Foundational Disjunctions:

Limit, Function, and Dialectic in Ernst Cassirer and Nicholas of Cusa

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Abstract

Ernst Cassirer is both an eminent scholar of the Western intellectual tradition and a philosopher in his own right. These two facets of his thought cannot be extricated from each other; indeed, his philosophy develops out of his evaluation and narrativisation of the progress of the Western intellectual tradition. Pivotal in this narrative is the 15th c. cardinal and philosopher, Nicholas of Cusa. Cusa, for Cassirer, encompasses all the strands of Renaissance thought and thus embodies the passage from the Middle Ages to Modernity. This thesis argues that Cusa's philosophy is defining for Cassirer's thought. More precisely, Cusa's elaboration of immanent and transcendental limit concepts enables Cassirer to bridge the gap between Plato's epistemology and the modern epistemology of transcendental idealism. Beginning with the Marburg Neo-Kantian reading of Kant's critical philosophy, I argue that their intellectualist reading implies a strongly dialectical foundation that requires the limitation of the understanding by reason and the limitation of reason by the absolute. The roots of this transcendental idealism are then traced back to Plato. Cassirer's philosophy is thus positioned within the context of the Platonic tradition as opposed to the Aristotelian tradition. More specifically, Cassirer is shown to rely on a disjunction between the sensible and the ideal realm in order to ensure the plenitude of the concept and its applicability to experience. This plenitude and this applicability, in turn, are achieved through by Cusa’s elaboration of a concept of negation that enables the dialectical relationship between an immanent and a transcendental limit concept. Accordingly, Cassirer's interpretation and development of transcendental idealism are shown to evolve out of his reading of Cusa's works.

Ernst Cassirer est à la fois un éminent spécialiste de la tradition intellectuelle occidentale et un philosophe à part entière. Ces deux facettes de sa pensée ne peuvent être dissociées l'une de l'autre ; en effet, sa philosophie se développe à partir de son évaluation et de sa narration du progrès de la tradition intellectuelle occidentale. Le cardinal et philosophe du XVe siècle, Nicolas de Cues, occupe une place centrale dans ce récit. Pour Cassirer, Nicolas englobe tous les courants de pensée de la Renaissance et incarne donc le passage du Moyen Âge à la modernité. Ce mémoire soutient que la philosophie du Cusain est déterminante pour la pensée de Cassirer. Plus précisément, l'élaboration par Nicolas des concepts de limites immanentes et transcendantales permet à Cassirer de combler l'écart entre l'épistémologie de Platon et l'épistémologie moderne de l'idéalisme transcendantal. En partant de la lecture néo-kantienne marbourgeoise de la philosophie critique de Kant, ce mémoire soutient que leur lecture intellectualiste implique un fondement fortement dialectique qui requiert la limitation de l'entendement par la raison et la limitation de la raison par l'absolu. Les racines de cet idéalisme transcendantal remontent donc à Platon. La philosophie de Cassirer est donc positionnée dans le contexte de la tradition platonicienne par opposition à la tradition aristotélicienne. Plus précisément, Cassirer s'appuie sur une disjonction entre le domaine sensible et le domaine idéal afin de garantir la plénitude du concept et son applicabilité à l'expérience. Cette plénitude et cette applicabilité, à leur tour, sont obtenues grâce à l'élaboration par le Cusain d'un concept de négation qui permet la relation dialectique entre un concept limite immanent et un concept limite transcendantal. En conséquence, l'interprétation et le développement de l'idéalisme transcendantal de Cassirer sont montrés comme évoluant à partir de la lecture des œuvres de Nicolas de Cues.

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Introduction

In 1927, Ernst Cassirer, one of the preeminent philosophers of his time, published a book on the Italian Renaissance. This book, *The Individual and the Cosmos in Renaissance Philosophy (Individuum und Kosmos in der Philosophie der Renaissance*),[1] proved a mainstay in Renaissance studies and reintroduced Nicholas of Cusa, until then a peripheral figure in the history of philosophy, into the intellectual mainstream.[2] Despite the popularity of this work within the context of Renaissance studies, it is not often seen as an important component of Cassirer's philosophical corpus. Scholars of Cassirer and early 20th c. Neo-Kantian or phenomenological schools pay it little attention. This is an unfortunate oversight, as Cassirer's study of Cusa is not only important to his philosophical system but stands as a crucial component of Cassirer's intellectual development. Indeed, *ICRP* is not Cassirer's first study of Cusa; the first chapter of his *Habilitationschrift*, completed in 1906 and titled *Das Erkenntnisproblem in der Philosophie und Wissenschaft der neueren Zeit: Erster Band*, is a comprehensive account of Cusa's work that, like *ICRP*, positions Cusa as a harbinger of Modernity. The thought of this 15th c. cardinal was formative for Cassirer, and he continued to study Cusa throughout his career as he moved from Marburg to Berlin to Hamburg. In his time at Hamburg, from 1919 to 1932,

[1] From here on out, referred to as *ICRP.*

[2] There is very little literature on Cusa before the 19th c. As Morimichi Watanabe points out, "Although there were some notable publications on Cusanus which appeared before and in the eighteenth century, such as Caspar Hartzheim's *Vita Nicolai de Cusa* and Johannes Sender's study and translation of Cusanus' *De pace fidei*, it was not until the beginning of the nineteenth century that serious research on Cusanus' life and thought began in German-speaking countries….what some historians called a Cusanus Renaissance occurred at the University of Tubingen in the 1820's under the influence of Johann Adam Mohler." (Watanabe, "The Origins of Modern Cusanus Research in Germany and the Establishment of the Heidelberg Opera Omnia.") This interest in Cusa continued on into the Neo-Kantian schools, where intellectuals such as Cassirer's mentor, Hermann Cohen took deep interest in Cusa's work. In Italy, Giuseppe Rossi published *Nicolo da Cusa e la direzione monistica della filosofia nel Rinascimento* in 1893 and Enrico Costanzi published "Un precursore di Galileo nel Sec. XV: il Cardinale Niccolo da Cusa, in 1898. In the 1910s and 1920s, Paolo Rotta published further work on Cusa in Italian. Pierre Duhem published the second volume of *Études sur Léonard de Vinci* in 1909, which deals with Cusa extensively. Edmond Vansteenberghe published a study of Johannes Wenck's treatise against Cusa, *De ignota litteratura,* in 1910 and the monograph, *Le cardinal Nicolas de Cues (1401-1464): L'action—la pensée*. It is only with Cassirer's 1927 publication and the undertaking of the establishment of the Heidelberg *Opera Omnia* that Cusa studies really take hold.

Cassirer pursued his study of the Renaissance in more depth. Equipped with Aby Warburg's famous library and surrounded by specialists on the Renaissance, such as Erwin Panofsky, Raymond Klibansky, Paul Oskar Kristeller, and Warburg himself, Cassirer was immersed in Renaissance thought. This period was not just one of historical study for Cassirer, however; it also proved to be his most productive philosophical period. Between 1923 and 1929, Cassirer published the three volumes of his *magnum opus*, *The Philosophy of Symbolic Forms*, not to mention several books and essays on language, myth, science, aesthetics, and the history of philosophy. It is also during this period, in 1929 at Davos in Switzerland, that Cassirer famously debated with Martin Heidegger about the concepts of freedom and rationality in Kant and their relation to the state of European philosophy.[3] *ICRP* is part and parcel of this broader philosophical project and must be considered within the context of Cassirer's thought more broadly as well as understood to contribute to this philosophical system.

Indeed, more generally, Cassirer's philosophy is inextricable from his scholarship. Following Hegel, Cassirer is preoccupied with identifying the spirit of an age or discipline. As he puts it in *ICRP*,

> although it can never cease trying to achieve the general, and even the most abstract universality, the history of philosophy must never forget that it can only make responsible generalizations by immersing itself in the most concrete particulars and in the most subtle detail. What is needed is the universality of a systematic point of view and of a systematic orientation which in no way coincides with the universality of merely empirical concepts used un the periodization of history for convenient classification.[4]

Cassirer's approach to history is thoroughly transcendental. He undertakes a twofold approach that insists on a "systematic orientation", a consistent method of inquiry, and that is preoccupied with identifying the general orientation and end towards which intellectual currents of an age or

[3] Two extensive studies of this encounter and Cassirer's arguments and philosophical position are Peter E. Gordon's *Continental Divide* and Simon Truwant's *Cassirer and Heidegger in Davos*.
[4] Cassirer, *The Individual and the Cosmos in Renaissance Philosophy*, 5.

discipline are directed by identifying and examining the particularities in which they are rooted. This approach is centered around a tension between the universality of the method and the particularities of historical context. Like Hegel, Cassirer believes that, as one moves from one mode of knowledge to the next, the character of the previous mode is overcome and built upon; thus, every mode of knowledge serves as a genetic principle for the next and remains as a permanent ground for subsequent forms of knowledge under the auspice of universal reason. Cassirer's account, though evolutionary, is less tied to historical ages than Hegel's. Cassirer maintains and insists on a mutual distinction between realms of knowledge and resists resolution into a single universal principle. It remains a subject of debate how successfully Cassirer holds this universal principle together with a distinction between stages of knowledge; nonetheless, it is central to his project. Cassirer outlines certain broad delimitations such as those that distinguish the period dominated by the mythic imagination from the period dominated by theoretical knowledge and that which distinguishes the era of the reign of a logic of substance, where the nature of being is of the highest concern, from the era of the reign of a logic of function, where structured systems are of primary concern. The first delimitation coincides with the transition from myth to philosophy in Ancient Greece. Indeed, much of Cassirer's work suggests a clear evolution from mythic or religious modes of thought to theoretical or discursive modes of thought. Though Cassirer views both as valid, he also views them as separate. The second delimitation, however, is less clear cut. Cassirer suggests that a transition occurs from a logic of substance to a functional logic with the advent of Modernity; but the full fruition of functional logic only comes in the late 19th and early 20th c. with the invention of group theory and modern physics. Accordingly, the passage to Modernity is characterised by a confluence of different perspectives.

In *ICRP,* Cassirer offers an analysis of Renaissance thought that suggests an entanglement of the logic of substance and a functional logic. In Cusa's work, these two forms of logic are distinguished and held in parallel. Though such a double system seems to contravene Cassirer's work in favour of a logic of function, the collaboration of these two systems of logic is in fact exemplary of Cassirer's philosophy. As Charles W. Hendel points out, Cassirer differs from Hegel insofar as he does not resolve spirit into life; rather, "It is never forgotten that in the constitution of whatever appears as "given" at any stage, even the highest, there is always a factor not contributed by the form giving consciousness."[5] Cassirer always resists the temptation to conflate epistemology with ontology. Accordingly, his philosophy, which is essentially an epistemology, never ventures claims about being. As a result of this critical circumscription, Cassirer has been accused of proffering a philosophy that lacks ontological foundations. In *ICRP*, however, this charge is met—if only indirectly. By positioning Cusa as an early proponent of functional logic, Cassirer is able to incorporate Cusa's thought into his system. In doing so, Cassirer demonstrates the compatibility of Cusa's ontological claims with his own critical epistemological claims.

Cassirer's critical position, of course, puts him in the Kantian tradition. As his approach to history evinces, Cassirer's Kantian heritage is not only critical but transcendental.[6] The Marburg school and Neo-Kantianism more broadly has as its fundamental premise the transcendental method. As Samantha Matherne points out, "the 'transcendental' question

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[5] Hendel, "Translator's Introduction," 62.

[6] Characterising Cassirer's philosophy as both critical and transcendental may seem redundant; however, this is a post-Kantian bias. Several thinkers, such as Plotinus or Pseudo-Dionysius, employ a transcendental method that endeavours to uncover the conditions for the possibility of knowledge without attempting to adjudicate under which rubric of knowledge these conditions fall. Accordingly, such a philosophy is transcendental but not critical. On the other hand, someone like David Hume claims a critical stance when he claims that causality is a mere side-effect of habit, as he circumscribes the realm of what can be claimed empirically and excludes causality. He does not, however, employ a transcendental method in order to do so.

concerns not so much the objects, as the "mode of knowledge [*Erkenntis*]" on which those objects depend."[7] In other words, for Cassirer and his Marburgian colleagues, in order to account for any and every sphere of experience, the conditions of the possibility for such knowledge must be elaborated. Matherne adds that this transcendental approach locates the unity of reason in the *terminus a quo* versus the *terminus ad quem* of the mental act. Though the latter could certainly be an option, because the different spheres of existence are oriented towards different ends in Cassirer's philosophy, only the faculties of the subject can stand as the source of the thoroughgoing unity of experience. Thus, like Kant, Cassirer is committed to finding the unity of experience in the unity of the subject. It is, however, particularly important for the Marburg Neo-Kantians that this subjective ground have a counterpart in the objectivity of experience. For Cassirer, this objectivity is in part rooted in the necessity of mathematics and logic. As he says in a 1927 essay, "The Problem of the Symbol and Its Place in the System of Philosophy,"

> Nothing adheres to the signs of the symbolic language of mathematics and logic that in any way includes a relation to the "subject" *or* to the individual world of feeling and sensation. They serve exclusively the representation [*Repräsentation*] of the most general, objective, and necessary facts.[8]

Mathematics and logic provide the necessary modality of thought that ensures its objectivity. This necessity must, however, be rooted in experience; thus, the Neo-Kantian project is deeply preoccupied with ensuring the applicability of mathematics and logic to experience. As we shall see, this will undergird Cassirer's transcendental project.[9]

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[7] Matherne, "Marburg Neo-Kantianism as Philosophy of Culture," 218.
[8] Cassirer, *The Warburg Years (1919-1933)*, 265.
[9] I do not wish to overemphasise Cassirer's Neo-Kantianism. As John Michael Krois points out, much non-Anglophone scholarship on Cassirer views him as a pure Marburg Neo-Kantian (*Cassirer, Symbolic Forms and History*, 6.) Though this aspect of Cassirer's thought is very important in the context of this study that focuses on his reception of the transcendental method, Cassirer's philosophy is rather more multi-faceted than a straightforward Neo-Kantian moniker can evince.

Cassirer's transcendental philosophy depends on two fundamental concepts: those of symbol and function. The concept of function is at least as fundamental to Cassirer's system as the concept of symbol. In fact, it seems that Cassirer developed his position on functional logic before developing his theory of the symbol. In his first major systematic work, *Substance and Function*, published in 1910, Cassirer fully elaborates his theory of functional logic; and, as Simon Truwant points out, though "In 1906, Cassirer [had] not yet developed the conceptual distinction between a substantial and functional unity. Nevertheless, the idea behind it is clearly already present in the introduction of the first volume of *The Problem of Knowledge*."[10] Cassirer had begun to develop his concept of function very early on, and, though much of the underpinnings of a functional account of the sciences can be traced to Cassirer's Neo-Kantian schooling, his development of this concept is here also tied to his earliest account of Nicholas of Cusa in *The Problem of Knowledge*. Truwant further argues that Cassirer only developed an account of the symbol after being exposed to the Warburg Library and Warburg's own theory of the symbol. The oft-cited account of Cassirer's discovery of symbolic forms recounts that the idea first came to him suddenly in a streetcar in Berlin in 1917. Though Cassirer would thus have spent some time developing this idea before arriving in Hamburg, Truwant points to a letter written on November 28, 1920, by Fritz Saxl, the director of the library, that indicates that, prior to his arrival, "[Cassirer] only knew a small part of the literature on the concept of the Symbol in our holdings, and the visual attitude (the making-visible of the Symbols in mimicry and art) not at all."[11] Much of Cassirer's reflections on symbolic form, especially in its mythical, religious, and artistic aspect, would therefore only have occurred after encountering the Warburg Library. Moreover, though Cassirer's theory of symbolism and its associated terms—such as "symbolic

[10] Truwant, "The Concept of 'Function' in Cassirer's Historical, Systematic, and Ethical Writings," 295.
[11] Saxl cited in Krois, "Cassirer's 'Prototype and Model' of Symbolism," Saxl cited in Krois 536.

pregnance" and "symbolic form"—are often considered his most important philosophical contributions, they are developed much later in his career than the concept of function. It is during his time in Hamburg that Cassirer elaborates his theory of the symbol and publishes his *Philosophy of Symbolic Forms*. That said, though Cassirer's exposure to the resources at the Warburg library certainly enabled the elaboration of his philosophical system, a logic of the symbol was already implicit in his earlier work. Indeed, Cassirer's commitment to a logic of function and the transcendental method leads him to develop a philosophy of symbolic forms. His philosophy of symbolic forms is thus a natural outgrowth of these joint commitments. More precisely, the confluence of his commitment to the transcendental method, along with his reflections of function and symbol, leads Cassirer to develop a dialectical account of the relationship between the Kantian faculties of reason and the understanding in order to ground empirical knowledge.

Cassirer finds in Cusa's works the first Modern account of a necessary and dialectical relationship between the empirical and the ideal. For Cassirer, Cusa's philosophy is representative of the Renaissance; this status is a result of his exploration of the relationship between the universal and the particular, which Cassirer characterises as the central achievement of this period. More specifically, according to Cassirer, the relation between the universal and the particular, as it is developed and espoused in the Renaissance, would come to augur the advent of modern scientific thought.[12] This new formulation focused on both the universalisation of the particular and the inherence of the universal within the particular. That is to say, while the particular was understood to be endowed with infinite potency, and thus symbolically gesturing towards the absolute, it was also conceptualised as a single unit within an infinite series of

[12] Domandi, "Translator's Introduction," viii.

homogeneous units. The "infinite particular", depending on whether the infinite is understood intensively or extensively, either belonged to a world overabundant in symbolic meaning or a completely quantifiable world.

In Cassirer's view, the potency of the human mind is tied to its symbolic capacity. Every aspect of human thought is symbolically expressed and developed; thus,

> We grasp the problem of symbolism so broadly that it does not belong exclusively to any single domain of spirit but rather becomes a systematic focal point toward which all of the basic disciplines of philosophy are directed—logic no less than aesthetics, the philosophy of language as well as the philosophy of religion.[13]

The mind's symbolic capacity is at the basis of its creative capacity. The world is developed and structured for us through symbolic forms. Cusa's view of the individual, which proceeds from his reflections on the concept of the infinite, is, for Cassirer, perfectly adapted to this genetic account of the symbol. Cassirer claims that,

> Cusanus had distinguished a threefold direction and a threefold significance in the concept of infinity. God is the Absolute-Infinite, the pure Maximum which as such remains unattainable to the human intellect. And opposed to Him are forms of the relative-infinite. One is present in the world, the other is the human mind. In the first, the infinity of the absolute presents and reflects itself in the image of the universe without spatial limits, stretching to indeterminate distances; in the second, the relation is so expressed that the mind in its progress recognizes no *ne plus ultra*, no limit to its striving.[14]

The contracted image which is found in the human mind is limitless and dynamic. More than creation as such, which is bounded, the human mind presents the true image of God. Accordingly, Cassirer understands the artist, in the act of creation, to be participating in a new spiritual creation. The human mind, by giving the world form, exercises its freedom. The mind actualises the potential reality according to its intended end. Accordingly, for Cassirer, not only does Cusa advance a system that is centered around the co-inherence of the universal and the

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[13] Cassirer, *The Warburg Years (1919-1933)*, 254–55.
[14] Cassirer, *The Individual and the Cosmos in Renaissance Philosophy*, 69.

particular he also ties this relationship back to a modern view of an infinite cosmos that is unified in the creative intellect of the human mind.

It is the convergence of all of these elements that makes Cusa the "simple focal point" of the intellectual spirit of the Renaissance.[15] This convergence is not just that of a single historical period, however. Due to the transitional and pivotal character of the Renaissance, Cusa's thought also serves as a point of convergence between Ancient and Medieval thought and Modern preoccupations. This relationship between Ancient and Modern and the transcendental method, which serves as a throughline from Plato to Kant, is at the center of Cassirer's reading of Cusa. To understand Cusa's importance for Cassirer, we must explore not just Cusa's own thought put his position within this tradition. Accordingly, we shall begin, in the first chapter by exploring Cassirer's reading of Kant. Following his Neo-Kantian colleagues, Cassirer views Kant's *Critique of Pure Reason* through an intellectualist lens. This perspective, combined with his preoccupation with extracting a functional logic from Kant's system, leads Cassirer to understand Kant's account of empirical knowledge to be grounded in a strongly dialectical structure. This structure in turn relies on a disjunction between different levels of knowledge that are themselves associated with different modalities of knowledge.[16] In the second chapter, the question of disjunction and dialectic will be put in conservation with Cassirer's reading of Plato. Cassirer understands functional logic, and Cusa's logic, to develop out of the Platonic tradition and the ontological divide that Plato posits between the ideal and the empirical realm. This

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[15] Cassirer, 7.

[16] Cassirer is of course well-known to have proffered an interpretation of Kant's critical philosophy that put much emphasis on the third critique in his monograph *Kant's Life and Thought*). Though the analysis in this paper focuses on the logical aspects of Cassirer's reading of Kant and thus restricts itself to the first critique, this strongly dialectical reading of the *CPR* is in line with the interplay of the faculties advanced in the *CPJ* and the important role played by subjective universals and reflective judgment. For more on the relationship between the regulative employment of the ideas of pure reason, hypothetical reason, and reflective judgment see Grier, "Kant on the Illusion of a Systematic Unity of Knowledge", especially 5-6, and Rajiva, "Is Hypothetical Reason a Precursor to Reflective Judgment?"

divide enables the reciprocal determination of the empirical and the ideal as well as their symbolic relation. For Cassirer, the conservation and association of unity and disjunction avoids the tyranny of the concept that characterises Aristotle's logic and, instead, prioritises relationality. Moreover, Plato's two-tiered ontology, as opposed to Aristotle's ontological monism, resists the identification of form and content and thus enables a system in which concepts, whose content cannot exist in reality—such as an unlimited totality—can be thought. Finally, in the third chapter, in light of Cassirer's reading of Kant and Plato, we shall see how Cassirer interprets Cusa as both a critical and transcendental thinker. Cusa serves as a bridge between Plato and Kant at the advent of modernity. Focusing on Cassirer's attention to disjunction, dialectic, and the relationship between the ideal and the empirical, Cusa's development of limit concepts will be shown to enable him, in Cassirer's view, to elaborate a unified philosophy that can account for an infinite cosmos. This infinite cosmos, moreover, is dialectically grounded in the concept of limit and can be thought both empirically and mathematically as well as in the relation of the two.

