sequence $c_1, c_2, c_3, \ldots$ is so

skewed in scope that one feels that they need to shift their mathematics from cardinal numbers to

transfinite cardinal numbers. In other words, there are multiple infinite sets of different

magnitudes that must be added together. Therefore, there is technically no value that can be

expressed in real numbers. At most, this is a ruse. Two can play at the game of magnitude.

There may not be a real number to express the value of the added infinite sets, but there is a real

number that corresponds to the number of infinite sets that are being added. In this way, there

may be an answer that he is willing to accept. Even if he is unwavering and refuses to accept

this objection, there is no reason to think that any statement should be rejected except for maybe

Sentence 1. By trying to show the inconstancy of Excluded Middle by proving the negation of

the first sentence, he has only exposed the fact that this Logical Law must be kept in its purest

form, i.e. a proper dichotomy. For example, this Law should be formulated primarily as,

> Law of Excluded Middle: Either A, or it is not the case that A.

In this scenario the value of the variable A corresponds to some proposition like "The sky is

blue." as it would in regular Propositional Calculus. The reason that this is important is that

Brouwer uses the denial of Excluded Middle (EM) like a domino effect; once EM is rejected so

too are a host of other fundamental theorems. First sentence 1 "fails," as seen above, then

sentence 2 "fails" because

> "the notion of L-integral, as it is called, ceases to be useful, because this notion of
>
> integral is bound to the notion 'measurable function.'… When the second fundamental
>
> property ceases to hold, so does the 'extended disjunction principle', according to which,

if a fundamental sequence of elements is contained in the union (p, q) of two

mathematical species p and q, either p or q contains a fundamental sequence of elements;

and when the extended disjunction principle ceases to hold, so does the Bolzano-

Weierstrass theorem, which rests upon it and according to which every bounded infinite

point species has a limit point."[60]

Clearly, the denial of all of these fundamental theorems in mathematics is unwarranted when one

is objecting to them simply because they wish to make room for transfinite sets. Indeed, as seen

above, transfinite numbers and sets can be added to mathematics without denying the strict

version of EM.

The second principle that Intuitionists had popularly denied was Double Negation

Elimination. This principle can be expressed as follows,

2. Billy bought a balloon.

3. Therefore it is not the case that Billy did not buy a balloon.

The truth tables for Double Negation are as follows,

P	$\neg p$	$\neg \neg p$
True	False	True
False	True	False

Clearly, the values for $\neg \neg p$ are the same as the values for p. Thus, logicians say that double

negation is the same as the original truth values for the variable. Brouwer and others deny this

principle on evidential grounds. The idea is that the Sherlockian principle of eliminating

possibilities until only one remains cannot be verified until one has actually explored those

possibilities. For example, if it is an axiom that there is a barber shop on one of the streets in

Santa Barbara, and one has gone down all of the streets except for one, Brouwer would say that

___

[60] Ibid.

one cannot conclude that there is a barber shop on the last street until they explore that

possibility. There is an explicit dependence on the use of the senses because the presupposition

is that the validity of the logical laws rest in human intuition and not objective laws of inference.

Regardless of the sanity that one assigns to Brouwer's framework, Kleene knew that it

needed a first order axiomatization to flow properly in formal language. For example, other

foundational fields in logic like ZFC and Proof Theory have first order axiomatizations in Set

Theory and Peano Arithmetic. Likewise, there needed to be such a first order axiomatization for

Intuitionism. Therefore, Kleene put forth his 1952 piece entitled, *Introduction to*

Metamathematics in order to lay out, *inter alia*, a basic first order formalization for

Intuitionism.[61] In addition to this system, the famous mathematician, Arend Heyting, spelled out

a first order number theory for Intutitionism known as Heyting Arithmetic, HA. It was Kleene's

additions to HA over *realizablility* that significantly advanced formal translations of

Intuitionistism. The only problem is that Kleene's work in this area makes use of Proof

Theoretical Language which can be dense and technical. To make the issue more accessible, I

will break down his formalities step by step with English definitions.

The first concept that needs to be understood is that of recursion. Recursion is essentially

the same as computability. A function is recursive iff (if and only if) it can be computed by a

Turing Machine, and a function is computable by a Turing Machine iff it is recursive.[62] This is

why some scholars will reference Computability Theory as Recursion Theory. The second

concept that needs to be explicated is that of realizability. A proof is realizable if it gives

---

[61] Kleene, Stephen Cole. *Introduction to Metamathematics*. Whitefish, MT: (Literary Licensing, LLC, 2012).

[62] For those who have not studied Theoretical Computer Science, a Turing Machine is theoretical model that can compute all computable inputs when the rules are well defined. That is, any computable function should be able to be computed by a hypothetical Turing Machine, because it has all of the necessary axioms at the outset of the computation.

practical examples to show completeness. In this way, one can see the underlying trends of

Empiricism that will enter Kleene's formal framework. In other words, realizability can make

use of empirical data. Combining these concepts, Stanford Encyclopedia states that he "used a

variant of number-realizability to prove **HA** satisfies the Church-Kleene Rule."[63] Axioms in a

system satisfy the Church-Kleene rule if they can be read by a computer (if their formal language

can be read by a computer) and they are explicit. In this context, explicit means that the axioms

can provided specific instances of the objects in their existential quantification. For example, in

the formal setting,

$$\vdash_T \exists x A(x)$$

T is explicit if $\vdash_T A(n)$ for some numeral n. The idea is that if the axiom T is a part of the

system, and T is "There exists an x such that x is A." then there will be some object, like a

number, that corresponds to the x variable.

Even though this advancement significantly improved the formal framework of

Intuitionism, there is still a problem in the starting metaphysical principles. Because the

metaphysics that Brouwer worked out were rot with problems, this denial of the Law of

Excluded Middle cannot stand. Other attempts to deny Excluded Middle come from Many

Valued Logics, most of which want to add the value of 'unknown' as a third category for truth

values. In this case Excluded Middle would fail because propositions could be true, false, or

unknown. With respect to these specific systems, the following Subjunctive Conditional may

serve as a refutation,

SC 1: If the unknown proposition was known, it would be either true or false.

---

[63] Moschovakis, Joan, "Intuitionistic Logic", *The Stanford Encyclopedia of Philosophy* (Spring 2015 Edition), Edward N. Zalta (ed.), URL = <https://plato.stanford.edu/archives/spr2015/entries/ logic-intuitionistic/>.

Through this premise, a reduction for propositions that are unknown may be completed so that

Excluded Middle could still obtain. The only reason that people would continue to reject SC 1 is

that there are some problems which they do not believe can be solved. A prime example is the

Church-Turing Thesis. In 1936 Alonzo Church and Alan Turing published a paper which

offered a response to what had been called the *Entscheidungsproblem*, or the decision problem.[64]

This problem asked whether an algorithm could prove the universal validity of any axiom of

first-order logic. In this context the axiom would be used as an input into the algorithm, and the

algorithm would be expected to produce an output of either Yes or No. If the algorithm could

prove the universality of the axiom, it would halt on one of the outputs. If it could not produce a

decision it would go on in an infinite do-loop and never halt. Without going into the technical

details, the Church-Turing Thesis essentially stated that an algorithm in such a setting could

never halt on a specified output. In this case, the proposition "Axiom X of First-Order Logic is

universally valid" is neither true nor false because there is no output or answer to the question.

The truth value is by definition "unknown." One might object to this objection by saying that

even if the Church-Turing Thesis is correct, it does not show the invalidity of the Law of

Excluded Middle. At most, it proves that certain algorithms are unable to decide on truth values

for some propositions that correspond to axioms in First-Order Logic. However, the idea with

these types of decision problems is that a Turing Machine is being used to compute the inputs.

In mathematics and computer science, it is widely held that any input that is computable can be

computed by a Turing Machine.[65] If this is right, then there is no other algorithm that could

---

[64] Church, A. 1936b. 'A Note on the Entscheidungsproblem'. *Journal of Symbolic Logic*, 1, 40-41.

[65] There is some debate on this issue because of recent advances in quantum mechanics. Some people have said that computations entered into a quantum computer cannot be performed by Turing Machines. Quantum computers, highly theoretical as they are, are simply computers that can use subatomic particles or selective quantum states to store information. Whether or not this claim is true can be sorted out on another day.

compute the input and the value would literally be "Unknown." However, for theists there is

another option. Remember, computation is simply the processing of information. Humans

compute, animals compute, and computers compute on a fairly basic level. However, to a

naturalist there is no infinite computer capable of performing mind-bending paradoxical

equations. For the theist, God is the ultimate and infinite super computer. There is no problem

that He would not be able to compute. To be clear, this is not just a vague reference. The

infinity of God's mind and His ability to think in an omniscient and omnipotent way outside of

time allow Him to complete computations not available to temporal, non-omniscient, non-

omnipotent computers.[66]

The reason for delving into Intuitionism and touching on Many Valued Logics is that I

wanted to give a brief example of an effort to deny a Logical Law. Obviously, Intuitionism has

been around for a good century, and there are new efforts to undermine the validity of the

Aristotelian Absolutes, but this brief synopsis of the effort showcases a reasonable objection to

the Transcendental Argument. If one could consistently deny a Logical Law, the Argument from

Logic would be invalidated. At first glance, the thought of being consistent and denying a

Logical Law seems contradictory, but it is because problems arise with the metaphysics of

Intuitionism that one can rationally negate the goal of this project.

Dialetheism- (Non-Contradiction)

In addition to attempts to deny the Principle of Excluded Middle, certain logicians have

advocated for a view called Dialetheism under which the Law of Non-Contradiction is said to be

invalid in certain circumstances. Arguing against this position can prove a difficult task because

---

[66] At this point do not devote too much attention to God being outside of time. I will spell out later what I mean by that remark. If the reader wishes to get some background on the arguments and the context of the debate they may consult Craig 2000, Craig 2000, Craig 2001, Walker 2016, and Walker 2017.

the traditional approach to dismantling a system no longer holds. Under normal circumstances, a position is disproved by taking its starting axioms and deriving from them contradictions. In this case, however, any contradiction derived from the axiom "True contradictions can obtain" is simply proof of the axiom in question. Therefore, a response to this type of logic must lay out attacks on a meta-level. One must engage the Dialetheist in her methodology, that is, her approach to reasoning to true contradictions.

Perhaps the most famous advocate of Dialethiesm to date is Graham Priest. Priest has published numerous works on the validity/invalidity of classical logic as well as its extensions into other formal realms like modal logic. In short, his life's work has revolved around negating the validity of principle and systems in classical logic. Does he then think that classical systems should not be taught at universities? No. In the same way that Newtonian Mechanics is introduced before the systems of Special Relativity, so too should the axioms of Frege and Russell be introduced before those that involve paraconsistent sets and non-monotonic relations of consequence. Priest's main source of contention with Classicism is its Principle of Explosion. The Principle of Explosion basically states that if there is a system with a contradiction, any proposition can be entailed from that contradiction and thus the system is incoherent. Logically speaking, if any proposition can be entailed from a contradiction and p and not p are found in a system, then the propositions "It is the case that p and not p" and "It is not the case that p and not p" can both be derived from the original contradiction. In essence, meta-contradictions can be derived from contradictions if explosion is valid. A famous anecdote is often accompanied with the introduction of this principle. It is said that in one of Bertrand Russell's introductory logic classes, a student challenged him by asking him to prove that "Bertrand Russell is the Pope" from the contradiction of 1=0. Russell promptly responded by saying that if 0=1, 1 can be added

to each side to get 1=2. In this case, Bertrand Russell and the Pope are two entities, and thus they are one entity. Therefore Russell is the Pope and explosion seems to be proved true.[67] Priest's position strictly denies this principle. For example, the paradox that Russell proposed in Naïve Set Theory would be said not to affect the other axioms in the system. As long as the proponent of Naïve Set Theory stays away from sets which involve the specific notion of being not themselves members of themselves, they avoid falling prey to contradiction. This would sort of make sense if, for example, ZFC simply had axioms that merely *avoided* self-referential paradoxes. However, the rules of ZFC have actually been phrased such that self-referential entries will lead to a contradiction. Thus, the set can be said not to exist. If ZFC was not available, Priest would maintain that other sets and axioms in Naïve Set Theory would remain untainted because they would not be touched by the falsity of self-referential sets. If that is the case, then there would be a coherent system where p and not p obtain, that is where a contradiction obtains, and the system does not fail. Therefore, the Law of Non-Contradiction would be invalid.

In this case, however, it is a bit odd to say that because the principle of explosion fails, therefore the Law of Non-Contradiction fails. To describe this situation in more detail there should be a distinction between three terms: strong contradiction, weak contradiction, and paradox. Let us define the terms as follows,

Strong Contradiction- P and not P obtain and the Principle of Explosion is valid.

Weak Contradiction- P and not P obtain and the Principle of Explosion is invalid.

---

[67] My personal thoughts on the matter tend to make me lean towards a principle of anti-explosion. That is, nothing follows from a contradiction. If this is the case, then Russell's proof does not work, because he is using deduction, and deduction is a form of reasoning that extends the proof with new thoughts.

Paradox- At first, it seems to be the case that P and not P obtain, but upon examination it

is found that P and not P are really different in some time or respect.[68]

Clearly, Priest is arguing for something like Weak Contradiction. Would Weak Contradiction

really deny Non-Contradiction, and if it does how would it affect the argument? It is at this point

that the "extreme meta-analysis" will come into play. It seems that, at first, a case of weak

contradiction would negate the Law of Non-Contradiction. I will argue that it does not, and the

fact that it does not is paradoxical. In weak contradiction, the contradiction itself is false. Non-

contradiction says that cases of p and not p cannot obtain. Therefore the Law is satisfied because

the actual contradiction is false. The only question that remains is "Does the falsity of the

contradiction impact the other axioms in the system." If it does not, then only that part of the

system needs to be rejected, and if it does, then the entire system is false. In essence, if Weak

Contradiction obtains, then the system can be saved, but if Strong Contradiction obtains, then the

system must be rejected. That argument is paradoxical because it seems contradictory at first,

but upon examination it is coherent. Therefore, Priest's attacks on Non-Contradiction should not

be taken as attacks, but as statements of clarification.

Relating these clarifications to the Transcendental Argument, it would seem that some of

the Doctrines of God may be paradoxical. For example Divine Eternity may lead the theist to

say that in some qualified/restricted sense, God is both "inside of" and "outside of" time. The

Impeccability of God and the existence of Evil may prove *prima facie* contradictory, but only

paradoxical upon further examination. It is not the view of this thesis that the attributes of God

are weakly contradictory, but what happens if there was an argument that appeared to lead to the

conclusion that weak contradictions existed in the nature of God? If, for instance, the logical

---

[68] This would entail that the variable in P and the variable in not P are corresponding to two different propositions. Thus there is technically no contradiction.

impossibility of omniscience was proven beyond a shadow of a doubt, the Christian would have to defend heresy. This is a problem that Van Til wrestled with and tried to avoid by saying that talk of God in the Transcendental Argument must presuppose a very specific *type* of God. This is a God who is necessarily omniscient. If that is the case, any discussion of God in the Transcendental Argument involves a necessary conception of a deity with omniscience. This seems like a nice little two for one deal if it works out: God exists and the conception of God necessarily involves omniscience. Therefore any talk of God presupposes the attribute of omniscience along with any other property that the theist wishes to attribute to God. The problem is that Van Til was not as enthusiastic about putting forth arguments for why these attributes are necessary. It is important to note, however, that this part of Van Til's thought is by no means essential to the flow of the Transcendental Argument. In fact, the main problem with saying that all of God's attributes are conceptually necessary in the Transcendental Argument is that there is really only one attribute that seems necessary to the progression of the reasoning: omnipotence/maximal greatness. As such, I do not believe that the Argument from Logic necessitates the direct Presuppositionalism. Instead, additional attributes should be added to the conception of God only on the basis of sound argumentation. The reason that it is incumbent on the reader to take note of this stage of the argument is because it is at this point that many Van Tilians try to inject their radical Presuppositionalist Epistemology into the way. I would argue that it is better to wait until the argument has finished to offer up arguments about the nature of Philosophical Theology. This is not to say that all Van Tilian verbage is bad, but this part does need some slight revision or the antagonist's rejoinders will sink it swiftly.

On a positive note, I would affirm with Van Til that if the Transcendental Argument is valid, then the atheist cannot reason logically and that when she does so, she is borrowing

principles from the theistic worldview. This is just a natural consequence of the argument. I

would suppose that even some atheists could agree with that subjunctive conditional statement.

Objections from Nominalist Positions

Introduction to Nominalist Objections

An obvious method for escaping the problem of abstract objects is to simply assert that

their existence is impossible in the first place. This type of a belief can result in a variety of

finely parsed positions, but for purposes of simplicity, the general term that will be used for

"abstract object deniers" is Nominalism. This may take some by surprise because under normal

circumstances, Nominalism is restricted to the position that universals do not exist. Other terms

like anti-realism are used when discussing the denial of abstracta such as numbers. This is

particularly popular in the Philosophy of Mathematics. However, such a distinction is not

necessary to the nature of the content. Therefore there is no reason to separate out terms and

introduce verbiage that can distract from the main point. Namely, if Nominalism is correct with

respect to the Logical Absolutes, then there is no problem for the atheist over the Transcendental

Question. That being said, the two most promising forms of Nominalism available to the anti-

theist are most probably going to take shape in the form of Free Logic and Pretense Theory. In

its most simplistic form, Free Logic is the idea that there are objects of language that can be

denoted as true, but that do not exist. For example, the crack in the wall is an object of language

which refers to a lack of existence. In reality, however, cracks do not exist. It is true to say,

"There is a crack in the wall," but it is not true to say "There exists a crack in the wall." A lack

of existing material is the referent of a crack. Thus the lack of existence cannot be existence

itself. In the same manner, a Free Logician might try to use this reasoning with the Laws of

Logic. They are useful devices of language, and they come in handy when thinking, but they do

not actually "exist." They are simply "true." A similar approach comes from Pretense Theory.

Pretense Theory emerged out of extensive advancement in the psychology of fiction and is the

belief that abstract objects are akin in many ways to storybooks. In a storybook, the events of the story are prescribed to be imagined. Thus, it is true to say, "In the Lord of the Rings Fiction, elves can be reborn in Middle Earth," but it is not true to say "In reality, elves can be reborn in Middle Earth." It might seem like a stretch to apply this reasoning to the Logical Absolutes, but all an advocate of Pretense Theory has to say is that abstract mental events are "prescribed to be imagined true" but are not true in reality. Thus every statement of mathematics and every statement of Logic is a giant counterfactual. "If the Fiction of Mathematics is true, "2+2 exists as 4." "If the Fiction of Logic is true than the rule of addition '1.) It is raining outside 2.) Therefore, either it is raining outside or John made it the case that the earth is sitting on the back of a tortoise' exists." Similarly, "If the Fiction of Logic is true, then "A=A" exists." I hope that people are not taken aback by this reasoning, but just to make sure, each position will be examined in detail.

Free Logic

In the 1970s, decades of classical logic had dominated universities, and the same syntax and semantics were used religiously to dissect problems of all shapes and sizes. Apart from a few pleas to non-classical and modal logics, little doubt was present that traditional approaches could handle any problem in philosophy. However, as time progressed, people started to realize that there were certain issues that the classical semantics could not solve. A prime problem was that fictional abstract objects could not be imported into valid pieces of logical formuli, despite the fact that those formulas would be true if there were non-fictional inserts in the formulas. For example, the tautology "Zeno=Zeno" is false in classical logic because the fictional abstract object "Zeno" cannot be preceded by an existential quantifier. On the other hand, tautologies are supposed to be necessarily true by definition. The reason that classical logicians reject this

formula is because they see the content of the tautology as "Non-existence is equal to non-existence." When further examined this is really equal to "Non-existence exists as non-existence." Obviously, "Non-existence" cannot exist as anything because Non-contradiction will not permit such occurrences. In addition, the Russells and Freges of analytic philosophy might also point out that "Non-existence" is not a referent. This means that there is nothing in the world that "Non-existence" picks out. It is unclear, however, that this second point relevantly refutes and responds to the tautology "Zeno=Zeno." The difference is that for Zeno, it is intuitively plausible that the referent could pick out a god of the Greek Pantheon, should there be a Greek Pantheon. On the contrary, with "Non-existence" it is impossible that there could be a referent of something in the world that "Non-existence" picks out. Despite the above explanation, there are some who insist that Zeno is equivalent to the term "Non-existence." To illustrate this difference in content, consider the following example, "Zeus $\neq$ Thor." Without the influence of classicism, this logical formula is true. This is because, even though Zeus and Thor are non-existent objects, the concepts to which Zeus and Thor refer are different. The fictional concept of Zeus differs from the fictional conception of Thor. Because of the modal distinction combined with the apparent cognitive difference in content, there is good reason to think that this problem cannot simply be swept under the carpet. As such, further investigation of the claims of the Free Logician will proceed.

Before grappling with the semantics of Free Logic, it is essential to grasp the content of certain key terms that are used in explicating formal systems. First, when going through axioms and rules of Logic it must be understood that they are said to exist inside of the framework of a formal language. To be clear, there are different types of formal languages like sentential and predicate logic, but broadly, a language can be defined as a set of valid sentences. In different

languages, different relations hold between different sentences, but in most every system a sentence can be labeled valid in two forms. A sentence is *syntactically valid* if the grammatical structure of the sentence is correct, and a sentence is *semantically valid* if it can be said that the meaning of the variables coheres with basic reasoning. For example, "Cows ride flowers" is syntactically valid, but it is not semantically valid because it makes no sense for cows to ride flowers in a system of sentential logic. Another important concept to nail down is the difference between an object language and a meta-language. First order languages that mimic sentential logic are denoted as object languages because the axioms of the language in question are the object of study. When people talk about specific rules and principles that guide the object language, they can speak in variables of a meta-language. This is usually done to condense axioms, but sometimes it is done for purposes of comprehension or intense analysis of validity. For instance, axioms a_0-a_n in a formal object language could be condensed to the variable $\mathcal{A}$ in the meta-language.

Now that these introductory terms are out of the way, the semantic impact of Free Logic can be explained in more detail. The major work that jumpstarted progress in the field was Karel Lambert's 1960 piece, *The Definition of E! in Free Logic*. In this paper Lambert maintained that Free Logic was a shorthand notation for a logic that is free of "existence assumptions with respect to its terms."[69] Releasing Logic from its existential bondage, however, did not stop at the door of the existential quantifier. Along with this symbol, the similar universal quantifier was also in need of amendment. Its formal shape can be seen as follows,

$$\forall x A \vdash A(t/x)$$

---

[69] Lambert, Karel, "The Definition of E! in Free Logic," in *Abstracts: The International Congress for Logic, Methodology and Philosophy of Science*, Stanford: (Stanford University Press, 1960).