Chapter 1 – Dialectic and the Transcendental Method

Cassirer's educational and intellectual trajectories are strongly allied to the Marburg school of Neo-Kantianism. Cassirer studied under Hermann Cohen at Marburg and, up until the death of Cohen in 1923, much of his scholarly output was, at least ostensibly, squarely within the confines of a Marburgian approach to intellectual history.[17] After Cohen's death and his arrival at Hamburg, Cassirer's position relative to the Marburg school becomes more ambiguous. Indeed, Cassirer's development of his philosophy of symbolic forms, due to its extension into diverse realms of knowledge such as myth and religion, seems to put him at odds with the Marburg project that was oriented for the most part towards the natural sciences, with some attention given to ethics and aesthetics as well. Most scholarship on Cassirer pushes back against this simplistic reading of the Marburg School's project and argues—to varying degrees—that developments in Cassirer's philosophy in the 1920s are continuous with his earlier work within the Marburg school.[18] At the very least, following Samantha Matherne, we can say that Cassirer retains a commitment to the transcendental method that, like Hermann Cohen's and Paul Natorp's, is fundamentally intellectualist.[19]

It is no secret that Neo-Kantianism, in the broadest sense of the term, called for a return to Kant as a response to the unbridled idealism of the Romantic idealists such as Fichte, Hegel,

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[17] For Cassirer's at times troubled relationship with Cohen and the philosophy of the Marburg school, see Skidelsky, *Ernst Cassirer*, 46–51.

[18] Most scholarship on the Marburg school and its relationship to Cassirer pushes back against this reductive reading of their project. Though Cohen and Natorp focused their attention on the three areas of knowledge addressed by Kant's three critiques, they understood science, ethics, and aesthetics to be forms of cultural expression of the same fundamental form of reason; accordingly, Cassirer's articulation of this same principle within the context of myth, religion, language, etc. can be seen as a natural extension of this neo-Kantian project. See Gordon, *Continental Divide,* Matherne, *Cassirer,* 17-48, and "Marburg Neo-Kantianism as Philosophy of Culture", as well as Skidelsky, *Ernst Cassirer*, 22-51.

[19] Matherne, *Cassirer*, 18–19, and Pereira, "Cassirer and Kant on the Unity of Space and the Role of Imagination", 117. Cassirer's position as a intellectualist interpreter of Kant comes out clearly in the introduction to volume 3 of *The Philosophy of Symbolic Forms*, where he states that no "merely sensory consciousness, that is, a consciousness remaining outside of any determination by the theoretical functions of signification and preceding them as an independent datum" (8).

and Schelling—though, the nature of this return varied according to the schools of Neo-Kantianism. One difference between the Marburg School and the Southwest School that is often remarked upon is the attention that the former pays to the natural sciences and of the latter to the humanities. As mentioned, however, the rigidity of this distinction is often exaggerated. A more important distinction lies in their interpretation of Kant's *Critique of Pure Reason* (*CPR*) as either intellectualist or non-conceptualist. The Southwest School endorses a non-conceptualist reading of Kant that sees a strict separation between sensibility and understanding. Thus, intuitions, as they are presented in the Aesthetic, are entirely independent of concepts until they are assimilated into the understanding by the imagination as described in the Schematism. An intellectualist reading, on the other hand, understands concepts to be operative "all the way down", such that intuitions are forms of thought; accordingly, sensibility is subsumed under reason. This second reading is the Marburgian reading, and it is Cassirer's reading. Cassirer's commitment to an intellectualist reading of the transcendental method leads him to develop a dialectical account of the relationship between reason and the understanding in order to ground empirical knowledge.

An intellectualist interpretation of Kant rests heavily on the principle of unity. Intellectualists argue that the object of experience is only determinable as such within the context of a structured unity. This structured unity can only be implemented by the synthesizing operation of the understanding. Accordingly, Cassirer states that,

> it is now the function of knowledge to build up and constitute the object, not as an absolute object but as a phenomenal object, conditioned by this very function. What we call objective being, what we call the object of experience, is itself only possible if we presuppose the understanding and its a priori functions of unity. We say then that we know the object when we have achieved synthetic unity in the manifold of intuition.[20]

[20] Cassirer, *The Philosophy of Symbolic Forms. Vol. 3*, 5.

For Cassirer, then, empirical knowledge requires a structured complex of totality or "systematic unity." In order to support this claim, Cassirer appeals to Kant's concept of the unity of apperception and claims that the unity it provides is "the condition "of every possible perception"", whether scientific or not.[21] This claim is, of course, drawn directly from Kant, who views apperception as one of the original sources (capacities or faculties of the soul), along with sense and imagination, "which contains the conditions of the possibility of all experience and that cannot be derived from any other faculty of the mind."[22] Kant's claim that the unity of apperception cannot be derived means that it has no determinate ground beyond itself. Indeed, in the Ideals of Pure Reason, Kant will assert that "Self-consciousness in general [the pure apperception] is…the representation of that which is the condition of all unity, and yet is itself unconditioned."[23] The unity of apperception is the unconditioned condition of the unity of the understanding. On this faculty of apperception is grounded the unity of the synthesis of the manifold. In other words, apperception is the transcendental ground of the unity of consciousness, the unity of the concepts of objects in general, the unity of objects of experience, and thus of all unity.[24] Accordingly, the unity of apperception grounds all concepts *a priori*,[25] and it does so in accordance with laws—the categories.[26]

The pure categories, however, are the mere form of thinking abstracted from all experience. In order to apply the categories to experience, Kant needs to synthesise sensibility and understanding in the imagination by way of the transcendental schema.[27] The schema is the bridge between the sensibility and understanding and governs the synthesis of the concepts of the

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[21] Cassirer, 8.
[22] Kant, *Critique of Pure Reason*, A94/B126.
[23] Kant, A401-402.
[24] Kant, A107.
[25] Kant, A107.
[26] Kant, A108.
[27] Kant, A138/B177 and A140/B179.

understanding with the objects of experience;[28] thus, it enables the understanding to determine an object of experience. The understanding, in turn, is, "generally speaking, the faculty of cognitions,"[29] and cognitions are "the determinate relation of given representations to an object."[30] In other words, the understanding unites the manifold of representations under a concept and, with the help of the schema, applies it to an object of experience. Experience as a whole, however, requires more than a one-to-one attribution of a concept to an object. Cognition of experience requires not only the determination of an object, but the determination of the relationship between objects—what Paul Guyer calls "the conditions of empirical knowledge."[31]

The determination of the relationship between the objects as the condition for empirical knowledge underlies Cassirer's account of functional logic. In his 1923 work *Einstein's Theory of Relativity*, Cassirer argues that, despite Kant's reliance on Newtonian physics in his account of space and time in the Analogies of Experience, transcendental idealism is in fact perfectly in line with modern physics. Kant's philosophy is fundamentally compatible with Einstein's theory because it understands objects in space and time to be determined reciprocally. Accordingly, space and time have no reality apart from our empirical knowledge but are revealed by our judgements about empirical reality to be schemas of connection, "by which what is sensuously perceived is set in certain relations of coexistence and sequence."[32] The determination of relationships of coexistence and sequence is what Kant refers to as "dynamical principles" or the "analogies of experience." As Guyer has argued, the Analogies of Experience in Kant's *CPR* set out the conditions of empirical knowledge.[33] They are the basic principles of judgment as

[28] Kant, A141/B180.
[29] Kant, B137.
[30] Kant, B137.
[31] Guyer, *Kant and the Claims of Knowledge*, 210.
[32] Cassirer, *Substance and Function & Einstein's Theory of Relativity*, 412.
[33] Guyer, *Kant and the Claims of Knowledge*, 210.

formulated with reference to temporal (and spatial)[34] forms of intuition rather than purely logical forms; accordingly, they are not a mere supplement to the categories but are essential to establishing the necessary temporal order of perceptions and thus ensuring the objective representation of perceptions. In other words, the analogies of experience are the fundamental regulative principles of possible experience and, as such, produce its systematic unity.

Systematic unity is provided by reason, not the understanding; accordingly, the unity of apperception, as the ground of the unity of the understanding is not sufficient. Instead, in order to produce a systematic unity, reason must presuppose an idea,

> namely, that of the whole form of a whole of cognition, which precedes the determinate relation of the parts and contains the conditions for determining *a priori* the place of each part to and its relation to others. Accordingly, this idea postulates complete unity of the the understanding's cognition, through which this cognition comes to be not merely a contingent aggregate, but a system interconnected with laws.[35]

In order to enable the presupposition of a systematic unity—which undergirds the Analogies' claim to empirical knowledge—reason must supply the idea of a whole of cognition. Though the unity of apperception provides the ground for the unity of the understanding, it does not provide the ground for the unity of the whole of cognition. Only reason, by postulating the structured unity of possible experience enables the Analogies to make a claim to empirical necessity.

The Analogies' claim to necessity through the postulates of reason can be illustrated by an analysis of the principle of substance[36] (the first analogy). Kant maintains that substance is the substratum of time itself.[37] Guyer suggests that this claim rests on an argument in four steps:

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[34] Though Guyer emphasises the role of temporal intuition, he also takes into account the role spatial intuition (Guyer 227-228). Other readings of the Analogies that strongly emphasises the role of spatial intuition are Arthur Melnick's *Kant's Analogies of Experience* and Jeffrey Edwards' *Substance, Force, and the Possibility of Knowledge*.
[35] Kant, *Critique of Pure Reason*, A645/B674.
[36] The choice to focus on the first analogy is strategic. Though all three analogies are interdependent and could be used to demonstrate the necessity of the postulates of reason, substance is an especially loaded concept for Cassirer. Indeed, by focusing on substance, Cassirer's critique of substance metaphysics, which will play an important role in part 2 of this paper, will be anticipated.
[37] Kant, *Critique of Pure Reason*, B224.

1) Insofar as succession and simultaneity are relations of moments in time, they are modifications of that which is permanent—*i.e.*, time itself.[38]
2) Time itself cannot be perceived. That is, though we can directly apprehend the succession of moments of time, the permanence of time itself, as permanent, cannot be perceived.[39]
3) Accordingly, there must be something, found among the objects of perception, which "represents time in general";[40] there must be a substratum that represents time in empirical cognition that is assumed to be permanent.[41]
4) Finally, Guyer argues that Kant "equates that which is the substratum *of time*, in the sense of a representation of the permanence of time, with "the substratum of all that is real", that is, *substance* in the traditional sense of the ultimate bearer of objective qualities."[42] In other words, substance, as the substratum of time is equated with material substance—substance in the Aristotelian or Scholastic sense of that which bears accidents.

It would seem that equating the substratum of time with substance is not a very Cassirean move, as the epistemological dominance of substance is, for Cassirer, the problem that philosophy must and, to an extent, has overcome. As we shall see, however, there is room in Kant's system to understand substance along purely regulative lines. In order to do so, though, one must move beyond the understanding to reason.

Guyer, after outlining Kant's argument, proceeds to problematise the third step. He suggests that there is no requirement that the representation of that which is permanent must itself be permanent.[43] Though I agree with Guyer's argument at the level of the understanding, I would suggest that reason does make the principle of substance necessary.[44] It is through this

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[38] Guyer, *Kant and the Claims of Knowledge*, 216.
[39] Guyer, 217.
[40] Kant, *Critique of Pure Reason*, B225.
[41] Guyer, *Kant and the Claims of Knowledge*, 217.
[42] Guyer, 217.
[43] Guyer, 219–20. Guyer supports this by appealing to the footnote at Bxli, which states that "the representation of something **persisting** in existence is not the same as a **persisting representation;** for that can be quite variable and changeable, as all our representations are, even the representations of matter, while still being related to something permanent, which must therefore be a thing distinct from all my representations and external, the existence of which is necessarily included in the **determination** of my own existence, which with it constitute only a single experience, which could not take place even as inner if it were not simultaneously (in part) outer".
[43] Indeed, as we shall see, Guyer himself touches on this demand of reason when he introduces the notion of epistemic necessity.
[44] Indeed, as we shall see, Guyer himself touches on this demand of reason when he introduces the notion of epistemic necessity.

move from the understanding to reason that Cassirer can transform substance from a metaphysical principle to a merely regulative principle.

In *Substance and Function*, Cassirer asserts that space and time are the postulates of reason that seem to recur and found every system of physics.[45] He further argues that space and time operate on two levels: at the level of sensation and at the theoretical or intellectual level.[46] It is only at the theoretical level that objectivity is achieved. Similarly, for Kant, the regulative principle of substance as the substratum of time ensures the possibility of empirical and thus objective knowledge. Accordingly, when Cassirer refers to the "pure concepts" of space and time, he is articulating space and time not as forms of intuition but as ideas. Indeed, in the later appended *Einstein's Theory of Relativity*, Cassirer refers to space and time along explicitly Kantian lines and quotes Kant in support:

> The meaning of the principle of order can in general be comprehended only in and with what is ordered; in particular, it is urged in the case of the measurement of time that the determination of the temporal positions of particular empirical objects and processes cannot be derived from the relations of the phenomena to absolute time, but that conversely, the phenomena must determine and make necessary their position in time for each other. "This unity in the determination of time is dynamical only, that is, time is not looked upon as that in which experience assigns immediately its place to every existence, for this would be impossible; because absolute time is no object of perception by which phenomena could be held together; but the rule of the understanding through which alone the existence of phenomena can receive synthetical unity in time determines the place of each of them in time, therefore *a priori* and as valid for all time."[47]

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[45] Cassirer, *Substance and Function & Einstein's Theory of Relativity*, 170: "Even in this plurality of possible starting-points, it is evident that the "picture" that we form of the reality of nature is not dependent on the data of sense perception alone, but upon the intellectual views and postulates that we bring to it. Among them, it is especially space and time, that uniformly recur in the different systems and thus form the unchanging part, the real invariant, for every theoretical founding of."

[46] Cassirer 171: "space and time are something different when we grasp them after the fashion of immediate sensation, and when grasp them after the fashion of mathematical concepts. And it is merely in the latter interpretation that their truth is affirmed."

[47] Cassirer, *Substance and Function & Einstein's Theory of Relativity*, 413.

The characterisation of time as a "rule of the understanding" is explicitly linked to the Kantian Idea a few pages later[48] when discussing absolute space. Ideas, as we know, belong not to the understanding but to reason; and, indeed, Kant's discussion of the regulative use of the ideas of pure reason identifies the permanence of substance as a necessary posit of reason in its regulation of the understanding.

The rules of logic presented by Kant in The Regulative Use of the Ideas of Pure Reason follow the traditional form. His analysis is based on a discussion of genus, species, and subspecies, and looks at how one moves between more general and more specific concepts within the field of logic. He suggests that reason prepares the field for the understanding by providing a principle of sameness of kind, a principle of variety, and, "in order to complete the systematic unity of it, adds…still another law of affinity of all concepts, which offers continuous transition from every species to every other graduated increase of varieties."[49] These three principles Kant names homogeneity, specification, and continuity.

Returning to the problem of substance, homogeneity and continuity are of especial concern. As we have seen, substance is a principle of permanence that underlies all change. For Kant—and for Cassirer[50]—such permanence requires homogeneity. Indeed, the presupposition that underlies the principle of substance is that of a homogeneous substratum in which change occurs. Through this homogeneity, continuity is ensured; because the substance endures, we can say that there is continuity from one moment to the next or that a substance endures in our absence.[51] Ultimately, though, substance is merely posited by reason. As the Marburg Neo-

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[48] Cassirer, 416.
[49] Kant, *Critique of Pure Reason*, A657-8/B685-6.
[50] Cassirer, *The Philosophy of Symbolic Forms. Vol. 3*, 127.
[51] Guyer argues the empirical knowledge of experience requires the permanence of substance. In the contingent world of experience, things must be related to something else in order to have determinacy. This is made quite clear by Guyer in his explanation of the principle of substance as a "synthetic, epistemological principle" (232). Guyer suggests that Kant requires the conservation of substance in order to enable us to make empirical judgments: "For

Kantians would argue, substance is the empirical instantiation of the principles of homogeneity and continuity and thus represents the application of the principles of reason to time and space.[52]

How this transition from the realm of pure reason to that of empirical cognition occurs, however, is not self-evident. Indeed, this transition is at the heart of the Cassirer's concern with the applicability of logic and mathematics to experience. It is also this transition that Guyer takes issue with; for, a representation (*Vorstellung*) is merely an object of the understanding and does not belong to cognition (and thus to empirical knowledge).[53] Accordingly, Guyer suggests that Kant endorses the notion of epistemic necessity as distinct from logical and metaphysical necessity.[54] Logical necessity, as we shall explore at length, holds unconditionally—that is, it follows from the form of discursive thought and holds of an object irrelevant of empirical conditions.[55] Metaphysical necessity makes claims about the formal constitution of our mind in order for our experience to be possible;[56] it thus encompasses the types of claims made in the Transcendental Deduction. Epistemic necessity, on the other hand, is not a claim about the human mind, but about the world. It posits how the world must be if we are to be able to cognise it. Accordingly, epistemic necessity is taken to belong to the objects of perception rather than to the subject.

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what Kant's principle implies is that if we cannot now produce *that* substance, currently characterized by some determination or properties incompatible with its continuing to comprise a porcelain pig, then it must simply remained undetermined whether the substance has ceased to exist or has just been moved or has even just been removed from our attention in some other way" (232). In order to verify the annihilation of an object, Kant requires that we can establish a state of affairs that is incompatible with the existence of that object. As Guyer puts it, "That can only be the same substance in another state" (232).

[52]See Skidelsky, *Ernst Cassirer,* 30; Truwant, "The Concept of 'Function' in Cassirer's Historical, Systematic, and Ethical Writings," 291.

[53] Kant, *Critique of Pure Reason*, A320/B376-7.

[54] Guyer, *Kant and the Claims of Knowledge*, 268.

[55] Guyer, 57.

[56] Guyer, 57–58.

Guyer suggests that Kant must rely on the notion of epistemic necessity, because time and space cannot be directly perceived. Cassirer makes the same point about the Newtonian concepts of absolute space and absolute time. Objectivity arises from an abstraction from the subjectivity of individual. Objective knowledge attains its necessity and universality, "because it abstracts from all differences."[57] Such abstraction is precisely how Newton comes to a definition of absolute space and time as fixed and eternal;[58] but, as Cassirer points out, such an abstraction from difference is susceptible to irremediably divorce objective knowledge from experience. As with Kant, the correspondence between reason and empirical cognition is not self-evident; and, indeed, if this correspondence cannot be established, then the theoretical postulation of space and time is nothing else but a "barren intellectual game"[59] whose claim to any regulative status is unfounded.

Accordingly, Cassirer claims that pure concepts must be related to empirical cases. In his system, Kant relates concepts to experience through the schematism. The schematism is the bridge between sensibility and understanding which enables the application of the concepts of the understanding to the objects of experience. The unity of apperception, as the transcendental ground of the unity of consciousness, is what guarantees the synthesis of the manifold. However, as we have seen, the one-to-one attribution of a concept to an object which the schematism enables is insufficient to a full account of experience: cognition of experience requires not only the determination of an object, but the determination of the relationship between objects. Indeed, the schematism can more accurately be said to relate concepts to objects (as Kant says) than to empirical cases; for, cases potentially involve many objects which must be related to each other.

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[57] Cassirer, *Substance and Function & Einstein's Theory of Relativity*, 171.
[58] Cassirer, 171–73 and 352.
[59] Cassirer, 171.

If we are to objectively determine the position of objects within space-time, we need to presuppose rules of relationality that enable the determination of objects in space and time—thus producing a systematic unity—through reciprocal determination.

It is through this these rules of relationality that one can extract a logic of function from Kant. As Edward Skidelsky points out, by applying Russell's calculus of relations to transcendental logic, Cassirer is able to root mathematics in the same a priori synthesis that governs the empirical world, thus enabling him to ensure the applicability of mathematics to nature.[60] Cassirer identifies such a common synthesis in Kant's claim that empirical reason requires the idea of the whole of cognition in order to attain a systematic unity, which can be drawn out of his account of possibility.

Possibility in General and Transcendental Logic

Possible experience is a modal category for Kant. Modal categories, through their determination of the object, do not contribute to its constitution but ask how the object is related to the understanding, the power of judgment, and reason.[61] The categories of modality thus restrict the pure categories to their empirical use;

> For if the categories are not to have merely logical significance and analytically express the form of **thinking**, but are to concern **things** and their possibility, actuality, and necessity, then they must pertain to possible experience and its synthetic unity, in which alone objects of cognition are given.[62]

The final lines of this passage express the two undergirding factors of the modal categories: the totality of experience and its unity. An interesting paradox arises, however, when we consider that the modal category of possibility requires possible experience in order to be established. If

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[60] Skidelsky, *Ernst Cassirer*, 54–55; In Cassirer's corpus, see especially *Substance and Function & Einstein's Theory of Relativity*, 53–54, "Kant Und Die Moderne Mathematik. (Mit Bezug Auf Bertrand Russells Und Louis Couturats Werke Über Die Prinzipien Der Mathematik)," 44, and *Philosophy of Symbolic Forms. Vol. 3,* 287-8 .
[61] Kant, *Critique of Pure Reason*, A219/B266.
[62] Kant, A219/B267.

possible experience defines possibility, what circumscribes the domain of possibility relative to experience? It seems untenable to suggest that possibility circumscribes the very concept that defines it.

This difficulty is a bit more palatable when we consider the difference between general (formal) and transcendental logic. As mentioned above, the Analogies function as a transition from the pure expression of the categories independent of experience to their empirical use. This transition maps onto Kant's distinction between general and transcendental logic. Where absolute possibility is a modal category of general logic, possibility, as it relates to possible experience, is a modal category of transcendental logic. Kant defines the two forms of logic in the following way:

> General logic abstracts from all content of the predicate (even if it is negative) and considers only whether it is attributed to the subject or opposed to it. Transcendental logic, however, also considers the value or content of the logical affirmation made in a judgment by means of a merely logical predicate, and what sort of gain this yields for the whole of cognition.[63]

Transcendental logic distinguishes itself from general logic by an appeal to the totality of possible experience. By aligning its domain with that of possible experience, transcendental logic defines possibility not merely according to the principle of non-contradiction—as general logic does—but according to its correspondence with intuition. In other words, possibility in general logic appeals only to non-contradiction. Its only requirement is that the concept be internally coherent; thus, it disregards the relationship of the object to the totality of experience. Transcendental logic, on the other hand, requires just this relation to the totality of experience.

When it comes to possibility, however, the relationship of transcendental logic to experience remains formal. Kant defines empirical possibility as "Whatever agrees with the

[63] Kant, A72/B97.

formal conditions of experience (in accordance with intuition and concepts)."[64] Contrary to actuality, possibility does not require sensation—its conditions are formal, not material. This formal aspect is, however, drawn from experience itself. As Kant's definition makes clear, the formal conditions of experience are not divorced from intuition; rather, they are formulated in accordance with both intuitions and concepts. That is to say, objects of possible experience are concepts that are internally coherent and that do not fly in the face of the totality of experience. They are both intrinsically and extrinsically possible.

Etienne Gilson links Kant's modalities of judgment to the problem of essence and existence. Gilson argues that, for Kant, existence—understood here as the givenness of the thing—adds nothing to essence.[65] Accordingly, it is a modality of judgment—*i.e.*, "something which pertains to existence without altering "what" it is."[66] Gilson then lays out three modalities of judgment—problematical (possibility), assertive (reality), or apodictical (necessity)—and claims that only the second answers to existence.[67] In other words, according to Gilson, it is only when judgment makes a claim about experience and thus attributes a concept to an object of experience that one can talk about reality. A problematical judgment, on the other hand, remains divorced from experience and belongs to the realm of general logic.

Though Gilson's account is not wrong, it is lacking; for, Kant's system, as we have seen, includes two types of possibility. Claude Piché outlines these two types of possibility in his discussion of the contingency of the Analogies of Experience.[68] Piché says that Kant holds a

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[64] Kant, A218/B266.
[65] Gilson, *Being and Some Philosophers*, 126.
[66] Gilson, 130. In order to distinguish Kant's position from thinkers such as Scotus, Gilson adds that "since existence can be grasped only in a reality which is the work of the mind (since both the *a priori* forms of sensibility and the *a priori* categories of the understanding cooperate in its making), existence can no longer be a mode of essence itself, but a modality of judgment" (130). In other words, Kant's are epistemological not ontological modalities.
[67] Gilson, 129.
[68] Piché, "Kant on the 'Conditions of the Possibility' of Experience."

notion of intrinsic possibility—what Baumgarten calls "absolute possibility."[69] Conversely, he also holds that that which is relatively (not absolutely) possible is that which agrees with the formal aspect—the transcendental conditions—of experience. This formal aspect is, however, drawn from experience itself. Hence, Piché states that "'Possible experience'…has a twofold meaning: 1) experience is made possible by *a priori* conditions; and 2) possible experience confers validity on the entire transcendental apparatus."[70] Here, we return to the crux of our question. The tension originally set out by Kant's definition remains: relative possibility, as the type of possibility that arises from the transcendental conditions of possible experience, is validated by possible experience; and, vice versa, possible experience depends on the *a priori* conditions of the understanding. Possibility and possible experience maintain each other through a mere correlation. Piché is content with this "virtual" correlation which he admits provides no sure footing for knowledge. As we shall see, however, this seemingly suspended notion of possibility in fact finds rather more secure foundations by way of its relationship to absolute possibility.

As we have seen, due to its connection with experience, relative possibility—possibility that is "restricted to conditions"[71]—is the only kind of possibility that the human mind can cognise, while absolute possibility can only be thought. Following this line, Piché suggests that the qualifier "absolute" is in fact *à propos* here. Since purely logical possibility is defined only internally, it is possibility without reference to any exterior relation—*i.e.*, it is absolute or "unconditioned" possibility. Indeed, Piché states that

> Kant feels the need to restore the strong sense of the term "absolute" at the beginning of the Transcendental Dialectic because it is synonymous with "unconditioned," which is the main topic of this second part of the *Critique* devoted to the logic of illusion. Indeed,

[69] Piché, 3.
[70] Piché, 5.
[71] Kant, *Critique of Pure Reason*, A326/B382.

> a possibility that is absolute in the full sense of the word pertains not to the understanding but to reason.[72]

Piché identifies an important point here: possibility, in the broadest sense, goes beyond the realm of possible experience and extends into the realm of the unconditioned—the noumenal realm. In other words, when possibility transgresses the bounds of experience, it is no longer relative but absolute. Absolute and relative possibility, like general and transcendental logic can thus be distinguished according to their relationship to experience.

The fundamental difference between general and transcendental logic is their given domain: where general logic ranges over the domain of possible thought, transcendental logic ranges over the domain of possible experience. As Kurt Mosser points out, the circumscription of these domains is essential to determining what logic can or cannot provide:

> A general logic can identify and clarify the concepts that constitute its rules, but cannot provide content beyond that, and thus offers only a negative criterion for determining the truth of a given claim…In contrast, [the rules of traditional logic] provide a "logic of truth" (A59=B84), but only within the domain of possible experience.[73]

The domain of general logic is larger; as we have seen, it requires a principle of non-contradiction. Transcendental logic, however, requires both the principle of non-contradiction at the level of the concept and "the agreement of cognition with its object"[74]—what I have referred to so far as intrinsic and extrinsic possibility. Thus, transcendental logic can, in a way, be understood to range over a domain that is contained within that of general logic. The principle of non-contradiction must be satisfied in order for a judgment to be made. That said, Mosser further emphasises that general logic should not be taken as prior to transcendental logic but as complementary.[75] Indeed, though transcendental logic must satisfy the demands of general logic,

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[72] Piché, "Kant on the 'Conditions of the Possibility' of Experience," 3.
[73] Mosser, *Necessity and Possibility: The Logical Strategy of Kant's Critique of Pure Reason*, 107.
[74] Kant, *Critique of Pure Reason*, A58/B83.
[75] Mosser, *Necessity and Possibility: The Logical Strategy of Kant's Critique of Pure Reason*, 108.

its restricted domain is a result of its relationship to a further criterion of truth—a criterion that general logic cannot speak to.

The domains described by Mosser map onto Gilson's modal categories of possibility and reality. Where general logic accounts for possibility, transcendental logic, by attributing cognition to its object, makes a claim about reality. Though these two modalities must, according to Mosser, be complementary, he does not clearly lay out what the nature of this relationship is. Indeed, Gilson considers the relationship between possibility and reality to be somewhat problematic in Kant; for, after Hume's intervention into philosophy, it has become impossible for one to posit a relationship of causality between these two modalities. Possibility does not cause reality; reality is a result of the givenness of existence.[76] Accordingly, Gilson, like Mosser, will point out that though Kant can say that these two modalities are complementary, the actual nature of the relationship between the two seems ambiguous.

Despite Gilson's and Mosser's claims to the contrary, the relationship between the two forms of logic is clearly illustrated in Kant's discussion of judgments of relation. In §6 of the Analytic, Kant lays out the logical function of the understanding relative to judgments in general. Under the third heading of "Relations," he presents three forms of relations of thinking in judgments: the categorical, the hypothetical, and the disjunctive. For our purposes, only the disjunctive is of interest. Disjunctive judgment, Kant states,

> contains the relations of two or more propositions to one another, though not the relation of sequence, but rather that of logical opposition, insofar as the sphere of one judgment excludes that of the other, yet at the same time the relation of community, insofar as judgments together exhaust the sphere of cognition proper.[77]

[76] Gilson, *Being and Some Philosophers*, 130.
[77] Kant, *Critique of Pure Reason*, A73-4/B98-9.

Disjunctive judgments function according to a principle of unity and opposition. In order to ascertain the relationship between judgments, reason must establish the sphere of cognition as a bounded unity in which a given judgment occupies a certain portion of this sphere, and its opposite(s) exhausts the remainder of the possibilities. Kant adds that disjunctive judgments are merely problematic, and that "**Problematic** judgments are those in which one regards the assertion or denial as merely **possible** (arbitrary)."[78] Disjunctive judgments, therefore, are problematic because though one side of the judgment might be true at a given time, the other could equally be true at another given time. For example, it is both true and untrue that the ball is rolling and that it is still, so long as the first proposition is given at time A and the second at time B. Accordingly, within the realm of possible experience, and thus within the domain of transcendental logic, a disjunctive judgment is no longer problematic because it makes not merely a claim to arbitrary possibility, but to the truth claim in a given time and space—*e.g.*, *this* ball is rolling.

From this example, we can see that the complementary relationship between the two forms of logic is intimately linked to Kant's account of possibility. If we consider the matter of disjunctive judgments further, we see that they in fact constitute the highest form of judgment. At the very end of the Transcendental Analytic, Kant asserts that

> The highest concept with which one is accustomed to begin a transcendental philosophy is usually the division between the possible and the impossible. But since every division presupposes a concept that is to be divided, a still higher one must be given, and this is the concept of an object in general (taken problematically, leaving undecided whether it is something or nothing).[79]

What Kant is getting at here is that, to establish the limits of the understanding, one must go beyond the understanding into the realm of pure reason. Indeed, here, by establishing the

[78] Kant, A74/B100.
[79] Kant, A290/B346.

distinction between possibility and impossibility through a disjunctive judgment and transcending this distinction, we find ourselves at the very boundary of transcendental and general logic; and, if we do not wish to fall into an infinite regress of higher and higher concepts, we must admit a single highest concept. For Kant, this concept, when it comes to the understanding, is the unified totality of possible experience; its opposite must accordingly be the impossibility of experience.

Negation and Transcendental Reflection

For Cassirer, the capacity to distinguish between the possible and the impossible is fundamental to any ideal determination:

> Every single concept embraces, side by side with a statement about being, an abundance of statements about non-being; every "is" in a predicative sentence can be fully understood only if we conceive of an "is not" as correlative with it. Indeed the concept cannot effect and ideal determination of the real as long as it remains exclusively within the confines of this reality. Its peculiar and supreme achievement requires that it progress from the contemplation of the real to that of the possible—and this it cannot do if it shrinks back from its opposite, the "impossible".[80]

In order to determine a given concept, one must be able to contrast it with what it is not. There is more being said here, however. In order to be able to determine being—and thus reality—one must be able to think what cannot be—*i.e.*, the impossible.

In order to fully account for the distinction between possibility and impossibility, however, a supplementary concept is required: the concept of nothing. As we have seen, in Kant, the modal principles make a claim to reality, and they do this by connecting the form of the understanding to sensibility. For, where there is no unity of experience—where there is no synthesis of sensibility and understanding—one falls outside the totality of possible experience. If we take Kant's account of disjunctive judgment into consideration, though, in order to make

[80] Cassirer, *The Philosophy of Symbolic Forms. Vol. 3*, 305.

this claim, its opposite must first be excluded. That is to say, as with Cassirer, in order for the real to be established, the not-real must be excluded. Accordingly, Kant sets out four instances in which reality cannot be affirmed: 1) an empty concept without an object, 2) an empty object of a concept, 3) an empty intuition without an object, 4) an empty object without a concept.[81] With the exception of the second,[82] every type of negation presents an instance in which a relationship between sensibility and understanding cannot be established. However, the first form of nothing, *ens rationis*, is of special importance, because it corresponds to the problematic use of pure reason. Kant describes the nothing that corresponds to the being of pure nothing as follows:

> To the concept of all, many, and one there is opposed the concept of that which cancels everything out, i.e., **none**, and thus the object of the concept to which no intuition that can be given corresponds is = nothing, i.e., a concept without an object, like *noumena*, which cannot be counted among the possibilities although they must not on that ground be asserted to be impossible.[83]

In order for the real, the phenomenal, to be deemed possible, it must be opposed to the not-real, the noumenal.

Though the noumenal is relatively impossible insofar as it cannot be an object of experience, it is not absolutely impossible. This distinction is what allows noumena to function as boundary concepts. In the third chapter of the Analytic of Principles, Kant commends the understanding for being both true *a priori* and the source of all truth through possible experience; however, he qualifies his praise by saying that "it does not seem enough to us merely to have expounded what is true, but also that which one has desired to know."[84] Indeed, for Kant, an inquiry into the merely empirical use of the understanding falls short of the aims of his project.

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[81] Kant, *Critique of Pure Reason*, A292/B348.
[82] The second is instead an example of the work of the principle of dynamical community in the Analogies. That is, considering the totality of experience, by identifying an absence there where there might be something or there was something, a privation is identified. Kant gives the example of a shadow (a privation of light) or the cold (a privation of heat).
[83] Kant, *Critique of Pure Reason*, A290/B347.
[84] Kant, A237/B296.

His concern is not simply with the praxis of the understanding, but with elucidating how the understanding can "determin[e] for itself the boundaries of its use and knowing of what may lie within and what without its whole sphere."[85] In order to set these boundaries, Kant appeals to the problematic concept of noumena. Through noumena, the understanding acquires a "negative expansion."[86] Negative expansion is a reflective capacity of the understanding. By extending its reach beyond possible experience, and thus coming to an empty concept, the understanding reflectively recognises the negative content of the concept at hand.[87] Consequently, once it reaches this point, it designates this domain as noumenal—that is, the realm of reason that exceeds the bounds of possible experience.

The expansion of the understanding, however, introduces the possibility of illusion. Accordingly, at the beginning of the Transcendental Dialectic, Kant presents a second function of transcendental reflection. One of the major aims of the Dialectic as a whole is to account for errors in judgment. Kant holds that error in judgment occur when we take what is only valid on subjective grounds to be valid on objective grounds, "For truth and illusion are not in the object, insofar as it is intuited, but in the judgment of it insofar as it is thought."[88] Error occurs at the level of the truth-evaluable judgment, which we have seen is a function of the modal principle of reality. In other words, error does not occur at the level of the pure understanding (absolute possibility), nor at the level of sensibility (mere givenness), but at the assignation of each to its proper place. Accordingly, Kant states that "in pure judgments *a priori* this must happen through transcendental reflection, through which…every representation is assigned its place in the faculty

[85] Kant, A238/B297.
[86] Kant, A256/B312.
[87] Kant, A256/B312.
[88] Kant, A293/B350.

of cognition proper to it."[89] Though this operation of transcendental reflection is applicable to the negative designation of noumena that we have just exposited, Kant avers that it serves a further function at the level of transcendental illusion. Transcendental illusion arises when transcendent principles—principles that fly beyond the boundaries of possible experience—"incite us to tear down all boundary posts and to lay claim to a wholly new territory that recognizes no demarcations anywhere."[90] It is at this unchecked roaming of reason that Kant aims his critique, and it is through transcendental reflection that he intends to guard against it.

Whereas in the Analytic, transcendental reflection is an operation of the understanding, in the dialectic, it belongs to the faculty of reason. Reason, according to Kant, is the highest unity of thinking.[91] However, reason contains within itself two faculties: a logical and a transcendental faculty. So far, we have examined the logical use of reason at length as the purely formal use of the understanding, or general logic. Through the logical use of reason, we can see that the dialectic between general and transcendental logic accounts for the capacity to posit a totality of possible experience; in other words, this dialectic enables one to ground relative possibility. However, the possibility that Gilson attributes to Kant—absolute possibility—remains ungrounded in this account. Accordingly, the transcendental faculty is needed; for, by introducing not mere concepts but ideas, the transcendental faculty of reason is able to ground absolute possibility.

Earlier, we saw how the Analogies of Experience require the idea of the whole of cognition in order to acquire systematic unity. We also saw that empirical knowledge requires the application of this systematic unity to experience. We the discovered that, in order for the logical

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[89] Kant, A295/B351.
[90] Kant, A296/B352.
[91] Kant, A299/B335.

principle of rational unity to apply to experience, a transcendental principle must be presupposed. A final step remains: the possibility of experience must be positioned relative to the transcendental faculty.

The idea of the whole of cognition is grounded on the higher idea of the being of all beings (*ens summum*).[92] For Kant, this reasoning arises from the nature of a disjunctive judgment. As we have seen, a disjunctive judgment requires the opposition between portions of a bounded whole. When considering the sum total of all possibilities, Kant suggests that the opposition becomes one between being and non-being.[93] In general logic, however, this opposition holds no ontological weight; indeed, it can only be taken problematically. Thus, Kant insists that it is only through transcendental negation that we can get to non-being in itself.[94] In transcendental negation, non-being is thought determinately by being grounded in the opposed affirmation of being. That is, concepts of negation are always derivative, they require an affirmation of being to ground them. Accordingly, Kant asserts that a transcendental substratum must ground the determination of all things in our reason, and "this substratum is nothing other than the idea of an All of reality."[95]

As the previous discussion of negation indicated, if all negations are nothing other than then the privation of the real, then they are nothing but limits. These limits, however, must be grounded in the unlimited. That is, though disjunctive judgments usually occur within a bounded whole, in the case of the determination of non-being to being, non-being is in fact unconditioned. Accordingly, what is really being determined is the limit of being beyond which there is only the

[92] Kant, A578-9/B606-7. Note the use of a superlative here. This notion of a superlative being will return when we get to Cusa.
[93] Kant, A574/B602.
[94] Kant, A572/B600.
[95] Kant, A572/B600.

unconditioned. Indeed, as with the disjunctive judgment attributed to the limits of the understanding, a limitation taken of the possibility of all things reaches the very limit of reason. As Kant puts it, "all negations…are limitations of a greater and finally of the highest reality; hence, they presuppose it, and as regards their content they are merely derived from it."[96] At the very highest level of possibility, a higher principle of reality, namely God, must be presupposed in order to limit it. Put simply, God is the ultimate limiting idea of reason from which all possibility is derived.

There is much that is tied up with Cassirer's intellectualist reading of Kant's First Critique that also looks to establish a functional logic that is applicable to experience. On a systematic level, the Analogies, as the conditions of empirical knowledge require the principle of a systematic unity that is provided by the idea of the whole of cognition. This idea is provided by reason. However, due to reason's tendency to draw the understanding beyond the bounds of its rightful domain, a faculty must intervene to ensure that the understanding is properly bounded—namely, transcendental reflection. Through the concept of negation, transcendental reflection is able to limit the understanding. Negation itself, however, requires its own regulating ideal. This ideal is the idea of God, which as the highest idea of reality serves as unconditioned ground of all possibility. Thus, we see that the Kantian claim to the unity of experience is always premised on the possibility of positing a totality of experience. Thus, totality and unity always go hand in hand. This totality, moreover, is established through limits. The ability to limit totality, however, is by no means self-evident. Speaking in broad terms, we see that Kant's epistemology establishes levels of knowledge that are disjunctively related to each other. These spheres of knowledge limit each other by circumscribing domains of possibility. Accordingly, Kant is able

[96] Kant, A578/B606.

to ground his account of empirical knowledge by positing mutually restricting modalities of knowledge. At the highest level, the modality of absolute possibility is limited by the impossible—which, taken in another guise, is the unconditioned.

Chapter 2 – Theorising the Ontological Divide

So far, we have seen how Cassirer draws a functional logic out of Kant's transcendental system by delimiting spheres of knowledge and dialectically positing one as the ground of the other. Though, for Cassirer and his fellow Neo-Kantians, this system finds its greatest transcendental expression in Kant, its original expression is found in Plato.[97] More than simply finding an original expression in Plato, however, Cassirer understands this transcendental system and its subsequent functional form to develop out of a rejection of an Aristotelian logic of substance. Indeed, in Plato's philosophy, Cassirer sees the ontological framework that will eventually lead to a modern epistemology of science that overcomes the Aristotelian logic of substance. For Cassirer, Aristotle's ontological monism leads him to develop a logic of substance that cannot be applied to experience. Mathematics and logic are thus divorced from experience. The Platonic two-tiered ontology, on the other hand, establishes a necessary relationship between the ideal and the empirical. Most notably, Plato's strict separation of ontological realms resists the conflation of form and content which enables the reciprocal determination of a series of particulars and the rule that governs them, the differential determination of concepts, and the positing of a totality. Accordingly, Plato's philosophy provides the characteristics that Cassirer considers necessary to a transcendental application of logic and mathematics in metaphysical form. As we shall see, in order for the Platonic system to become truly modern, Cusa's own philosophy must intervene; but, before we can get there, an account of Aristotle's logic and Plato's contravening ontology as they relate to Cassirer's own functional logic must be given.

[97] For an in-depth account of the Marburg school's relationship to Platonism, see, Lembeck, "Plato-Reception in the Marburg School," 219.

Aristotle's Theory of Abstraction

Cassirer's critique of Aristotle is, at its base, a critique of monism. Cassirer sums up Aristotle's general position concisely: "Reality is one."[98] There may be oppositions within reality, but these oppositions exist on the same ontological plane. Indeed, for Aristotle, opposition is only understood as such "if there is some means for going from one pole to another."[99] Though he countenances Aristotle's attention to this question, Cassirer does not consider Aristotle's metaphysics to be adequate to a Modern cosmology. This inadequacy stems from the fact that a monistic metaphysics can only justify a correspondence between the intelligible and the sensible if the world it describes is self-enclosed, continuous, and finite.[100] This interpretation is a result of Cassirer's positioning of Aristotle's monism within the tradition of Eleatic metaphysics.[101] The rapprochement Cassirer makes between Aristotle and Parmenides rests on a claim about the primacy and the resulting univocity of being. The Parmenidean position, by positing being as a ubiquitous and universal concept, necessarily results in monism due to its reduction of everything to this single concept. Every group of concepts can be subsumed under a more universal one until every concept is collapsed into a single universal concept—the concept of being. For Cassirer, the primacy of being causes problems for a theory of abstraction:

> One of the limitations of the usual abstraction theory of the concept is that it must presuppose as given the elements from which the concept is supposedly built up, from which it is supposedly abstracted. If the concept is to bring out the common factor in a series of particulars, it must have them as distinct sensuous or intuitive realities, before it can stamp them with its own form. According to this theory, it can designate only what

[98] Cassirer, *The Individual and the Cosmos in Renaissance Philosophy*, 17.
[99] Cassirer, 17.
[100] Cassirer, 18.
[101] Cassirer, *The Philosophy of Symbolic Forms. Vol. 3*, 304.