The reason that Lambert objected to this construal was that, yet again, it was only committed to objects within the existential domain of discourse, D. In other words, if every x was in D, and t was fit to be an x, t might be disqualified purely on the basis of existential mass. To solve this problem, Lambert suggested in a number of places that there should be a *free model structure* in which there is a "pair **S = <D1, D2>** with **DI ⊆ D2** and **D2** nonempty."[70] **D2** would take care of all of the non-existent objects and fit them into the structure. The only problem in spelling out the system is trying to distinguish formally which objects exist and which objects do not exist. As John Nolt points out in his explication of formal free logic, that by

> "Using '*E!*' we can express classical logic's blanket presumption that singular terms
>
> denote members of ***D*** as an explicit premise, *E!t*, for selected terms *t*. Thus we can
>
> formulate the following weaker analogs of universal instantiation:
>
> $\forall xA, E!t \vdash A(t/x)$
>
> and existential generalization:
>
> $A(t/x), E!t \vdash \exists xA,$
>
> which are valid in free logic."[71]

Thus by using the expression *E!* before the variable, readers can know whether or not the variable is in the existential domain, D.

While such tactics are interesting when trying to include nonexistent objects in a structural framework, analogously trying to apply this reasoning so that one can include the Laws of Logic in their framework is unnecessary. While it is true that some objects can be objects of language and not exist, the Laws of Logic are not included in that set. For example,

---

[70] Lambert, Karel. *Free logic: Selected Essays*. Cambridge: Cambridge university press, 2007, 82.

[71] Nolt, John, "Free Logic", *The Stanford Encyclopedia of Philosophy* (Winter 2014 Edition), Edward N. Zalta (ed.), URL = <https://plato.stanford.edu/archives/win2014/entries/logic-free/>.

the difference between cats and dogs points to an abstract concept of differentiation between two types of existing beings, but the concept that differentiates the existents does not itself exist. A similar argument might run for holes in a wall. The concept of the hole may function as an abstract concept, but the hole itself does not exist. In the case of the Laws of Logic, however, these concepts that are being discussed are causally themselves efficacious existents. Therefore the use of a Free Logic to include them under the category of nonexistent variables breaks down. While this strategy would work, if they were proved nonexistent, a simple appeal to Freely-logical semantics does nothing to solve the question of their existence.

Pretense Theory

While objections from the Free Logician can be disturbing if one is unfamiliar with symbols in the formal arena, there is little trouble once one is acquainted with the content of those semantic terms. With Pretense Theory, however, the weight of the objection lies not in grasping the meaning of logical formuli, but in being able to wrestle with and work through complex concepts. Birthed out of laborious developments in the psychology of imagination, Pretense Theory has become a growing alternative to realism offered from the Nominalistic camp. In fact, there is now an established posse of philosophers keen to embrace these ideas. Especially prominent has been its role in interpreting fields like Set Theory in the Philosophy of Mathematics. Because of its multifaceted impact in Philosophy, Psychology, and Mathematics, it is important that this view receive special attention when responding to the contrarian of the Transcendental Argument.

In his 1978 paper, *Fearing Fictions*, Kendall Walton sparked much dialogue over the nature of fiction in Psychology by saying that,

"Readers or spectators detest Iago, worry about Tom Sawyer and Becky lost in the cave, pity Willy Loman, envy Superman-and Charles fears the slime. But I am skeptical. We do indeed get "caught up" in stories; we often become "emotionally involved" when we read novels or watch plays or films. But to construe this involvement as consisting of our having psychological attitudes toward fictional entities is, I think, to tolerate mystery and court confusion."[72]

At first glance Walton seems to be speaking out of both sides of his mouth. We do have emotional experiences when interacting with fiction, but they are not real? To understand what he is getting at, one must have an understanding of intentionality or object directed-ness. A psychologist could define having an emotional experience as displaying an emotional attitude. Emotional attitudes can manifest in the form of tears, screeches, laughter, et cetera. However, each of these experiences is usually intentional or directed toward an event. Thus, a psychologist could say "Jody's tears were directed towards the violence of her boyfriend Steve." In this case, the so-called *aspectual shape* of Jody's thoughts produced moisture from her tear ducts after Steve angrily broke her favorite lamp. It is important to note that both Jody's tears and her boyfriend Steve both actually exist. What Walton is maintaining is that in works of fiction, the tears would exist, but the fictional characters or events to which the agent is directing their emotion do not exist. This raises an interesting question, namely, how is it possible for real emotional experiences to result from fictional events and characters? While this question has undergone a variety of names and forms over the years, it is most commonly referred to as the Paradox of Fiction.

---

[72] Walton, Kendall L. "Fearing Fictions." *The Journal of Philosophy* 75, no. 1 (1978): 5. Pg 6. doi:10.2307/2025831.

In response to the so-called Paradox of Fiction, Walton explicated an elaborate system which has come to be known as Prop Theory. The magnum opus of prop theoretical ideology was seen in Walton's 1990 piece, *Mimesis as Make Belief.* In this work, Walton argued that the Arts rely heavily on "props" which prescribe the imagination of a narrative. For this definition to fall into place Walton had to spend a fair amount of time explaining what he meant by the concepts of imagination and prescription. Interestingly, he maintained that

> "Imagining a bear goes beyond imagining that there is one. To imagine swimming or climbing or giving a speech is not just of oneself that one swims or climbs or gives a speech if it is even partly that. (See 1.4.) Props prescribe nonpropositional imaginings as well as propositional ones. They do not thereby generate fictional truths, but the mandated non propositional imaginings are a distinctive and important part of our games of make-belief."[73]

At first glance it might seem difficult to make sense of such statements. Within the context of analytic philosophy, it is understandable for one to question the possibility of "nonpropositional imaginings," especially when considering the various forms of realism about propositions or perhaps even the work of Robert Adams on possible world semantics.[74] The objection might by stated as follows, "To imagine an event is to imagine the proposition corresponding to that event is true." If the event did not occur in reality, then the truth value of the proposition corresponding to the event would be *false*. If there are not propositions or if there are non-propositional imaginings, then how can one properly assign truth or falsity to a supposed fact or event? After all, in this case the ascription of truth or falsity is a mental act

---

[73] Walton, Kendall L. *Mimesis as Make-Believe: On the Foundations of the Representational Arts.* Cambridge, Mass.: (Harvard Univ. Press, 1990), 43.

[74] See Adams, 1974.

because of the imagination that is required, and propositions in this setting are more or less the

mental content of supposed sentence tokens. The answer is that, aside from a quick dash through

different forms of truthmaker theory, this observation is the answer. Propositions are more or

less the metal content of sentence tokens, but there are some fictional scenarios where it makes

no sense to ask about the truth or falsity of the imaginings. In the cases of non-propositional

imaginings, it is hard to see how truth or falsity applies because of a lack of what Walton terms

Principles of Generation. The most famous example of a non-propositional imagining outside of

the context of psychology would be Bertrand Russell's infamous question of whether or not "The

[present] King of France is bald."[75] The problem with asking this question, says Russell, is that

France is currently a republic, so the present King of France picks out the "null class."[76]

Because there is no King of France, it makes no sense to ask whether or not he is bald. This

answer, however, is troubling in more ways than one, and it lends itself to problems in other

areas of Philosophy of Religion. For instance, if we cannot ask about the present King of

France's exposed scalp because he does not exist, then we cannot ask about the horned scalp of a

unicorn simply because it does not exist. Clearly, the problem is not one of existence, but one of

definition. There is nothing in the definition of the present King of France that would allow us to

deduce whether or not he has hair. Obviously, however, we can deduce by way of definition that

a unicorn has the property of a horn-ness on its head, even though it does not exist. If it were the

case that Russell's "null class" solution was correct, then it seems there would be a defeater for

the Ontological Argument, at least the most basic Anselmian format. If we cannot say that

certain objects, whether fictional or nonfictional, have certain properties because of the way they

---

[75] Russell, Bertrand. *On Denoting*. (Oxford: Blackwell, 1905), 483.

[76] Ibid, 484.

are defined until their existence is known, then it would be impossible to attribute Omnipotence or Maximal Greatness to God. In other words, if it is impossible to know any of the properties of an object until it is known whether or not that object exists, then the Ontological Argument is invalid by way of default. By why adopt such a criterion? Are there not some cases in which the properties of an object allow us to rule out its existence? For example, a four sided circle does not exist, because by definition circles have infinitely many sides. This example goes a bit too far for the Nominalist because such a philosopher would simply say that circles don't exist because of their property of abstractness. Thankfully, however, there do appear to be no reasons to apply this highly selective and restrictive lens of existentialism to problems in Philosophy of Religion or Modal Metaphysics.[77] It is important to note that in addition to there being nothing in the definition of the Present King of France that would allow us to deduce his baldness, there are no *Principles of Generation* that would allow us to deduce his baldness. Principles of Generation are terms that Walton used to describe rules of fiction in games of make belief. It is important to point out that these rules are not explicitly defined, but implicitly understood by the players in the game. Thus, if we imagined a present King of France, we might also imagine that he lives in a palace and not a shack on the side of the street. That assumption or question can make sense within the proper Principles of Generation, but it does not make sense to ask, whether he has hair under those principles, for that condition is ambiguous. Perhaps in a spirit of jest, the imaginer could say that the King is shaved by Russell's barber or perhaps more somberly, the imaginer could posit that the King has lost his hair from anger and depression. Regardless, it does not make sense to ask about the truth value of such a proposition when there is no way to know, by definition or by Principles of Generation, whether or not such a fictional

---

[77] I insert Modal Metaphysics because the denial of Essentialism entails the rejection of de re modality.

fact is true or false in the context of the game of make believe. If there was a clue in the definition or there was a clue in the Principles of Generation, then such a question could be reasonably asked and answered, but since such properties have not been explicated, they cannot be answered now. The key word here is *now*, given the extent of our knowledge. This is by no means a denial of the Law of Excluded Middle; it is just an admission of the faulty conditions that can be fixed upon a different definition of the King or a more extensive set of Generation Principles.

Obviously, the implications for this unique train of thought do not stop at novels, artwork, and film, but they apply more broadly to abstract object talk as a whole. For example, one could maintain with the Prop/Pretense Theorist that the truth value of certain laws or formulas in mathematics is prescribed to be imagined. If this is the case, then mathematics is true, but it does not carry with it any ontological commitment. Interestingly enough, this field of reason is a prime candidate for the influence of Pretense Theory. The formal way of inadvertently promoting Prop Theory in Philosophy of Mathematics is called Postulationalism. A postualtionalist takes the axioms of certain theories in mathematics as postulates whose consequences can be explored without actual commitment to the objective truth of these axioms. Indeed, there are a slew of philosophers of mathematics who maintain that there is a large difference between using the axioms of Set Theory and believing the axioms of Set Theory. Of course the alternative to this position, Deductivism, promotes the idea that math is what follows from the axioms, and the axioms are all true mind independent realities. Perhaps the most prominent Postulationalist in Philosophy of Math is Mary Leng. In her book, *Mathematics and Reality*, Leng argues at length for a fictional interpretation of mathematics that molds nicely with prescribing the axioms as postulates which are to be imagined instead of believed to be true. The

bulk of her content lies in rebutting the realist alternative of W.V.O. Quine, namely she argues virulently against Quine's Indispensability Argument. The Indispensability Argument is practically the go-to candidate for arguments in favor of a realistic interpretation of mathematics. Unfortunately, Leng notes that this argument was not fully explicated by Quine in his major writings. Of course this is not entirely his fault because the subject at hand is particularly elusive. In fact, Leng concedes in her section on Naturalized Ontology that, "Even for Quine, then, the project of uncovering our 'ontological commitments' from our theoretical utterances is rather less than straightforward than it might seem at first."[78] Being this as it may, Leng still tries to spell out what Quine might have said should he have argued at length for the linguistic indispensability of mathematics. She attempts this by taking certain commitments that were essential to Quine's beliefs and then combining them into a philosophical argument for realism. Her reasoning is as follows,

> "Putting together these various ingredients, then, we have the following indispensability argument for believing in mathematical objects:
>
> > P1 (Naturalism): We should look to science and in particular the statements that are considered best confirmed according to our ordinary scientific standards, to discover what we ought to believe.
> >
> > P2 (Confirmation Holism): The confirmation our theories receive extends to all their statements equally.
> >
> > P3 (Indispensability): Statements whose truth would require the existence of mathematical objects are indispensable in formulating our best confirmed scientific theories.

---

[78] Leng, Mary. *Mathematics and reality*. Oxford: (Oxford University Press, 2013), 39.

∴

C (Mathematical Realism): We ought to believe that there are mathematical objects."[79]

At first glance, a theist might obsess over P1 and reject it because it is entitled *Naturalism*. With more careful refinement, the title could be revamped with the label of *Scientism*. If this is the case, then the term *Naturalism* can be reserved for science that is done only in the natural world. If not, P1 of the indispensability argument might run into objections from scientists themselves. For example, there are some interpretations of Quantum Mechanics that involve a many worlds hypothesis. Surely Quine does not think that we should reject this theory purely because it goes outside of the natural world? Additionally, when String Theory was popular in the 1980s, it would have been odd for a Quinean to pipe up and posit its incorrectness simply because it brought in talk of other dimensions. Even with this slight amendment, one might further wish to add on the phrase 'about science' to the end of the first premise. For if P1 is left on such open ended terms, one may look to our best scientific theories to try to gain insight on the parsing of grammar. There is simply no reason to think that there is anything in the physical sciences that would lend knowledge of where to put a verb or how to place a predicate in a sentence. In fact, this linguistic knowledge is almost presupposed in the science classroom. If the proponent of the argument means the word "Science" to apply beyond the definition of "Physical Sciences" than in many cases Quine is just saying that we should look to our best confirmed theories in each field of reasoning to tell us what we should believe. If this is the case, then almost nothing has been argued that is atheistic or out of the ordinary at all. Put in its strongest form, Quine wants us to go to each field of study and used the most confirmed theories to help us figure out what to believe. If that is naturalism, the concerned theist should

---

[79] Ibid, 8.

feel free to place the word commonsense before the daunting term. However, with Leng's use of "ordinary scientific standards" it is unlikely that science is being used in the general sense. Thus negating P1 for the reasons above does not seem to be done in a state of panic or blanket irrationality. On either account it is my opinion that the Indispensability Argument could still stand without the strong validity of P1. We might replace strong P1 with the following weaker form,

> Weak P1- The statements that are considered best confirmed according to our ordinary scientific standards are reliable sources of truth.

Once done, we can move on to consideration of P2. Leng is gleeful to accept P1, but at P2 she is more hesitant to come to terms with the content of confirmation holism. By accepting P1 and holding to anti-realist Leng is forced to reject either P2 or P3 of the argument. Theoretically, one could say that there are some theorems of physics that commit us to the reality of mathematical objects but because confirmation holism is false, that commitment does not apply in those sentences. While this is an interesting approach, Confirmation Holism as a doctrine is untenable in the eyes of most philosophers. Thus it would be more honest for the anti realist to take issue with the stronger P3. P3 is rambunctious in its claims, and thus the strategies for avoiding it are numerous. One notable solution is posed by Geoffrey Hellman. Hellman maintains a type of modal structuralism under which numbers are taken as positions in a formal framework. Unfortunately this requires a deviation from the normal semantics of mathematics and logic, but the thought of construing numbers as pure unit positions is one which would send shivers down the spine of W.V.O. Quine. In my opinion, the most ruthless way to sink the Indispensability Proof would be to accept the normal semantics for Physical Laws, but still maintain that there are no axioms that commit us ontologically to the existence of abstract

objects. That way, even if there are certain axioms that are indispensable to our best theories of science, they have no ontological commitment to bother the anti-realist. An interesting strategy that has been pursued extensively by Bill Craig is simply questioning the validity of Quine's criterion of ontological commitment.[80] Without delving too deeply into different existence criterions, we can still take Leng's quotation of a basic example from Putnam about the reality of numbers and show that there are simple fallacies in the argument itself. That is, Craig's meta-level approach is interesting, but for purposes of length we will stay on the level of first order dialogue. Leng summarizes Putnam as follows,

> "Thus Hillary Putnam suggests that anyone who is tempted to assume that statements hypothesizing the existence of mathematical objects are inessential in empirical science should take a close look at Newton's law of universal gravitation."

From this quote it seems that Putnam thinks that because the numbers in the equation refer to forces in the actual world, each of these numbers is existent in a literal sense. This would be because they perform roles with true reference. For example, if the following proposition "The cup is blue" is true we would assume, given a correspondence theory of truth, that the cup exists and that the cup is blue. This analogy is a bit flawed because blue itself is usually thought of as an abstract object, but if blue is reduced to a wavelength that bounces off the cup the analogy would stand. Putnam, however, did not focus so much on reference as his did on the actual existence of the forces. By doing this he opened himself up to a fallacy of conflating truth with existence. The numbers in the law of universal gravitation do refer truly to forces in the universe and they do refer truly to specific amounts of each force, but the numbers themselves are simply mental constructs. They serve the drab purpose of clarifying the impact of

---

[80] See, inter alia, "Peter Van Inwagen, Substitutional Quantification, and Ontological Commitment." *Notre Dame Journal of Formal Logic* 55 (2014): 553-561.

each force to the human brain. They break down for bipedal primates the nature of such forces

and they do so by talking in terms that a hominid can comprehend. Surely it is natural and sane

to maintain that the forces in these equations exist, but the numbers that describe them do not. In

these examples, it is interesting to note the relevance of a pretense theoretical framework. Such

an application would beautifully make sense of pesky and/or troublesome axioms of physics.

For on this view, numbers in equations are just fictional constructs that relate certain lengths and

distances together in a coherent manner that is consistent in the physical universe. It is important

to note that fiction is not necessarily false, but prescribed to be imagined. Thus we are

prescribed to imagine the abstract relation of abstract numbers to physical distances and forces.

Perhaps it could be said that these numbers are helpful in imagining the intensity of a forces

prevalent in certain parts of the universe. In sum, tactics for trying to produce a realistic

interpretation of mathematics ultimately rely on making elements of the physical realm identical

to elements of the abstract realm. Since this is the case, these types of realism fail because of the

snappy responses issued by Pretense Theorists. Lest one should think that Leng only argued

against Holism, it is worth noting that she also incorporated the fictionalist alternatives of a prop

theoretical approach in her liturgy against Quine.

The only problem with taking Leng's objections and applying them directly to the

Transcendental Argument is that in this case Indispensability is not used to argue for the reality

of abstract objects. However, if one is to combine the Pretense Theory of Walton with the

implicit Postulationist tactics of Leng, one could devise a clever dialogue of objections to the

Transcendental Argument. Consider the following,

Pretense/Prop Theorist - Instead of actually saying that the Laws of Logic exist, we are just

asked by logicians to imagine a set of rules that stops objects from existing in reality. However,

there are not any real 'Laws of Logic' that carry with them ontological commitments. They

neither exist in or causally interact with reality. Again, these are simply concepts that are

devised to help us come to terms with why certain objects don't exist. For example, we might

say that "Square circles do not exist because the Laws of Logic do not permit them to exist," but

in actuality there are no such 'Laws of Logic.' It just so happens that reality is the way it is, and

it is not the way it is not. If reality was different, then perhaps the 'Laws of Logic' could be

different, but there are not actually Laws that have the ability to causally interact. To be clear,

there are, however, weak human brains that can't understand reality without imposing their

mental constructs onto it.

Possible Response - The problem with this objection lies in the relation that is being construed

by the Logical Laws to reality. The Laws of Logic do not represent reality in a dependence

related fashion. That is, the Laws of Logic are not dependent upon the events that occur in

reality. If they were, then reality could be different, and the Laws of Logic would then be

different. Instead, the Logical Laws are *counter-possible* statements. Their content cannot be

different than what it is. Reality cannot reflect a different truth-value than that which accords

with the Laws of Logic. It is important to note that this property does not hold with physical

laws. Laws of Gravity, for example, have counterfactual truth values, meaning that if reality was

different their truth value could be altered. Understanding the difference between these two

terms is crucial to understanding the crux of the argument. This distinction means that reality is,

by definition, a representation of the Laws of Logic, and the Laws of Logic are not a

representation of reality. Although it may seem counterintuitive, this truth is necessary. The

propositions A=A and so forth are not only true, but they must be causally efficacious in that

they bar certain types of objects from existing. It may seem like they are just prescriptions to

help us imagine why certain objects exist, but if that were the case, then there could be a circumstance in which the law could be prescribed differently to explain different circumstances. Again, a different prescription is impossible. Therefore, construing the laws as prescriptions of imagination is irresponsible. The relation is simply wrong when one tries to say that these Laws are just devices to help us understand how reality works. Reality is a device to show us how the Laws of Logic work.

Once this distinction has been spelled out, there is the looming question of what could guarantee the existence of a causally efficacious abstract object. A theist will say something along the lines of "Omnipotence is the only property powerful enough to bring about such a circumstance. Then they might carry this conclusion to say that the Laws of Thought reflect the nature of God. Since the abstract nature of God is immutable, so too are the Laws of Logic immutable and unchanging. Such details, however, are not essential to raising the question of how there can be a causally efficacious abstract object.

Postulationalist - While I would agree that the Laws of Logic are counter-possibles, so too are certain axioms of set theory, and I take all of these axioms in a Nominalistic fashion as postulates whose truth value is to be explored. How would you differentiate Laws of Mathematics, which I do not believe exist from Laws of Logic, which you claim exist?

Possible Response - First, it is worth noting that there are multiple logicians who have pointed out differences between laws of mathematics and laws of thought. In fact, the German mathematician Gottlob Frege said in the Foundations of Arithmetic that the laws of mathematics should be subject to nothing except Logical Laws. This primitive distinction should make us question whether or not there is really warrant for applying the arguments for nominalism in Set Theory to nominalism about the Laws of Logic. First off, it does not seem that all axioms of

mathematics are necessary or counter-posssibles. Consider the case, 1+1=2. This law is true in

this world because aggregates composed of 1 and 1 are equal to 2. However, what if there was a

possible world in which aggregates that housed 1 and 1 instantly materialized a third identical

object from the energy and matter around them? In this world 1+1 would equal 3. The act of

putting two objects into an aggregate would result in the appearance of a third object, so in this

world, 1+1=3. This would differentiate logical laws from mathematical laws by way of

necessity. In this respect, this axiom of mathematics is not a counter-possible. Secondly, it is

difficult to see what object that laws of mathematics prohibit from existing in reality. Perhaps

there are some axioms that prohibit the existence of certain sets, such as the Russell set, but that

problem is more based on Non-contradiction than actual rules in set theory. Moreover, in set

theory, Restricted Comprehension does not actually negate the existence of paradoxical sets; it

entails principles that negate paradoxical sets. Although this is slightly similar to an outright

denial, the point is that the axioms themselves are not doing the work. The logical entailment is

doing the work. In this way, maybe it is possible to be a realist about entailment. ☺

Postulationalist - Fair enough, but could the Laws of Logic, like the Axioms of Arithmetic,

serve as a sufficient explanation of themselves, since they are eternal and always true? Their

existence, therefore, needs no explanation because it houses its own explanation.

Possible Response-   While the Laws of Logic are eternal and necessarily true, they cannot serve

as explanations of themselves because there is nothing in their nature that explains their

combined properties of "causally efficacy" and "abstract-ness." The original question is "What

can explain the existence of causally efficacious abstracta?" If the Laws of Logic answer that

question, then there must be something in their nature that makes sense of that phenomenon. It

is unclear how the properties of eternality and necessary truth serve as explanations. At most

they say *that* these Laws must be true and exist, but they do not answer *why* it could be the case

that they are causally efficacious and abstract at the same time.

Postulationalist - Assuming that God's nature counterfactually grounds the Laws of Logic at

every point at which they exist, can you answer how that comes about? At this stage it seems

you are answering the question of why, but not how a causally efficacious abstracta can come

about.

Possible Response - By counterfactually dependent, I just mean that at every time or point at

which the Laws of Logic exist, if God did not exist at that time or point, the Laws of Logic

would not exist at that point or time. The *how* behind that counterfactual dependence could play

out in a variety of ways, but one possibility that might be in line with Biblical thinking would be

the following: In the Bible, God seems to have control over reality through the use of pure

speech acts. The best example of this is in Genesis where God says "Let there be light," and

light appears. There is no reason to think that the same type of principle could not hold true with

God's thoughts. That is, God can use his noetic capabilities to bring about the truth of certain

propositions. In the case of the Logical Laws, however, God does not necessarily bring their

truth value into existence. Instead, the Laws of Logic are just reflections of the thought schema

that God uses in his noetic activities. All of God's thoughts take the general shape of a Logical

form. In this way, if the Laws of Logic are reflections of God's thoughts, and God's thoughts

are causally efficacious, because He is omnipotent, then the Laws of Logic are also causally

efficacious upon and in reality. It is important to note that these Logical Laws are not guidelines

for God's thoughts. If they were, then God would be forced to think in a set way. Instead, God's

thoughts provide the content that shape the content of the Laws of Logic. This means that the

Laws of Logic are necessarily *ab alio*, as opposed to necessary *a se*. Also, remember that these

are God's thoughts in His causally efficacious abstract substance. Lastly, I would point out that this may be difficult to understand, because normally general laws spell out the behavior of particulars, but in the case of God, His particular thoughts form the shape of the generic Logical Laws. Again, it is because these Laws reflect God's thought that they are causally efficacious like God's thoughts.

Issues in Philosophical Theology

God and Logic

In this thesis, I have maintained implicitly that the Laws of Logic exist, and that it is the nature of God that counterfactually guarantees their existence. God's existence, I have argued, is that which allows and explains the existence of the Laws of Logic. This means that if God did not exist, the Laws of Logic would not exist. What's more, it means that if God did not exist, the existence of the Laws of Logic could not be explained. The reason I state this explicitly is because it is common for the antagonist of the Transcendental Argument to say that there are no explicit statements of what is being claimed. Although I am of the opinion that I have already backed these claims with sufficient arguments, I do not want people to leave without a feeling of full and honest explication. Thus, I will set aside the following pages to delve deeper into the reasons I have previously outlined. To complete this process properly, it is necessary to explore the content of three fields in philosophy. First, to make clear the claim that the Laws of Logic exist, theories of Counter-possibles will be outlined and distinguished from theories of counterfactuals. By doing this, it should become clear that the nature of the Logical Laws is quite different from the nature of normal abstract objects. Secondly, a relation of counterfactual theories to the existence of God will be discussed briefly in order to back the claim that it is God's nature that counterfactually grounds the Laws of Logic. Finally, the elements of time and causation will be incorporated to illustrate the effects of the Transcendental Argument on one's views of the relationship of God to Time. Because this last area is so fruitful for dialogue, an entire second section will be devoted, as an extension, in order to address other assorted philosophical issues that arise in the realm of Theology after one has assimilated the content of the Transcendental Argument.

Before beginning the conversation above, I would like to briefly rehearse the rational for

an anti-Realist (Nominalist) approach to abstract objects. This will give ample ammunition to

anyone who wants to deny the claim that the Laws of Logic exist. For a Nominalist, the idea that

there can be an existential status associated with the Laws of Logic is metaphorical at best and

repulsively arrogant at worst. Even a majority of Realist philosophers would most likely shrug

off this statement as similar in form to something like the claim that "Moral Laws exist." What

most academics mean by this normative statement is that "Moral Laws are objectively true."

Clearly, these two propositions are markedly distinct. At any rate, it would be a bit peculiar to

say that there are Moral Laws that have individual mind-independent essences in the actual

world. It is worth noting that even the few scholars who lean toward saying "Moral Laws are

mind-independent" are mostly just paying lip service. They have no intention of implying that

these laws *exist* independent of the mind. They simply mean that they are *true* independent of

the mind. But this seems obvious! Of course there are moral laws that are true whether or not a

specific Mind, A*, exists or a specific Mind, B*, exists. It is quite a different thing, however, to

say that these axiological codes literally '*exist*' whether or not there are minds. Because the

existential commitment to abstract objects is so radical, I take special effort to emphasize its

entailments and stand behind them when they are applied to the Laws of Logic. Remember, the

reason that I would not say that most abstract objects exist is because they lack *causal efficacy*.

Objects that exist must be able to impact reality. Additionally, these objects must impact reality

on their own accord. A prime reason for emphasizing this comes into play when realists say that

abstract objects exist because *thoughts* of nonexistent objects can drive people to action.

Because of my weak commitments to Physicalism, I would respond by saying that thoughts,

regardless of whether they are directed toward existent or non-existent objects, are reducible to

neurons firing in the brain. Obviously neurons are physical and therefore they are permitted to have effects in reality.[81] A second reason for adopting Nominalism about most of the members of the platonic host is that, in the majority of scenarios, reality is the arbiter of the truth value of abstract propositions. This means that abstract propositions do not arbitrate the truth value of events in reality, but it is events in reality arbitrate the truth value of abstract propositions.[82] Because reality can change the truth value of propositions by altering its existential status, there is no reason to assign a separate status of existence to propositions that do not contribute existentially to reality. It is at this point that the concept of counterfactuals enters the arena because discussion of changing the existential status of reality has begun. Thus before talking about the relations between counterfactual conditionals, Logic and God, we must understand some of the basics about these so-called *counterfactuals*. To begin this rather extended conversation, consider the following generic counterfactual statement,

C1: If reality had a different existential status, proposition P1 would be false.

While C1 may merrily obtain, no one (except perhaps Spinoza) would agree to the counterfactual below,

C2: If P1 had the value of 'true,' reality would correspondingly align with that value.

While C1 seems to be true, and C2 seems to be false, it is a bit of a mystery as to how we should know such a thing. It is one matter to say the proposition "My shirt is red" is true because in reality there is a truthmaker for my shirt being red, but what strategy could be used to assess

---

[81] For a deeper discussion of physicalism along with some of the reasons that I lean towards it, see Inwagen, Peter Van. *Material beings*. Ithaca: Cornell University Press, 2007. Trippett 2016 and Trippett forthcoming.

[82] Obviously this belief involves a weak commitment to a Correspondence Theory of Truth, but the reason that I will not re word the statement to avoid the weak commitment is that it is being used as a reason to adopt nominalism. If one disagrees with such a theory of truth, than that specific reason for adopting nominalism would fail. If that is the case, then there is one less objection to realism about the Laws of Logic.

whether a counterfactual or a subjunctive conditional is true? Interestingly, in philosophy, the truth value of counterfactuals is usually broken down into terms of more basic modal terminology. Broadly speaking, there are two main theories for the truth value of counterfactuals that prey upon the use of modality. The first was spelled out by David Lewis in 1973 and 1979.[83] Basically, Lewis stated that counterfactuals are the same as subjective conditionals and that the truth conditions for counterfactual statements should be given in terms of the Possible Worlds Semantics. To make sense of how the Possible Worlds Semantics could be applied to counterfactual statements, Lewis employed the notion of *'close-ness.'* To come to grips with this idea, consider the following conditional, C2,

> C3: If Archibald had killed his children yesterday morning, he would have gone to jail for
>
> 20 years.

For C3 to be true on a Lewis like account of counterfactuals, there must be a world in which Archibald killed his children yesterday morning and went to jail for 20 years, and that world must be closer to the actual world than any other world with alternative possibilities. By close-ness one should think of resemblance. The world must resemble the actual world in more ways than any other possible world. In addition to the concept of closeness, another point to take into account on Lewis' model is the inter-definablity of "would" and "might" counterfactuals. Lewis states that,

> "My interpretation of the would counterfactual as a variably strict conditional, together
>
> with my definition
>
> $\phi \Diamond \rightarrow \psi =^{df} \sim(\phi \Box \rightarrow \sim\psi)$

---

[83] See Lewis, David K. *Counterfactuals*. Malden: Blackwell, 2008. and Lewis, David K. "Counterfactual Dependence and Time's Arrow." 1979.

of the 'might' counterfactual in terms of the 'would' counterfactual, yield derived truth conditions for the might counterfactual as follows.

$\phi \diamond \rightarrow \psi$ is true at a world (according to the system of spheres $\$$) if and only if both

(1) Some ϕ–world belongs to some sphere S in $\$_i$, and

(2) every sphere S in $\$_i$ that contains at least one ϕ–world where ϕ & ψ holds."[84],[85]

In the same way that the operators for necessity and possibility are primitive in modal predicate logic, and thus inter-definable, so too are counterfactual statements that have the terms "would" or "might" in their consequent. For example, as stated above, C3 is categorized as a 'would counterfactual,' but if instead C3 was phrased as

C3*: It is not *necessarily* the case that *if* Archibald had killed his children yesterday morning, he would *not* have gone to jail for 20 years.

then C3 could be taken as a might counterfactual. The temptation after seeing the inter-definability of these two operations is to equate them as equal. However, just because a pair of primitive operators is inter-definable, it does not follow that they are identical. In different situations, the context requires the use of different operations. In the Transcendental Argument, the 'would' variant of counterfactual statements will be employed because it makes use of the necessity operator, and the necessity operator is needed when discussing the subjects of God and Logic.

The second modal theory of counterfactuals is very similar to the first and was proposed by Robert Stalnaker in 1968 and 1981.[86] Mainly, Stalnaker's account of counterfactuals entails

---

[84] Lewis, Counterfactuals, 21.

[85] To avoid confusion, the reader must understand that the symbols ϕ and ψ are not referents to any operation or axiom. They are simply generic symbols used in logic for the antecedent and consequent expressed in the implication, $\rightarrow$.

two substantive commitments, both of which Lewis rejects: The Uniqueness Assumption and the

Law of Conditional Excluded Middle. The Uniqueness Assumption is the idea that for any

antecedent in a conditional, there is a unique possible world where that antecedent is true.

Obviously, Lewis' strong leanings toward modal realism made him weary of this commitment.

While the basic idea is spelled out above the more technical side of Stalnaker's belief can be

stated as follows,

> "In addition to a model structure, our semantical apparatus includes a *selection function*,
>
> f, which takes a proposition and a possible world as arguments and a possible world as a
>
> value. The s-function selects, for each antecedent A, a particular possible world in which
>
> A is true. The assertion which the conditional makes, then, is that the consequent is true
>
> in the world selected. A conditional is true in the actual world when the consequent is
>
> true in the selected world."[87]

If one accepts the truth of the 'uniqueness assumption' they will most likely be

committed to the validity of Stalnaker's Limit Assumption. Briefly to state it, this is the belief

that there is, in addition to a unique possible world where each antecedent is true, a unique set of

possible worlds that are closest to the actual world wherein each antecedent is true.[88] Fair

enough; there is no intuitive warrant to reject this assumption. Surely upon the mantle-place of

---

[86] See Stalnaker, R., 1968. "A Theory of Conditionals" in *Studies in Logical Theory, American Philosophical Quarterly* (Monograph Series, 2), Oxford: Blackwell, pp. 98–112. Reprinted in F. Jackson (ed.), 1991. Page references to 1991. and Stalnaker, R., 1981. "A Defense of Conditional Excluded Middle" in Harper, Stalnaker and Pearce (eds.) *op. cit.*, pp. 87–104.

[87] Stalnaker, A Theory of Conditionals, p 103.

[88] To avoid ambiguity, I am not saying that there is one set of possible worlds that by itself comprises the truth value of every antecedent of every counterfactual. Instead I am saying that there is a one-to-one correlation in which one set of possible worlds has the value of 'true' for antecedent, A1, at each possible world in the set. Likewise, there is a different set of possible worlds that has the value of 'true' for antecedent, A2, at each possible world in that set. This can continue on with different antecedents, A3-AN, and different sets for as many counterfactual statements as there exist.

the possible worlds framework there is enough variety to house a unique world for each

antecedent where that antecedent is true in that world. What's more, it does not seem that

farfetched to extend the commitment to a one to one relation between an individual antecedent

and a unique *set* of possible worlds for that antecedent where in each possible world in the set the

individual antecedent is true. But wait, the fact that there exist such sets possible worlds for each

antecedent is not in itself the limit assumption. The limit assumption involves a set which is

closest to the actual world. It is at this point that David Lewis raises an objection with which I

agree. His well known score with Stalnaker's theory is that

>"we have no right to assume that there always are a smallest antecedent permitting sphere
>
>and, within it, a set of closest antecedent worlds. Suppose we entertain the counterfactual
>
>supposition that at this point there appears a line more than an inch long. (Actually it is
>
>under an inch.) There are worlds with a line 2" long; worlds presumably closer to ours
>
>with a line $1^1/_2$ " long; worlds presumably still closer . . . . But how long is the line in the
>
>closest worlds with a line more than an inch long? If it is 1+x for any x however small,
>
>why are there not other worlds still closer to ours in which it is $1+^1/_2$x", a length still
>
>closer to its actual length?"[89]

Lewis' objection is clearly a modified version of Zeno's paradox, except the objection does not

run into the problem of "real world" application because possibility by definition is not

constrained to the "real world." The reason that I flock toward Lewis' point is that I think that it

helps to show the breadth of the possible worlds framework. There is not enough discussion, in

my opinion, about whether the set of possible worlds is actually infinite, $\aleph_0$. To deny the limit

assumption, however, one only needs to show that the set of possible worlds with a true

---

[89] Counterfactuals, 20.

antecedent, A1, is potentially infinite, ∞, or approaching infinity. From the example above it seems clear that Lewis has met this desideratum.

The second commitment of Stalnaker's theory is one that can also be related to the uniqueness assumption, the law of conditional excluded middle. Formally, the law of conditional excluded middle states that,

Conditional Excluded Middle: $(\phi\square\rightarrow\psi) \vee (\phi\square\rightarrow\sim\psi)$

In English this means that it is either the case that if ϕ is true then ψ is true or it is the case that if ϕ is true then ψ is not true. At first glance, this may seem to be a reformulation of the Law of Excluded Middle and thereby true from definition. However, such a judgment would be hasty. For example, if ϕ and ψ are completely unrelated does the condition relation really apply? Clearly it is the case that either ψ or $\sim\psi$, but what sense does it make to say that "It is either the case that if I am wearing a green sweater, the empire state building will be destroyed or if I am wearing a green sweater the empire state building will not be destroyed?" Obviously, given excluded middle, it is either the case that the empire state building will be destroyed or it is not the case that the empire state building will be destroyed, but why invoke uncanny relations that can invoke the use of unrelated antecedents? The Modal Realist objected to this rule on the basis of his beliefs about might counterfactuals, but for the purposes of this thesis it is not necessary to unpack his misgivings about Conditional Excluded Middle.

In addition to using modal theories of counterfactuals to answer what makes a subjunctive conditional true, it is also important to use non-modal theories of counterfactuals to help spell out how their fundamentality works out in reality. To be clear, fundamentality is different from truth-functionality. One might say, for example, that *time* is a fundamental element of the universe because it cannot be broken down into simpler components or explained

in terms of more basic metaphysical tools. However, this fact does not stop explorations into

tense logic because there is still a need to spell out the truth conditions of temporal events. For

counterfactuals, this distinction entails that one could side with Lewis and company on their

notion of a 'closest possible worlds' approach to truth functionality, but then disagree with them

on their ideas of what is fundament. Understanding what is fundamental is important because it

affects the way one carries out her metaphysics. That is to say, it tells us what the most basic

building blocks are for constructing theories. Also, for the purposes of the Transcendental

Argument, exploring these possibilities will help us understand if the Laws of Nature are at

similar to the Laws of Logic.

For academics like Lewis and Stalnaker, the most fundamental facts when considering

counterfactuals are indicative conditionals. Indicative conditionals are easiest to explain when

broken down into their two components: sentences in the indicative mood and conditionals.

Sentences in the indicative mood are simply sentences that can be made into statements and

conditionals are simply sentences that take the form 'If A, then C.' Thus, an indicative

conditional is just a conditional whose antecedent (A) is a statement. Because of the role of

other conditionals that come into play later on, indicative conditionals are reserved for statements

about the way the world is in reality or statements about actual world. For Lewis and others it is

mainly because of the fundamentality of indicative conditionals that counterfactuals are

considered true based upon how close they are to the actual world. The idea is that the actual

world is just a composition of indicative conditionals or true propositions. While this thought is

novel and probably the most intuitive when talking about 'closest possible worlds,' there are

other alternatives. When discussing the fundamental with regard to counterfactuals there are

actually four main options in the running. Because of the breadth that these alternatives breed,

only two of the most prominent choices will be examined. Essentially, the four main choices for

the fundamental guarantor of counterfactuals are the following,

   1.) Nomism- the laws of nature are fundamental and ground indicative statements,

       counterfactuals, and causal powers.

   2.) Hypotheticalism- counterfactuals are fundamental and ground indicative statements, the

       laws of nature, and causal powers.

   3.) Neo Humeism- there are no grounds for counterfactuals in the normal metaphysical

       vocabulary. It is hopeless to look to the laws of nature, counterfactuals, or causal powers

       for help. Indicative statements ground the truth value of counterfactuals and other

       nominological and causal phenomena.

   4.) Powerism- Causal powers ground the truth value of indicative statements, the laws of

       nature and counterfactuals.

While some might find 1 and 2 interesting, I would urge independent study of these alternatives

to discourage this distasteful adoration.[90] As for the purposes of this thesis, 3 and 4 alone will be

analyzed because they have received the most prominent and serious support.

        The eighteenth century Scottish philosopher, David Hume, made a name for himself by,

inter alia, challenging the widely held belief in causation causal relations. While Neo-Humeists

would not wish to cast doubt upon the concept of causation itself, they would side with Hume in

neglecting the fundamentality of such event schemas. Although it may be counterintuitive to

neglect the role that causality plays in the world, it is not far from the norm to advocate that

---

[90] For a start see chapter 3 of Metaphysics: The Fundamentals by Robert Koons and Timothy Pickavance.
For a more in depth analysis see The Atlas of Reality forthcoming.

indicative statements, over causal powers, are the more fundamental elements of the universe.[91]

Obviously this claim would make more sense under a Realist conception of abstracta because if

abstract objects exist, there is no problem with saying they are more fundamental than the

average causal powers. Alas, however, under a Nominalist framework this idea would appear

humorous. It is the same as believing that a non-existent set of propositions is more fundamental

than *actually existing* causal powers. That being said, there are independent arguments, apart

from realist/nominalist commitments, that align with and against the truth of the Neo-Humeist

position.

The main argument in support of Neo-Humeism is basically an argument from

parsimony. In other words, it is an appeal to Ockham's Razor. Both ontologically and

scientifically, it is quite simply to posit the Neo-Humist view because only the qualities of

objects as they are arranged in space and time are considered to be necessarily fundamental.

From this combination spawn the laws of nature, and from the laws of nature spawn powers and

counterfactuals. The implications of such a short list basic commitments mean that there are no

looming problems with positing universals as the arbiters of dispositions and causal powers, i.e.

the pitfall of nomism, or with an infinity of hypotheticals as identical with or casually efficacious

over dispositions and causal powers, i.e. the pitfall of hypotheticalism. A minor objection to this

train of thought is that the argument from parsimony bars individuals from taking science

seriously as a body of knowledge that is representative of the actual world. On a Neo-Humeist

position the laws of nature are equivalent to the result of humans assigning generalizations and

propensities to the qualities of objects across space and time. This entails that there is some

degree of subjectivity that enters the arena when physicists formulate their "laws." For example,

---

[91] One might object to equating indicative statements with the propositions that comprise the actual world, but below definitions will be given such that this equation should make sense.

there is a possibility that some degree of social or psychological bias is present in the formulation of specific laws, especially since physicists do not have epistemic access to all of the indicative conditionals. However, scientists want to make the exact opposite claim. They want to say that because their laws are objective, they do not need access to all of the indicative conditionals to formulate certain laws of nature and that it is impossible for social and psychological biases to muddy the waters of this content. At best, primates can get close to something like the Laws of Nature on Neo-Humeism, but they cannot have the privilege of labeling their laws objective in the way that scientific realists wish to proceed. Even Rob Koons and Timothy Pickavance complain that "the fact remains there is still something anthropocentric (people centered) about the Neo-Humeist's account of the laws of nature."[92] But why is the human element, present in the natural laws, problematic? Is it not the case that if scientists discovered new indicative conditionals, that they would change the laws they once thought to be objective? Is it really true that an empirical law can be validated as absolutely true or necessary if it is not accompanied with some type of a priori foundation or if there is still empirical knowledge that is lacking? Are not the laws of nature just the brain's attempt to assign propensities to the natural world? It is interesting to note, that in conversation with some physicists I have learned that black-holes are defined informally as points in space where the classical laws of gravity break down. If the Laws of Nature breed objective knowledge, this should not be the case. Regardless of whether they are rigid or not, regardless of whether they are causal or not, humans are involved in the process of discovering the laws of nature. Thus, it would make sense to say there is some degree of variance that must be tempered out as new facts are acquired and new data is obtained. For purposes of clarification, the Neo-Humist is not saying that there are no Laws of Nature. She is

---

[92] Koons, Robert C., and Timothy H. Pickavance. *Metaphysics: the fundamentals*. Chichester, West Sussex, UK: (Wiley Blackwell, 2015), 57.

just maintaining that scientific realists who want to label science as objective knowledge may have failed to account for the vast amount of data they still need to acquire. There is a possibility their laws can change with new knowledge. Therefore it is conceivable to think that this minor objection to the Neo-Humist stance will ultimately run amuck.

Interestingly enough, stronger objections to the Neo Humist position make use of the notion of causation. Before understanding the first major objection from causality, there must be a distinction between two types of 'laws of nature': deterministic laws of nature and probabilistic laws of nature. Deterministic Laws of Nature mandate that given the presence of a certain combination of causes, certain events will occur. It is important to note that for a Neo-Humeist it is not necessarily true that the causal laws of nature are metaphysically necessary because she could simply say that causal powers are not fundamental. If this is true, then there could be different causal laws of nature. On the other hand, probabilistic Laws of Nature imply that given the presence of a certain combination of causes, certain events will most likely occur. Remember, a Neo Humeist must say that events occur because of a combination of qualities, spacetime and the *actual* laws of nature. Thus, if two causes are present and an event occurs, a Neo Humeist must say as a matter of necessity that both of the causes in harmony led to the event and that there can be no such place for a probability of that event happening less than 1. First off, the reason that there is no probability less than 1 is that indicative statements are taken as fundamental. Therefore the actual events of reality occurred, and the actual events of reality could not have not occurred. Again this is because they are fundamental. Secondly, the reason that there cannot be only one cause of an event when two causes exist is the deterministic laws of nature mandate the events spawn from the qualities of objects in space and time. Thus it must be the case that those causes both lead to the event in question. But surely there could be more than

one cause that could exist and the event in question could only have spawned from one of the

causes? As for the question of probabilistic laws of nature, this part of the objection is less

convincing. There has not been enough discussion in this thesis to make a decision on, for

example, which type of interpretation of quantum mechanics one should assume or whether it is

the case that necessitarianism or contingentism is true. These are both conversations that need to

be had in order to decide whether there can be probabilistic laws of nature.