> is—not what is not. And it is this postulate that stands at the beginning of all logic; it constitutes the fundamental idea of Eleatic logic.[102]

A theory that prioritises the given is problematic because it cannot escape this sphere. If the given is taken as the single primary ground of a logical theory, then this theory is bound by the limitations of the sphere of reality. Though Cassirer here relates this immanentised logic to Parmenides, his main object of critique is its development in the work of Aristotle. The invocation of both of these figures is, however, telling; for, it indicates Cassirer's conviction that the theory of abstraction, though a logical theory, is fundamentally linked to certain ontological assumptions.

In Aristotle's case, these ontological assumptions take the form of a theory of substance. Substance, for Aristotle, refers to the concrete coming together of matter and form in order to produce an individual or particular.[103] The formation of scientific concepts or universals proceeds by abstracting from these particulars to a universal property shared by all of them. As a result of this process, a class of objects is determined according to a concept. As Cassirer points out, however, this concept is empty:

> If we call the number of properties of a concept the magnitude of its *content*, this magnitude increases as we descend from the higher concepts to the lower, and thus diminishes the number of species subordinate to the concept; while, when we ascend to the higher genus, this content will diminish as the number of species is increased. This increasing extension of the concept corresponds to a progressive diminution of the content; so that finally, the most general we can reach no longer possess any definite content.[104]

When we reach the highest concept, we realise that what we are designating has no determinate content at all. For Aristotle, who presupposes the ontological primacy of substance, this means

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[102] Cassirer, 304.
[103] Aristotle, *The Categories; On Interpretation*, chap. 2.
[104] Cassirer, *Substance and Function & Einstein's Theory of Relativity*, 5–6.

that general concepts, though strongly extensional, have no intensional force. Cassirer borrows an example from Hermann Lotze in order to demonstrate the perils of such a system:

> If we group cherries and meat together under the attributes red, juicy and edible, we do not thereby attain a valid logical concept but a meaningless combination of words and, quite useless for the comprehension of the particular cases. Thus it becomes clear that the general formal rule in itself does not suffice; that on the contrary, there is always tacit reference to another intellectual criterion to supplement it.[105]

Either concept formation is nothing but an empty play of ideas, or it must be supplemented by some other principle. The latter is the case for Aristotle who uses the principle of form to connect the origin of a thing to its end teleologically. A thing's end is germinally present in it from its conception and thus its direction can be determined from the beginning. Aristotle's logic of substance can only afford concepts an explanatory force if they are set within the context of a closed teleological system.

Idealisation

Cassirer does not want to rely on such a closed system, however; for it cannot be applied to the infinite universe of Modernity. Indeed, the emptiness of the concept is highly problematic for Cassirer; as within an open-ended system, there is no means to endow the concept with any content. Accordingly, the concept cannot be applied deductively to reality, for, as Lotze's example demonstrates, the descent from the empty concept to objects is largely arbitrary. The impossibility of moving back down from the concept to reality is especially troubling in the case of mathematics. Indeed, Aristotle himself admits that his theory of abstraction disallows the application of mathematics to reality. At the end *Metaphysics* Book α, Aristotle claims that, "we should not demand the argumentative exactness of mathematics in all cases but only in the case of things that include no matter. That is why the way of inquiry is not the one characteristic of

[105] Cassirer, 5–6.

natural science, since presumably every nature includes matter."[106] Mathematics cannot be applied to an analysis of reality and thus cannot be a component part of the natural sciences.

Cassirer, however, cannot countenance the exclusion of mathematics from the natural sciences and thus insists on method that requires a reciprocal relationship between the concept and the particulars that it encompasses. Starting with mathematics, Cassirer insists that a concept should instead be *necessarily* related to reality:

> When a mathematician makes his formula more general, this means not only that he is *to retain* all the more special cases, but also to be able *to deduce* them from the universal formula. The possibility of deduction is not found int the case of the scholastic concepts, since these, according to the traditional formula, are formed by neglecting the particular, and hence the reproduction of the particular moments of the concept seems excluded.[107]

A mathematical formula always conserves the particular within its formulation while determining it as a particular within the series—the relationship is reciprocal and constitutive of the rule. As Cassirer adds a few pages on,

> If we carry through the above rule to the end, it obliges us to retain, in place of the particular "marks" which are neglected in the formation of the concept, the systematic totality (*Inbegriff*) to which those marks belong as special determinations….We represent this systematic totality (*Inbegriff*) when we substitute for the *constant* particular "marks," *variable* terms, such as stand for the total group of possible values which the different "marks" can assume.[108]

The particulars in a series are not negated, they are replaced by a general rule. If we take a series $p1, p2, p3\ldots$, it is replaced by P when one moves from the particular to the universal. This P includes all of the peculiarities of any particular p as a possible instances of its rule rather than abstracting from their differences. Each particular in a series is constitutive of the rule that governs it.

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[106] Aristotle, *Metaphysics*, α.995.1.14-18.
[107] Cassirer, *Substance and Function & Einstein's Theory of Relativity*, 19.
[108] Cassirer, 22.

In order to establish this reciprocal relationship, the concept must be understood as the ideal limit of the real particulars that it governs. Cassirer's logical system adheres to what we would today call a theory of idealisation.[109] In contrast to abstraction, which is premised on generalisation, idealisation is premised on essentialisation—or what Cassirer, following Hegel, refers to as concrete rather than abstract universality.[110] In brief, this method consists in building an ideal model on the basis of real data. One example of this process—though there are many in Cassirer's works—is his analysis of space and time. Space and time are intellectual forms which have no definite materiality; for this reason, Kant found it necessary to posit them as *a priori* intuitions. Cassirer takes a different direction and points out that, despite the fact that they cannot be immediately discerned, space and time are deducible from empirically observable movements.[111] These movements, however, only provide us with inexact measures. Thus, for Cassirer, space and time exist in two senses: relative and absolute.[112] The relative form of space and time belongs to sense perception; their absolute form, on the other hand, arises from an idealisation from this sense perception. The ideal model of space and time constitutes the unchanging part of the structural complex. Accordingly, absolute does not signify "without relation" or "without correlate," but signifies "an assumption as to the nature of this correlate." The nature of absolute time and its correlate (absolute space) is that of a pure mathematical

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[109] For an extensive analysis of the theory of idealisation in Cassirer' work, see Borbone, "The Concept of Idealization in Ernst Cassirer's Theory of Knowledge."
[110] Cassirer, *Substance and Function & Einstein's Theory of Relativity*, 20.
[111] Cassirer, 171.
[112] In *The Philosophy of Symbolic Forms. Vol.2: Mythical Thought*, Cassirer of course outlines an alternative account of time and space within the mythical consciousness which presents them as having a form, but a form that is rooted in feeling rather than in abstraction. This more intuitive consciousness of space and time results in qualitative rather than quantitative distinctions. Thus, though mythical space has an "analogous form" to that of geometrical space, its content is different insofar as it brings elements into relation through a schema whose categories are oriented around the qualitative value of space as either sacred or profane (*PSF v.2* 83-94). Similarly, with mythical time, Cassirer states that, "For myth there is no time "as such," no perpetual duration and no regular recurrence or succession; there are only configurations of particular content which in turn reveal a certain temporal *gestalt*, a coming and going, a rhythmical being and becoming. Thus, time as a whole is divided by certain boundaries akin to musical bars. But at first its "beats" are not measured or counted but felt." (108)

concept separated from all material content—from the "only sensuous, and thus inexact, measures from empirical movements."[113] Thus, one can posit absolute motion, which emerges as the correlation of given determinations of absolute space and absolute time. Absolute space and time are "intellectual forms" that are understood as *a priori* intuitions only insofar as they are mental constructs that are determined reciprocally with experience. Cassirer's notion of time, as it is presented in *Substance and Function*, is thus balanced between empiricism and idealism. Though experience is the starting point for the postulation of absolute space and time, ultimately, absolute space and time define that reality. All thought is necessarily related to empirical reality and may be falsified by this reality, but intelligibility arises not from immanent form but is constructed by the mind through the mutual determination of concepts.

The potential for both empirical reality and intellectual construction to lay claim to the determination of truth arises from what James Bradley refers to as "the intrinsic relationality of the natural world."[114] By establishing this intrinsic relationality, mathematics posits relations as essential, not accidental. Cassirer points out much the same development:

> Mathematical concepts which arise through genetic definition, through the intellectual establishment of a *constructive* connection, are different from empirical concepts, which aim merely to be copies of certain factual characteristics of the given reality of things. While in the latter case, the multiplicity of things is given in and for itself and is only drawn together for the sake of an abbreviated verbal or intellectual expression, in the former case we first have to create the multiplicity which is the object of consideration, by producing from a simple act of constructing (*Setzung*), by progressive synthesis, a systematic connection of thought-constructions (*Denkgebilden*). There appears here, in opposition to bare "abstraction," an act of thought itself, a free production of certain relational systems.[115]

Intellectual forms and the activity of mapping that arises between them is precisely "a systematic connection of thought-constructions." The move from Aristotelian logic to functional logic

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[113] Cassirer, *Substance and Function & Einstein's Theory of Relativity*, 173.
[114] Bradley, "The Triune Event: Event Ontology, Reason and Love," 138.
[115] Cassirer, *Substance and Function & Einstein's Theory of Relativity*, 12.

allows for the priority of relations within the conceptual matrix. Moreover, activity—intellectual activity—is essential to the construction of the structural complex integral to this logical paradigm.

For Cassirer, accordingly, the ground of differentiation and ordination arises with the very activity of actualisation. The object is defined in relation to the whole—in relation to the structured complex of particular determinations—but "The whole gains its form and system only by the assumption of original relations, of which no one can be pointed out as "tangible" like a given sensuous content."[116] The object is only ever determined with reference to relations which arise from the relational determination of objects. This relational determination, however, requires that the simultaneous assumption of original relations. These original relations serve as the ground of origin and differentiation.

One such original relation is the concept of inertia. As Cassirer points out, inertia is a concept that we cannot do without in the scientific exposition of phenomena,[117] and thus it must be presupposed. Cassirer's ground virtually proceeds from reciprocal determination: "It denotes an *idea*, for the purpose of ordering the phenomena, yet not standing on the same plane methodologically with these phenomena. Hence this motion needs no real but only a conceived substratum."[118] The ground of differentiation and ordination is the totality of original relations (intellectual forms) which must be presupposed to order phenomena. Cassirer's original relations seem to result from a process of abduction: they are an "inference to the best possible explanation,"[119] to an ideal model. Accordingly, for Cassirer,

> [judgment] asserts that, as often as the conditions embraced by the subject concept are realized, the consequences expressed in the predicate concept will be always and

[116] Cassirer, 302.
[117] Cassirer, 169.
[118] Cassirer, 169.
[119] Bradley, "The Triune Event: Event Ontology, Reason and Love," 135.

> necessarily connected with them. For thought, the moment of immediate perception is extended to the whole course of time, which is surveyed in its totality at one glance.[120]

The inference of the moment to the totality, however, is always subject to the expanse of that totality. Cassirer's system is fallibilist—these relations may be proved false as our view of totality expands. The relationship is reciprocal: the rule governs the particulars, and the particulars determine and prove the rule.

Accordingly, Cassirer's functional method or method of idealisation, which he sees as fundamental to any applicability of mathematics to reality, is defined by four interrelated characteristics: 1) the reciprocal determination of a series of particulars and the rule that governs them, 2) a differential determination of the concept, 3) the always provisional positing of a totality 4) the disjunction of the empirical from the ideal. All four of these aspects of Cassirer's method find their origin in Plato's philosophy.

Plato's Ontology: *Symbolon* and the Problem of Mathematics in the Middle Dialogues

Cassirer's functional logic has so far been elaborated as a critique of Aristotle's logic of substance and the metaphysical assumptions it must presuppose; however, Cassirer's own logic is not entirely free of presuppositions either. Though he proposes his logic on critical foundations and thus largely excludes any ontological claims from his system, Cassirer still understands functional logic to develop out of a Platonic tradition. Indeed, the four aspects of Cassirer's method of idealisation can be found in Plato's writings, and they find their fundamental premise in the Plato's two-tiered ontology and the relationship between these two ontological levels. Though this two-tiered ontology is a staple of Plato's thought, his philosophy is not necessarily consistent throughout all of his dialogues. Cassirer draws inspiration from all of Plato's corpus, and he often brings together aspects of Plato's middle dialogues with developments in the later

[120] Cassirer, *Substance and Function & Einstein's Theory of Relativity*, 243.

dialogues. Accordingly, Cassirer reads Plato synchronously, not because he believes him to be consistent, but because he sees value in different and potentially unreconciled aspects of his thought.[121] The aspects that concern us are Plato's treatment of symbolic relations and his understanding of essence and significance in the middle dialogues, as well as his treatment of language and limit in the later dialogues. By reading these two periods of Plato's thought together, we shall see how Cassirer can develop a robust foundation for a transcendental and functional logic out of the Platonic ontology and its corresponding epistemology that offers a system in which the empirical and the ideal are fundamentally divided yet symbolically related.

The general lines of Plato's ontology are, of course, well-known. The world is composed of two ontological levels: the level of becoming (*gignomena*), which is characterised by flux and indeterminacy, and the level of being (*onta*), which is characterised by permanancy and determinacy. The former derives its being from the latter. This ontological framework, in turn, proposes an epistemological framework in which the world of becoming is understood as an image (*eikasia*) of the world of being and thus only provides imperfect knowledge in the form of belief (*pistis*). In order to access true or stable knowledge, one must rise above the world of appearances to the realm of stable knowledge. In Plato's middle period, this relationship is theorised through the concepts of *chorismos* (separation) and *methexis* (participation). *Chorismos* describes the ontological divide that separates the realms of being and becoming, while *methexis*

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[121] Cassirer views Plato as a thinker who understands the world to be unified. In practice, however, Plato struggles to evince this unity—as is the case in Plato's treatment of art. Cassirer explores this tension in Plato at length in his 1924 essay "*Eidos and Eidolon*: The Problem of Beauty and Art in the Dialogues of Plato" in which he looks to bring together the sensible *eidolon* with the ideal *eidos* without therewith collapsing their distinction. For example:

> It was given to Plato to immediately embody a unification that modern thought had *sought* from different avenues. Being and theory interpenetrate in him such that the question as to which of the two elements is first, which is second, which determines and has formed the other can no longer be posed.
>
> And yet there exists a vast sphere of problems for which this unity seems to have been sublated, in which a clear rupture seems to have occurred between who Plato was and what he taught. (*Cassirer, "Eidos and Eidolon*: The Problem of Beauty and Art in the Dialogues of Plato," 216).

describes how appearances are related to forms despite this divide. These concepts of *methexis* and *chorismos* are central to how Cassirer conceives of the move from the empirical to the ideal.

Due to the opposition between being and becoming, Plato's ontology cannot accommodate empiricism. Instead, it must locate essence in signification, or the determination of language; in doing so, it accords being to all abstracted concepts. The weight that is accorded to the ideal realm by this fullness of the concept is attractive for Cassirer; however, it also leads to the denigration of empiricism. Empiricism always begins with sense impression, but sense impression is always fleeting; it is always stuck in the flux of becoming. In the *Theaetetus*, Plato identifies empiricism with the motion of the present in order to render it unthinkable. At 151e, Theaetetus proposes that knowledge is perception. Socrates refutes this theory by suggesting that if perception is indeed knowledge, then all knowledge is subjective:

> it is not a bad description of knowledge that you have given, but one which Protagoras also used to give. Only, he has said the same thing in a different way. For he says somewhere that man is "the measure of all things, of the existence of the things that are and the non-existence of the things that are not."…Well, is not this about what he means, that individual things are for me such as they appear to me, and for you in turn such as they appear to you—you and I being "man"?

Empiricism cannot be the basis for scientific knowledge because it is mired in subjectivity and motion. In order to attain any real knowledge, permanence is required.

By associating knowledge and permanence, Plato positions essence within the realm of the intelligible. The realm of the Platonic intelligible is the realm of the forms. The basic logic of Plato's theory of forms is syllogistic: one abstracts up from a particular to a universal, and the form serves as a universal category in which the particular participates. This process of abstraction is a process of truth-seeking and truth-finding through the discovery of significance. The problem of essence becomes a problem of language: how do we name something? How do we determine its essence?

In the *Cratylus*, the relationship of language to essence is problematised according to the distinction between nature and convention.[122] Where Cratylus points to language's foundation in nature, Hermogenes affirms that the denominations of language arise through convention. Socrates disagrees with both of these positions: language is neither an exact communication of a nature, nor purely conventional. Therefore, Paul Ricœur suggests that instead of adhering to either of these theories, Socrates transposes the problem of language from the realm of fact to that of judgment. Ricœur thus frames Socrates's notion of language with reference to its end:

> quelle est la *destinatio* du langage? C'est de signifier la réalité. La signification est le fondement de la denomination *juste*. Si le langage était juste, il serait le véhicule de l'essence. En fait, le langage n'est pas fidèle à la nature des choses : selon le mythe du *Cratyle*, il a été institué par un un « législateur ivre », aberrant, et il porte la marque de ce péché original. Cette volte-face, ce balancement entre les deux thèses veut exprimer la situation même du langage : d'une part, il est signe de réalité, mais en même temps, il risque d'être faux savoir. Le langage se situe sur le plan de l'équivoque. L'étymologie ne peut pas être la dialectique, la science.[123]

The adequacy of language, the adequacy of determination, is here brought under the judgment of truth. The modality of reality is the just determination of the world through language. Language, in and of itself, has no claim to truth; however, by referring it back to truth, the denominations of discourse can be governed by the determinations of truth. Accordingly, discourse is subordinated to contemplation.

For Plato, it is only through contemplation that one can access the essence (*ousia*) of a thing; thus, *ousia* becomes the measure of language. Language begins in distinction, and it is through proper distinction—distinction made with reference to truth—that a thing's nature is determined. Accordingly, Ricœur describes Platonic being as discontinuous: "L'être est *essentiellement* discontinu; il se donne d'emblée dans des réalités multiples, dans *des*

[122] Plato, "Cratylus," 431b.
[123] Ricœur, *Être, Essence et Substance Chez Platon et Aristote*, 30.

êtres…Chez Platon [l'être] est tout de suite un pluriel".[124] Language is multiple, thus being is multiple.

In order to maintain intelligibility amongst this plurality, Plato must refer all truth to a single unifying principle. In the *Symposium*, Plato, presents what could be called a hierarchy of the Good as it relates to beauty. In the *Republic* Book X, the Good becomes the Idea of the Good—the Good as the foundation of all being. The fundamental premise of this theory is that there is a single, absolute, separate, stable, and everlasting Good which "is imparted to the ever-growing and perishing beauties of other things".[125] All things participate differentially in the absolute Good, and the philosopher's task is to discern this Good; in training oneself to do so "[one] will of [oneself] perceive that the beauty of one form is akin to the beauty of another; and then if beauty of form in general is [one's] pursuit, how foolish would [one] be not to recognise that the beauty in every form is one and the same".[126] Beauty is singular; all of its iterations, in fact, do but point beyond themselves to this pre-eminent beauty. Accordingly, Plato's worldview is oriented around this single stable principle (Beauty, the Idea of the Good) to which everything refers. Through contemplation, one arrives at the measure of all things. Thus, Plato suggests that communion with absolute beauty is possible and that this communion consists in the transcendence of images of beauty to the reality of beauty. It is only in communion with this absolute beauty, "beholding beauty with the eye of the mind, [that one] will be enabled to bring forth, not images of beauty, but realities."[127]

Beauty, moreover, is the principle which undergirds the pursuit of wholeness. In *ICRP*, Cassirer emphasises the reinstatement of Plato's concepts of *chorismos* and *heteron*. The

[124] Ricœur, 34.
[125] Plato, "Symposium," 211b.
[126] Plato, 211c.
[127] Plato, 211e.

empirical world is the polar antithesis of the ideal world: “Everything predicated of the one must be denied to the other. All the characteristics of the ‘idea’ may therefore be deduced antithetically from those of appearance.”[128] Cassirer, as we shall see, here characterises the Platonic concept of *heteron* symbollically. By defining the two ontological realms disjunctively, Plato’s ontology enables the two realms to mutually determine each other. Though the connection cannot be straightforwardly causal—because there is no continuity between the two realms—the opposition between the two realms enables the determination of what can be predicated of the one realm by establishing that it cannot be predicated of the other. The realm of being and the realm of appearances are two halves of a whole whose spheres of operation are mutually exclusive.

In the *Symposium*, Aristophanes speaks about two halves of a whole as symbolically related. Aristophanes’ speech is well-known: soulmates used to be joined together as a single entity until the gods, out of fear for their capacity to usurp them, split these beings in half. As bifurcated creatures, Aristophanes claims that “Each of us…is a “matching half” [*symbolon*] of a human whole.”[129] Everyone is a lover in search of their beloved. On this point, Charles Salman remarks:

> These lovers, as Aristophanes would have it, have "two faces, exactly alike" (189e7-al: *kai prosopa homoia pante*). In his beloved the Aristophanic lover thus pursues not what takes a different form from the lover himself, but rather only, as it were, a kind of permanent reconciliation with what he already is like.[130]

Though Salman claims that the lovers are alike, this likeness is really an isomorphism. The lovers desire each other because they complete each other—each possesses what the other requires but does not have. The wholeness that arises from their reconciliation is premised on their otherness.

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[128] Cassirer, *The Individual and the Cosmos in Renaissance Philosophy*, 16.
[129] Plato, “Symposium,” 191d.
[130] Salman, “The Contrivance of Eros in Plato’s ‘Symposium,’” 243.

The otherness of the object of desire is made all the more explicit in Diotima's speech. In this speech, *Eros* is the driving force behind the pursuit of wisdom. The beloved is no longer what the lover seeks; rather, the lover is in a state of desire because he lacks that which at the foundation of his being—the Good or the Beautiful. This ultimate object of desire is beyond being, it is completely other to the world of appearances, but it is immanent in us in our symbolic desire to attain it. The love "calls back the halves of our original nature together; it tries to make one out of two and heal the wound of human nature."[131] It becomes the love which calls one back to one's end and origin. *Eros* is the pursuit of wholeness;[132] it is the search for the connection between two halves that are symbolically related.