The second objection from causation deals with the direction or the "arrow" in which

causal events occur. Before beginning, it is important to note that this is somewhat related to the

minor objection from scientific realism. Because of the advancements in Special and General

Relativity, post-Newton scientists and philosophers have come to the conclusion that

fundamental elements of the universe such as time and causation can run in more than one

direction.[93] In fact, because of these advancements in relativity there is somewhat of a looming

question as to how best to cut up the four dimensional Spacetime Manifold. It seems as if there

are an infinite amount ways to cut up the four dimensional block, none of which is more correct

than the next. More or less the same concept can be applied to the notion of causation. Humans

see the presences of causes and work forward to their effects. However, from a factual

standpoint causal elements can be stated in reverse. This is not commonplace, but it is possible.

Consider the following inverses: If there must be certain facts about the length of a shadow given

the height of a building, then there must also be certain facts about the height of a building given

the length of a shadow. Both of these scenarios make explicit use of causation without a

---

[93] To be clear, whether or not time is reversible depends on one's precise metaphysical commitments. For example, most forms of the A-Theory of time, including presentism, tend to rule out reversible arrows of time.

narrowing restriction to a single direction.[94] On the Neo-Humeist position, however, there must only be one direction: the direction humans experience- causes then effects. When indicative conditionals are taken as fundamental in this way there is not a good methodology to account for the second direction of causation. This lack in the Neo-Humeist position is absolutely devastating. It is akin to positing a metaphysical framework that is at best 50% accurate. The failure of indicative conditionals to account for reverse causation in this manner, despite the very presupposition of their fundamentality, garnishes strong warrant for rejecting Neo-Humism as an adequate account of counterfactual statements.

Once one has abandoned one's giddy ideas about indicative conditionals, the next possibility that appears tenable takes *causal powers* as the grounding for subjunctive conditionals. At this point, I want to take a moment to distinguish this form of Powerism from how the term has sometimes been used in the literature. It will occasionally be said that in order to be a Powerist one must believe that causal powers are as fundamental as Spacetime itself. For the most part that is a not a claim which I wish to construe. Obviously causation that is concrete cannot be more fundamental than Spacetime because concrete causation must take place in Spacetime. In the case of divine causation or causation that imamates from other immaterial entities, however, if such a thing is possible, than it would be more fundamental than Spactime itself. In the following conversation, one should read causal powers as referring to materially concrete causal powers, unless otherwise specified. In this respect, there are two main types of casual powers that come into play in the actual world: active powers and passive powers. Active powers take form when a causal agent, such as the wind or rain, acts on a patient such as rocks or

---

[94] For purposes of clarity this is not the same thing as retro-causation or causation occurring in reverse. All that is taking place is a statement of the facts in reverse. One could most definitely deny retro-causation, but come to agreement with this symmetry of causation.

dirt. Examples of passive powers, on the other hand, would be more like water boiling at 212 degrees Fahrenheit and freezing at 32 degrees Fahrenheit. Talk of causal powers in this way is often linked to talk of properties. A property of an object is just a bundle of powers that is conferred upon that object. The only question is "Are properties only bundles of powers?" Structuralists in this regard would answer in the affirmative whereas anti-structuralists would respond in the negative. I am of the opinion that properties are more than simple bundles of casual powers, but this qualm is a subpoint of a subpoint and to explore it in detail would be to diverge from the focus as hand and uproot the tip of the iceberg on an incredibly lengthy subject. Thus, for an explication of views that I lean towards see John Hawthorne's excellent article entitled *Causal Structuralism*.[95] Returning back, it appears that the reasons for accepting Powerism as a position are twofold: it bears intuitive warrant and it picks us up where Neo-Humism lets us down. Let us take these points in reverse order. On Powerism, causal powers are fundamental enough not to be restricted by any one direction of time or causation. Thus it does not matter whether one slices up a manifold in a certain fashion or spells out facts about causation in one way over another. Human fallibility is not a real issue. Moreover, because of some of the challenges that arise in Epistemology regarding the definition of knowledge as justified true belief, Powerism can better accord with the causal accounts of knowledge that fill the post-Gettier world. As for the point on intuitive warrant, it does not *generally* make sense for abstract objects to be more fundamental than concrete objects. In the case of indicative conditions, laws of nature, and subjunctive conditionals, each is a set of propositions which is itself abstract. In most instances, however, causal powers are considered concrete objects.

---

[95] See Hawthorne, John. "Causal Structuralism 1." *Metaphysical Essays*, 2006, 211-28. doi:10.1093/acprof:oso/9780199291236.003.0010.

The one regard in which I would separate myself from powerist thought is this: Powerists believe that the Laws of Nature are metaphysically necessary. This is to say, they could not be different than what they are now. Not only is this intuitively repulsive, but the arguments for arriving at such a conclusion are, in my opinion, puzzling at best. The way in which most powerists arrive at this conclusion is by using the distinction between intrinsic and extrinsic properties. An intrinsic property is a property that is internal to an agent or object whereas an extrinsic property is a property that one agent or object holds in relation to another agent or object. To give an example, the distance one mountain stands from another mountain is an extrinsic property. Mountain A has the property of "being x-many kilometers from Mountain B." Intrinsic properties of Mountain A would be geared more toward how tall it is, how rough the surface is around the peak, and whether or not it has cliffs. A Powerist sees the Laws of Nature as dependent upon the intrinsic properties of Causal Powers. The Laws of Nature are just rules that govern the interactions or extrinsic properties between casual powers. As we saw above, Causal Powers are conferred on objects and agents in the form of properties. Thus, when we examine the intrinsic properties of Causal Powers, we are really examining the intrinsic properties of properties, and the intrinsic properties of properties are essential, not accidental. This means they are the same across all possible worlds. There is no way for them to be different. Another way to think of this point is by asking "Can the property of being able to lift a rock ever confer the power of not being able to lift any rocks?" If the property of being able to lift a rock is instantiated and someone cannot lift any rocks, then they do not have the property of being able to lift a rock. The property may be able to change based on the weight of the rock, but the property that the property confers cannot change, less it be different property. As confusing as that sounds, I think there is a major flaw in that piece of argumentation. Different

universes could conceivably have different causal powers in the same way that we could posit

different metrics of time for different dimensions of reality. Almost everyone agrees that time is

fundamental, but not everyone means that *metric* time is fundamental. Perhaps prior to the Big

Bang, our universe exhibited a different sort of *quantum* time in which normal metrics simply

don't apply. Moreover, extension is thought to be fundamental in this universe, but our space

does not necessarily preclude the possibility of hyperspace. In this situation, the Laws of Nature

could be different if there were a different set or class of casual powers. Simply because causal

powers are fundamental it does not follow that only the set of causal powers in this universe are

fundamental. The whole idea, then, of a multi-verse on Powerism would necessarily consist of

different universes, each of which possessing a slightly different set of causal powers. Of course

I cannot practically give an example of what those type of casual powers would look like

because I do not have access to other universes, but am able to appeal possibility that is, in my

own opinion, very plausible. It is for this reason that I part paths with Powerism on the

metaphysical necessity of the Laws of Nature.

The only other point that I want to make before moving on to the relation of

Counterfactuals to God and Logic is the issue of free will. I have written about fee will

elsewhere, but the topic is enormously dense and thus it tends to pop up when one would least

expect it. I do not want the reader to walk away with the impression that since the causal powers

and the laws of nature are fixed, so too are the actions of human beings. Peter Van Inwagen runs

a similar version of this idea using the combination of the Laws of Nature and the fixity of the

past.[96] However, I take the Laws of Nature to be construed as limits on ability instead of

determinants. There is no way to answer all of the subsequent questions that will arise from that

---

[96] For more explication of the argument see Inwagen, Peter Van. *An Essay on Free Will*. Oxford: Clarendon Press, 2010.

assertion without deeply diverging from the issue at hand, thus I will leave that leaf unturned and move on.

In summary, the above paragraphs regarding subjunctive conditionals can be stated as "Counterfactual statements obtain their truth or falsity from an examination of the conditions of other possible worlds that are closest to the actual world. Additionally it is the causal powers of *this* universe that determine the content of the laws of nature, indicative conditionals and subsequently, counterfactual statements about *this* universe. Other universes may have different causal powers, different indicative statements different laws of nature and different sets of true counterfactuals." What this means for the theory of possible worlds is that for each set of possible causal powers that could obtain there is corresponding set of unique possible worlds that accompany or surround *that* set of causal powers.

It is at this juncture that we are properly outfitted to return to the discussion outlined in the first paragraph of this section. Namely, "How do God and Logic relate to reality?"

To easiest way to address this question is to start with the relation of Logic to Reality. We have already seen that this thesis upholds the radical opinion that the Laws of Logic exist, despite their abstract essence. The reason this belief is presented is because the Laws of Logic act in a causal manner that no other abstracta are able to parallel. Actually, there are two features of the Logical Laws that when combined lead to the conclusion that they exist: metaphysical necessity and casual efficacy. It is important to note that causal efficacy by itself is enough to ensure that an object exists. For the Laws of Logic, however, the attribute of metaphysical necessity helps to prove the causal efficacy of the Logical Laws. One might be tempted to return to the thought that the Laws of Nature can be construed as metaphysically necessary on some versions of Powerism. This might prompt them to try to run a Transcendental Argument from

the Laws of Nature. It is important to note that even if that can be done, it would not serve as a

parody, but rather as a sister argument to the argument from Logic. This is because there would

be yet one more set of causally efficacious abstract objects in need of explanation. Regardless,

one of the ways in which we see the metaphysical necessity of the Laws of Logic is when we try

to apply conditionals to their essence. When this effort is pursued we find that we must make

use of counterpossibles instead of counterfactuals to come to terms with their nature. While

counterfactuals are conditionals with false antecedents, counterpossibles are conditionals with

impossible antecedents. The reason that counterfactuals cannot be applied to Logical Laws is

that such an attempt assumes Laws of Logic can be invalidated. Since the Laws of Logic cannot

be invalidated, conditionals like

C4: If squared circles exist, the Laws of Logic are false.

are counterpossibles, and conditionals like

C5: If the acceleration due to gravity on the surface of the earth is not 9.8 m/(s^2), the

Laws of Physics are false.

are counterfactuals. From this it should be clear that the Laws of Logic are metaphysically

necessary, but we should also something about the relation of the Logical Laws to reality. If it is

the case that it is impossible to falsify the Laws of Logic, then no matter how reality changes, the

Laws of Logic cannot change. Thus it is not reality that arbitrates the truth value of the Laws of

Logic. Therefore the second point under the section on arguments for Nominalism does not

apply. Secondly, because the Laws of Logic are existential laws, they explicate a criterion for

objects that can exist in reality. That is to say, every existent object must bow to the mandates of

the Logical Laws before it can enter into reality. If these objects do not meet the logical

criterion, they cannot enter into reality. Thus the Laws of Logic are able to stop certain types of

objects from existing in reality and allow other objects to occupy existence in reality. If one is looking for a specifically causal word for the role of the Laws of Logic, constraint might come to mind. The Laws of Logic constrain certain objects from existing in reality and allow other objects to exist in reality. Thus the Laws of Logic are causally efficacious in a very fundamental way. Such a crucial role in the process of existence itself is very compelling evidence for the conclusion that the Laws of Logic exist.

At this point, there may still be a question lingering as to whether certain metaphysically necessary laws can be labeled as counterpossibles and then parodied in a Transcendental Fashion to reach the existence conclusion. For example, consider the following "causal" law of nature, N1, with the parodied counterpossible conditionals, C6 and C7,

N1: Acceleration occurs when a force applied to an object causes a change in the velocity of that object.

C6: If a force is not applied to an object, and the velocity of that object changes, acceleration does not occur.

C7: If a force is not applied to an object, and the velocity of that object changes, acceleration occurs.

Because of the counterpossible antecedent, both of the consequents in C6 and C7 follow logically in the conditional. There are two factors, however, that separate the counterpossibles about "causal" laws of nature from the Laws of Logic. First, notice the role of causality in these "causal" laws. Because of the use of such notions, one could refer back to the paragraphs above on Powerism. Basically, I maintained that even though causal powers are fundamental, it is conceivable to imagine a different set of causal powers. If this goes through, then a different set of powers could bring it about that there is a change in velocity without the direct application of

a force as defined under classical physics. Therefore, N1 cannot be necessary because the application of a force is necessary to change velocity. Leading into the second point, this means that N1 must derive its necessity purely from rigidified linguistic structures. Because we have defined acceleration as the conjunction of force application and change in velocity, if these two events are separated at all then contradictions arise and counterpossibles must be stipulated. This, however, is patently absurd for if there is not a necessary connection between the causal power of a force applied and a change in acceleration, why should anyone insist that there is still some degree of necessity hidden in the language? Surely it is enough to show the non-necessity of the casual powers in order to prove the non-necessity of the statement. Further there are no independent arguments for the attribution of linguistic necessity or the specific use of the word 'acceleration' as opposed to the use of another word. Because of the failure of N1 to attain any causal or analytic (definitional) necessity, it seems that it is inappropriate to parody such statement as necessary and then negate it to form a counterpossible and ludicrously conclude with lack of reason that therefore this "law" exists. Once more, if there was such a proof, it would not hurt, but only add to the retina of the Transcendental Argument.

Moving on, then, with the conclusion that the Laws of Logic exist, we must ask why it is the case that the Laws of Logic exist. What is the explanation of the existence of these causally efficacious abstract objects? It does not appear that the Laws of Logic can ground the truth value of themselves, for there is nothing in their nature that gives any insight as to why or how it could be the case that the Laws of Logic *exist* as causally efficacious abstract objects. At most the necessity and eternality of the Logical Laws provide us the knowledge *that* such objects exist, but they do not answer the questions of *why* or *how*. This is problematic because the Laws of Logic, unlike most existents have the property of extreme transcendence. This means that in

their order of magnitude they are above every concrete object. Thus a concrete object would have a difficult time grounding the truth value of the Logical Laws. Even the masses of objects in the Platonic Heaven are subjugate to the Laws of Logic. Some might ask about the impossible abstract objects, like squared circles and so forth, but these objects are not even able to be conceived in the mind because the Laws of Logic have dominion over them. The Logical Laws themselves are tautologies. They apply to themselves. For example, A=A = A=A. This leads us to conclude that most every abstract and concrete object is not high enough in its magnitude to account for the existence of such laws. The only property that could be higher than the Laws of Logic in its order of magnitude would be the omnipotence of a divine being. Omnipotence is the only property powerful enough to bring it about that such an enormously impactful and counterintuitive-ly existing set of Laws could come about.

While this might sound dandy upon first glance, I can hear the cries of an objection that is very natural. Even if one is to accept the counterintuitive existence of causally efficacious abstract objects, the Logical Laws, an appeal to God, who is greater in order of magnitude than the Laws of Logic, does not explain how the Laws of Logic can exist. The specifics of omnipotence are vague. Clearly, it has been explained that the Laws of Logic exist, and it has been explained why God is being used as the explanation of their existence, but how does God explain their existence? If this question is not answered then the non-theist could claim that they are no worse off from an explanatory position than the theist. It is important to point out that on terms of pure comportment of worldviews, the theistic position would be better suited at this point because he has an appeal to explanation where as the non-theistic options seem nil. Regardless it is proper to ask for the specifics of the explanation. On the version of the Transcendental Argument explicated in this thesis, the Laws of Logic are taken as descriptions of

the nature of God. Because God is logical by nature, the Laws of Logic exist at every time that

God exists. In fact, because God is immutable in his abstract trope, the Laws of Logic are

immutable in their content. At first, we might be tempted to argue counterfactually as I said we

would above that,

       C8: If God did not exist the Laws of Logic would not exist.

However, because we have seen that the Laws of Logic work best with counterpossibles, we

must work backwards and slightly amend C8 to be called a counterpossible instead of a

counterfactual. If this is the case, then the nature of God counterpossibly grounds the nature of

the Laws of Logic at every point at which it is true to say that there is anything that exists in

reality.

       As I stated above, the explication of this argument raises some interesting questions in

the realm of Philosophical Theology. Is the nature of God abstract or concrete, temporal or

timeless, et cetera? Essentially, the nature of God needs some explication if is going to be used

as part of the Transcendental Argument, but as promised, discussion of whether God is inside or

outside of time will be dealt with first. The question of God and Time notoriously raises age old

disputes over metaphysics, freewill, and foreknowledge, but for the purposes of answering the

question I will try to stay as close to the topic at hand as possible. From the writings of the New

Testament and other holy books, it would seem that God, if He exists, is inside of time.

However, as the Transcendental Argument was explicated above, God would have to be

construed outside of time, right? Let us first start by breaking down some crucial distinctions

and definitions. One would think that by using the word, *time*, there is a clear cut definition

shared by all individuals among different disciplines. Not even close. Because of such variance,

two concepts will be referenced separately when this thesis wishes to make use of the word *time*:

physical time and metaphysical units of time.

> Physical Time- synonymous with change and is the fourth dimension of the Spacetime
>
> manifold.
>
> Metaphysical Units of Time- abstract numbers that correspond to theoretical slices of a
>
> Spacetime manifold. (For example, "time t_2" will refer to the second slice of the abstract
>
> Spacetime manifold should there be an objective way to cut the manifold.)

As confusing as it may sound, it is important to note that the slices are static. They do not

change, but there can be *motion* at a slice in the same way that there can be velocity at point on a

physics graph. This brings us to the second set of terms that needs to be distinguished: *change*

and *motion*.

> Change- the progression from one metaphysical unit of time to the next along the
>
> Spacetime manifold.
>
> Motion- manipulation of physical matter in the universe.

For anyone who was still unclear perhaps this distinction made more sense of the lack of change

at one slice accompanied by the presence of motion. Now that we have defined some of the

terms around time, we should explain some of the notions around God and the Trinity.

Obviously, if God is Trinitarian, His relationship to time would be different than if He were

Unitarian. Although it is unpopular to use arguments to reach this conclusion, I believe that God

must necessarily exist in a Trinitarian Fashion. The scholars who argue for this view with the

most vigor are Van Til, 1955, and Bosserman, 2014. Van Til started the tradition of arguing for

the necessity of the Trinity, and Bosserman refined and reinforced the efforts he had begun. To

understand Van Til's point of view on this topic, it is necessary to understand a problem that has

been raised for realists in the history of philosophy, namely the so-called problem of the "one

and the many." For someone who says that abstract objects exist, it is difficult to explain how

these abstract objects interact with reality. After all, matter and non-matter are two different

substances. Therefore, it is puzzling as to how they can have any common ground on which to

overlap and subsequently interact. It makes sense to say that two lines intersect at a point, or that

two planets can collide on the same orbit, but what would it be for the abstract color red to exist

in the box or have its essence instantiated in the disc? The Greeks may have worded the question

most potently by asking how the abstract realm *arrives* in concrete reality. For proponents of the

Transcendental Argument, however, one can be a nominalist about nearly every abstract object

except for the Laws of Logic. This means that both every concrete object and the Laws of Logic

have one feature in common: existence.[97] Thus there needs to be a unifier or a causal bridge

between the two realms. Theists have the existence of immaterial entities to allow casually

efficacious abstract objects like the Laws of Logic to exist with and interact with the concrete

realm. This may sound like an exact restatement of the Transcendental Argument, but with more

explanation the application of the model of the Trinity will become clear. The reason that God is

able to act as a causal bridge between the abstract and concrete realm is that his very existence is

the "perfect harmony of unity and diversity in Himself."[98] God, remarkably similar to the

Christian conception, is one substance with a diversity of persons. The one substance is causally

efficacious and abstract, and the diversity of persons are construed as concrete particulars. In

this way God is able to act as the causal bride between the abstract realm and the concrete realm

---

[97] It should be noted that the type of existence that concrete objects exemplify is different from the type of existence that the Laws of Logic exemplify because the order of magnitude of the Laws of Logic is higher than the order of magnitude for most concrete objects. The only exception might be the concrete members of the Trinity.

[98] Bosserman, B. A. *The Trinity and the Vindication of Christian Paradox An Interpretation and Refinement of the Theological Apologetic of Cornelius Van Til*. (Cambridge, U.K.: James Clarke, 2015), xx.

and the problem of the one and the many is resolved. But why should it be the case that the diversity of the divine substance is three and not two? Perhaps the diversity could even be exemplified in ten, twenty, or thirty fold. The reason that Bosserman gives for this conclusion is as follows,

> "If the number of divine persons were decreased to two, then the relationship between those two persons would have to appear within an impersonalist void, since there is no third, divine and personal context to be found. If the number of divine persons were multiplied beyond three, then the relationship between any two divine persons would have to be facilitated by an additional "group" of divine persons (which is not, properly speaking, a divine person)."[99]

Bosserman's argument is very thought provoking, but perhaps in his reason for not multiplying beyond three, he should include a criterion of parsimony. That is, in metaphysical theories, the simplest formulation of a principle is the most attractive. So even though one could have a host of divine persons, with ten or twenty members, in the context of one member and avoid Bosserman's idea about multiplying beyond three, the most simple or parsimonious construal of this idea would be to have two members in the context of the third. This criterion of simplicity would make Christianity more favorable over some versions of Hinduism which say that there are infinitely many divine persons in one substance. The Christian version of the Trinity is simple enough to bring together the abstract and concrete realms, but it is not extraneous in so doing. Another addition to Bosserman's argument would be the necessity of a personal God over an impersonal God. When considering the reasons for positing three beings over two

---

[99] Ibid.

beings, a personal context in which to find the relationship of the two beings is only necessary if a personal existence is greater than a non-personal existence.

Under this conception of divine existence, it is now proper to turn to the issue of God and Time. The oneness or substance of God can be construed as a causally efficacious abstract trope. This trope would be casually efficacious because, the Laws of Logic are casually efficacious and the substance of God is higher in order of magnitude than the Laws of Logic. Therefore, it is not problematic to assign causality to the abstract substance of God. It might be said that of this divine trope, it is both outside of Physical Time and outside of Metaphysical Units of Time. On the other hand, the subsistences of the divine trope, the Father, the Son, and the Holy Spirit, can be construed as concrete objects, each of whom is obviously causally efficacious. This is a bit different from what the majority of theologians are willing to commit to in regards to the Father and the Holy Spirit. Most theologians would have the idea that both of these subsistences are immaterial. However, in the Old Testament, Moses was said to have seen the back side of God according to Exodus 33:18. Additionally, the majority of biblical scholars will interpret the tongues of fire over the heads of the apostles at Pentecost to be indicative of the Holy Spirit. While it is conceivable that the Holy Ghost could be immaterial, His effects were not. Thus it is also perfectly conceivable to say that the Holy Spirit, like His divine counterparts, is also concrete in His existence. If this is the case, all three of the divine persons are inside of Metaphsyical Units of Time. This is not to say that they are constrained by Physical Time in the same way that normal human beings are constrained. Perhaps they are able to experience the full existence of causal symmetry and travel through and manipulate the fabric of the Spacetime manifold itself. Regardless, each of them is inside of Metaphysical Units of Time. Before bringing this discussion to a close, I want to emphasize that the abstract substance of God is not a

heretical fourth person or essence. On this view, there is only one divine essence. God is one

substance, abstract and causally efficacious, with three subsistences, concrete and distinct.

Interestingly, Bill Craig makes an analogy between God and human beings that would be helpful

to paraphrase at this juncture.[100] Human beings, he says, have one substance and one center of

consciousness, but God has one substance and three centers of consciousness. While this is

helpful in analogizing the Trinity, it is dubious that Bill Craig would be willing to construe the

"one substance of God" as a casually efficacious abstract trope. For people who are very

concerned that this is a fourth person, I sympathize, but one should think of this causally

efficacious abstract substance as a type of glue that, instead of added to the Trinity, unifies and

connects each person in divine harmony. To be clear, I would still hold to the view that the

persons of the Trinity are each themselves proper constituents of divinity, but I wanted to make

clear the specific role of the abstract substance.

Before ending this section on God and Logic, I want to leave the reader with the

following reflections. It is common for opponents of the Transcendental Argument to say that

God is subjected to the Laws of Logic because He cannot change them. This is exactly the point

over which I would want no one to stumble. This thesis has argued that God by virtue of His

omnipotence possesses a higher order of magnitude than the Logical Laws. His existence is

superior because the Laws of Logic describe His nature. They are subordinate to Him. It is not

necessarily the case that God is not able to make A = ~A, it is just that the nature of God's

substance is logical and also immutable. Because the nature of God's substance does not

change, the Laws of Logic do not change. In this way, the Logic Laws are dependent on God,

---

[100] For more detail on his ideas see "A Formulation and Defense of the Doctrine of the Trinity." Unabridged version of Chapter 29 in Philosophical Foundations of a Christian Worldview. Downer's Grove, Ill.: Inter-Varsity Press, 2003.

even in their absoluteness, and consequentially questions of the sort "Can God make A = ~A?"

or "In a non-sentient universe (a universe with no minds) are the Laws of Logic still true?" are

counterpossibles. Interestingly, it is at this point that there appears to be some overlap with the

content of the Ontological Argument. The premises and conclusions below can be combined to

show how a theist can use an onto-transcendental approach to deal with the question of non-

sentient worlds apart from purely modal intuitions.

Premise 1: God is the greatest existent possible.

Premise 2: The greatest existent possible would have to exist in all possible worlds (have

the property of necessary existence) because if he did not, then objects that did exist in

every possible world would be greater than Him.

Conclusion 1: Thus God exists in every possible world.

Conclusion 2: Anything to negate the existence of God is a counter possible.

Premise 1: That which follows from a counter possible is contradictory.

Premise 2: Anything to negate the existence of God is a counter possible.

Conclusion 1: The negation of the existence of God is contradictory.

Conclusion 2: Non-sentient worlds are contradictory because they negate the existence of

God.

Conclusion 3: Non-sentient worlds are illogical.

Conclusion 4: The Laws of Logic do not allow non-sentient worlds to be true or logical

or exist.

Also, for good measure, I have attached a formulation of the Ontological Argument to answer

those who might object that the normal formulations confuse the actual existence of God with

the effort to conceive of God existing. The formulation below does not fall into such a confusion.

Premise 1: God is by definition the greatest being imaginable.

Premise 2: The greatest being imaginable would have to be greater than all existing and non-existing objects and agents.

Premise 3: If God does not exist in reality than all of the objects in reality are greater than God because they have more causal efficacy than Him.

Conclusion: Therefore the definition of God must entail that he exists in the mind and that he exists in reality.

Property Ascription

After exploring the relationship between God, Logic, Time and the Trinity, the philosophical theologian may ponder about the association of the classical properties with this revised nature of God. That is to say, they might try to decide which properties are supposed to be categorized under the casually efficacious abstract trope and which properties are supposed to be categorized under each of the concrete particulars of the Trinity. The delegation of specific powers to specific parts of God is a massive project to undertake, but given the information above it is at least noteworthy to attempt to resolve the properties that could be considered troublesome in a "Transcendental Theology."

Before engaging in specific property ascription, I want to make clear some of my methodological commitments and presuppositions. This is so that they are out in the open and no one feels that I am trying to sneak in some underhanded doctrines of God. My commitments will be labeled from strongest to weakest,

1.) The Coherence of Theism- In order for theism to be true, all of the attributes of God must be coherent.

2.) Physicalism- There is no such existent as the soul. Humans are completely material. At most there could be allowed a hylomorphic dualism, in which the soul is taken as an abstract object which somehow is able to cause events to occur. This causation, however, is not well defined. Thus, physicalism is the view that I wish to espouse.

3.) Eternalism- the universe has had no beginning in time, but it has had changes in the type of time that it exudes. At the Big Bang, for example, thermodynamic expansion begun and the universe move from one type of time (most likely a quantum time) to the metric time we observe today.

4.) Annihilationism- Instead of going to hell after death, the bodies of deviant humans decay. At the second coming of Christ, deviant humans are given bodies that mimic the current state of their current body at death and have a choice to accept God. If they do not accept God, then they will de-evolve until they disintegrate and ultimately go out of existence completely. However, they can choose to accept God at any point along the de-evolution process.

5.) Molinism- Affectionately called theological compatiblism, the belief that humans possess freedom of the will, but that the actions of every human are known exhaustively by the Father. It is not really determinism because the determinant of human actions is considered to be humans themselves.

Once these rather controversial assumptions are understood, the rest of the radical beliefs which I push will not be taken with such shock.

First, let us try to better understand the divine trope. As shown in the previous section, the divine trope is both abstract and causally efficacious. Additionally, I will argue that the divine trope, and only the divine trope, is omnipotent. The reason for this is that it is impossible for multiple persons to be all- powerful. If were true that there were multiple omnipotent persons and their wills diverged, there could be divergence over logically exclusive options. Omnipotent person 1 could make it the case that A and omnipotent person 2 could make it the case that ~A. Obviously, however, the Laws of Logic exclude the possibility of both A and ~A existing simultaneously. Thus, multiple persons cannot be omnipotent. It might be objected that the three persons of the Trinity will never have divergent wills, so at most this argument should only be used against polytheists. For this objection to go through, there must be no logically possible event over which the persons of the Trinity could have different opinions. From the biblical data this does not seem to be the case. Consider Mark 26: 36-46 where Jesus is in the Garden of Gethsemane pleading with the Father for another way of achieving atonement than death on the cross. Even if it is the case that there is no logically possible event over which the desires and attitudes of the persons of the Trinity could diverge, I am committed to the idea that it is the divine essence of the Trinity that breeds omnipotence, not any one member of the Trinity. I believe this because if one member of the Trinity could be the sole bearer of omnipotence, there would not need to be other members of the Trinity to constitute divinity. The one member that is omnipotent could be divine alone. Therefore, since it is the case that not all of the divne persons can be omnipotent together, and not one of the divine persons can be omnipotent alone, their plurality must constitute omnipotence. That is, omnipotence must be the result of the three divine persons in the abstract trope. This is important point because we have already established that divinity must be omnipotent and that divinity must be Trinitarian. By

using these arguments on the attribution of omnipotence we are simply refining possibilities for how divine all power works out. A second point to note about the trope is that there are some properties that it must lack because it is not an agent. The trope is not omniscient, absolutely benevolent, impeccable, or impassible because these properties involve some type of action or inaction and action cannot apply to an abstract object. Properties that can apply to trope are immutability, simplicity, timelessness, in-corporeality, *a se*, necessary and transcendence.[101]

Next up, would be the Father or the first person of the Trinity. I would point out that this label is a bit deceiving because there is really no order among members of the Trinity. The divine essence they share makes each of them equal in existence. They are the highest existence, above all other actual and possible existents. The Father is concrete, casually efficacious, corporeal, temporal, mutable (has the ability to change), immanent, absolutely benevolent, impeccable, and impassible. However, His impassibility can only be construed prior to Jesus' death on the cross. From the Father's concreteness, it just follows by necessity that He be casually efficacious and corporeal. From his temporality, it follows that He is mutable and immanent (personally in reality) and from His impeccability, it follows that He is absolutely benevolent. It is also important to point out that the Father alone is omniscient for He is the only member who is an agent and who knows the time and place of the second coming of Christ. This proposition is not known by the other members of the Trinity. Thus, they cannot technically be omniscient. Lastly, the Father is necessary in that He must exist, but it is also the case that He is dependent on the other members of the Trinity and the other members of the Trinity are dependent upon Him. This means that He is technically not necessary *ab alio* because He is not

---

[101] By simplicity, I mean the classical definition of no body, parts or passions. By no parts I simply mean that the abstract trope is not and cannot be a part of anything. It is not necessarily indivisible, it is just not attributable to a part of a bigger whole because it is actually infinite in its order of magnitude.

dependent on a *thing*. The members of the Trinity must be necessary *ab divino* because they are all dependent on the divine persons that constitute the divinity. The divinity as a whole, however, is completely independent. That is why the totality or the abstract trope is labeled above as necessary and *a se*.

The Son, or as I say reluctantly the "second" person of the Trinity, shares many of the attributes with the Father. He too is concrete, causally efficacious, corporeal, temporal, mutable, and absolutely benevolent. The other attributes, however, need more explanation. From a philosophical and theological perspective the most interesting feature about Christ is His incarnation and the effects this may have upon the atonement.[102] I believe that there is a major flaw with the way in which people view the incarnation. They think of it as the second person of the Trinity becoming completely human while remaining completely divine. While the wording of that statement is correct, the ideas that accompany it are often incorrect. People view the humanity of Jesus as a fourth person of the Trinity in the same way that some people might mistake the divine trope for a fourth part of the Trinity. Wording that seems to convey the idea in a less confusing format is,

> "the divine second person of the Trinity took on the property of humanity. This property involved bodily form or a human body. The property of humanity is just another property of the second person of the Trinity. It can be listed among the properties of concreteness, casual efficacy, and so forth. Therefore the incarnation was just when the second person of the Trinity took on the property of humanity."

This wording entails that there is only one second person of the Trinity. It is just that this person possesses new attributes after the incarnation. But if the second person of the Trinity is already

---

[102] I will barely be addressing the atonement, but if one is interested in this topic they should see Font 2017.

concrete, what does it mean for him to take on humanity? Obviously, if Jesus exists like a disembodied soul then it makes sense for Him to take on a human body, but if He is concrete at all times, how does He specifically take on humanity? The best solution that I have heard to this problem is to say that the pre-incarnate Jesus and the post-resurrection Jesus are the same. When Jesus willingly takes on the property of humanity, He remains divine, but He also lowers His physical form to human form so that He may carry out the divine will. It seems as if this entails that Jesus would be only human at this point, but that is not correct. Under a modified version of Apollinaris' model of the Incarnation, the second person of the Trinity could be completely human in most of his physical form with the exclusion of his physical subconscious. Jesus would retain His full divinity in this physical subconscious and become fully human in the rest of His physical body. This is a radical conclusion based off of a modified form of heresy, but until another option is offered, it is the best way that I know of to combine the commitments I outlined in the beginning of the section. Another issue that arises in the incarnation is that depending on the view of the atonement that one adheres to, the impeccability of the Son may be difficult to construe. Within the context of a Molinst framework, however, it appears to be the case that the second person of the Trinity would not allow his humanity to be placed in situations under which he knew that those molecules would succumb to sin. Interestingly, Thomas Flint has taken this idea to lead to some radical conclusions under which the second person of the Trinity did not have to take on the particular human form that he assumed. In other words, it is logically possible that the second person of the Trinity could have acquired different molecules and thus became a different human being. After all, on physicalism, humans are just the aggregates of very specially arranged high functioning and firing molecules. There seems to be nothing

special about the second person of the Trinity taking on one set rather than another.[103] On this

radical commitment Flint notes,

> "As I see it, Molinism forces upon its adherents no particular answers to these questions.
>
> But it does, I think, open the door to certain responses that might initially seem rather
>
> radical. Indeed, 'open the door' seems to me too feeble a metaphor. More apt would be a
>
> picture of one swimming in a river where the current will naturally take one downstream
>
> unless considerable effort is expended to go in some other direction. If the river is
>
> Molinism, the flow, it seems to me, is decidedly toward those radical downstream
>
> waters."

Whether or not the view of Flint is true, it does introduce some interesting dialogue into

the forum. On a separate note, a way in which Jesus may be different from the unity of divinity

as seen in the Trope is that He is passible or He is able to suffer. Once incarnate, it is clear that

Christ is able to suffer and die as observed from His persistence through the cross. This property

does not appear problematic. There is, however, one looming question about the interplay of

certain commitments and I have saved it as the last point on the Son. This is a natural objection

to which I will give an extremely radical and wholly divergent answer. The natural objection is

this: "If it is the case that Annihilationism is true, then when Christ dies on the cross his

consciousness must cease to exist, but if it is the case that divinity must necessarily be

Trinitarian, then when Jesus' consciousness goes out of existence, so must God. If God does not

exist, then Jesus cannot be brought back from nonexistence." This is a very well placed

objection because once Christ loses consciousness, not only does it seem that He is no longer

---

[103] For a criticism of this view see Craig, William Lane "Flint's Radical Molinist Christology Not Radical Enough." Faith and Philosophy 23 (2006): 55-64. By this footnote I am just showing that there are criticisms, not necessarily that I agree with such criticisms.

human, but it seems that the divinity of the second person of the Trinity also ceases to exist since there is no subconscious in existence either, and Christ's divine properties existed in the subconscious. On this note, however, I want to offer the very counterintuitive possibility that even though the humanity of Jesus and almost every property of the second person of the Trinity ceased to exist when the consciousness of Jesus went out of existence, the divinity of the second person of the Trinity was still able to be grounded in the molecules that were constituent of the human body of the Christ. I am aware that for the three days when Jesus was in the grave, His human body may have started to decay. I still hold that the existence was sufficient to ground the divinity of the second person of the Trinity, even though this second person lacked literally all of His other properties. If this is right, then there is not a problem with Trinitarian divinity because the second person of the Trinity was still able to ground his contribution to the divine Godhead in the molecules of Jesus' dead body. All that is necessary for Trinitarian divinity is that there be three personal instances of divinity grounded in reality. It might be objected at this point that the mere molecules of Jesus' dead body are not sufficient enough to constitute personhood. However, because of my commitment to physicalism, Jesus' dead body would still count as a person because it has all of the same molecules. I follow David Chalmers in saying that consciousness is just a matter of organization of molecules in the brain. Thus when Jesus died, this organization was broken, and His consciousness did not continue to exist. Therefore, His humanity via rationality ceased to exist and all of His divine attributes that required the use of agent causation ceased to exist. The only physical difference, however, is that the consciousness was not intact for three days because of the arrangement of neurons. At the end of the three days the Father rearranged the neurons and the second person of the Trinity regained consciousness. However, His neurons were rearranged as they were prior to the incarnation.

Thus, Jesus post-resurrection is the same as Jesus pre-incarnation. I completely understand that this is a very radical viewpoint, but if it is true, it has enormous implications. If true, it means that God, the ultimate form of existence, is able to conquer nonexistence by taking it head on through the second person of the Trinity. It means that His omnipotence is so grand that it can subsume a part of the divinity to nothingness and defeat nonexistence in its own turf. It is the ultimate personification of a defeat that should be impossible to carry out. In the end, the purest form of existence wins, and God is the ultimate champion over sin and reality and non-reality. This means that there is a philosophical as well as a theological element to the incarnation. Once more, I grant that it is a radical view, but I emphasize it because the implications are enormously strengthening for the grandeur of omnipotence, and it is the most coherent way I know of merging the commitments in the beginning with the Godhead.

Lastly I would like to try to apply these ideas to the existence of the Holy Spirit. From the above study it is reasonable to assume that the Holy Spirit is concrete, causally efficacious, corporeal, temporal, mutable, absolutely benevolent, impeccable, immanent and necessary ab divino. The only attribute of the Holy Spirit that may need a small amount of explication is His passability. As stated above, the Holy Spirit is able to make our requests known to the Father within the context of all of the facts and all of human history. He is able to fit our struggles into the wider narrative of humanity and "groan" for us. At least this is what I have been told that Romans 8:28 means to theologians. If this is all true, then the properties ascribed to the Holy Spirit are much less objectionable than the properties ascribed to the other two divine persons. The only problem that people may have is to overcome is their prejudice that the Holy Spirit is necessarily incorporeal. At very least this may play in philosophically when some Christians use the term, the Holy Spirit "dwells" in their heart. This can be semi-problematic because they are

most likely attributing this "dwelling" to dwelling in a soul. Nonetheless, the problem is one with the doctrine of being in more than one location at once or omnipresence. Perhaps the divine persons could co-exist with a multitude of spatial points should they be incorporeal, but the corporeality of the Father, the Son and the Spirit should restrict them to specific points in space, right? First off, I would be apt to point out that most theologians who say God is omnipresent do not mean that He exists at every point in space or that He co-exists at every point in space because this would invoke a type of Pantheism or Panentheism. Instead, most theologians either mean that God is transcendent of space and therefore is able to access every point in space or simply that He is aware of and has causal efficacy over every point in space. Because I have already addressed the properties of immanence and transcendence, I will opt for the second redefinition of omnipresence. Under this account, the omnipresence of the divine persons entails that they are aware of and have causal efficacy over all points of space. For purposes of salvation, God has allowed humans to have some amount of freedom of the will by organizing their neurons in such a manner as to give them control over certain molecules in space. When humans accept the Christian doctrines and wish to "receive the Holy Spirit" they are really just freely giving control of the molecules that occupy certain points of space back to the divine persons. By allowing the divine persons to have control over their lives, they receive salvation from annihilation.

Upon reaching this point in the thesis, it is fairly likely that the readers will be suffering from "radicalization overdose." Let's face it, it is very rare for people to talk of divinity in this way, jumping from doctrine to doctrine with each leap becoming more vivid than the last. Part of the reason that these alternatives are unorthodox is that they cauterize the combination of theses laid out in the beginning. The other reason that there is some nuance is that these

doctrines have not been widely discussed in popular and academic forums; thus there is some leeway as to how the perfect stance should be articulated. That being said, if the above arguments are seen as philosophically and theologically acceptable, then it would be less warranted to say that they are invalid simply because they do not cohere with our first intuitions. In fact, it would almost be natural that the solutions to problems not discussed would appear a tad extreme. As such, the primary purpose of the above ideas is to articulate a "transcendental theology" that comports with the coherence of theism. Notably, however, this is where I part paths with Van Til. He would have tried to reduce all of the attributes of God to logical paradoxes which are present only to illuminate the absurdity of the human situation. To most people this is a ludicrous attempt to cover up the fact that theism is not coherent. In my opinion, however, Van Til reads like a smart theologian who was cut off from the fruit of the analytic tradition. A theist without such benefits might see the flaws that every philosopher prior to 1960 saw with the classical proofs for God's existence and move on to another construct in support of theism. Because no other constructs existed, this person would try to construct their own. Van Til's attempt was the brilliantly structured Transcendental Method. This massive combination of complex topics involves everything from the linguistic elements of presupposition to Strawsonian transcendental arguments, and even touches of the Dooyeweirdian advancements to the traditional Kantian schemas. From any angle the ingenuity to construct such a position is a major accomplishment and should be applauded for its conceptual effort. However, as I stated above, the part that is objectionable is the notion of paradox. While some feel that it is right to forget Van Til's business about the ontological Trinity, my experience tells me this seemingly absurd offense may, in time, be forgiven. Van Til's notion of paradox is simply an attempt to skirt an admittedly difficult series of problems. I am assuming that if these paradoxes could be

answered with logically coherent thought processes, Van Til would cease to call them

paradoxes. On this ground, it is proper to reject this notion in favor of the analytic-type solutions

offered above. The one respect in which he highlighted a truth about dealing with these

absurdities is that most philosophers appeal to heresy to fix them.

Objections from Quantum Mechanics

The Phenomena

A final posse of objections that might be leveled against the Transcendental Argument stems from the advancements that have taken place in Quantum Mechanics over the course of the twentieth century. It is argued that some of these developments have the potential to cast "major doubts" on the validity of the Laws of Logic. The superposition of electrons in the Double Slit experiment, the spooky action at a distance that occurs when particles become quantum entangled, and the leap that electrons take from one orbital to the next inside an atom all present unique challenges to how people normally apply common sense to reality. In extreme cases they are even used to bring contention to the very Laws of Thought which logicians have claimed to be crucial for philosophical well-being.

To maintain an attitude of intellectual honesty, I want to make it clear at the outset of these sections that I am not an expert in quantum mechanics. I have not devoted the same amount of time and study to the philosophy of the physical sciences that I have to logic, formal semantics, and epistemology. That being said however, I am by no means a novice or ignorant of the claims that are being presented in these types of arguments. There are just certain issues that one does not need the brilliance of a Schrodinger or a Born to sort out. For example, if we were dealing with classical physics, and I asked, "How many rotations does a ball make in a minute if it rotates at 10 rpms?", it is likely that no one who knows that rpms mean rotations per minute would hesitate to answer "10!" However, if someone did not understand that rpms is an abbreviation for rotations per minute, perhaps they thought it meant radians per minute, they might start up with all types of crazy conversions to see just how many radians per minute the ball rotated. Similarly in quantum mechanics there are some problems that have simple

solutions, but have been dressed up in extravagant verbiage and misleading terminology. Because of this, there is a craze that has taken hold of popular level physics which fanaticizes scientific claims and blows them out of proportion. What's more, there are brilliant physicists who have never taken a course in philosophy or language and tend to say things that they do not mean or fully understand. They grasp the content of their equations, but they do not understand the implications of their language. For example, when particles collide and turn into waves they do not "go out of existence," they change state. Actually from a more technically correct perspective, they change the amount of energy they contain. Moreover, in relativistic quantum field theory there is no "law" that states particles will come into and go out of existence *ex nihilo*. It just so happens that physicists in the last half century have posited waves as the fundamental elements of the universe. This means that the arrangement of such waves determines the amount of particles in the universe. If the waves form a vacuum state, they have been arranged such that no particles are formed. If the universe changes out of a vacuum state, however, the particles do not "pop into existence" out of nothing. It is just the case that there is a different combination of pre-existing waves where a different arrangement yields different numbers of particles. In these scenarios, there are no creepy violations of our prized metaphysical principles at play.

From these popular level kerfuffles, we should not conclude that there are no serious perturbations to the common sense when quantum physics is spelled out correctly. There are some issues, such as the measurement problem or the correct interpretation of quantum physics that require serious thought and may not have easy answers, but I still stand by the belief that on the popular level it has been all too easy to make people with absolutely no expertise in a field believe that certain features of reality act in ways that are counter-logical.

Setting aside simple misunderstandings, we may turn to other developments that require more attention. Someone who raises objections from Quantum Mechanics might realize that the fundamental existential principle "ex nihilo nihil fit" (out of nothing comes nothing) is preserved, but they might still have objections to Non-Contradiction. To understand their qualms completely we need some background about the swamp from which they arise.