Wholeness, in the *Symposium*, is a principle of order. Towards the end of his speech, Aristophanes reminds his listeners of the myth at the origin of his account of *eros*,

> Long ago we were united, as I said; but now the god has divided us as punishment for the wrong we did him, just as the Spartans divided the Arcadians. So there's a danger that if we don't keep order before the gods, we'll be split into two again…We should encourage all men, therefore, to treat the gods with all due reverence, so that we may escape this fate and find wholeness instead.[133]

The division of the lovers was a result of their unruliness, of their injustice. The properly ordered individual who aims towards wholeness is a just individual. Thus, the symbolic relation of wholeness is one that orients the universe and explains and unites its two disjunct halves into wholeness.

The Problem of Platonic Mathematics

Most, if not all, of Plato's dialogues are preoccupied with explaining this order. As we have seen, in the middle dialogues, this relationship is understood as that of an image to its form

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[131] Plato, "Symposium," 191d.
[132] Plato, 192e.
[133] Plato, 193-a-b.

or in terms of language or predication; that is, it is understood syllogistically, as that of a particular to a universal. Moreover, the ascent from images to forms is propelled by *eros,* which is the desire for an ordered whole grounded in Beauty or the Good. As we shall see, however, Plato's ontology does not position mathematics in the order of truth; rather, its axiomatic nature leaves mathematics isolated. For Cassirer, this poses a problem. However, by considering developments in mathematics along with developments in Plato's later dialogues, Cassirer is able to conserve the symbolic aspect of Plato's thought while moving towards a functional understanding of mathematics and logic.

As we saw above, both Plato's and Aristotle's logic systems are dependent upon their metaphysical systems. Both of these metaphysical systems presuppose a closed cosmos grounded on a unifying principle. These assumptions pose a problem for the development of the natural sciences and mathematics. Today, these two interrelated domains reveal to us an infinite universe. The closed cosmos of classical thought has given way to infinite extension.[134] This development in our conception of the universe is tied to developments in logic and mathematics. Namely, mathematics has moved away from the fixed and axiomatic realm of Euclidean geometry, on which Plato relied, into the dynamic realm of Galilean and, later, Einsteinian physics;[135] in doing so, as Cassirer puts it, "mathematics—which with Plato still remained wholly within the sphere of being—[has] moved into the sphere of becoming."[136]

Plato's theory of representation in the *Republic* points to the imitation of truth. As Ricœur remarks, however, Plato's theory of representation (*mimesis*) and his theory of participation

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[134] This phrase is derived from Alexandre Koyré's *From the Closed World to the Infinite Universe* (1957). In this monograph, Koyré traces the transformation from the classical view of the cosmos as closed and self-contained in ancient thought to an open-ended universe in Modernity. Unlike Cassirer, Koyré does not view Cusa as an important figure in this transition.

[135] Not to mention subsequent developments that post-date Cassirer's lifetime.

[136] Cassirer, *The Logic of the Humanities*, 162.

(*methexis*) are not clearly differentiated within his writings.[137] Things in their concrete particularity participate in the forms as well as being imitations of these forms. Abstract ideas with no reference in reality—such as mathematical symbols—however, do not participate; they only imitate. This distinction poses a problem for Platonic mathematics. Mathematics finds itself in a limbo between the visible world and the intelligible world of the forms. For Plato, there is a hierarchy of knowledge which moves from the visible to the invisible. Within the visible world, there are objects and images. In the realm of the invisible, there are mathematical objects and objects of scientific knowledge (*episteme* or *logos*). *Episteme* is the ultimate mode of knowledge for Plato, and it is fundamentally a dialectic. *Episteme* is noetic. The noetic is the realm of significance and therefore of reality in the Platonic schema. In order to attain truth, one must engage in dialectic, which always aims towards the *arche*—the final ground of intelligible reality. Mathematics, on the other hand, belongs to the dianoetic realm. It is an intermediary between the realm of becoming (the visible world) and the realm of being (the intelligible world).[138] Thus, mathematics has neither the derivative fluctuating reality of the visible world, which participates in the forms, nor the preeminent reality of the intelligible world of the forms. Instead, it exists as a static representation of the forms—it is neither being nor becoming.

Enclosed in this intermediary realm, mathematics must be taken as self-evident, as axiomatic. Plato asserts that there is no justification for mathematical objects; they are posited as assumptions or hypotheses rather than truth:

> This then is the class that I described as intelligible, it is true, but with the reservation first that the soul is compelled to employ assumptions in the investigation of it, not proceeding to a first principle because of its inability to extricate itself from and rise above its assumptions, and second, that it uses as images or likenesses the very objects that are

[137] Ricœur, *Être, Essence et Substance Chez Platon et Aristote*, 27.
[138] Ricœur, 64.

> themselves copied and adumbrated by the class below them, and that in comparison with these latter are esteemed as clear and held in honour.[139]

One can deduce down to reality from mathematics to deal with the problem at hand, but one cannot ascend towards the forms. The axiomatic nature of mathematics stops this upward movement; for a self-evident principle has no reason to aim towards a higher truth—its desire is satisfied by its own axiomatic nature. Accordingly, mathematics can arrive at a term (*teleute*), but not at a first principle (*arche*).[140] In the Platonic schema, the *arche* is the transcendental referent against which the truth or falsity of a concept is checked. Mathematics never refers to this ultimate principle, it is only involved in the praxis of thought. Thus, mathematical objects are used in research, but they do not themselves lead to a vision of the forms. There is no way to check the verity of mathematical objects. The isolation of the mathematical object from the *arche* renders it non-falsifiable. Plato's characterisation of mathematics as non-falsifiable, however, is based on an outdated understanding of mathematics. Plato's mathematics are Euclidean, and though he identifies the problem with Euclidean geometry—*i.e.*, its axiomatic nature—he is unable to overcome this problem.[141]

Plato's Ontology: The Neo-Kantian Reading and Logic in the Later Dialogues

Developments in mathematics have, however, provided a way out. Cassirer points to the concept of *eidos* in Euclidean geometry as the problematic element. Euclidean geometry takes certain propositions as axiomatic—*e.g.*, a straight line may be drawn between any two points. Within such an axiom, form and content become identical because the content of mathematics is not material—a line between two points only ever exists as a mental construction. The mathematical form is self-contained insofar as its content, its unfolding, is identical with its

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[139] Plato, *Republic*, 510c.
[140] Ricœur, *Être, Essence et Substance Chez Platon et Aristote*, 69.
[141] Ricœur, 68.

form. The Euclidean *eidos* represents a unity of form and content. For Cassirer, the unity of form and content results in fixity.[142]

For Plato, this lack of transcendence means that mathematics can never say anything assuredly true about the world; but, for Cassirer, the construction of form provides a grounding principle which is also fallibilistic. As we have seen, according to functional logic, mathematical concepts are generated or constructed. To this extent, functional and Platonic mathematics agree: mathematical concepts are not Platonic forms. Such a system would seem to be just as incompatible with empiricism as Plato's own logic and metaphysics; this is not the case, though, as this system arises from an interplay between empirical reality and intellectual forms. Indeed, along with the other members of the Marburg school, Cassirer sees a way out of this predicament in Plato's own ontology.

As with Cassirer's Kantian convictions, his Platonic disposition is part of his Neo-Kantian education. Both Cohen and Natorp studied Plato in depth and published extensively on Plato and his legacy. Despite the Neo-Kantian preoccupation with Plato's philosophy, Natorp is the only one to have published a monograph offering a systematic interpretation of Plato's works, and he perhaps emphasises the transcendental aspect of Plato's philosophy the most. Natorp argues that, because Plato wants to derive the nature of reality from the nature of the mind, he is the initiator of the transcendental method. Natorp's reading of Plato is anchored by the claim that Plato's Ideas are not substances or things but laws or principles. Though this position is a rather idiosyncratic reading of Plato, it points to what is likely the most central aspect of the Neo-Kantian interpretation—namely, Plato's philosophy, as fundamentally transcendental, is also necessarily dialectical. This claim seems largely unproblematic; indeed,

[142] Cassirer, *Substance and Function & Einstein's Theory of Relativity*, 68.

Plato and dialectic are almost synonymous. What the Marburg Neo-Kantian's mean by dialectical, however, holds particular connotations. Most importantly, for our purposes, they are intent on establishing a two-directional method—that is to say, the move up from the particular to the universal and the move back down from the universal to the particular. Thus, for the Marburg Neo-Kantians, Plato's ontology offers an alternative to the Aristotelian logic of substance by positing both a fundamental separation and a connection between universals and particulars.

As mentioned, Natorp conceives of Platonic Ideas not as substances or "primary beings" but as explanations. Moreover, Vasilis Politis points out that Natorp believes that Ideas must be understood as explanations in order to ensure that "they are not at all like the things that they explain."[143] In other words, Natorp conceptualizes the ontological divide between forms and particulars as that between a rule and the series that the rule governs. The similarities with Cassirer's own method of idealisation are obvious, and Natorp serves similar intentions. Plato's intentions in positing such an ontological divide, however, are primarily aim at ensuring the stability of knowledge and preventing infinite regress.

The relationship described by *chorismos* and *methexis,* which we explored above in its symbolic aspect, is also understood as the relationship of the one to the many. Many particulars participate in a single unified universal despite themselves not being that universal. In the middle dialogues, Plato elaborates this doctrine of *methexis* and *chorismos* in order to explain how forms can relate to a sensible object. Forms, according to Plato, are *auto kath' hauto* (non-composite) and therefore self-predicative explanatory principles endowed with true being.[144] Due to Plato's epistemological hierarchy, in order for forms to be true objects of knowledge, they must have all

[143] Politis, "Introduction," 27.
[144] Plato, "Phaedo," 78c.

of these attributes. Sensible objects, because they are composite, are ontologically distinct (*chorismos*) from forms, yet they must somehow participate (*methexis*) in the forms in order for us to have any workable knowledge of our world.

In the *Parmenides*, the character of Parmenides draws out how the relationship of forms to sensible objects results in one of two paradoxes. First, he points out that a completely simple form, if predicated of many things, must either "be present at once and as a whole in things that are many and separate, and thus it would be separated from itself," or "[it] would be in many different places at once, as if you spread a sail over a number of men and then claim that one thing as a whole was over many" such that "the characters are divisible…and things that have a share in them would have a share of parts of them; the whole would no longer be in each, but part of each in each."[145] Either the form must be separate from itself, or it is no longer simple but composite. Such a critique threatens to disallow the theory of forms. The forms are intended to serve as simple explanatory principles (*aetei*) for sensible objects. Yet, when this relationship is analysed, it becomes clear that a conception of forms as *auto kath' hauto* does not hold water.

Another problem that arises from Plato's theory of forms in the middle dialogues is precisely one which the concept of *chorismos* is meant to prevent: the problem of infinite regress, or what is known as the Third Man argument. The Third Man argument is presented by Aristotle at *Metaphysics* 990-1039. Aristotle problematises Plato's theory by addressing self-predication in the *Parmenides*. Simply put, Aristotle argues that a form cannot be the source of its own explanation; for, this would result in infinite regress. The example provided by Aristotle is that of largeness. If largeness$_1$ explains how largeness is large, then another form, largeness$_2$, would be required to explain why largeness$_1$ is large, and so on and so forth. The force of this

[145] Plato, *Plato's Parmenides*, 131b-c.

argument lies not only in the problem of infinite regress but also due to its softening of the divide between forms and particulars. Forms are supposed to be explanations of particulars; thus, if they themselves need an explanation, there seems to be a blurring of the distinction between forms and particulars. This is further compounded by the fact that the status of the forms as *auto kath'hauto* seems to be completely undermined. The forms are no longer self-contained but rely on explanations beyond themselves.

The later dialogues are thus in large part preoccupied with overcoming these problems, and this requires a reconceptualisation of the forms that is not *auto kath' hauto*. How this reconceptualisation is accomplished remains a topic of debate. We can, however, rely on Cassirer's interpretation which is, as we know, something of a transcendental reading. Indeed, Cassirer understands the relationship between the universal and the particular to imply not only a move up from the particular to the universal but a move back down to the particular. In *ICRP* Cassirer repeatedly refers to the concepts of *chorismos* and *methexis* to explain Plato's influence on Cusa; but he always aligns the *chorimos* with the concept of *heteron* or otherness. As we have seen, the middle dialogues position the realm of forms as completely other to that of the realm of appearances and relates them symbolically. Moreover, Cassirer views this relationship of otherness as one of Cusa's main Platonic inheritances. Cassirer's understanding of the terms, however, is not straightforwardly taken from the middle dialogues; indeed, his understanding of these terms relies heavily on the later dialogues, especially the *Sophist* and the *Philebus*.

The concept of otherness (*heteron*) that is examined in the *Sophist* and further elaborated in the *Philebus* serves to explain the relationship between the two levels of being (*gignomena* and *ontos*). As Martin Kavka points out, in the *Sophist*, Plato outlines three forms of predication:

pros heauto (*auto kath'hauto*), *pros alla*, and *pros heteron*.[146] We have already examined the first of these forms: *auto kath'hauto* refers to self-sufficiency—that is to say, it refers to a tautological or analytic relationship. The second form of predication, *pros alla*, refers to a relationship between one object and an indeterminate number of other objects. The third form, *pros heteron*, refers to a relationship between two different objects. The *pros heteron* relationship, by subsuming the other two, is what enables a revision of the theory of forms such that both self-sufficiency and relationality can be maintained.

The *pros heteron* relationship that Cassirer describes in the *ICRP* is also a *pros heauto* relationship. According to Cassirer, the relationship of otherness is one of opposition—everything that can be said of one must be denied of the other. This type of opposition implies a disjunctive relationship. There can be no overlap between the characteristics of the two differentiae; indeed, they must be diametrically opposed. In the case of appearance and Idea, "if continuous flux is characteristic of [the former], abiding permanence is proper to [the latter]."[147] The antithetical relationship that being and becoming have to each other means that, because becoming is dependent on being, being must be self-sufficient—*auto kath'hauto*. As Cassirer puts it, "Appearance and Idea, the world of phenomena and noumena, can be related through thought; the one must be measured by the other. But never does any 'mixture' take place."[148] Paradoxically, the self-sufficiency of Ideas is derived from their heteronomous relationship to becoming. Because appearances participate, we can say with assurance that forms do not.

The *pros heteron* relationship can also be conjoined with the *pros alla* relationship. *Pros alla* designates a basic relationship of predication—*e.g.*, Max is just. This relationship of

[146] Kavka, "Being and Nonbeing: The Appropriation of the Greek Concept of to Me on in Jewish Thought," 97.
[147] Cassirer, *The Individual and the Cosmos in Renaissance Philosophy*, 16.
[148] Cassirer, 17.

predication can of course be extended—*e.g.*, Max is just and athletic and articulate. The predication of attributes to the subject can be extended indefinitely; however, they cannot encompass all that is. As many attributes as Max may have, he cannot hold two contradictory attributes at the same time; he cannot be both just and unjust, athletic and unathletic, articulate and inarticulate. Every predication of an attribute excludes other attributes. Accordingly, otherness pervades every form such that no form can be understood apart from its differentiation from other forms. The Stranger makes this point when examining the relationship between motion and rest:

> STRANGER: Then motion plainly is in its being 'not that which is' and 'that which is', since it participates in 'that which is.'
> THEAETETUS: Most plainly.
> S: So it is after all of necessity, in the case of motion and throughout all the genera, that 'that which is not' be, for in each and every case the nature of the other, in producing each to be other than 'that which is', makes it 'not that which is', and on the same terms we'll in this way speak correctly of all things as 'not the things which are'. And, once more, because they participate in 'that which is', we'll say they are and 'the things which are'.
> T: Probably.
> S: So for each of the species, then, 'that which is' is extensive, but 'that which is not' is infinite in multitude.
> T: It seems likely.
> S: Then it must be said that 'that which is in itself' too is other than all the rest.
> T: It's a necessity.
> S: And so, for us, 'that which is', to the extent that everything else is, to that extent is not, for in not being those it is itself one, and everything else, in turn, unlimited in their number, is not.[149]
> T: It's pretty nearly so.

Otherness pervades every form because, in order to define what something is, we must exclude everything that it is not. Thus, when a *pros alla* relationship is established, that which is—the subject and its predicates—is said ‘to be’ in opposition to everything which it is not. The *pros alla* relationship, like the *pros heauto* relationship, only takes on meaning when it taken together with a *pros heteron* relationship—in other words, meaning is not derived from the form alone,

[149] Plato, “Sophist,” 256c.

but from its relationships to other forms. The fundamental divide that characterises Plato's ontology in the middle dialogues is thus conserved in the later dialogues, but it is held together more tightly with being. The method by which the connection between being and becoming is explained, consequently, must also develop.

In the middle dialogues, Plato deploys a method of dialectic in which terms are interrogated in order that they be defined in their most essential characteristics and their relationships to each other. Thus, the process follows the general structure of thought: terms are interrogated and classified such that an ascent from particulars to species to genera is engendered. Plato wants to conserve this structure, but he must refine it in order to incorporate the different possible combinations of relationships. This refined dialectical method, or *diaeresis*, is primarily understood as a method of division. Using the example of an angler, the Eleatic Stranger in Plato's *Sophist* demonstrates how a concept can be divided in two naturally at its joints. Thus, the Stranger begins by remarking that the angler is an artisan (*techne*).[150] He then divides art into two categories—the acquisitive arts and the poetic arts—and places angling within the category of the acquisitive arts.[151] He then divides acquisition into an 'exchange between two willing parties' and 'mastery'—a type of acquisition in which someone acquires something by getting the better of it. Angling naturally falls into the latter category. Mastery is then split into two categories—open mastery, or competition, and concealed mastery, or hunting.[152] This process of refinement is continued until a full account of angling can be given such that,

> after all, in the case of the art of angling, [the Stranger] and [Theaetetus] have come to an agreement not only about the name but [they have] also seized adequately the speech about the work itself. Of art in its entirety, a half-part of it was acquisitive, and of the

[150] Plato, 219a.
[151] Plato, 219d.
[152] Plato, 219e.

> acquisitive there was mastery, and of mastery hunting, and of the hunting a hunting of animals, and of hunting of animals an in-liquid-hunting, and of in-liquid-hunting the lower section as a whole was fishing, and of the art of fishing there was striking, and of striking hooking, and of this, that which was involved with a downward stroke and angling upwards, since its name was made similar to the action itself, has got designated as the presently sought-for art of angling.[153]

Diaeresis, through a process of division and categorisation, defines a term through a determination and division of all of its encompassing terms. This process of differentiation is fundamentally one of opposition. Terms are divided into mutually excluding sub-groups such that a term must be placed in one or the other but never in both. That said, the terms are always related by the more general term from which they are derived. *Diaeresis* thus consists in both disjunction and unity. It operates on the same premise as the symbolic connection presented in the *Symposium*.

Fundamentally, then, we see that the *Sophist* understands definition to occur through opposition. This opposition can be between a given object and everything 'which it is not' or between being and not-being more broadly. Thus, the *Sophist* presents the determination of forms as a differential process. Such a differential system, as we have seen in the context of Kant's philosophy, only functions if the concept is within a circumscribed totality where every form is defined. In other words, true knowledge of being only arises where being is, at least potentially, known in its totality. For Plato, such a total view fits perfectly into his ontology. Forms are stable and eternal; they thus constitute a static and delimited sphere that is undergirded by a unifying principle (the Good, the Beautiful). Being and otherness can be interrelated because, when taken as a whole, they constitute the stable sphere of totality.

Once again, however, this is a problem for Cassirer, who would like to put forth a system that can define terms both differentially and dynamically. As such, Cassirer will read the *Sophist*

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[153] Plato, 221b-c.

along Kantian lines. As we saw in the previous chapter, the movement between the real and the not-real described by Cassirer is, in the Kantian system, the move between understanding and reason. Reason is the domain of thought that deals with that which is not real. While the understanding deals with possible experience, reason deals with absolute possibility. This bipartite division of possibility, however, is too simple. These two modal categories are in fact more properly understood alongside another threefold division. Accordingly, Cassirer, along with Natorp, will also speaks about the relationship between the real and the not-real in Platonic terms. Instead of just relative and absolute possibility, the modalities of knowledge can and should be understood along with possibility, necessity, and reality. These modal categories are traditionally associated with the Medieval problem of universals, but in the Marburg school, they were also found to apply to transcendental logic and to Plato's theory of Forms.

Natorp's account of these modalities of being is the most extensive and systematic of the group. Possibility designates the modality of being prior to any determination whatsoever, whether hypothetical or actual. Thus, it stands as pure unconditioned being. Reality, on the other hand, is complete determination. Not only is it the *factum* of any particular existent thing in its full and peculiar determination, reality is also the full determination of the totality as it is given—*i.e.*, thus and not otherwise. Necessity, finally, mediates between possibility and reality. As Karl-Heinz Lembeck puts it, in the field of necessity, "Being is brought out of Possibility into Reality, in that the original indeterminacy of the possible undergoes its hypothetical delimitation (*Limitation*) via the dialectical process of being determined thus and otherwise."[154] Each antecedent phase places demands on the subsequent ones such that reality is grounded on necessity, which is in turn grounded on possibility. Reality, as the fully determined *factum* of

[154] Lembeck, "Plato-Reception in the Marburg School," 235.

existence is ordered and delimited by the necessity, where the hypothetical principles of relation are drawn out of the pure possibility of being.

The relationship between necessity and reality is of especial concern for Cassirer, for it is at the level of this dialectic that the question of the relationship between logic and reality comes into play and, indeed, where the Platonic Forms are to be located. In order to examine the relationship between the real and the "not-real" (*i.e.*, the possible and the necessary), Cassirer refers to Plato's *Sophist*. Indeed, to reiterate a quote that proved *à propos* in our analysis of Kant, Cassirer states,

> The system of knowledge, the community of interlocking concepts—Plato's *Sophist* teaches—is not achieved until we resolve to recognize being and nonbeing as equally justified and equally necessary factors. Every single concept embraces, side by side with a statement about being, and abundance of statements about non-being; every single "is" in a predicative sentence can be fully understood only if we conceive of an "is not" as correlative with it. Indeed the concept cannot effect an ideal determination of the real as long as it remains exclusively within the confines of this reality. Its peculiar and supreme achievement requires that it progress from the contemplation of the real to the possible—and this it cannot do if it shrinks back from its opposite, the impossible.[155]

The implications of this passage are extensive; however, Cassirer's general line of reasoning is as follows: 1) being must be thought together with non-being; 2) thinking non-being requires thinking outside the confines of reality; 3) thinking beyond reality is not simply thinking necessity but requires a move from the real to the possible to the impossible.