There is some debate as to exactly when the study of Quantum Mechanics began, but one of the first observations that sparked interest in the field revolved around the peculiar behavior of light when viewed under certain conditions. The idea is that when gas is heated in a tube the light that emanates from the tube makes lines on the wall when it passes through a prism. Scientists had argued for decades over whether light was a particle or a wave, but this behavior was difficult to comprehend on either view. To help make sense of the issue, Niels Bohr, a 20th century scientific radicalist, postulated a quantum model of the atom under which light separated into lines because electrons emit specific wavelengths which correspond to different colors when they fall from an orbital with higher energy to an orbital with lower energy. Bohr argued that when a gas is heated, the electrons are agitated and consequently "jump" from one orbital to another orbital. If the electrons move to an orbital with higher energy, no wave is emitted. However, when the atom looses energy, the electrons move to orbitals with lower energy and emit the excess energy in the form of a wave. Because the wavelength emitted is of a certain form, there will be very specific colors that appear in different lines on the wall. Bohr also argued that the reason that the electrons could mysteriously "jump" from one orbital to the next without traveling through space is that the electrons are *quantized*. This means they can only exist in certain states. In other words, if energy can only be broken down into a smallest chunk, then there are only specific states at which electrons can exist. The

different energy levels of these electrons correspond to the different orbitals around the nucleus. The technical name for the "jump" that electrons make from one orbital to the next is called the *quantum leap*. While the quantum leap has been construed as an odd idea in quantum mechanics, there is nothing conceptually deviant about this principle. There are only specified states at which electrons can exist when they gain and lose energy because energy itself has a smallest unit. Imagine filling up a cubical tower that is 1"x1"x12" with cubes that are 1"x1"x1". With regard to the dimension of height, blocks can only reach whole number values ranging from 1" to 12". The state of the blocks is fixed such that no combination of blocks can ever reach a height of 6.5". In this scenario, we would never say that a 7" tower goes out of existence and becomes a 6" tower when a 1" block is removed. It just so happens that a discrete amount of wood was separated from the 7" tower and only 6" of wood remained. In the same way electrons exist on different energy states, when a fixed amount of energy is separated or added to them. Therefore they jump from one energy level to the next.

The second phenomenon that deserves attention in the study of quantum physics is the results of the famed Double Slit Experiment. First tested by Thomas Young early in the 19th century, the Double Slit Experiment was crucial in determining how scientists viewed the nature of light. Before Young, academics like Descartes and Newton had adhered to a corpuscular theory of light under which light was composed of tiny particles. However, the implications of this experiment made it hard to hold to such a belief. Instead, light was viewed most fundamentally as a wave. The way the experiment worked was that electrons were shot through a gold-coated sheet of silicon that had a double slit and then onto the backstop of a wall. Interestingly, like in the case of the light on the wall, the electrons formed straight lines on the wall on the other side of the double slit. The only problem is that electrons are clearly particles.

To have the "straight-lines phenomenon" we need a wave. Therefore it is not surprising that the famous explanation of this occurrence is called wave-particle duality. Before this explanation came about, however, some scientists tried to say that electrons were just smeared out into waves when they were in motion. If that is right, then the peak of the waves is just where most of the electron is located. To understand how wave-particle duality differs from this idea, we must understand Heisenberg's Principle of Uncertainty. This principle states that it is impossible to know both the position and speed of an electron simultaneously. This means that when an electron is in motion, the peak of the wave is not where most of the electron is located because knowledge of such facts is not scientifically measurable. Instead, it corresponds to the most probable position of the electron if the electron was observed. In this context, the term observed is not synonymous with the act of looking at event. Instead the act of looking comes into play after the wave hits the back of the wall. When the wave hits the back of the wall, the electron materializes at a position and can consequentially be observed by the human eye, but the second that the electron materializes after hitting the back of the wall, it is "observed" by the wall. Under this theory, the electrons behave like particles when they are not in motion, but as soon as they are shot out of the gun their trajectory is a wave whose points each correspond to a different probability of the location of the electron. The big question/debate that arises from this is whether the wave is synonymous with those probabilities or whether those probabilities correspond to different points on a physical wave. It is important to note that if the electrons went through the slits as particles, there would only be two streaks of locations for the particles to land. There are, however, multiple lines. Thus, there must be waves that enters the slits and cancel out each other's troughs on the other sides of the slits. This is sufficient to creates multiple lines on the back wall. This principle can be hard to visualize with words, so the

following figure is provided to make sense of how the troughs combine to make multiple lines on the other side of the double slit:
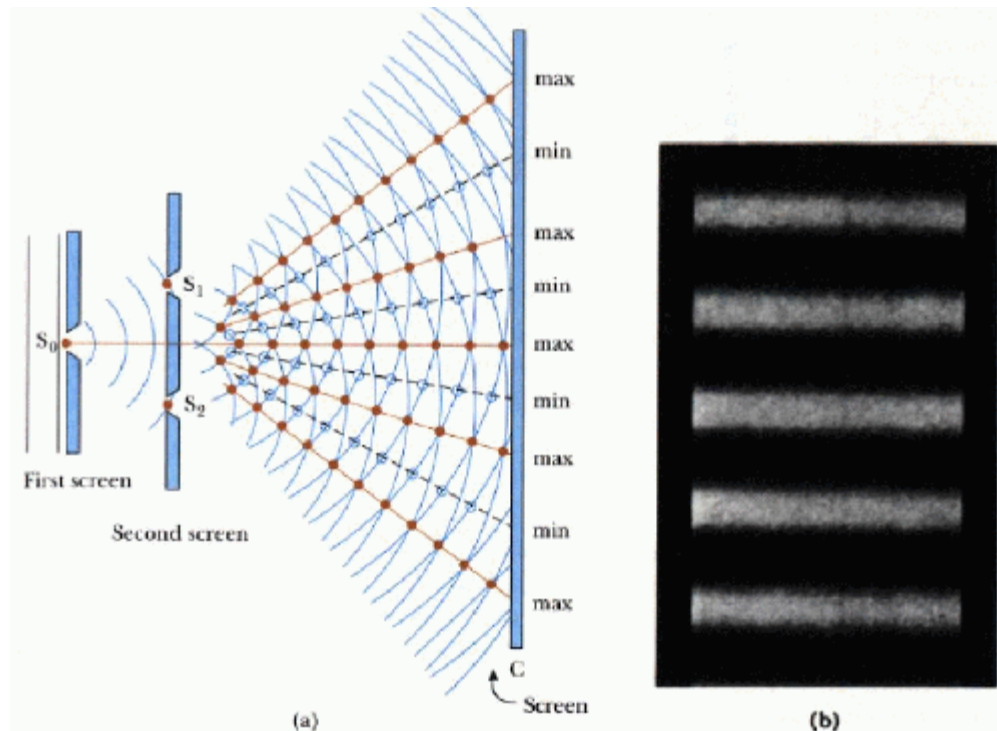
Clearly, after the first wave goes through the double slits, it will intersect in multiples points on the other sides. It is this repeated intersection that is able to produce the lines on the wall. If one takes these waves as pure probabilities, as Bohr did, we have a non-physical interpretation of the double slit experiment which leads us straight to realism about mathematical probabilities.

On an anti-realist view, however, it is important to understand that even though these waves are not "smeared out electrons" they are also not pure probabilities. That is, when some scientists try to explain wave-particle duality, they equate the waves to mathematical probabilities traveling through space. Instead, the anti-realist would say that different points on the wave correspond to the mathematical probabilities of where the electron may be located. The wave itself is physical and not mathematically abstract. It is not the case that mathematical probabilities are traveling through space because these entities by definition can have no

spatiotemporal restrictions. To an anti-realist the issue is that professors have been trying to get students to understand that electrons are defined as particles and not waves. Therefore they contort the definition of waves into things they are not. To be clear, both the electron and the wave are physical, and with a little help from quantum field theory it may be argued that the wave is fundamental. This means when the motion of the wave is stopped by the wall, the electron in the form of a particle may be observed at a location. It is a bit peculiar that on a Copenhagen (non-physical/realist) Interpretation, a physical observer, like the back of a wall, is able to collapse the abstract wave, but the physical medium through which the wave travels cannot collapse the wave. Of course the obvious response is that the Schrodinger equation describes the behavior of the wave over time and mandates that the wave collapse when it is observed by the back of the wall, but not when it travels through the medium. With an anti-realist interpretation, however, one is free to construe the Schrodinger equation as descriptive and not prescriptive because a physical wave hits the back of a physical wall and this physical interaction is described by the Schrodinger Equation.

The last anomaly that should be discussed before moving on to the different interpretations of the data is what Einstein called "spooky action at a distance." This term was used to refer to the abnormal behaviors of particles that had undergone quantum entanglement. Entanglement is a theoretical prediction that is based off of certain equations in quantum mechanics. Two particles can become entangled if they are close together and their properties become linked. The process for particles becoming linked is complex so this thesis will not examine it in detail. The weird part of the process is that once particles become linked they remain "linked" regardless of the distance they are separated afterwards. Consider the property of electrons known as spin. Until observed, the spin of electrons is fuzzy, but upon observation

it either spins clockwise or counterclockwise. If two electrons are entangled and one is observed, the other electron will always have the opposite spin. If the observed electron collapses to spin clockwise, the other, no matter how far away, must immediately spin counterclockwise. The reason that Einstein was interested in this "spooky action at a distance" was that he thought it was proof of the incompleteness of quantum mechanics. In his opinion, entanglement was not strong enough to prove that Quantum Mechanics was incorrect. To elaborate on the incompleteness of quantum mechanics, Einstein along with Boris Podolsky and Nathan Rosen devised a thought experiment which would eliminate this weirdness. This thought experiment has famously been labeled the EPR paradox. In essence, they maintained that entanglement was synonymous with putting two gloves in two separate boxes and sending the boxes to different locations. In this way, if a person in New York got one of the boxes and noticed the glove inside was a right-handed glove, then necessarily the glove in the other box, wherever that box may be, is a left handed glove. Einstein's idea is clever, but it misses the point of what the quantum mechanist means by the term entanglement. The point is that the measurement determines the spin of an electron in motion. In Einstein's analogy, however, the spin would have to be pre-determined. The entire point of the work of men like Neils Bohr is to say that the electron spin is not predetermined beforehand like gloves in a box. The proof for this came into play in 1967 when John Clauser was working on a PhD in Astrophysics at Columbia University. Clauser, like Einstein, had problems with the equations in Quantum Mechanics, but because he had spent time reading the work of John Bell, he believed that if entanglement was not at play in a Bohr-like fashion, Quantum Mechanics would be incorrect. To prove the thesis that Quantum Mechanics was indeed false, Clauser constructed an experiment that Bell suggested in one of his papers. When he ran the tests, however, the results

seemed to prove the validity of entanglement. By the 1980s, the French physicist Alain Aspect had placed the final nail in the coffin when he repeated and verified the tests of Clauser with much stronger evidence. The spooky action that Einstein had so vehemently opposed is a verified principle of the inner-workings of the world.

While this principle may seem strange to most, when I first understood it (not the first time I heard it), I thought that it would kind of make sense if the universe really is a closed system. By this I mean that there are no physical energy inputs from the outside. I am not yet sure if a causally efficacious abstract object interacting with the concrete realm would make it an open system as opposed to a closed system. Nevertheless, if it is true that the universe is a closed system then perhaps when one electron spins clockwise, the other must spin counterclockwise to balance out the energy in the closed system. The only question that still remains for the reader would be the exact process of how it is that these two electrons can become entangled. As I noted above, this process is too complex to spell out here, but the key principle to take away is that the measurement effects the spin of the electron being measured and the entangled electron simultaneously. Again, observation in this context is physical regardless of the interpretation one takes of Quantum Physics.

Interpretations

The present section will be divided into two main parts. First, we shall explore different interpretations of the phenomena discussed in the previous section, and second we shall look at reasons for thinking that the quantum world does not undermine the truth value of the Laws of Logic. Even though discussions about Quantum Mechanics have only received attention for about a century and a half, there have developed a cornucopia of different interpretations to explain the eerie advancements that have occurred. As such, it would be impossible to give a

detailed account of all of these theories. Thus, only three of the most prominent interpretations will be given attention. When examining a theory of quantum mechanics it is important to understand whether it is deterministic or indeterministic. That is, whether events are fixed or whether there is uncertainty in their occurrence. If the occurrence of events is fixed beforehand, then the multitude of probabilities of a superposed electron cannot correspond to more than one location. They simply serve to highlight the epistemic problem of our knowing their actual position. After this has been question has been answered clearly, it is crucial to grasp the precise explanation of how the model explains specific events and what those explanations entail about the physical world. Using these criteria we are justified in giving weight and prejudice to certain theories over others. Notably, the ten competing theories of quantum mechanics are all able to make sense of the mathematical equations, it is the metaphysical implications that separate the theories.

The standard interpretation of Quantum Mechanics is the Copenhagen Model proposed by Neils Bohr and Werner Heisenberg in 1925. Bohr and Heisenberg essentially took the results of Quantum Mechanics to mean what they appeared to mean. There was no complex addition of a world ensemble for energy to pour out into other realities as there is in the Everett Model, and there was no collapse of the wave function by purely conscious observers as there is in the Von Neumann-Wigner Model. Simply put, wave functions collapse because of physical observation or measurement. What they failed to make clear in the years following their progress was the difference between the *results* of experiments pertaining to Quantum Physics and the *interpretation* of the results from those experiments. For example, it is necessary to take the results of the double slit experiment as signifying that electrons in motion are really waves, but whether the nature of such waves is abstract or concrete is a matter that requires more elaborate

discussion. Bohr and Heisenberg championed the view that these waves were non-physical mathematical probabilities! They made no effort illuminate the fact that there may be some uncertainty (that is ironic) as to the nature of waves in their theory. Because scientists were taught that these waves are abstract, there arose certain ways of talking theoretically and these ways of talking theoretically became accepted as dogma on both the academic and popular levels. Take the heinous parable that was written by Erwin Schrodinger in 1935 to describe the notion of collapse to Albert Einstein. Schrodinger was trying to explain to Einstein that physical observation is responsible for the collapse of the wave function of electrons in a superposed state. As a result he used the analogy of a cat placed in a box with a vile of deadly poison and a mallet. If the mallet hits the vile, the vile will break and the contents will kill the cat. The question in this scenario is "Can we know if the cat is dead or alive before opening the box?" Schrodinger said we could not because the cat was both dead and alive before the box was opened. Relating this back to the double slit experiment, he used the *physical* example of a cat being both dead and alive to correspond to the fact that two *non-physical* mathematical probabilities of the position of an electron can both be true at different points on the wave function before observation and collapse. In this analogy observation causes collapse. Understandably, people might be tempted to think that the Law of Non-contradiction has been molested because a cat being physically both dead and alive is a very different matter from different probabilities being true at different points along the wave function. Even if the wave is abstract, as Schrodinger clearly believed, Non-Contradiction has not been violated because the individual probabilities of the different positions of the electron are not both true on one point of the wave function. This is important! The only way for Non-Contradiction to be violated would be if both probabilities were true at the same point on the wave. However, the different

probabilities correspond to different points on the wave. This means that whether or not the wave is abstract, Non-Contradiction has not been harmed. Setting this detail aside, the second part of this parable that is revolting to think about is that Schrodinger has committed us, once more, to realism about abstracta. The mathematical probabilities are both said to exist in the same way that a cat exists as both alive and dead. This means that on the Copenhagen Interpretation, abstract objects exist and we must become realist philosophers. Again, the nature of the wave is purely mathematical and it is the mathematical probabilities that given existence to the wave function. If this is correct, the proponent of the Copenhagen Interpretation must believe that the wave that goes though the double slit is a non-physical combination of probabilities, but that it actually exists. So with one analogy Schrodinger managed to misrepresent the Copenhagen Interpretation so as to assume the invalidity of Non-Contradiction and misrepresent Quantum Mechanics so as to assume the validity of the Copenhagen Interpretation by saying that there must be an abstract interpretation of the wave function. He ended up declaring as dogma what could still in theory be debated. It goes without saying that this analogy injected confusion into the minds of Einstein and other academics as to the seriousness of Quantum Physics. Now, because of its popularity, this parable is the back of most everyone's brain when they are learning the terms of quanta. The story is meant to make the results of the double slit experiment more understandable, but in reality it assumes premises that could and should be parsed more finely. Lastly, and even worse, until one has a better understanding of physics they could also draw the conclusion that only the abstract act of looking is what causes collapse. This is not even true on a Copenhagen Model of Quantum Physics. Every scientist, even in their most vehement radicalism, understands that the back of the wall is physical and thus it is not abstract observation *alone* which collapses waves.

The only point that needs some clarity on this front is our epistemic status of an electron in a superposed state. Regardless of the nature of the wave or what collapses that wave, there is only a fixed amount of information we can know about an electron while it is in a superposed state. We cannot know the precise position of the electron because the wave is all that we can describe. We can know, however, that the peaks and troughs correspond to the different probabilities of locations the electron could occupy. Remember, the only sense in which the electron is both at position A and at position B is that there is a wave that occupies both positions and from the behavior of that wave there is a calculable mathematical probability that the electron could collapse at either position. It should be said, therefore, that it is both probable that the electron could collapse at Position A and Probable that the electron could collapse at position B. One question that is hard to answer if one thinks that Non-Contradiction is truly invalid is "If it were really the case that the electron was located at both Position A and Position B, then why would it need to collapse?" Once this is clear, the second dangerous misunderstanding to avoid is falling in the trap of thinking that the wave is just the electron smeared out. The reason that we do not want to say this is that it would make particles fundamental elements of the universe, and the best versions of the standard model posit waves as fundamental.

Before traveling forward much farther it is necessary to discuss in more detail a puzzle about observation and collapse within the modern context of quantum mechanics: the measurement problem. In Quantum Physics subatomic particles do not have all of their properties intrinsically, but only in relation to a measuring apparatus. Whether this is the back of a wall or a quantum measuring rode, electrons collapse upon "observation." The dilemma is that the measuring apparatus can be described by quantum physics and thus it does not have all of its properties intrinsically but only in relation to another measuring apparatus. This process can

continue on ad infinitum. As mentioned above, some have suggested that the chain is broken

with observation by the consciousness of humans. To be clear, this is markedly different from

the misunderstanding which confusedly maintains that the "abstract" act of human observation

causes collapse. Under this model, consciousness is linked to a brain substratum which gives it

the causal ability to bring about the collapse of electrons. The idea that consciousness can be

described completely and reductively in physical and or quantum terms is called

Epiphenomenalism. There are two variants of epiphenomenalism that capitalize on this position:

the Von Neumann-Wigner Interpretation and the Penrose-Hameroff Interpretation. It is

important to note that despite their attempts to avoid it, both models have trouble with the

measurement problem. The Von Neumann-Wigner Interpretation is the poster-child for models

that want to make consciousness a physical phenomenon that causes wave collapse. The main

problem for models of this sort is that they run into difficulty with finding an object that has

physical mass and cannot be described by quantum mechanics. If one combines the idea that

consciousness is physical with the idea that all physical phenomena are describable by quantum

mechanics, one will have trouble making sense of the idea that consciousness is able to collapse

a wave. This is because, like the back of the wall, the brain must have a cause of its collapse

because it is describable by quantum mechanics. Because of this problem, interpretations that

are similar to the Von Neumann-Wigner model will not be discussed in detail. Another problem

with models of this type is that they sometimes entail that if there is a planet a million light-years

away in a superposed state and humans are somehow able to get a satellite with a camera to

reach it, the second a human on earth observes the signal that the satellite sends back, the entire

planet collapses from its superposed state. To avoid these types of peculiarities, Roger Penrose

and Stewart Hameroff have suggested a different method of interpreting quantum mechanics.

Essentially, their idea is a reverse Von Neumann Wigner model in which consciousness strongly emerges from the material world. This means that by the time that the wave function has collapsed in the Schrodinger Equation, consciousness *has not* already existed and had the chance to collapse it. It is that from the collapse of the wave function consciousness has the possibility to strongly emerge. This means that there is still a problem with measurement and observation. If consciousness emerges from the collapse of the wave function, what is it that collapses the wave function?

To this question two interpretations have arisen to make sense of Quantum Mechanics: Panpsychism and the Everett Model. The Everett model maintains that the wave has never really collapsed. At the most fundamental quantum level, reality is a wave and at the most macroscopic universal level reality is a wave. Between these two states all of the possible outcomes in reality play out along different functions. By contrast, Panpsychism is the view that consciousness is a fundamental element of the universe and therefore every physical object is conscious in some sense. To avoid the measurement problem, Panpsychism poses as a version of naturalistic dualism. In other words, while consciousness is fundamental and every physical object possesses some level of consciousness, consciousness itself is not physical and thereby cannot be described by quantum mechanics. It might be tempting from a metaphysical perspective to take part of a Penrose-Hameroff Interpretation to make sense of the emergence of consciousness in the material world and then take part of an Everett interpretation to reconcile the observation of random events with the deterministic equations of the quantum realm and the collapse of the wave function, but there are problems for each theory. The primary difficulties for the Penrose-Hameroff Interpretation are that it assumes that consciousness is not computable and it also gives rise to numerous biological issues in the emergence of consciousness from

mircotublials. I am not an expert in biology, but the main problem posed with microtubials is

that they are too far away to become entangled on the quantum level.[104] I could, however, give

some more insight as to why their interpretation of Godel's theorem when they try to argue that

consciousness is incomputable, but I am not entirely sure whether computation by itself is

enough to define consciousness in general so I will stay away from addressing the topic in

general. Whether or not computation and information processing serve as a minima for

consciousness is a matter of debate, but it can be said with confidence that Penrose's attempt to

use JR Lucas' interpretation of Godel's Theorem to deny that consciousness is computable is

misguided.

Turning to the Everett Model the main problem for adopting this interpretation is that the

bulk of the evidence to support it is statistical in nature. This means that the way in which one

molds their statistical and probabilistic equations will impact the way in which one views the

evidence in favor of the Everett Model. As Greaves and Myrvold have convincingly pointed out,

"Everettian quantum mechanics is confirmed in much the same way as quantum mechanics with

Born-rule chances" are confirmed.[105,106] Basically, in the same way that we would not use the

Born Rule to tell us which interpretation of Quantum Mechanics is valid, we should not use the

Everett Postulates to conclude that there are as ontologically many worlds as there are outcomes

with nonzero amplitudes. It is on this basis of these arguments that the Penrose-Hameroff

---

[104] For Biological problems with the meshing of quantum mechanics and microtubials see, inter alia, Khoshbin-e-Khoshnazar, M.R. (2007). "Achills heels of the Orch Or model". *NuroQuantology*. **5** (1): 182–185. doi:10.14704/nq.2007.5.1.123.

[105] Greaves, Hilary, and Wayne Myrvold. "Everett and Evidence." *Many Worlds?*, 2010, 264-304. (doi:10.1093/acprof:oso/9780199560561.003.0011), 286.

[106] For a critical analysis of this evidence see Greaves and Myrvold 2010. For a view of the Everett Interpretation that casts it in a more positive light, see Vilenkin, A. *Many Worlds in One the Search for Other Universes*. New York: Hill and Wang, (A division of Farrar, Straus and Giroux, 2007).

Interpretation and the Many Worlds Interpretation can be rejected independently and in combination.