The first of these claims has already been addressed through our analysis of differential determination. A point must be added, however; as just before the passage quoted above, Cassirer contrasts this claim with Aristotle's logic of substance. As we saw in Cassirer's critique of Aristotelian logic, a theory that prioritises the given is problematic because it cannot escape this sphere. If the given is taken as the single primary ground of a logical theory, then this theory

[155] Cassirer, *The Philosophy of Symbolic Forms. Vol. 3*, 304–5.

is bound by the limitations of the sphere of reality. Our subsequent analysis of Plato's *Sophist*, however, has shown that in order to think being, we must be able to think the other of being—non-being. In Natorp's terms, the need to think non-being means that we must move beyond the sphere of reality to the sphere of possibility. The sphere of possibility, however, is not simply the unconditioned. Rather, as Cassirer points out, the possible itself is delimited by the impossible. Indeed, just as with Kant, possible instantiations of reality must always be established in opposition to the impossible instantiations of reality. As absolute as possibility might be, as soon as it comes into relation with reality, it is limited. The possibilities become necessities because they are set in dialectical opposition to that which is not real.

This reading is further supported by the *Philebus* and its elaboration of limit (*peras*) and unlimitedness (*apeiria*). In the *Philebus*, limit is introduced in order to talk about a complex unity or, put in different terms, to explain how the many can be one. At 16c-e, Socrates recounts the following:

> A gift of gods to men, as I believe, was tossed down from some divine source through the agency of a Prometheus together with a gleaming fire; and the ancients, who were better than we and lived nearer the gods, handed down the tradition that all the things which are ever said to exist are sprung from one and many and have inherent in them the finite [*peras*] and the infinite [*apeiria*]. This being the way in which these things are arranged, we must always assume that there is in every case one idea of everything and must look for it—for we shall find that it is there—and if we get a grasp of this, we must look next for two, if there be two, and if not, for three or some other number; and again we must treat each of those units in the same way, until we can see not only that the original unit is one and many and infinite, but just how many it is. And we must not apply the idea of infinite to plurality until we have a view of its whole number between infinity and one; then, and not before, we may let each unit of everything pass on unhindered into infinity.[156]

Socrates here suggests that each unit—each limited or finite thing—is one, many, and infinite, or unlimited. Each unit is one, insofar as we see or grasp it as a unit; but it is also many, insofar as it

[156] Plato, *Philebus*, 16c-e.

is composed of several constituent parts. As for the limit, Stanley Rosen points out that when we cognise something, "we suppose that in all cases there is a single form…The expression "in all cases" refers to the entire visible world. Whatever is visible is so thanks to a single form for each collection of lookalikes."[157] The extension of the unit is limited by its form. Though we cannot think every possible iteration of a thing when we see it, its form makes it intelligible to us.

We can explain the one, many, and the limited, but the role of the unlimited in all of this seems less straightforward. We can say, following Rosen, that the unlimited is not matter insofar as Socrates refers to the form (*idean*) of the unlimited.[158] Indeed, the final lines point to a different explanation; they point to the same differential determination advanced in the *Sophist.* Only once we have a view of every component of the unit that we are inquiring into, once we have reached the end of the process of *diaeresis,* can we attribute to it a form. Once this form is attributed, then we can place it in a differential relation to every other form—to the unlimited. Accordingly, at the level of forms, unity and limit become one, as unity is established through the differential relation of the limited from the unlimited.

The unlimited, however, remains undetermined. That is, though we have defined it as the totality of other forms, it is not clear how we can delimit this totality—indeed, this is the crux of our issue. Once again, Rosen offers an incisive answer:

> The unlimited has a nature; that is, it is accessible to the calculative intelligence, *and is therefore limited or definite*…In this case we have a distinction between "form" and "content" that does not hold good of other forms. Other forms have formal elements, but here, the "content" of the form or nature of the unlimited is not itself a form.[159]

Rosen's claim here is absolutely essential. In order to think the unlimited, we must think it as limited. Such an operation, however, is only possible if there is a complete separation of form

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[157] Rosen, *Plato's "Sophist,"* 77.
[158] Rosen, 79, referencing *Philebus*, 16d.
[159] Rosen, 82, emphasis in the original.

and content. Though Rosen states that this division is not true of other forms, for Cassirer, it is precisely this division that enables mathematical objects to avoid the fixity that ails them in the context of Euclidean mathematics. Indeed, as Massimo Ferrari points out, Cassirer's mathematical Platonism differs from the mathematical Platonism of someone like Alexandre Koyré, because, in Cassirer's view, mathematical forms are related to experience.[160] Unlike Koyré who insists on the epistemological priority of mathematical forms, Cassirer, as we have seen, always understands mathematical forms to be rules that come into being along with the particulars that they govern. Accordingly, the mathematical form, like the unlimited, is constituted by two ontologically distinct parts that cannot be conflated. Consequently, concepts, such as the infinite or any open-ended formula, despite being—in terms of their content—unthinkable in their entirety, can still be thought insofar as their form can be conceived in a limited way.

Through an analysis Plato's two-tiered ontology we can thus see why Cassirer positions his logic of function within the Platonic tradition as opposed to the Aristotelian tradition. Plato's system is only successful for Cassirer, because it enables knowledge to operate on different levels such that these levels limit and determine each other dialectically. Plato's dialectical methodology represents "a unity of opposites" whose, "essential achievement consists in the perfect intellectual balance produced between the function of division and that of combination."[161] Division and combination are not two distinct operations; they must be thought together; when they are,

> the *διαειν*, the *τέμνειν κατ'είδη* knows no other goal than to bring together anew the separated elements into one unitary figure. Thus, the dialectician is not only inadvertently

[160] Ferrari, "Koyré, Cassirer and the History of Science," 161.
[161] Cassirer, *The Warburg Years (1919-1933)*, 215.

> or subsequently a synoptist, but by virtue of his first and original endeavor, he is simultaneously a synoptist; so, only the synoptist can be the true dialectician."[162]

Plato, in true dialectical form, always thinks analysis and synthesis together. Never is anything thought in isolation. For Cassirer, this synthetic method enables a mathematics to be rooted in experience despite operating on a different ontological level. Indeed, the symbolic relation between the empirical and the ideal means that the two must be thought as two halves of a whole. Moreover, this unity in disjunction enables Cassirer to find in Plato a basis for a dynamic account of mathematical knowledge. Form and content must be separate; accordingly, a concept, such as the unlimited, which can never be experienced in its entirety, can be thought in a limited way. For Cassirer, the capacity to think the unlimited as limited is essential; for it is precisely such a capacity that enables one to circumscribe an infinite totality, which, in turn, allows one to define concepts differentially—that is to say, as objects that derive their significance from their relation to other objects.

[162] Cassirer, 215.

Chapter 3 – Limits, Disjunction, Dialectic

Having examined a quintessentially Modern perspective in Kant and a paradigm of ancient knowledge in Plato, we now turn the bridge between the two: Nicholas of Cusa. Cusa is, of course, famously advanced by Cassirer as the first Modern thinker. Several aspects of Cusa's thought contribute to this nomination: a new emphasis on the individual, a theory of an infinite universe, the democratisation of the cosmological and spiritual hierarchy, a new emphasis on mathematics, a critique of knowledge.[163] The specific confluence of these elements and the manifold consequences that they hold are certainly too much for a single work to address—indeed, each and every one of these characteristics of Cusa's thought and their effect on Modernity continue to be subjects of inquiry and debate. Our inquiry, however, is focused on the influence of Cusa's thought on Cassirer's interpretation of the transcendental method and its resulting functional logic. With regard to this interpretation, all of the facets of Cusa's thought intersect in his development of the limit concept.

The limit concept finds several iterations across Cusa's corpus as well as within individual works. On one level, it follows a differential schema in which limits serve to distinguish concepts from one another. On another level, the limit concept is understood as a transcendental principle of knowledge that circumscribes different strata of knowledge. The

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[163] All of these elements are emphasised by Cassirer in the first two chapters of *ICRP* (Cassirer, *The Individual and the Cosmos in Renaissance Philosophy*, 1–72). Other scholars, however, tend to emphasise one or another of these aspects of Cusa's thought rather than all of them. Hans-Georg Gadamer, for example, stresses Cusa's new cosmological hierarchy and his development of a notion of continuum (Gadamer, "Niclaus Cusanus and the Present"). Louis Dupré also highlights Cusa's contribution to a two-tiered cosmos and the impact that this would have on the development of a new notion of the individual (Dupré, *Passage to Modernity*, 57-61 167-189. Pierre Duhem, in his *Études Sur Léonard de* Vinci, focuses on Cusa's speculative developments in mathematics. David Albertson also focuses on Cusa's mathematical developments; but he anchors these developments in a Medieval and Neo-Pythagorean heritage (Albertson, *Mathematical Theologies*, 1–20). Hans Blumenberg alludes to the critical aspect of Cusa's philosophy (*The Legitimacy of the Modern Age*, 490-91and 495). Few scholars emphasise the critical and individualistic aspects of Cusa's thought as much as Cassirer. For a comprehensive overview of Cusa scholarship in the 20th and 21st c., see Burton, Hollmann, and Parker, "Introduction: Nicholas of Cusa and Early Modern Reform Towards a Reassessment."

standard interpretation of Cusa's intellectual development divides his thought into three periods that move from a more apophatic emphasis in his early period and a middle period—exemplified by such works as *De Visione Dei*—that serves a transition to his later period, where there is a fully dialectical determination of the limit between the levels of knowledge. Cassirer's interpretation is slightly more synchronous. Indeed, though he recognizes a certain development in Cusa's thought, Cassirer views Cusa's philosophy as a coherent whole in which each part supplements and justifies the other. This synchronous reading is, in fact, what enables such a potent reading of Cusa's limit concept. By understanding Cusa's different iterations of the limit concept to be in dialectical relation to each other, we can draw out how the limit concept serves as both a principle of objective knowledge, in its differential iteration, as well as a transcendental principle, in its circumscription of totality. Most importantly, we can see how these two concepts of the limit—the immanent differential limit and the transcendental limit—only function if they are maintained in dialectical tension with each other through a symbolic relation.

The exploration of Cusa's development of limit concepts must begin with an appraisal of his ontology. As we shall see, Cusa's democratisation of the cosmos transfers the ontological hierarchy of the Platonic cosmos into an epistemological hierarchy. The mind of the individual has an internal hierarchy, but, between the individual and God, there is no mediation. Indeed, through Cusa's new ontology, Cassirer shows that a Modern transcendental method can have no mediation between the mind and the absolute. The mind and God are disjunctively related such that reaching the upper limits of the mind is approaching the limits of the absolute. In other words, the minds self-critique is premised on its delimitation by the absolute.

Such a delimitation, however, must pass through the mind's action on nature. As Cassirer points out,

> In exercising its own creative power, the mind does not remain within itself but must have recourse to sensible 'matter', which it forms and transforms. But this does not indicate a retreat from the purely intellectual nature and essence of the mind. For here, again, the way up and the way down are one and the same; the intellectual descends to the sensible only to raise the sense-world up to itself. Its action upon the world made of apparently opposite stuff is the condition for its recognizing and realizing its own form, and for translating this from potential to actual being.[164]

In order for the mind to know itself, it must act on the world; for it is only by acting on the world that the mind can determine the conditions for the possibility of its knowledge. It is for this reason that Cassirer claims that the inheritors of Cusa's idealism "see no contradiction between 'apriorism' and 'empiricism'; because what they seek in experience is necessity—it is reason itself."[165]

The necessity of reason in experience, for Cassirer, develops out of a new approach to nature that finds its origin in the mystical theology of Francis of Assisi. Cassirer reads Francis' theology as essentially founded on love. This love is not just love of God but a brotherly love that prioritises connection over "specific and individual 'thingness'."[166] The relationality of all things also redeems nature as it becomes an object of love. For Cassirer, however, a knowledge corresponding to this love must be evinced such that nature can be "justified." This justification can only come through an overhaul of Scholastic logic and its corresponding hierarchical physics and cosmology. "In its place", insists Cassirer, "comes the *logic of mathematics*, to provide the means by which we can raise ourselves above the sphere of mystical feeling into that of intellectual *vision*."[167] Indeed, Cassirer seeks to demonstrate that a new impulse towards the valuation of nature along with a continued preoccupation with the theological leads to a new method in which nature, as the image of the divine, is seen as a road to the absolute. He insists,

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[164] Cassirer, *The Individual and the Cosmos in Renaissance Philosophy*, 57–58.
[165] Cassirer, 58.
[166] Cassirer, 52.
[167] Cassirer, 52.

however, that this new road to the absolute is accompanied by a critique of our knowledge of the absolute:

> According to the *De docta ignorantia*…everything visible is an image of the invisible, which we cannot see except in an image or an enigma. For us, then, the spiritual remains itself unattainable in itself; we can never grasp it except in a sense-image, a symbol. But we may at least demand that the sense-image itself contains nothing unclear, nothing doubtful; for the road to uncertainty can only lead through certainty. This is the novelty: [Cusa] requires of the symbols in which the divine becomes graspable by us not only sensible fullness and force but also intellectual precision and certainty.[168]

Cassirer sees in Cusa's doctrine of learned ignorance a circumscription of the realm of knowledge. Nature points symbolically beyond itself to the absolute. This symbolic activity, however, holds a new and particular valence in its precision—a precision that is attributed to mathematics. On account of it proceeding from our own mind, mathematical knowledge is the only truly precise knowledge that we can have: "Only mathematics establishes unequivocal and necessary standards against the arbitrariness and uncertainty of opinions…Instead of a mere aggregate of words, mathematics gives us a strictly syntactical structure of thoughts and propositions."[169] Because mathematical knowledge expresses the relation between particulars rather than particulars themselves, it is best suited to express this new understanding of nature.

The relational structure of mathematics also implies necessity. There is a necessary rational order to the world, but this necessity is somehow held together with the creative and agential power of the human mind. This particularly Modern conundrum, which is at the center of Cassirer's interpretation of Cusa, finds its resolution in the different modalities of knowledge that the limit concept enables. More precisely, in Cusa's dialectic of limit concepts, Cassirer finds both a principle for applying the necessity of mathematics to an infinite universe and a principle for circumscribing this necessity such that possibility and the agency of the individual

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[168] Cassirer, 53.
[169] Cassirer, 54.

can be conserved. Most importantly, Cassirer, in Cusa's philosophy, finds a system in which these two facets of Modern thought not only *can* be thought together but *must* be thought together.

Cusa's two-tiered ontology

Cusa's ontology differs from Plato in that he posits a divide between the absolute infinite and the contracted infinite, or God and creation, rather than between the realm of Ideas and the realm of appearances. Though Cusa's ontological levels correspond to different levels of knowledge, these levels are not the same as Plato's. As we have seen, for Plato, *ontos* corresponds to true and stable knowledge (*episteme*), while *eikasia* corresponds to changeable knowledge (*doxa*). Cusa's upper tier, on the other hand, admits no knowledge. Its epistemological status is that of unknowability. Indeed, to refer to the absolute infinite as an ontological level is somewhat misleading: the absolute infinite is not being in any straightforward sense so much as it is that which is beyond being. This status of the absolute infinite as super-ontological means that which eludes comparison: "the infinite, qua infinite, is unknown; for it escapes all comparative relation."[170]. Cusa suggests that the human intellect can only know things through processes of comparison—we acquire knowledge by comparing a given thing against its measure. Accordingly, the absolute infinite is beyond the reach of human knowledge—it is incommensurable with human cognition. This logic of comparison that Cusa invokes to explain intelligibility is not as novel as his ontology. Indeed, in many ways, it invokes Plato's theory of forms: the particular is measured against its ideal concept. What is novel in Cusa's system, however, is the ontological weight he gives to forms. Cusa, so to speak, imports

[170] Nicholas of Cusa, "On Learned Ignorance," 1.3.

Plato's forms into the human mind.[171] There are no longer two tiers of being that correspond to two tiers of knowledge. Instead, there is a tier of being that corresponds to knowledge—however inexact—and a tier of being that corresponds to unknowledge. Thus, as Cassirer points out, Cusa reintroduces Plato's two-tiered ontology in order to further radicalize it.

Cassirer emphasises that Cusa's new ontology is opposed to the Neoplatonic and Scholastic-Aristotelian view of the cosmos of his predecessors. The Neoplatonic cosmos, Cassirer remarks, adopts an "absolute opposition between the sensible and the intelligible."[172] However, he adds that, in the Middle Ages, Christian authors such as Pseudo-Dionysius adopted

> the fundamental category of graduated mediation, which on the one hand allowed the integral existence of divine transcendence, and on the other hand mastered it, both theoretically and practically, with a hierarchy of concepts and spiritual forces. Through the miracle of the ecclesiastical order of life and salvation, transcendence was now both recognized and conquered. In this miracle, the invisible had become visible, the inconceivable had become conceivable to man.[173]

However accurate Cassirer's reading of Medieval Christian theology might be here, his concerns are quite clear. The mediation enabled by the Neoplatonic doctrine of emanation offers a stepladder up to the divine. Despite the supposed absolute transcendence of the divine, it is all too easy for the human being to access this transcendent principle. Coming from a critical position, Cassirer worries such a system.

Cassirer's rejection of the Aristotelian cosmos is based on similar grounds, but he also questions the logic that follows from its monistic ontology. The Aristotelian cosmos is continuous and hierarchical. Oriented around a single center, the spheres of the cosmos radiate

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[171] As we shall see, this "importation" of the forms alters their epistemological valence as well. The measure of the world is no longer the stable realm of being but the necessary realm of mathematics. Accordingly, speaking in Platonic terms, we can say that the dianoetic becomes the measure of the world and, in a drastic departure from Plato, is posited as that which enables symbolic access to the absolute.
[172] Cassirer, *The Individual and the Cosmos in Renaissance Philosophy*, 18.
[173] Cassirer, 18.

out in an ordered hierarchy according to the perfection of their substance. The outer most or highest sphere, the heavens, is the most perfect and thus entirely stable. The dynamism of the elements creates movement in the lower spheres; but everything, following its *telos*, tends towards rest in its assigned position in the cosmos. This system, Cassirer remarks, cannot be reconciled with Cusa's new ontology:

> A closer view of the system reveals that it consists of two dissimilar and ultimately incompatible components. Ideal is mixed with empirical, empirical with ideal. Perfect movement, movement in a perfectly circular orbit is supposed to correspond to the perfect substance of the heavens. But we learned from the principle of the *docta ignorantia* that the truly perfect can never be encountered as something actually existing, i.e., as something present and demonstrable in the reality of things.[174]

Perfection, for Cusa, is only a characteristic of the absolute infinite. He, therefore, cannot countenance a cosmology that claims that it is present in the empirical world, let alone continuous with it. If we are to speak of "perfection", even in a derivative sense, we must speak of equality. As we shall see, equality is never found in the empirical world and thus can only be achieved through an abstraction from it.

The passage quoted above also indicates that Cusa's new ontology severs the bond with Scholastic logic.[175] There is no way to access the absolute through demonstration. Indeed, demonstration, in the Aristotelian system, refers to syllogism. Syllogistic logic, in the Scholastic-Aristotelian context, operates on the basis of the principle of the excluded middle. For this reason, it is a logic of the finite. As Cassirer explains it,

> All its concepts are concepts of comparison; they rest upon the union of the equal and the similar and upon the separation of the unequal and the different. By such a process…all empirical being splits up into definite genuses and species that stand in a definite relationship of super- or sub-ordination to each other. The whole art of logical thought consists in making this interlocking of the conceptual spheres visible and clear. To define

[174] Cassirer, 26.
[175] Cassirer, *The Individual and the Cosmos in Renaissance Philosophy*.

> one concept through another, we must traverse the whole series of middle terms that stand between them.[176]

Syllogism, because it operates through a process of comparison that ties every conceptual level together and clarifies their relations, must be inadequate to the infinite. Indeed, to emphasise this point, Cusa adopts Thomas's assertion that there is no proportion between the finite and the infinite. From this claim, Cusa extrapolates the limits of our knowledge: "But all who investigate judge the uncertain proportionally by comparing it to what is presupposed as certain. Therefore, every inquiry is comparative and uses the method of proportion…Because the infinite escapes all proportion, the infinite as infinite is unknown."[177] There is no gradual passage from the finite to the infinite; the two are disjunct.

A further consequence of this logic of comparison is that precise knowledge of the empirical world is unattainable. While absolute terms escape our knowledge due to their infinite character, perfect knowledge of objects in the world is also unattainable due to the imprecision of comparison. In order for an object to be known perfectly, a concept must be perfectly equal to its object. As Cusa, points out, however,

> we find equality occurring in degrees so that one thing is more equal to another than a third…Clearly, therefore, two or more objects cannot be so similar and equal that they could not be more similar ad infinitum. Consequently, however equal the measure and the thing measured may be, they will always remain different.[178]

Not only can we have no perfect knowledge of an object, but no two objects are identical, nor can the distance between a concept and its object ever be bridged. Accordingly, the distance between two objects or a concept and its object conceived epistemically is always relatively infinite—that is to say, infinite yet related—insofar as they can always be more similar. This

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[176] Cassirer, 12.
[177] Nicholas of Cusa, *DDI*, n.d., 1.1.2-3.
[178] Nicholas of Cusa, 1.3.9.

distance is thus understood asymptotically. Though the two can never be identical, the former approaches the latter asymptotically as its limit. Accordingly, the infinite movement is not undetermined, it tends towards a definite limit. One can only access truth by reaching this limit.