From this cursory analysis of complexities in the measurement problem there are only two conclusions that the scientific community should draw: the actual cause of collapse is a mystery and the nature of consciousness is a mystery. When philosophers and scientists try to combine these two mysteries to create solutions they often end up with more problems than they start with in the first place. I did not engage in an analysis of Panpsychism because it is a very detailed view that I could not hope to do justice to in this short space. My intuitions toward the validity of this view is that if it is true that we are backed up against a wall and the only way out of the measurement problem is to posit consciousness as fundamental and say that it somehow causes collapse, we may as well go along with the theists who wish to say that God's mind is the efficient cause of the collapse. Essentially, I do not think we have enough evidence to be justified in being committed to either at this point, but David Chalmers, himself an atheist, and a whole host of quantum-happy theists would wish to crucify me for this analogy. Moving on, it can never be emphasized enough that these inconclusive results on collapse and consciousness do nothing to take away from the conclusiveness that quantum indeterminacy in the double slit experiment does not undermine Non-Contradiction. Let me just say once more for sanity's sake that even on a Copenhagen Model, Non-Contradiction is not undermined because the particle "exists/has a true values" at different points on the wave function and does not have the same two values at one point.

Speaking of the wave function, it is now time to return to our discussion in the beginning of this section on the nature of the wave. Although, we saw that the Copenhagen Model posits waves as abstract, this is not the only option available. It is important to note that positing the

wave as abstract or concrete does not directly affect the validity of Logic per se, but it could have implications for the Transcendental Argument in general. If the Copenhagen Interpretation were correct, the abstract wave collapses when it interacts with the back of the physical wall. This means that there is an eerie interaction of the abstract realm with the concrete world. It is unclear whether this needs a causal explanation or not because the *efficient* (first) *cause* of collapse is not known from a scientific standpoint. However it is more than likely that the abstract wave would not be interacting causally with the physical world. Nonetheless it would be interacting with the physical world and thus Copenhagen enthusiasts would need to give some more explication of how this interaction plays out exactly. At this point, if the Copenhagen Model turned out correct, one would have an easier time explaining this interaction as a theist than as an atheist. I do not, in actuality, think this argument would go through or be advanced seriously because, as I said above, there seems to be another way out: Bohmian Mechanics.

Pilot Wave Theory was first proposed in 1927 by Louis De Broglie as an alternative to the standard Copenhagen Interpretation, which was prevalent at the time. Oddly, De Broglie was convinced almost immediately of the inaccuracy of his theory after presenting one of his papers at the 1927 Solvay Conference in Brussels. It was not until 1952 that the work of David Bohm inspired a re-examination of the veracity of this model. Even with Bohm's new derivations, De Broglie remained unconvinced of his own theory. However, since he did lead the way in pioneering this theory in the first place, Pilot Wave Theory has also been labeled as the De Broglie-Bohm Interpretation of Quantum Physics. The major tenet which distinguishes Bohmian Mechanics from other quantum interpretations is the fact that it posits particles all the way up and all the way down. That is to say, on the most macroscopic and microscopic levels, reality is not a wave; it is a conglomeration of moving particle. The sense in which waves play a part in

reality is that they guide the paths of the particles' motion. This means that the randomness that we see on the back of the wall in the double slit experiment is due to different starting positions of the electron gun firing each electron. Electrons are so small than an observer could think she is firing from the same position when in reality each starting point is different. From different beginning positions, the waves will guide the particles to different positions. A major implication of this view is that in much the same way that the motion of a coin is deterministic under Newtonian Mechanics when all of the forces acting on the coin are known, the path of the particles is deterministic in Bohmian Mechanics when there are hidden variables that act on the particles in motion. In addition to the Schrodinger Equation which describes the evolution of the wave function over time, there is a guiding equation which spells out the velocities of particles along their paths in space. Some dislike the guiding equation because it diminishes the role of parsimony in quantum mechanics, but they have difficulty explaining away the fact that the guiding equation is literally derived from the Schrodinger Equation. There is a flurry of mathematical terms and constants that could be explored, but the reason that I gravitate toward the Bohmian theory is that it does not make waves abstract. Also, it appears to provide a solution to the measurement problem. If there are hidden variables that are able to constitute a guiding equation, then we can know the behavior of the wave function and if there are only particles all the way up and all the way down, there are no problems with collapse.

When faced with the daunting challenge of trying to combine quantum mechanics with relativity, I prefer to take a Lorentzian interpretation of relativity in order to garner non-locality and preserve absolute simultaneity. To hold steady to the eternity of the universe, I want to say that waves are the eternal fundamental elements of the universe and that this is evidenced by the results of quantum field theory. To be clear this argument is not the traditional quantum

argument in favor of an eternal universe. I am saying that we should use Quantum Physics to reach an eternal universe because quantum field theory has posited waves as fundamental and I think that those waves can exist eternally. In addition to saying that waves are piloting the velocities of the electron particles, they should also have power over the amount of electrons present in the universe based on the way that they are arranged. If this is the case, the eternal universe theorist is in good shape because there has been no physical evidence widely presented at this point to think that fundamental waves have a beginning in time.

For most quantum mechanists, however, the results of the Schrodinger Equation provide an argument for multiple arrows of time and thus a universe that never begun. This argument is far from convincing. Basically the Schrodinger Equation is used in physics and chemistry as a part of wave mechanics to help explain different parts of the atom as they evolve over time. It is argued that the time parameter in the abstract equation can help describe the evolution of the time of the physical universe. The formal equation is

$$H^\wedge|\Psi\rangle = i\partial t|\Psi\rangle$$

where $|\Psi\rangle$ is a wave function that describes the physical state of the universe. Sean Carroll has aptly noted that it is just a "ray in a Hilbert space with some number of dimensions."[107] $H^\wedge$ is a Hamiltonian operator which is independent of time and defined on the Hilbert Space itself. The idea is that if the time interval spans from (-∞, ∞) then the universe is infinitely old. As Bill Craig has observed, however, this only gives us the ability to "extrapolate from the present indefinitely into the past or future. This allows us to describe a moment prior to a given moment *if there is such a moment*; but in order to know whether there is such a moment we must

---

[107] Carroll, Sean M. "What if Time Really Exists?" *FQXi Community*: 1-9.

look to empirical evidence."[108] While the Big Bang may be a good starting place for empirical

beginnings, if there are mathematical equations which allow use to describe existing quantum

states prior to the singularity, then we would no longer be restricted to the physical realm for

questions of an eternal universe.   As such, I have suggested that quantum field theory provides

such adequate evidence by positing fundamental waves which can be construed as existing

eternally. Again, the Bohmian Interpretation can be correct if it is able to say that waves both

guide the velocities of the particles and constitute the amount of particles in the physical universe

based on their arrangement.

---

[108] "Does Quantum Mechanics Indicate an Eternal Universe? | Reasonable Faith." ReasonableFaith.org. Accessed May 01, 2017. http://www.reasonablefaith.org/does-quantum-mechanics-indicate-an-eternal-universe#ixzz4cpXigAzP.

Part 2: A Transcendental Argument from Propositions

Introduction

In the first part of this thesis, we explored an argument for the existence of God that

relied on the nature of abstract objects. It was claimed that in normal cases abstract objects do

not exist or have causal efficacy. Thus any instance of a causally efficacious abstract object

would need an explanation. It was claimed that the Laws of Logic are valid examples of causally

efficacious abstract objects, and the only explanation of their existence could be the existence of

an omnipotent being. This is because an omnipotent being is the only type of existent that could

have a higher order of magnitude than the Laws of Logic. In the current section we will examine

a similar type of argument in favor of the existence of God. There are two versions of this

argument that I wish to discuss. The first version, which I believe is weakly successful, will be

called the Transcendental Argument from Thoughts and the second version, which I believe is

successful in a stronger sense, will be called the Transcendental Argument from Propositions. In

much of the same way that the argument in part one incorporated the nature of logic, here too we

will see similar tactics employed. However, instead of centering in on the "existing causally

efficacious" side of the Logical Laws, we shall examine in more detail the "eternal validity and

propositionality" of the Laws of Logic. The way this argument is structured is slightly different

from the argument in part one. In part one, we saw a piece of positive apologetics. This means

that the argument constructed took principles in the natural world and worked its way to the

existence of God. In this argument, however, the type-form is more geared towards negative

apologetics, or attacking the non-theistic worldview.

The best way of summarizing the difference between parts one and two of this thesis is

that while both argument schemas rely on the nature of the laws of logic, part one is an

exploration of God and Abstracta whereas part two is more of an exploration of the relationship between God and Thoughts. I want to make clear that this is not an examination of God and Epistemology. A Transcendental Epistemology is important to come to grips with, but questions of that sort will be addressed in part three. In the first section of part two, I shall look at a quick sketch of how a Van Tilian might approach this type of Argument from Thoughts/Propositions.[109] It will essentially involve outlining the work of James N. Anderson and Greg Welty because they are what we might call "academic Van Tilians." I will outline a major problem that could arise from using their type of argument and then I will discuss the problems that I have concerning their account of God's relationship to thoughts in general. In the second section, I will suggest a solution to their argument that mimics the form of Lorraine Keller's Argument from Intentionality. Then, I will outline my view on how God relates to thoughts. It will be somewhat similar to my views on God's relation to abstracta, but not entirely the same. Hopefully, the reader will walk away with a better understanding of how this "Argument from Thoughts" works and a better understanding of the distinction between the two types of arguments from logic at the disposal of the Van Tilian: The Argument from Abstract Objects and the Argument from Propositions.

---

[109] To be clear, thoughts and propositions are not the same, but in talking of the relationship of God to thoughts and thoughts to God, discussion of propositions often arises.

## _Divine Conceptualism and the Argument from Thoughts_

Unfortunately, in Western Philosophy of Religion the work of Cornelius Van Til has been largely ignored by analytic theists. This is due in part to the fact that Van Til himself was never able to make his claims about apologetics practical. He locked himself away in the intellectual ivory tower and never ventured down to decode or spell out his complex thought processes to commoners. Because of this there is not much explication in his work behind the exact reasons for why he believed what he believed. Moreover, the hard-line "Presuppositionalists" who have consumed his text and propagated his verbiage have been radical members of the reformed community. These individuals only understand the impact of Van Til's claims for the intellectual life of the non-theist. However, because they are not technically philosophers, but academically trained theologians, they are not equipped to engage with or understand the reasoning behind Van Tilianism. Therefore they come off as sheep in wolves clothing when they engage in debates. While it is possible that Van Til with his technical intellectual rearing may have been able to spell out what he meant had he been cast onto the streets in debates, his flock is clearly not of the same cut. Thus, when it is the case that we stumble across academic Van Tilians, there is every right to be elated, but there is no right to spare criticism or dull the steady blade of reasoning and strong powered evidence.

Greg Welty graduated with a PhD in Philosophy from the University of Oxford in 2006. His dissertation topic, Theistic Conceptual Realism, was exactly the type of topic that would play into the conversations being had at this juncture of the thesis. His doctoral supervisor was Richard Swinburne, and at the oral examination of his defense, Brian Leftow and Paul Helm were invited to test out his mental acumen. If there is a more qualified analytic Van Tilian, I am unaware of him/her. James N. Anderson, another academic presuppositionalst, graduated with a

PhD in Philosophy from the University of Edinburgh. In 2011, these men co-authored a journal article in *Philosophia Christi* entitled "The Lord of Non-Contradiction: An Argument for God from Logic" in which they defend a type of Transcendental Argument from Thoughts. They outlined 9 principles pertaining to the Laws of Logic which when taken in conjunction they thought would prove the existence of God. In my opinion, the majority of these statements were either intuitively obvious or mildly distasteful, but I understand the reasons that they took time to spell each of them out. They did not want anyone to miss their assumptions or reasoning toward their conclusion. When compared with the work of Van Til himself, they were much more explicit in their steps. As such, I wish to go over what they did well in the paper and what they need to improve upon. Because I have some suggestions for strengthening their argument, I will begin by outlining what they did poorly and then transition into what they did well.

Welty and Anderson are Divine Conceptualists (DC). This means that they take abstract objects as thoughts that exist in the mind of God. Divine Conceptualism has actually been the historic Christian position about abstracta, but that does not mean that we should blindly follow in the tradition of our ancestors. The reason I mention that is because, even though I disagree with it, DC is not completely irrational or hopelessly radical as many of the claims of the presuppositionalist appear to be at first. However, I would like to outline some problems with the view. First, when a Divine Conceptualist starts to talk about abstract platonic entities, they tend to lump them all together under one name, propositions. It may be true that a large portion of abstract objects are propositions, but surely there are some abstract objects which would not be capable of being restricted to the roles carried out by propositions. To understand whether an abstract object passes as a proposition, we need to understand how propositions are defined. Alvin Plantinga has defined propositions as "claims or assertions; they attribute or predicate

properties to or of objects; they represent reality or some part of it as having a certain

character."[110] While this definition is pleasing in scope, I would wish to say in the vein of

simplicity that propositions are the contents of possible or actual thoughts; their essence is to

represent reality and they are the primary bearers of truth and falsity. When talking about

propositions I find it helpful to look at the diagram proposed by Robert Koons and Timothy

Pickavance,

"

Proposition   Represents   →   World

Expresses ↑
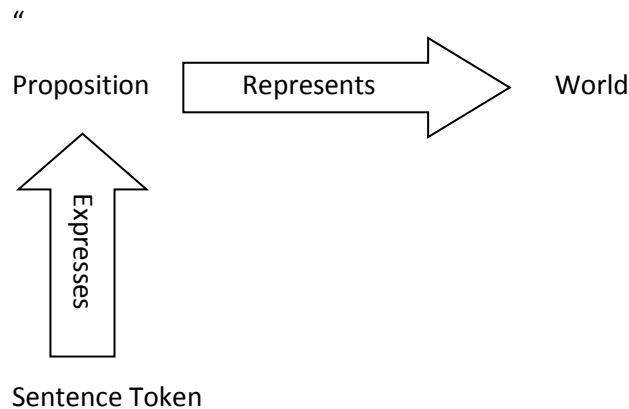
Sentence Token

"[111]

      In the diagram above we will take the term "sentence token" to signify a thought or a

speech act. To be clear, philosophers usually take tokens to mean abstract objects, but this

context demands a different definition. Thus the use of the word "token" should not lead the

reader to think of the word "abstracta." I should also take a second to pause and mention that

this is a diagram of the traditional conception of propositions. That is, there are other more

modern views that will be discussed later in the paper which change this conception. On this

traditionalist view, propositions are the fundamental objects of representation. This means that

when humans exemplify doxastic (belief directed) and other attitudes, they are only representing

---

[110] Plantinga, Alvin, and Matthew Davidson. *Essays in the Metaphysics of Modality*. Oxford: (Oxford Univ. Press, 2003), 193.

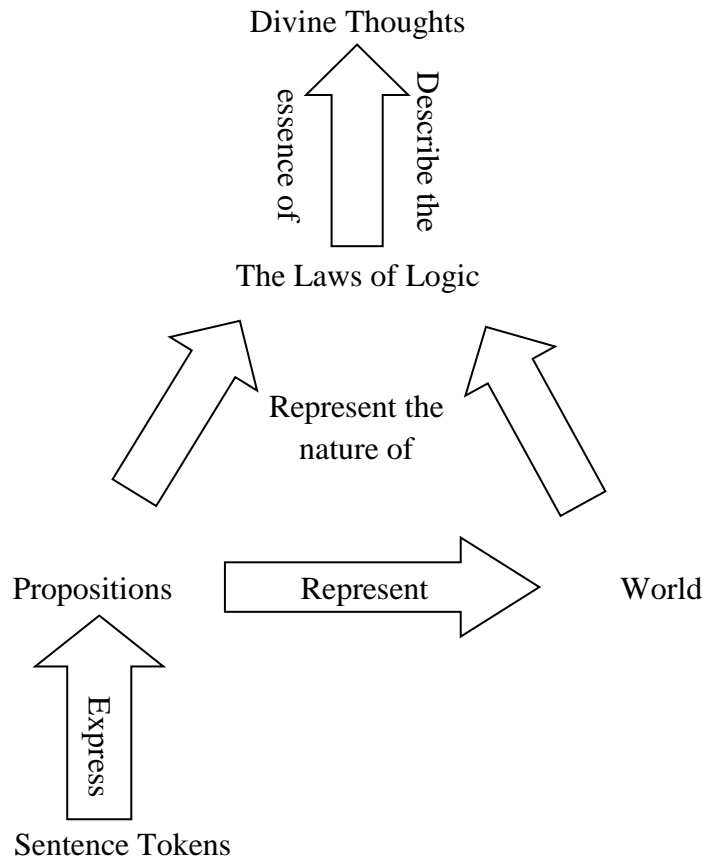[111] Metaphysics: The Fundamentals, 16.

the world derivatively with the help of a proposition. Again, this is only the traditional view, but

I believe we are at a better conceptual standpoint to assess whether or not an abstract object

qualifies as a proposition. Welty and Anderson maintain that the Laws of Logic are

propositions. In passing they mention that "The third argument is based on the existential

presuppositions of verbs that take propositions (such as the laws of logic) as their objects."[112] It

seems to me that if we want to label the Laws of Logic as propositions, then we need to do some

re-organizing of the diagram above. First, the Laws of Logic are abstract objects, so they meet

requirement 1 for propositions. However, it is on the grounds of representation and truth-falsity

that the Laws of Logic differ from traditional propositions. The reason that most philosophers

say that propositions are the primary bearers of truth and falsity is that they are either true or

false and they are abstract. This means that the proposition that corresponds to the sentence

tokens "The boat is red" and "Das boot ist rot" is the primary bearer of truth or falsity over and

above the sentence tokens. While there may be different tokens, there is only one proposition,

and the truth or falsity of that proposition is the primary truth *about* the world. But if

propositions operate on a meta-level, the Laws of Logic would have to operate on a meta-meta-

level. The Laws of Logic are almost like guides for how truth and falsity can play out in

propositions. This means that the Laws of Logic are content agnostic. They are true even of

false propositions because false propositions must still be logical in form even if they are not true

or logical in content. If propositions are the primary bearers of truth and falsity, the laws of logic

are the fundamental meta-guidelines for how truth and falsity plays out in propositions. The

second way in which the Logical Laws are distinct from traditional propositions is that they do

not represent the world, the world represents them. In the diagram above, every arrow that could

---

[112] Anderson, James N., and Greg Welty. "The Lord of Non-Contradiction: An Argument for God from Logic." *Philosophi Christi*, 2011, 9.

be labeled "represents would be pointed at the laws of logic. Interestingly, Divine Conceptualists of the type of Anderson and Welty want to say that the Laws of Logic are propositions and that all propositions are divine thoughts. To this opinion there are pros and cons. First, let us examine the pros. It seems now that the picture they want to draw is as follows,

Propositions/Divine Thoughts ⬛ Represent ⟹ World

⬆ Express

Sentence Tokens
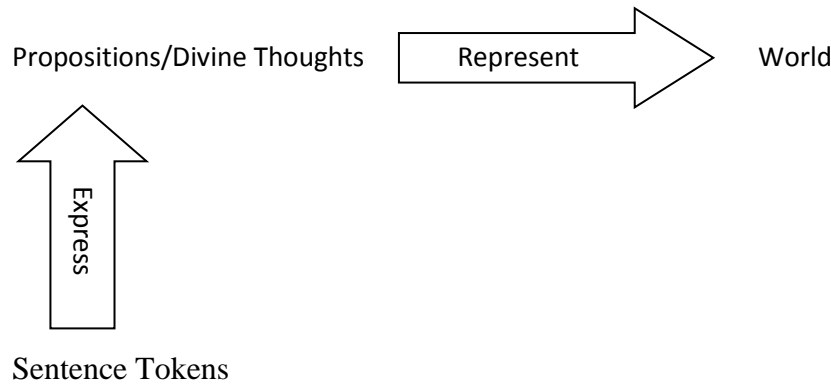
Notice the epistemic implication of this view! It means that if there are no divine thoughts, no one can speak or think. This is the classic Van Tilian line that every Presuppositionalist wants to affirm. However, notice also the arrow toward the world. If propositions represent the world, and divine thoughts are propositions, then Divine thoughts represent the world. This means that the world is the ultimate metaphysical foundation and not God. Such a trade off is not what the theist should have in mind when siding with Van Til. In this picture one either has to give up the view that propositions represent the world, which is laughable at best, or they have to give up the view that propositions are divine thoughts, a more reasonable assumption (especially when the Laws of Logic are guidelines for propositions). Instead, a better diagram for them to draw is illustrated at the top of the next page:

Divine Thoughts

essence of   Describe the

The Laws of Logic

Represent the
nature of

Propositions   Represent   World

Express

Sentence Tokens

Because I disagree with their intuitions about propositions and the mind of God, I will not follow

them down the rabbit hole for the entirety of their argument. This does not mean, however, that I

think their argument is waste of time or that it cannot be improved upon. The argument that they

make will just fall prey to some rather acute criticisms.

Although they never stated it explicitly in a syllogistic format in the paper, Anderson and

Welty's argument was fairly easy to ascertain from the paragraphs of the text. If someone was

picky and wanted an exact replication I am sure that they would be more than happy to outline a

draft. However, for the purposes of analyzing their argument in the paper, I will have to present

my own rendition which will try to capture their content and consistently align with their version

of Divine Conceptualism. The main difference will be that they never really followed through

with a strong conclusion of their argument. Thus I will add premises in blue which I think would

do well to complete the argument.

A&W's Argument from Thoughts (Modified)

    1.) Everything that exists non-physically exists as a concept in a mind.

    2.) The Laws of Logic are concepts that reside in a mind.

        a.   The Laws of Logic are necessary

        b.   Necessary objects must exist in worlds that do not have any physical objects.

        c.   Therefore the Laws of Logic must exist in possible worlds with no physical

            objects.

        d.   Therefore, the Laws of Logic must be non-physical.

        e.   Therefore, the Laws of Logic must exist as concepts in a mind.

    3.) The Laws of Logic are epistemically necessary truths about truths and are metaphysically

    necessary existents.[113]

    4.) The only way for a concept to be necessary is if it is the product of a mind that is possibly

    necessary.

        a.   A concept that exists necessarily must exist in all possible worlds.

        b.   For a concept to exist, a mind must exist.

        c.   Therefore a concept that necessarily exists entails a mind that possibly can exist in

            every possible world.

        d.   A mind that possibly can exist in every possible world is possibly necessary.

        e.   Conditional S5

        f.   Therefore there exists a necessary mind.

---

[113] All blue markings are my additions to the argument to increase its analytic credibility.

5.) Therefore, the Laws of Logic are the product of a possibly necessary mind.

6.) By S5 this mind is actually necessary and by intuition this mind is God.

7.) Therefore, God exists.