Both the ineffability of the infinite and the imprecision of the finite would seem to pose serious problems for any claim to knowledge. Indeed, one would expect both of these claims to lead Cusa to advance a relativistic account of knowledge—but this is not the case. Instead, Cusa uses the unbridgeable distance between objects to ground knowledge and enable access to the absolute. More precisely, by understanding the limit concept as something that is inherently beyond the reach of finite objects and by simultaneously enabling access to this limit despite its infinite distance, the very relative infinite that renders precise access to truth impossible instigates the movement that leads us symbolically to the absolute. For Cassirer, the disjunction of the limit concept from any instance that it describes allows it to serve as a rule and ground for this concept. More fundamentally, the limits between concepts, by pointing symbolically to the absolute, enable the mind to establish its transcendental limit in dialectical relation to these conceptual limits.

The Limit Concept in the *De Docta Ignorantia*

Following in the footsteps of his Medieval predecessors, Cusa advances an epistemology that divides the mind into three faculties: *sensus*, *ratio*, and *intellectus*. This threefold division is fundamental to Cusa's system insofar as it enables him to move from the *confusio* of the sensible world to the *ordinatio* of the rational world by grouping and dividing concepts in accordance with the Aristotelian categories. From the rational realm, whose order is premised on opposition, Cusa can move to the level of *intellectus* by overcoming of these oppositions. In other words,

Cusa's tripartite epistemology enables him to advance one of his most famous notions—the coincidence of opposites.

Though the movement between mental faculties is fundamental to Cusa's system—especially the move between *ratio* and *intellectus*—little scholarly attention has been devoted to understanding what the mechanics and structure of this movement really entail. In his first major philosophical work, *De Docta Ignorantia* (*DDI*), and in several subsequent works up to the end of his life, Cusa describes the movement from *ratio* to *intellectus* as one of *transsumptio*.[179] The two most prolonged and in-depth accounts of Cusa's method of *transsumptio*—Tamara Albertini's[180] and Carlos Zorrilla P.'s[181]—argue that it represents an alternative to syllogistic reasoning. Cusa's epistemological method of comparison—at the level of reason—is, as both Albertini and Zorrilla aver, syllogistic. Knowledge is obtained through comparison: *ratio* differentiates concepts into species and then unites them into groups of genera through comparison. These comparisons are described by Cusa as relations in which "the objects of inquiry can be compared by a close proportional reaching back to what is presupposed as certain."[182] As Zorrilla points out, however, Cusa advances a two-tiered ontology that is characterised by a radical disproportion between the two levels of being. Thus, just as Cassirer's own interpretation highlights, syllogistic reasoning, as a method based on proportion, is inadequate to this movement between the two tiers. Accordingly, the movement of the mind from the lower tier to the higher requires a method that can overcome this impasse.[183] Cusa invokes

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[179] In addition to the *DDI*, the term or one of its cognates can be found in *De coniecturis* (1443), *De filiatione Dei* (1445), in two Sermons from 1440 and 1455, in *De aequalitate* (1459), and *Cribratio Alkorani* (1460). For more information, see Albertini, "How to Unlock the Infinite in: Mystical Theology and Platonism in the Time of Cusanus," 216.
[180] Albertini, "How to Unlock the Infinite in: Mystical Theology and Platonism in the Time of Cusanus."
[181] Zorrilla P., "Transumption and the Decentered Cosmology of Nicolaus Cusanus."
[182] *DDI*, 1.1.2.
[183] Zorrilla P., "Transumption and the Decentered Cosmology of Nicolaus Cusanus," 270–71.

transsumptio in order to explain this movement. While a comparative relation moves from the certain to the uncertain, a transsumptive relation moves from the certain to the unknown[184] or, as Zorilla puts it, from the proportionate to the disproportionate.[185]

Both Zorrilla and Albertini see *transsumptio* as operative in the geometrical examples advanced in *DDI.* In *DDI*, Cusa uses the term *transsumptio* when describing how one approaches the divine through mathematical symbols. As mentioned, a transsumptive relation entails a move from the certain to the unknown. In the context of the Cusan epistemology, however, the only certain object of knowledge is the mathematical concept.[186] Accordingly, the standpoint of the certain from which one must begin a transsumptive movement is the knowledge of a mathematical concept. Though Cusa tends to rely on geometrical examples in order to demonstrate this movement,[187] at chapter 12 of *DDI* he sets out the method in explicit terms:

> Therefore, if we want to use finite things as a method of ascending to the simply maximum, we must first consider mathematical figures along with their attributes and relations; then we must transfer these relations to corresponding infinite figures; and, finally, we must, at a still higher level, apply the relations of the infinite figures to the simple, which is entirely independent even of every figure. And then, as we labor in the dark of enigma, our ignorance will be taught incomprehensibly how we are to think of the Most High more correctly and truly.[188]

The move from the finite to the infinite consists in a move from a possible instantiation of a figure in reality to an instantiation that, despite proceeding from a definition of a geometrical figure, cannot exist in reality. This move from the possible to the impossible figure enables a

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[184] Albertini, "How to Unlock the Infinite in: Mystical Theology and Platonism in the Time of Cusanus," 224–25, 234.
[185] Zorrilla P., "Transumption and the Decentered Cosmology of Nicolaus Cusanus," 273–74. Albertini's analysis of *transsumptio* offers a similar interpretation, though she understands this operation to be an analogical one (Albertini, "How to Unlock the Infinite in: Mystical Theology and Platonism in the Time of Cusanus," 231).
[186] Nicholas of Cusa, *DDI,* 1.11.31.
[187] He argues, for example, that, if one takes a circle and increases its circumference infinitely, the curvature of the circle will be resolved into a straight line.[187] Cusa refers to such infinitisations of geometrical objects as an ascent "from a quantitative to a nonquantitative" figure (*DDI*, 1.14.39).
[188] Nicholas of Cusa, 1.12.33.

move from *ratio* to *intellectus*. Accordingly, both Albertini and Zorilla[189] understand *transsumptio* to consist in taking a geometrical example and pushing it to its infinite. Through this infinitisation of the geometrical figure, the mind overcomes the distinctions imposed by *ratio* and attains unto the coincidence of opposites at the level of *intellectus.*

A more precise account of this movement can be articulated if we compare *transsumptio* to the structure of syllogism. Syllogism or deduction (*sullogismos*), in the later Middle Ages and Early Renaissance, followed the Aristotelian model. In his *Prior Analytics*, Aristotle defines syllogism as "speech (*logos*) in which, certain things having been supposed, something different from those supposed results of necessity because of their being so."[190] Aristotle's definition outlines a statement in which premises (*protasis*) are advanced that result in a necessary conclusion (*sumperasma*). The premises include a major term and a minor term which share a common middle term (*meson*). The necessity of the connection between the extreme terms (*akra*) of the major and minor premises is thus a function of the middle term (or terms). Without the *meson*, the jump from the one *akron* to the other is arbitrary.

Despite the fact that Cusa is attempting to move beyond a merely syllogistic logic, he does not want to fall into pure arbitrariness. Accordingly, he adopts a structure in which the middle term omitted yet implied when employing a transsumptive method.[191] As mentioned

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[189] Zorrilla describes this relation as one that explodes the parameters set by *ratio* in order to access the more fundamental parameters of *intellectus* (286). The intellect, when faced with its own limitation is disrupted and thus self-reflexively overthrown. Through this overthrow, that occurs at the limit of *intellectus,* one comes into contact with its unconditioned ground—God (298). Albertini considers *transsumptio* to be akin to an analogical relation. he suggests that Cusa's use of the verb "*transilire*" implies a leap from one intellectual sphere to another. That is to say, while *transilire* enables the comparison of the quantitative geometrical figure with its maximal expression (the contracted maximum), *transsumptio* refers to the leap from the contracted maximum to the absolute maximum (231-2).

[190] Aristotle, *Prior Analytics.* Book 1, 2, 24b18–20.

[191] Though such an analysis goes beyond the scope of this thesis, *transsumptio* was a popular literary device in the later Middle Ages that Cusa would undoubtedly have been familiar with. *Transsumptio* referred to an omitted term that explained the connection between the terms in a metaphor. *Transsumptio* was often theorised by such figures as Geoffrey of Vinsauf to follow a syllogistic structure that implied the middle term despite omitting it. For more on this topic see, Turner, "Geoffrey of Vinsauf's Master Trope"; Vinsauf, "Poetria Nova"; Murphy, *Rhetoric in the*

above, in *DDI*, Cusa often refers to *transsumptio* when treating geometrical examples. In the chapters in which Cusa undertakes this process, he begins by yoking together two seemingly unrelated premises. For example, book 1, chapter 13 of *DDI* begins with the statement, "if there were an infinite line, it would be a straight line, and also a triangle, a circle, a sphere."[192] This statement can be broken down into three individual statements: 1) "an infinite straight line is also a triangle," 2) "an infinite straight line is also a circle," and 3) "an infinite straight line is also a sphere." None of these claims are defensible on their own; it is difficult to see the logic that undergirds them, and one struggles to follow Cusa in his metaphorical leap. Through the mere statement of the fact of the two extreme terms, Cusa fails to lead us up from *ratio* to *intellectus.* In order to do so, he must explain how these two terms are connected. Accordingly, the three following chapters serve as the explananda of the connection between the pairs of terms—or as the *mesoi* which connect the pairs of *akrα*.

Cusa's first example is that of the circle that coincides with the infinite line. His argument is composed of two premises that lead to a necessary conclusion. First, he provides three defining characteristics of a circle: 1) "The diameter of a circle is a straight line;" 2) "the circumference is a curved line longer than the diameter;" 3) "the curved line becomes less curved by as much as the circumference of a circle increases."[193] Second, he calls for the maximisation of these defining terms. That is to say, he asks the reader to imagine how the composition of the circle changes when its circumference has an infinite length. This maximisation of the circumference, which coincides with the minimisation of the diameter, renders its degree of

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Middle Ages; Purcell, "Transsumptio: A Rhetorical Doctrine of the Thirteenth Century"; Curry Woods, "Transformation and Continuity in the Teaching of Latin in Late Medieval Universities: The Case of the Poetria Nova"; Woods, "Teaching the Tropes in the Middle Ages."

[192] Nicholas of Cusa,"On Learned Ignorance," 1.13.35.

[193] Nicholas of Cusa, 1.13.35 .

curvature 0. Thus, we reach the conclusion of Cusa's argument: the infinite circle coincides with the infinite line. The form of Cusa's argument is syllogistic. The two terms—the circle and the line—are related through an intermediate term—maximisation or infinitisation. Cusa's explanation serves as passage from one term to the other.

Though the example of the circle has provided us with the structure of the transsumptive argument, the nature of the middle term remains elusive. Cusa characterises the operation as a maximisation, but what exactly does this entail? The example of the infinite triangle in chapter 14 is perhaps the one that best exemplifies the transsumptive method, and it offers a clue as to how the passage from one term to the other actually occurs. In the same vein as the previous example, the title of the chapter claims the identity of two seemingly irreconcilable terms: "The Infinite Line Is a Triangle;"[194] the chapter then serves as an explanandum for this statement. The argument here follows the same structure as the first: 1) the definition of the geometrical object, 2) the maximisation of the defining terms, 3) the reconciliation of the two initial terms into an identity as proposed by the initial statement. In this example, however, Cusa provides an account of the maximising operation:

> Although, according to our first principle, any one angle can be increased short of the extent or sum of the two right angles, let us suppose, however, that it may be fully increased to the sum of the two right angles, without the disappearance of the triangle. In this case, it is evident that the triangle has one angle which is three angles and the three angles are one.[195]

Cusa acknowledges here that one angle in a quantitative triangle cannot be fully increased to 180º, yet he asks us to suppose that we can do so anyway. Only through this supposition (*admissum*) can one ascend from the quantitative finite triangle to the non-quantitative infinite triangle that coincides with the infinite line. This supposition, however, involves overcoming the

[194] Nicholas of Cusa, 1.14.37.
[195] Nicholas of Cusa, 1.14.38.

limit posed by the definition of a triangle. Cusa provides a two-part definition for a triangle: 1) "Every quantitative triangle has three angles equal to two right angles" [$\angle_1 + \angle_2 + \angle_3 = 180^o$]; therefore, 2) "the larger one angle becomes, the smaller the other two are" [$\angle_1 + \angle_2 = 180^o - \angle_3$].[196] The second part of this definition leads us to the claim presented above: "any one [angle] can be increased short of the extent or sum of two right angles" [$\angle_1 + \angle_2 < 180^o$]. The sum of $\angle_1$ and $\angle_2$ must be smaller that 180^o; this is the excluded upper limit of the definition of a triangle which any quantitative triangle can only approach asymptotically. If the sum of $\angle_1$ and $\angle_2$ reaches 180^o, then one falls outside of the definition of a triangle—as Cusa puts it, the triangle disappears. Cusa, however, is asking the reader to maintain the existence of the triangle there where it should disappear. He wants the reader to incorporate the limit, this point of disappearance, into the triangle itself, such that $\angle_1 + \angle_2 < 180^o$ becomes $\angle_1 + \angle_2 \leq 180^o$. By maximising the triangle to its excluding limit, this limit is incorporated into the definition, and the infinite distance that separates the triangle from the line is bridged.

The line, however, is not properly speaking another object; it is the limit of the concept of the triangle. Cusa's geometrical examples only ever pass from a 3-dimensional object to a 2-dimensional object to a 1-dimensional object and back up again.[197] This transition, for Cusa, is representative of a move from one mode of reality to its grounding essence. In other words, a surface is the limit of a volume, a line is the limit of a surface, and a point is the limit of a line.[198] Accordingly, when Cusa claims the coincidence of the triangle with the line, or the coincidence of the circle with the triangle through their coincidence with the line, he is not claiming their complete coincidence, but their coincidence at their limit. The limit of the triangle is what

[196] Nicholas of Cusa, 1.14.38.
[197] Nicolai de Cusa, "On Surmises."
[198] This relationship is exposited in depth in chapters 4 to 9 of *De coniecturis*

distinguishes the triangle from everything else, but it is not the triangle itself. Thus, when one supposes that the triangle can incorporate its own limit, one imagines the space between a concept and the rest of the world. In short, when Cusa asks his readers to incorporate an excluding limit into the definition that it delimits, he is asking them to occupy a space of disjunction.

Occupying the space of disjunction requires a transference of mindset. For Cusa, the transfer of mindset that enables this operation is the move from *ratio* to *intellectus.* The transsumptive relation serves to lead one beyond the discursive differentiation of *ratio* to the coincidence of contradictories at the level of *intellectus*. This movement does not account for an overcoming of a limit but allows one to reach a limit that should not be reachable. It allows one to reach the negative limit between two positivities. This liminal point is not God, but the self-reflexive knowledge of the limit of our knowledge—or learned ignorance. This knowledge occurs at the level of *intellectus* where we see that God is absolute and perfect unity and thus cannot exist in any relation to the created universe.[199] Thus, the unity represented by *intellectus* is not the perfect unity of God, but a derivative unity. Indeed, in the *De Coniecturis* (*DC*), *intellectus* is understood as the unity that precedes distinction. It is the second oneness that, unlike God's absolute oneness, originates together with opposition.[200] Accordingly, it is not an absolute unity that exists of itself and through itself unrelatedly; it is a derivative, related unity that only arises together with difference as the unity of that difference. *Intellectus* transsumptively bridges the gap that divides two concepts by occupying the limit between them.

The passage into the gap enables the coincidence of opposites without collapsing the opposition. The gap, as the space of *transsumptio*, is a null space. Quintilian, whose definition of

[199] Nicholas of Cusa, *DDI*, 1.24.74-5.
[200] Nicholas of Cusa, "On Surmises", 1.6.22.

transsumptio was important in the later Middle Ages, states that *transsumptio* is a middle term that joins the two terms of metaphor by explaining their connection; it thus has no significance outside of its reference to the metaphor that it explains.[201] It is, in itself, nothing. Despite its lack of being, it serves to ground the metaphor, as it enables the connection between the two terms. More importantly, it maintains their difference in spite of this connection. Metaphors function by maintaining a tension between identity and difference. The claim is unequivocal, "x *is* y". Despite the force of the claim, however, one is always aware that a difference persists—x is not identical to y and never will be. The force of the metaphor arises from this tension. By maintaining identity and difference in concentrated form, the mind is opened to new depths of significance and new possible meanings. Accordingly, *transsumptio*, as the middle term that brings forth this similarity and yet absents itself, enables this tension between difference and identity. The tension between unity and difference can be held together because Cusa understands them to occur at two different levels of knowledge. Cusa's epistemology is thus structurally disjunctive. This disjunction, however, does not result in incoherence. Quite the contrary, the disjunction between terms enables each level of knowledge to be grounded by a more fundamental one. The epistemic limit of each faculty stands as its point of contact with the next.[202] Indeed, though, so far, we have focused primarily on the relationship between *ratio* and *intellectus*, this relationship occurs throughout Cusa's system: *sensus* is grounded in *ratio,* which is in turn grounded in *intellectus*. The two terms can coincide, but they do not reconcile themselves into a single term because the middle term, the transsumptive term, is always located

[201] Quintilian uses the Greek term *metalepsis.* In the Middle Ages, however, this term was translated as *transsumptio*. Quintilien, *The institutio oratoria*, trans. Harold Edgeworth Butler, Loeb classical library 124–127 (Cambridge, Mass. London: Harvard university press W.Heinemann, 1979), 3:323; For the importance of Quintilian's definition in the Middle Ages, see Purcell, "Transsumptio: A Rhetorical Doctrine of the Thirteenth Century," 371–72.
[202] Nicolai de Cusa, *De Coniecturis*, 1.13.67.

at a more fundamental level of knowledge. Due this triangular structure, their opposition is always held together with their union.

Cusa's use of *transsumptio* is thus no mere mystical leap from the certain to the unknown. *Transsumptio* is in fact a fairly precise concept that refers to the passage between two seemingly unrelated terms by way of an omitted middle term. Accordingly, *transsumptio* is not straightforwardly opposed to syllogistic logic; it is a transformation of it.[203] Cusa, by positing the excluding limit of a concept as this middle term, is able to construct a dialectical relationship between two terms that identifies them without collapsing them into a single term. In this way, he is able to avoid collapsing the levels of his epistemology and, consequently, his ontology. This method serves to reach the limits of knowledge, but it does not overcome these limits. Instead through its movement between intellectual faculties, it occupies the disjunction between the levels of knowledge.

The Symbolism of the Point

Cusa's articulation of the limit concept in *DDI*, however, does not seem entirely sufficient to explain how a transcendental limit can be assimilated by the mind. The mind's three-tiered structure clearly enables *intellectus* to ground *ratio*, but Cusa himself says that *intellectus* is "the rooted-oneness that has no earlier root of itself."[204] Though the three epistemological levels "coincide" with the next at their upper limit, *intellectus* does not coincide with the absolute which is radically other to it. How then can this limit be conceived? The answer lies, in part, in Cusa's use of the symbolism of the point. The point is an extremely potent symbol in Cusa's philosophy. Through it, he is able to bring together all of the aspects of his thought that Cassirer

[203] I make this point in contrast to Hans Blumenberg's articulation of move from the finite to the infinite as an "metaphor of explosion". (Blumenberg, *The Legitimacy of the Modern Age* 487 and 493.)
[204] Nicholas of Cusa, "On Surmises," 1.4.14.

views as integral to his project. The point serves as a symbol of the limit concept; moreover, in doing so, it serves as a symbol of a new type of unity that enables the coinherence of the universal and the particular and the convergence of the minimum and the maximum that, in turn, enables a delimitation of totality and grounds this totality in the delimitation of concepts and *vice versa*. Accordingly, the point serves as a symbol that enables the transition from the immanent to the transcendental limit.

At Chapter 9 of the *Idiota de Mente* (*IDM*), Cusa establishes a parallel between the intellectual faculties and the imagery of the point: "Mind constructs the point as the limit of line and line as the limit of surface and surface as the limit of body."[205] Each dimension serves as the ground of and limit of the subsequent dimension, and, as Cusa adds, the mind utilises these different dimensions as measures through which "it measures everything."[206] Unlike line, surface, and body, however, the point seems to be an odd principle of measure, as Cusa claims that it is non-quantitative and has no magnitude.[207] Cusa comes to this conclusion through a process of imaginative subtraction. In the dialogue between the Philosopher and the Layman, the Philosopher asks, "How does mind construct the line?" To which the Layman answers, "By considering length without width, and it fashions the surface by imagining width without thickness."[208] If we follow Cusa's logic here, then the point is constructed by imagining a line without length. As a result, the point has no quantity. More importantly, it serves as the end of this process. There is no way to subtract any degree of quantity from the point because it has no quantity. The Layman accordingly remarks that "the terminal point is indivisible, for there is no

[205] Nicholas of Cusa, *Idiota de Mente*, Ch. 9. See also *De Conjecturis,* 1. 8. 30.
[206] Nicholas of Cusa, Ch. 9.
[207] Nicholas of Cusa, Ch. 9.
[208] Nicholas of Cusa, Ch.9.

limit of a limit."[209] The point, as a limit, cannot itself be limited, for, as we have seen, the limit has no conceptual being in and of itself.

Despite its lack of conceptual being, the limit (and point) is still thematized by Cusa as the absolute minimum. In *DDI*, Cusa argues that the absolute maximum and the absolute minimum coincide insofar as, when one abstracts from quantity, one is left only with the form of a superlative—*i.e.*, the absolute minimum is really maximum smallness. For Cusa, the coincidence of maximum and minimum entails a new type of unity. Instead of a relationship between particulars and universals, in the interplay between the *intellectus* and *ratio*, we have an enfolded (*complicatio*) and an unfolded (*explicatio*) unity. The point is, for Cusa, the enfolding of quantitative unfolding.[210] As such, it is ontologically prior to quantity in such a way that it has no magnitude—it is non-quantitative.[211] The point, as the enfolded unity of number is thus, "nothing else than infinite unity, for infinite unity is the point that is the limit, perfection, and totality of line and quantity, which it enfolds."[212] In turn, line is the enfolding of surface, and surface the enfolding of body. Therefore, from the point, the entirety of existent things can be unfolded. It is the limit and totality of all that exists.