At first, there are two major criticisms of this argument that come to mind. Straight off the bat, a majority of realist scholars would heartily disagree with premise 1 because they would take the whole of the platonic host to both exist and be non-conceptual. That is the entire point of saying that there are mind independent non-spatiotemporal existents. The second group of scholars that would be turned away from this reasoning are those theists who do not adopt Divine Conceptualism. They would not wish to construe the Laws of Logic as divine thoughts and therefore would have trouble accepting premise 2. As such, this argument could at best serve as a reductio of atheism. That is, if realism is really false and atheism is supposedly true, then there is something like Divine Conceptualism that must be true given the argument above. However, because Divine Conceptualism is false, either atheism must be false or realism must be true. The Divine Conceptualist would say that atheism is false, and the theist who is not a Divine Conceptualist would say that realism might be true. In sum, the two major assumptions of the above argument are the falsity of realism about abstract objects and the truth of Divine Conceptualism about the doctrine of aseity. Given those two assumptions, a theist may argue for the existence of God.

Because I disagree with Divine Conceptualism, I will have to find another way for this argument to go through, but before doing so, I would like to end this section by taking a moment to explore an interesting point that I discovered when running though this version of the Transcendental Argument. There may be a way to use the tail end of the argument above as

proof of the plausibility premise in the Ontological Argument. Consider the following

reasoning,

1.) $\Diamond(\square G(x))$

    a. There are concepts that exist necessarily. $\square C(x)$

        i. Existents can either be physical or conceptual

            1. Immaterial objects only exist as thoughts when they are conceived

               by a mind. (assumes the atheistic anti-realist position is correct)

        ii. The Laws of Logic are non-physical

        iii. Therefore the Laws of Logic are conceptual

    b. The only way for there to be concepts that exist necessarily is if there is a mind

       that is possibly necessary. $\square[\square C(x) \rightarrow \Diamond\square M(x)]$

    c. Therefore, there is a possibly necessary mind. $\therefore \Diamond\square M(x)$

    d. A possibly necessary mind is logically equivalent with a possibly necessary God

       $\Diamond\square M(x) \equiv \Diamond\square G(x)$

2.) Conditional S5

3.) $\therefore \square G(x)$

If this progression is correct we have a reductio of atheism that also breathes new life into the

modal ontological argument by giving support the first premise of the argument.

Intentionality and the Argument from Propositions

In this section of the thesis I hope to accomplish two objectives: first I wish to outline what I feel would be a stronger version of the Argument from Thoughts, then I will raise some problems with the stronger version in hopes of segueing into an even stronger Argument from Propositions. The easiest way to outline such arguments is to present them in syllogistic form. Consider first the following version of the Argument from Thoughts,

Argument from Thoughts: Reductio of Atheism

Stage 1

1.) If atheism is true, then everything that exists is either physical or conceptual. (Premise)

    a. On an atheistic worldview, the only way for a non-physical object to exist is if it is conceived as a thought in a mind.

        i. Saying that abstract objects have existence when they are spoken is not convincing because there is no privileged reason to randomly correlate a physical wavelength of sound with an abstract object. They are of two different substances.

        ii. With thoughts, however, the case is different. Even a hardcore physicalists will have some mysteries left over when trying to explain consciousness. Moreover, the aspectual shape of a thought can point to something that is non-physical even if the thought itself is grounded in a brain state. This means that there is not a problem with marrying the existence of certain abstract objects to the causal efficacy of certain thoughts.

   b. The second that a non-physical object ceases to be conceived is the second that it ceases to exist.

   c. Therefore all non-physical existents are conceived.

 2.) The Laws of Logic exist. (Premise)

 3.) The Laws of Logic are non-physical (Premise)

 4.) Therefore, on an atheist worldview, the Laws of Logic must be conceived at every point at which they exist. (Conclusion 1)

Stage 2

 1.) On an atheist worldview if there is a time, t, at which the Laws of Logic are not being conceived, they do not exist at that time, t. (Premise)

 2.) The Laws of Logic exist at every time, t. (Premise)

   a. The Laws of Logic exist because they have casual efficacy. Causal efficacy can be attributed to the Laws of Logic because they constrain the types of objects that can exist in reality. If the essence of an object does not conform with the essence of the Laws of Logic, that object is prohibited from existing. See the Transcendental Argument from Abstracta for more elaboration on this point.

 3.) Therefore the Laws of Logic must be conceived by a mind at every time, t. (Conclusion 2)

Stage 3

 1.) The Laws of Logic are necessary truths.

 2.) If at any time, t, the mind that grounds the Laws of Logic is contingent, then it is possible for that mind not to exist at that time, t.

 3.) It is possible that at any time t, no contingent minds exist.

4.) There is an actual time, t, at which no contingent minds exist. (Ex. Perhaps the first moment after the Big Bang.)

5.) Thus there must be a non-contingent (necessary) mind at that juncture to ground the existence of the Laws of Logic.

6.) There is no reason to shy away from labeling such a necessarily existing mind "God"

7.) Therefore, God exists.

Although this argument is stronger than the version I modified in the previous section from Anderson and Welty, it does rehash some of the same issues. For example, there could still be an atheist who is a realist and reject the sub-argument of premise 1 in Stage 1 of the argument. This argument tries to say that the only way for an atheist to be a realist about abstracta is if they construe abstract objects that exist as thoughts in someone's mind. If an atheist, however, wanted to say that some abstract objects exist when they are spoken in forms of language, they would have a defeater for this argument. The best way to go down this route would be to use the Quine-Putnam Indispensability Argument.[114]

The second response that an atheist could pose to Argument from Thoughts above is that the Laws of Logic may exist at every time, t, at which there is a mind, but for every time t, t, at which minds do not exist, the Laws of Logic are true, but they do not exist in the ontological sense because there is no mind to conceive of them. To summarize this reasoning the atheist could argue as follows,

1.) The Laws of Logic are true at every time, t.

2.) The Laws of Logic do not exist at every time, t.

    a. We are taking the Laws of Logic to be propositions.

---

[114] For my thoughts on why this approach is not successful see the section on Pretense Theory in the Cosmo-Transcendental Argument from Abstracta.

b. Propositions are the contents or expressions of sentence tokens (thoughts and spoken sentences).

c. If thoughts are not being had by agents, these propositions do not exist.

d. Propositions are still the bearers of truth and falsity.

a. Therefore their essence can still be true or false.

3.) Thus, there is no need for an eternally existing mind.

This is an interesting objection, so there are two possible responses that I would like to spell out. The first response, however, can be used to combat the objection above as well as another atheistic objection. Therefore I will outline the second atheistic objection before I give the first theistic response. It is worth noting that the second atheistic objection is really a more general criticism of the Transcendental Argument. The idea is that the theist has assumed the principle that "if something is not able to be conceived then it cannot exist." This leads the proponent of the Transcendental Argument to presuppose that the Laws of Logic are metaphysically necessary in addition to being epistemically necessary. However, the antagonist of this argument would simply say that we have no evidence to think that the Laws of Logic are metaphysically necessary. Therefore, we should only say that they are epistmically necessary. However, if they are only epistemically necessary, they do not have to exist. In fact, they do not even have to be true, but the point is that they do not have to exist even if they *are* true.[115]

I will respond to these objections in reverse order. First, the Laws of Logic are metaphysically necessary in addition to epistemically necessary because they are the essential pre-criterions for existential objects to adhere to. Basically, if the Laws of Logic did not exist,

---

[115] There are different definitions of metaphysical necessity floating around, but it is an interesting question as to whether something could be metaphysically necessary and not exist. That is, whether it's truth value alone could be enough to garner it a status of metaphysical necessity. My modal intuition on this matter is to say that if something does not exist, it cannot be metaphysically necessary.

there would be no standard by which to define existence. In general, the reason the Logical

Absolutes cannot simply be true and not exist is because of cases involving Chronological

Priority. If, nothing existed (this is a counterpossible) and the Laws of Logic were said to be

"true", they would be true in virtue of nothing. I am not promoting a truthmaker model here, I

am promoting a reason-based model. There would literally be no reason to say the Laws of

Logic were true or false if it was the case that "nothing existed.'" If we want to add any existent

to "nothing" it would first have to meet some existential standards. However, not only would

there not exist any existential standards, there would be no way of telling whether an existential

standard was actually true. Therefore, the Laws of Logic must exist first, then other objects of

existential mass are allowed to come into existence because there is a standard against which

they can be weighed. The reader may be tempted to think that this makes the Laws of Logic

"dependent" on existence, but remember the Laws of Logic are the standards of existence. Thus

one might as well object by saying they are dependent on themselves. My stance is that the

argument necessarily entails that the Laws of Logic are tautological in their content as well as

their existence. That is, their nature applies to their nature and they exist in the way in which

their nature says that existing objects must exist. To be painstakingly crystal clear, this by no

means entails that in their nature, the Laws of Logic contain an explanation of their existence.

Their nature simply tells how they must exist, but it does not explain why they exist. The

argument of this thesis is that God provides the explanation for the existence of the Laws of

Logic.

Above was a general reason for thinking that the Laws of Logic must exist and not

simply be true, however, in the context of the Argument from Propositions there is a second,

more relevant, response that could be offered. In the syllogistic form, the atheist stated that she

was taking the Laws of Logic as propositions. Interestingly enough, a view has emerged among some of the foremost atheistic philosophers on the nature of propositions entitled Propositional Naturalism.[116] Briefly to state it, this is the view that propositions require a mind to exist. In fact, it is a bit more aggressive than that because they would want to say that propositions are thoughts. Given this major concession by very well meaning atheists we may conjoin the following pieces of theistic reasoning so as to address the problem with existence and truth and transition into a Transcendental Argument for God from Propositions,

1.) For the sake of argument, agree with the Propositional Naturalist that Propositions are thoughts. Then move to 4.

    a. Propositions <u>are</u> the contents or expressions of sentence tokens (thoughts and spoken sentences).

    b. Propositions <u>are</u> the primary bearers of truth and falsity

    c. Argument 1

        i. But Propositions also represent the structure of the actual world. If they represent it correctly, they are labeled as true and if they represent it incorrectly they are labeled as false.

        ii. A Propositional Naturalist would say that abstract propositions cannot represent because they are spatio-temporally inert. They would say representation could only take place with the mental capacities of agents.

        iii. Thus by virtue of function, propositions must be conceived as thoughts in order to represent. They cannot just be true and not exist, because to be

---

[116] See the work of Scott Soams, Peter Hanks and Jeff King.

true or false, a proposition needs to be able to represent and to represent, one needs a mind to carry out intentional action.

    d. Argument 2

        i. Serious Actualism- Propositions are not true in worlds in which they do not exist.

2.) Argument from Propositions

    a. To exist, it is necessary for propositions to be grounded by a mind.

    b. There are some propositions that cannot be grounded by finite/temporally restricted minds.

        i. Choice Only Sets/Laws of Logic

    c. Therefore an infinite/temporally unrestricted mind must exist to ground such propositions.

    d. There is no reason to shy away from labeling such an infinitely/temporally unrestricted mind "God"

    e. Therefore, God exists.

The Argument from Propositions is essentially a combination of The Transcendental Argument from Thoughts and Lorraine Keller's Argument from Intentionality. To help see this correlation, I will briefly spell out her ideas. Keller argues that in Set Theory there are specific sets that human minds cannot possibly grasp because of their infinity. If propositions are thoughts, however, then these "thoughts" must be the product of an infinite mind, and there is no reason to shy away from calling that infinite mind God. She labeled her example sets 'Choice Only Sets.' Choice Only Sets are sets that one can arrive at only by using the choice function as laid out in the Axiom of Choice. In ZFC, the Axiom of Choice is as follows,

AOC: For every non-empty set, S, whose members are all disjoint sets, there exist a choice set which contains one element from each of the disjoint sets in S.

To get a handle on the function being described by the Axiom of Choice, consider the following analogy. Imagine a bowl that is filled with 10 bags of marbles with 10 marbles in each bag. Each marble in the bowl is a different color. Now imagine that at random one marble is removed from each bag such that there are now 10 bags with 9 marbles each. The ten marbles that were removed could be placed in a separate bag. That separate bag would be equivalent to the Choice Set and the steps for placing those marbles in the extra bag could be equated with the Choice Function. Using the Choice Function will allow the mathematician to arrive at a Choice Set. However, with most Choice Sets it is possible to arrive at the set with a function other than the Choice Function. Again, if a Choice Set can only be arrived at by using the Choice Function, Lorraine Keller would call it a Choice Only Set. Another important point about Choice Sets is that unlike in the analogy, a Choice Set must be infinite. This is because per the definition in the Axiom of Choice, the set, S, contains an infinite amount of sets. Let's look at some specific sets and determine whether or not they are Choice Only Sets. Bertrand Russell famously gave the example of a millionaire who had bought an infinite pair of shoes and an infinite pair of socks. For this set we could define a total function that contains the partial function of every right shoe and sock plus the partial function of every left shoe and sock. In this way, we can define two functions that help us understand the entire set with out using the Choice Function. Therefore, Russell's example is not a Choice Only Set. However, if we can find an example of a Choice Only Set, Keller's Argument would be valid. Take, for instance, Zermelo's proof of the Well Ordering Theorem.

WOT- For every set, S, there exists a well ordering of that set with a domain S.

Proof- ($\aleph$) - $\emptyset$

Since the Power Set of all the real numbers is an infinite function on an infinite set, instead of a

simply defined function on an infinite set, the choice function would be the only way in which to

arrive at a set on that proof set. Therefore, it would technically be a set that could only be

arrived at by using a Choice Function, or a Choice Only Set. Thus it would have to be the

product of an infinite mind if propositions are considered to be thoughts.

Coda

When operating at an academic level, it is a rarity to find the Transcendental Argument being propounded to reach the conclusion that God exists. In fact, most analytic philosophers wouldn't bat an eye if they were told that the only prospects for theistic belief stem from the work of Al Plantinga, Richard Swinburne, and William Lane Craig. Moving away from the analytic trinity, however, I have tried to outline an approach that both argues for God's existence intellectually and strays away from the traditional canon. At the same time, it is my hope that academics working inside the traditional lines would be able to appreciate the value of Van Til and temper his ideas into their own thought structures, even when he seems radical at first glance. There is no reason to jettison the entire line of Dutch Reformed Scholars from whom Van Til's work stemmed simply because their loudest advocates have remained languid at the popular level. It is my hope that one day the work of scholars like Dooyeweerd, Stoker, and Bavinck will be discussed with the same vigor as the works of Augustine, Anselm and Aquinas. This is not because I agree with the work of Stoker any more than I agree with the work of Aquinas, but I believe there is value in those who made the Van Tilian Framework possible in the same way that I believe there is value in those who made the Classical Model possible. Another note in closing is that while I would concede the point that there are logically acceptable versions of the Transcendental Argument, I am not in any normal sense of the word a *Presuppositionalist*. I have sought to take aspects of Van Til and incorporate them into a broader apologetic, but his epistemic ideas I would wish to refine instead of adopt. Lastly, I would like to highlight a benefit of the Transcendental Argument if it is valid. Because it is a highly abstract metaphysical argument, it is attacking the anti-theist at the core of her being. Her deep metaphysical tools will never change in their strength or vigor no matter how far the natural

sciences progress. Therefore, if one was convinced of the validity of the Transcendental

Argument, they may very well be convinced of the complete annihilation of atheism.

Bibliography

Anderson, James N., and Greg Welty. "The Lord of Non-Contradiction: An Argument for God from Logic." *Philosophi Christi*, 2011, 9.

Atten, Mark Van, and Göran Sundholm. "L.E.J. Brouwer's 'Unreliability of the Logical Principles': A New Translation, with an Introduction." *History and Philosophy of Logic* 38, no. 1 (2016): 24-47. doi:10.1080/01445340.2016.1210986.

Beauchamp, Tom L. and Rosenberg, Alexander. *Hume and the Problem of Causation*. (Oxford University Press, New York, New York), 1981.

Boole, George. *The Laws of Thought*. Amherst, NY: (Prometheus Books, 2003), 27.

Bosserman, B. A. *The Trinity and the Vindication of Christian Paradox An Interpretation and Refinement of the Theological Apologetic of Cornelius Van Til*. (Cambridge, U.K.: James Clarke, 2015)

Brouwer, "Consciousness, Philosophy and Mathematics" in Collected Works, Vol 1, 488.

Brouwer (1923b, 1954, 1954a) "On the significance of the principle of excluded middle in mathematics, especially in function theory. Addenda and Corrigenda, Further Addenda and Corrigenda." (From Frege to Godel)

Cantor, Georg, and Philip E. B. Jourdain. *Contributions to the founding of the theory of transfinite numbers*. LaVergne, TN?: Nabu Press, 2012.

Carroll, Sean M. "What if Time Really Exists?" *FQXi Community*: 1-9.

Chalmers, David John. *The Conscious Mind: In Search of a Fundamental Theory*. New York: Oxford U Press, 1996. Print.

Church, A. 1936b. 'A Note on the Entscheidungsproblem'. *Journal of Symbolic Logic*, 1, 40-41.

Craig, William Lane. "A Formulation and Defense of the Doctrine of the Trinity." Unabridged version of Chapter 29 in Philosophical Foundations of a Christian Worldview. Downer's Grove, Ill.: Inter-Varsity Press, 2003.

Craig, William Lane "Flint's Radical Molinist Christology Not Radical Enough." Faith and
      Philosophy 23 (2006): 55-64.

Craig, William Lane. "Peter Van Inwagen, Substitutional Quantification, and Ontological
      Commitment." *Notre Dame Journal of Formal Logic* 55 (2014): 553-561.

"Does Quantum Mechanics Indicate an Eternal Universe? | Reasonable Faith."
      ReasonableFaith.org. Accessed May 01, 2017. http://www.reasonablefaith.org/does-
      quantum-mechanics-indicate-an-eternal-universe#ixzz4cpXigAzP.

Frege, Gottlob. *The Foundations of Arithmetic: A Logico-Mathematical Enquiry into the
      Concept of Number*. Blackwell, 1968, XV.

Greaves, Hilary, and Wayne Myrvold. "Everett and Evidence." *Many Worlds?*, 2010, 264-304.
      (doi:10.1093/acprof:oso/9780199560561.003.0011), 286.

Hamilton, William (Henry L. Mansel and John Veitch, ed.), Lectures on Metaphysics and Logic,
      in Two Volumes. Vol. II. Logic, Boston: (Gould and Lincoln, 1860) 61.

Hanks, Peter, 2009, 'Recent Work on Propositions', *Philosophy Compass*, 4(3): 469–486

Hawthorne, John. "Causal Structuralism 1." *Metaphysical Essays*, 2006, 211-28.
      doi:10.1093/acprof:oso/9780199291236.003.0010.

Inwagen, Peter Van. *Material beings*. Ithaca: Cornell University Press, 2007.

Inwagen, Peter Van. *An Essay on Free Will*. Oxford: Clarendon Press, 2010.

Kant, Immanuel, and J. M. D. Meiklejohn. *The Critique of Pure Reason*. United States: (Create
      Space Independent Publishing Platform, 2015) 280.

Khoshbin-e-Khoshnazar, M.R. (2007). "Achills heels of the Orch Or
      model". *NuroQuantology*. **5** (1): 182–185. doi:10.14704/nq.2007.5.1.123.

King, Jeff 1996, 'Structured Propositions and Sentence Structure', *Journal of Philosophical
      Logic* 25: 495–521

Kleene, Stephen Cole. *Introduction to Metamathematics*. Whitefish, MT: (Literary Licensing,

LLC, 2012).

Koons, Robert C., and Timothy H. Pickavance. *Metaphysics: the fundamentals*. Chichester, West

Sussex, UK: (Wiley Blackwell, 2015)

Lambert, Karel, "The Definition of E! in Free Logic," in *Abstracts: The International Congress*

for Logic, Methodology and Philosophy of Science, Stanford: (Stanford University Press,

1960).

Lambert, Karel. *Free logic: Selected Essays*. Cambridge: Cambridge university press, 2007, 82.

Leibniz, Gottfried Wilhelm., and Robert Latta. *The Monadology*. Alex Catalogue: (NetLibrary,

2000), 5 section 32.

Leite, Adam, 2004. "On Justifying and Being Justified," *Philosophical Perspectives* (Noûs

Supplement), 14: 219–253.

Leng, Mary. *Mathematics and reality*. Oxford: (Oxford University Press, 2013), 39.

Lewis, David K. *Counterfactuals*. Malden: Blackwell, 2008. and Lewis, David K.

"Counterfactual Dependence and Time's Arrow." 1979.

Moschovakis, Joan, "Intuitionistic Logic", *The Stanford Encyclopedia of Philosophy* (Spring

2015 Edition), Edward N. Zalta (ed.), URL =

<https://plato.stanford.edu/archives/spr2015/entries/ logic-intuitionistic/>.

Nolt, John, "Free Logic", *The Stanford Encyclopedia of Philosophy* (Winter 2014 Edition),

Edward N. Zalta (ed.), URL = <https://plato.stanford.edu/archives/win2014/entries/logic-

free/>.

Plantinga, Alvin, and Matthew Davidson. *Essays in the Metaphysics of Modality*. Oxford:

(Oxford Univ. Press, 2003), 193.

Plato, Chris Emlyn-Jones, and William Preddy. *Republic*. Cambridge, MA: (Harvard University

Press, 2013) 293.

Allen, Reginald E. Greek philosophy: thales to Aristotle. (New York: The Free Press, 1996) 327.

Duns Scotus and Francisco Suarez in *Quaest. sup. Met.* IV., Q. 3 and *Disp. Met.* III., § 3.

Pruss, Alexander R. "The Leibnizian Cosmological Argument." *The Blackwell Companion to Natural Theology*, 2009, 24-100. doi:10.1002/9781444308334.ch2, 1.

Russell, Bertrand, "Letter to Frege." Bertrand Russell to Gottlob Frege, 1902.

Russell, Bertrand. *On Denoting*. (Oxford: Blackwell, 1905), 483.

Schopenhauer, Arthur. *On the fourfold root of the principle of sufficient reason*. La Salle, IL: Open Court, 1990.

Soames, Scott 1987, 'Direct Reference, Propositional Attitudes and Semantic Content', *Philosophical Topics* 15: 47–87.

Stalnaker, R., 1968. "A Theory of Conditionals" in *Studies in Logical Theory, American Philosophical Quarterly* (Monograph Series, 2), Oxford: Blackwell, pp. 98–112. Reprinted in F. Jackson (ed.), 1991. Page references to 1991.

Stalnaker, R., 1981. "A Defense of Conditional Excluded Middle" in Harper, Stalnaker and Pearce (eds.) *op. cit.*, pp. 87–104.

Steinhart, Eric. Nietzsche on Identity. Revista di Estetica (2005) 28 (1), 241-256.

Taliaferro, Charles. "The Project of Natural Theology." *The Blackwell Companion to Natural Theology* (2009): 1-23. Web.

Titus, 1:12-13. In *ESV: Study Bible: English Standard Version*. Wheaton, IL: Crossway Bibles, 2007.

Vilenkin, A. *Many Worlds in One the Search for Other Universes*. New York: Hill and Wang, (A division of Farrar, Straus and Giroux, 2007).

Walton, Kendall L. "Fearing Fictions." *The Journal of Philosophy* 75, no. 1 (1978): 5. Pg 6. doi:10.2307/2025831.

Walton, Kendall L. *Mimesis as Make-Believe: On the Foundations of the Representational Arts*. Cambridge, Mass.: (Harvard Univ. Press, 1990), 43.

Wilson, Fred. *Hume's Defense of Causal Inference*. (University of Toronto Press, Toronto

    Canada), 1997.