Paolo Rossini argues that Cusa's claim that the point is the limit of the line should be understood relative to Thierry of Chartres' *Commentary on Boethius'* Arithmetica.[213] As David Albertson has shown, the influence of Thierry's thought on Cusa was quite significant,[214] and this extends to his concept of limit. Both Cusa and Thierry draw on Boethius' definition of a line

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[209] Nicholas of Cusa, Ch.9.
[210] "Infinite unity, therefore, is the enfolding of all things; indeed, "unity," which unites all things designates this. Unity is a maximum not merely because it is the enfolding of number but also because it is the enfolding of all things." Nicholas of Cusa, "DDI," in *Selected Spiritual Writings*, trans. H. Lawrence Bond, The Classics of Western Spirituality, #89 (New York: Paulist Press, 1997) 2.3.105.
[211] Nicholas of Cusa, *Idiota de Mente*, Ch.9.
[212] Nicholas of Cusa, "DDI," 1997, 2.3.105.
[213] Rossini, "Atomism and Mathematics in the Thought of Giordano Bruno," 86–89.
[214] Albertson, *Mathematical Theologies*.

as something that has material existence. As we have seen, the line is an abstraction from surface, and the point is a further abstraction from the line. For Thierry, this means that a line does not have a limit at each end (as Euclid would claim), but a single limit: "when we say that a line has two limits (*terminos*), we misuse the term limit, since the limit is only one, the point is only one."[215] Rossini suggests that Thierry's concept of limit should be taken together with the concepts of perfection and totality, as he used the three concepts almost synonymously.[216] The result of such a reading is that the point, as the limit of the line, encompasses the totality of the line, but is also its perfection, and this its "insurmountable upper limit."[217]

This concept of unity is only possible within an epistemology that posits different and disjunct spheres of knowledge. The point is both the beginning and the end of the line enfolded into a single unity. Thus, the line is derived from the point, but it also, therefore, only finds its perfection in the point. The concept of unity defined by the model of *complicatio/explicatio* is one that understands the limit to be one because it delimits the derived concept from a different level of knowledge. Indeed, as Cusa's Philosopher points out in *IDM*, if the point has no quantum, then Boethius is right: "If you add one point to another, you effect no more than if you join nothing to nothing."[218] In the dimension in which the line exists, the point has no being. This dimension, however, cannot exist without the dimension that is first established by the point.

The point, however, has no such upper limit. Instead, the point stands at the threshold between being and nothing. Following the same Boethian logic as the *IDM*, in *De Theologicis Complementis*, Cusa claims that "[God] made a point, which is almost nothing. For between a point and nothing there is no intermediary; for a point is to such an extent almost-nothing [*prope*

[215] Rossini, "Atomism and Mathematics in the Thought of Giordano Bruno," Rossini quoting Thierry 87.
[216] Rossini, 88.
[217] Rossini, 88.
[218] Nicholas of Cusa, *Idiota de Mente*, Ch.9.

nihil] that if you added a point to a point, there would result no more than if you added nothing to nothing."[219] There is no limit to a point, because, as we have seen, "there is no limit of a limit."[220] The concept of limit, as that which has no being in itself, must be reintroduced here. In our analysis of *transsumptio* in *DDI*, we saw that the limit defines a concept in the same way that an asymptote defines a curve. As much as the curve might approach the asymptote, it will never reach it. An asymptote, however, has no being in and of itself—it only defines the point at which the curve would no longer be the curve defined by the formula. In other words, the limit is the point at which a concept ceases to be. The point serves to illustrate this notion at the most fundamental level. Like Cusa's infinite circle whose circumference coincides with its center, the point is not only the beginning of the unfolding of totality but its end and perfection as well. Accordingly, the point is the limit of totality.

The point's capacity to enfold totality is derived from its symbolic aspect. For Cassirer, the point does not just serve as the limit between being and nothing, it is the principle that mind uses to unfold the world:

> Within itself, the mind finds the simple concept and 'principle' of the point: and from this, after continuously repeated movements, it produces the line, the surface, and the entire world of extension. Within itself, the mind finds the simple principle of the 'now', out of which unfolds the infinity of temporal series.[221]

We have already seen how Cusa unfolds the whole world of extension from the point. Cassirer, however, adds to this analysis the notion of repeated movements and the notion of a temporal series. Both of these elements are present in Cusa,[222] but they are more reflective of Cassirer's own understanding of the symbol.

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[219] Nicholas of Cusa, "De Theologicis Complementis," Bk. IX para.44.
[220] Nicholas of Cusa, *Idiota de Mente*, Ch.9.
[221] Cassirer, *The Individual and the Cosmos in Renaissance Philosophy*, 41.
[222] For the temporal principle see, for example, Nicholas of Cusa, "De Ludo Globi," in *Nicholas of Cusa: Metaphysical Speculations*, trans. Jasper Hopkins, vol. 2 (Minneapolis, Minnesota: The Arthur J. Banning Press,

Cassirer explicitly compares Cusa's concept of the symbol to Goethe's. More importantly, he claims that this concept of the symbol is what enables the "living revelation of the inscrutable" and the connection of "the general and the universal to the particular, to the immediate sensible."[223] Cassirer draws much of his interpretation of Goethe's symbol from the "Brief an Friedrich Schiller, 16./17. August 1797." Perhaps the most relevant passage from the letter is the following:

> Ich habe daher die Gegenstände, die einen solchen Effect hervorbringen, genau betrachtet und zu meiner Verwunderung bemerkt daß sie eigentlich symbolisch sind, das heißt, wie ich kaum zu sagen brauche, es sind eminente Fälle, die, in einer charakteristischen Mannigfaltigkeit, als Repräsentanten von vielen andern dastehen, eine gewisse Totalität in sich schließen, eine gewisse Reihe fordern, ähnliches und fremdes in meinem Geiste aufregen und so von außen wie von innen an eine gewisse Einheit und Allheit Anspruch machen.[224]

Goethe here makes three important points: 1) the symbolical is representative of a multiplicity and thus embraces a certain totality, 2) the symbolical demands a certain series, 3) the symbolical lays claim to the unity of said series. It is fairly clear that this notion of the symbolical contains much of what defines the ideal in Cassirer's method of idealisation. Indeed, for this reason, Cassirer claimed that Goethe has a scientific understanding of the symbol because he develops it out of a background of empirical experimentation, sensory perception, and logical sequences.[225] Indeed, in a 1798 essay, *Der Versuch als Vermittler von Objekt und Subjekt*, Goethe states,

> Wenn wir die Erfahrungen, welche vor uns gemacht worden, die wir selbst oder andere zu gleicher Zeit mit uns machen, vorsätzlich wiederholen und die Phänomene die teils zufällig teils künstlich entstanden sind, wieder darstellen, so nennen wir dieses einen Versuch…Aber eben zwei Versuche die mit einander einige Ähnlichkeit haben zu vereinigen und zu verbinden, gehört mehr Strenge und Aufmerksamkeit, als selbst scharfe Beobachter oft von sich gefordert haben.[226]

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n.d.), 2.92; For the the repeated movements see, for example, Nicolai de Cusa, *De Coniecturis*, 1.4.16, 1.9.37, 2.7.106, 2.13.134.

[223] Cassirer, *The Individual and the Cosmos in Renaissance Philosophy*, 31.

[224] Goethe, *Vom 1. Januar 1800 bis zum 9. Mai 1805 / hrsg. von Volker C. Dörr und Norbert Oellers*, 388–91.

[225] Naumann, *Philosophie und Poetik des Symbols*, 140–47.

[226] Goethe, *Sämtliche Werke, Briefe, Tagebücher und Gespräche. 25*, 30.

Goethe's claim here is that experiments, the artificial repetition of a phenomenon, only takes on meaning if they are positioned in a series in which they are compared to other instances and variations of this phenomenon. Thus, symbolic meaning arises sequentially. In the context of our discussion of the point, these features are applied to the whole of the world of extension. The point is not just representative of a certain totality, but of totality *tout court.* Accordingly, the symbolical demands the iteration of every series. Every group that is formed at the level of *ratio* is united in the point; thus, the point lays claim to the unity of every series there is. By uniting multiplicity enfoldedly, the point creates a totality.

As Frauke Berndt argues, moreover, such a transcendental notion of the symbol emerges out of a dialectic between presence and absence that is anchored temporal sequence. In the letter, Goethe claims that only the square in which he lives and his grandfather's old house in Frankfurt have a symbolical value for him. He remembers his grandfather's house in Frankfurt that has been destroyed by bombs and muses, "In so fern sich nun denken läßt daß das Ganze wieder von einem neuen Unternehmer gekauft und hergestellt werde, so sehn Sie leicht daß es, in mehr als Einem Sinne, als Symbol vieler tausend andern Fälle, in dieser gewerbreichen Stadt, besonders vor meinem Anschauen, dastehen muß."[227] Berndt points out that, in this passage, the givenness of the object in the moment is held together with the development of the moment in time. For Goethe, a symbol can only emerge out of that which is both in and out of time: "Consequently," Berndt says,

> it would seem that none of these symbolic scenes are repeatable; at the same time, however, every such scene *must* have been repeated in order to have become symbolic in the first place. Indeed, the scene is based on a curious, even paradoxical, interplay of presence and absence. For Goethe, the object is at once present—in the unique

[227] Goethe, *Vom 1. Januar 1800 bis zum 9. Mai 1805 / hrsg. von Volker C. Dörr und Norbert Oellers*, 388–91.

> perceptional situation—and absent—in the recapitulation of itself, where Goethe consolidates the remembered perceptional situation into a text.[228]

The symbol, by its a reiteration of one thing, represents something else; but it is also always singular. Accordingly, the symbolical makes present the other while maintaining it in its absence.

The point does this for totality, as it holds its enfolded potentiality within itself without making it present in actuality. As Berndt points out, this potentiality is part and parcel of the symbolic structure:

> This totality pertains, on the one hand and in terms of the object, to the completeness, now conceived as perfection, of the symbolic object; on the other hand, and in terms of the subject, it relates to the process of aesthetic perception. As a detractor of mere lists, however, Goethe questions whether the object, or indeed the process of aesthetic perception, can ever attain totality—an attitude that corresponds to the symbol's inherent structural deficiency.[229]

Like the Platonic symbol, the inherent structural deficiency of the Goethean symbol means that, even though it serves as the relation between two halves of a whole, it is a whole that is, by definition, split. Thus, the wholeness or totality achieved by the symbol is never absolute. The symbol is always open-ended, as it unites what is present and what is absent—the object and its other—into a momentary whole. The symbol stands at the *nunc*—"it encompasses both the conscious memory of the past and an expectance or anticipation of the future."[230]—yet, it remains anchored in a temporal sequence. Because the symbolical derives its meaning from the interrelation between the iteration and reiteration of given instances, it never gives itself over to atemporality. One must always undertake repeated movements between the instances and the symbolic value that is drawn from them. Thus, the point only has value insofar as one holds it in dialectical tension with totality.

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[228] Berndt, "The Myth of Otherness: Goethe on Presence," 58.
[229] Berndt, 59.
[230] Berndt, 58.

Reality, Necessity, and the Impossible

In order to understand the full import of Cusa's concept of the symbol for Cassirer, the symbol of the point must be understood along with Cusa's elaboration of different modalities of knowledge. One of the central recurring motifs of our investigation has been the delimitation of different levels of knowledge and their dialectical interaction, and we must now return to it in Cusa's work. Though, as we have seen, Cusa advances a hierarchy of knowledge from his earliest major philosophical works, it is especially in his middle and late works, such as the *Idiota de Mente* (1450) and the *Trialogus de Possest* (*DP*) (1460), that Cusa really mines the depths of his tripartite division of knowledge. Indeed, in these works, Cusa elaborates the relationship between *sensus*, *ratio*, and *intellectus* in order to draw out how their interaction engenders different modalities of knowledge.

From as early as *DC* (1443), Cusa explicitly presents the movement from *sensus* through *ratio* to *intellectus* as bidirectional:

> because of the fact that in the senses the intellect is present actually, somnolent reason is awakened through wondering, so that it hastens toward that which is a *likeness* of the true object. Next intelligence is stimulated, so that it makes representations, in the imagination, of those things which are perceived; and when it inquires about their form [*ratio*], it proceeds unto an act of understanding and unto a knowledge of the true object. For it unites—in the imagination—the differences of the things perceived…Therefore, the more deeply the intellect enters these images, the more they are absorbed by its light, so that, at length, the intellectual otherness, having been resolved into intellectual oneness, finds rest as its own goal. Therefore, the oneness of the intellect is made more perfect the more it proceeds from potentiality into actuality. [231]

The soul's descent unto the senses is the perceptible's ascent unto the intellect.[232] The two movements are one and the same. Perhaps counterintuitively, however, this double movement betrays the priority of higher forms of knowledge. As this passage makes clear, the

[231] Nicholas of Cusa, "On Surmises," 2.16.159.
[232] Nicholas of Cusa, 2.16.157.

epistemological value of the sensible world comes from the fact that it helps the intellect to actualize itself. This process of actualization is a direct result of the two-way progression from *intellectus* down to *sensus* and back up again. The sense world, in its reality, spurs the mind on. Reason groups together the particulars such that they are unified together into a rule at their limit. The intellect, in turn, is spurred on to the unification of the whole realm of *ratio* by both limiting and uniting all these differentiations. The aim, Cassirer points out, is the unification of the diversity of totality:

> The ideal towards which our knowledge must strive, then, does not lie in denying the and rejecting particularity, but in allowing it to unfold in all its richness. For only the *totality* of faces gives us the One view of the Divine. The world becomes the symbol of God, not in that we pick out one part of it and provide it with the singular mark of value, but rather in that we pass through it in all of its forms, freely submitting ourselves to its multiplicity, to its antithesis.[233]

Intellectus is brought into fuller actuality as it assimilates more and more of the created world. In doing so, it comes to enfold within itself a greater and greater totality such that it can serve as the ultimate symbol of the absolute. This process holds many intricacies, however; and only a full account of its unfolding provides any sure footing for knowledge at any level.

Let us begin at the bottom of the ladder with the mind's assimilation (*assimilatio*) of sensible experience as it proceeds from *sensus* to *ratio.* In chapter 4 of *IDM*, Cusa differentiates the mind's status as the image of the divine mind and the mind's unfolding: "Note that an image is one thing, an unfolding [*explicatio*] of something else. Equality is the image of unity since from unity first arises equality. So equality is the image of unity. And the unfolding of unity is not equality, but the plurality of the unfolded."[234] Cusa here outlines a threefold hierarchy: 1) the unity of the divine mind, 2) the equality of the created mind, 3) the plurality of creation. He

[233] Cassirer, *The Individual and the Cosmos in Renaissance Philosophy*, 37.
[234] Nicholas of Cusa, *Idiota de Mente*, Ch.4.

places the created mind above creation and claims that it is, "the first image of the divine enfolding which comprises in its simplicity and power every image of enfolding."[235] Because the mind has every image of enfolding contained in it, it has the potential to assimilate itself to the plurality of the world. These images exist only in a potential state, however. In order for the mind to unfold them, it must be stimulated by the senses. For Cusa, this means, contra Plato, that "innate ideas are not created along with the soul in the beginning and then lost upon being put in the body. But because the mind cannot advance if it lacks all judgment…the power of judgment without which mind could not progress is created with mind."[236] The power of judgment, or the power of differentiation, is essential to the mind's capacity to assimilate the world. Thus, Cusa insists that even the most basic assimilation of sensible experience requires that this sense experience be differentiated by the reason. In other words, sense experience is not simply given in its diversity; it proceeds from an interaction between *sensus* and *ratio*, as *ratio* applies the necessary measure of its mathematical principles to the *confusio* of world assimilated by *sensus*.

Ratio does not only differentiate particulars; it also unifies them. Indeed, Cusa posits rational concepts as limit of the particulars that it enfolds. The concepts held by *ratio* are the maximal representation of their associated particulars. Cusa insists that, in order to obtain rational forms, we abstract from the material aspect of the sensible world, and, in doing so, "Mind sets the limits of everything."[237] In order to illustrate this point, Cusa compares a material circle to a purely rational circle:

> [the mind] conceptualizes the circle as a figure from whose center all lines drawn to its circumference are equal. No circle existing outside the mind in matter can have this mode of being. For it is impossible for two lines drawn on a material surface to be equal, and

[235] Nicholas of Cusa, Ch.4.
[236] Nicholas of Cusa, Ch.4.
[237] Nicholas of Cusa, Ch.7.

> even less possible that such a circle be drawn. So the circle is in the mind as the exemplar and measure of the truth of the circle on the floor.[238]

The rational circle can stand as the measure of the material circle because it delimits the concept of the circle. As we saw in *DDI*, a definition provides the limits of a concept beyond which a concept ceases to be itself. The perfect identity of the concept with itself means that it is both maximum and the minimum of a circle—it an "absolute measure which cannot be greater or smaller because it is not restricted to quantity."[239] Accordingly, the concept's relationship to its material iterations is that of a rule that encompasses a potentially infinite series of circles within its definition.

The infinite, however, cannot actually exist in reality. Though we can potentially posit an infinite number of circles, these could never exist in actuality. Accordingly, the principle of a definition, as that which encompasses a potentially infinite number of particulars, must exist outside of the sphere of actuality. Though it determines and unfolds reality, it is distinctly separate from reality. We seem to have found ourselves back in Platonic territory: mathematical entities have no claim to being, as such, they should have no claim to truth. However, as we just saw, it is precisely the status of mathematical entities as "not-real"[240] that enables them to serve as measures for existent things. Though Cusa claims that these concepts can be attributed to particulars, it is not entirely clear why this is the case. Moreover, he warns us that only the divine mind has access to the essence of *realia*.[241] Indeed, we know that despite the precision of concepts, we can never know the particular in its unique and indissoluble individuality.[242]

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[238] Nicholas of Cusa, Ch.7.
[239] Nicholas of Cusa, Ch.9.
[240] Cusa describes mathematica entities as "*notionalia*" that have neither "*quid*" nor "*quale*" (Nicholas of Cusa, "Trialogus de Possest," 43.)
[241] Nicholas of Cusa, 43.
[242] Cassirer, *The Individual and the Cosmos in Renaissance Philosophy*, 28.

Nonetheless, Cusa insists that "the truth of things exists in the mind in the "necessity of connection" which is provided by reason.[243] It is at this point that we would do well to remember the two-fold movement of the mind. There is no simple ascent from *sensus* to *intellectus*; rather, everything that occurs at the level of *sensus* and *ratio* is always already unified at the level of *intellectus*. Accordingly, the delimitation of totality that *intellectus* posits is operative in the application of *ratio* to *sensus*. Accordingly, we must not understand the applicability of the concepts of reason to the sensible world in terms of a one-to-one adequation of a concept to an object. Instead, the applicability of necessity to reality is instead a question of a total ideal structure. That is to say, when the sensible world is taken in its infinite capacity, it is taken in its totality; thus, at its limit, it coincides with the rational realm in its necessity.[244]

The coincidence of possibility and necessity is, however, impossible. Accordingly, the unity that *intellectus* provides is a function of being able to think the impossible. If we follow our earlier method, this process consists in maximizing the concepts of necessity and possibility such that they are abstracted to their more fundamental ground. Thus, we should conceive of absolute possibility and absolute necessity. However, both of these maximized concepts are, according to Cusa, only attributable to God. Only in God do we find the coincidence of absolute possibility and absolute necessity. Absolute possibility, for Cusa, is what he refers to as Actualized-

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[243] Nicholas of Cusa, *Idiota de Mente*, Ch.7.

[244] With an example from *DP*, we can draw out a strongly transcendental reading of Cusa's modal epistemology: "when with my mind I see a rose, I see a triune rose. (1) For I see the possible rose. (For if possibility were denied of the rose, assuredly the rose would not be possible to exist.) (2) I [also] see the existing rose. (For if existence were denied of it, how is it that is would exist?) (3) And I see the possible and the existing rose in union. (For it the union of the two were denied of the rose, the rose would not actually exist, since nothing actually exists unless it is possible to exist and does exist. For actual existence proceeds from these two.)" (Nicholas of Cusa, "Trialogus de Possest," 47.) The first step, the possibility of seeing the rose, corresponds to absolute possibility. Their must the possibility of the rose's existence before it can be determined in reality. The second step, the existence of the rose, proceeds therefrom and corresponds to reality—the rose actually exists. The third step, the union of possibility and existence, describes the transcendental application of absolute possibility to reality—the rose is true and thus necessarily exists.

possibility (28). Actualized-possibility is the state of possibility as all that it can be. In other words, Cusa posits possibility, not as indeterminacy, but as a concept. As such, possibility, at the level of reality, can be more or less perfect. At the level of *ratio,* however, it stands as a paradigm—it is the concept of possibility in all that it could possibly be at the level of reality. This concept can be maximized at the level of *intellectus*, however. What this entails is an infinitisation such that the concept goes beyond any potential—if unachievable—possibility of experience such that possibility beyond that which is conceivable by reason—it becomes the coincidence of opposites.

This level of possibility is, really, impossibility. Cusa, in *DP*, introduces the concept of Actualized-possibility. He claims that Actualized-possibility is "a unitary principle for all modes of being."[245] This claim proceeds from considering possibility together with the concept of creation. Cusa asserts that Actualized-possibility must be uncreated possibility; for, it stands as the condition of possibility of all "possibility-of-being-made."[246] That is to say, the creation of something out of nothing must presuppose possibility that requires nothing else—from itself, any and every eventuality can proceed. With the creation of the something, however, this absolute possibility is understood also as absolute necessity. As a condition for the possibility of that which exists, absolute possibility is understood to be an absolutely necessary principle for the existence of the world. As such, at the level of Actualized-possibility, absolute necessity and absolute possibility coincide—possibility is understood to be necessary. Thus, possibility turns into its opposite—the possible becomes the "im-possible."[247]

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[245] Nicholas of Cusa, 28.
[246] Nicholas of Cusa, 28–29.
[247] Emmanuel Falque, though following a slightly different logic, employs the same locution in his essay "Le Pouvoir-Est ('De Possest') Ou Le Dieu « im-Possible » (Nicolas de Cues)," *Archivio de Filosofia* 78, no. 1 (2010): 208.

From an Immanent Limit Concept to a Transcendental Limit Concept

For Cassirer, the unity that *intellectus* provides, through this union of possibility and necessity in impossibility, is not just a means to ensure knowledge of the world, however; it is also, and perhaps primarily, a function of the mind coming to know itself. Indeed, Cassirer asserts that

> [Cusa] requires a *concrete* subject as the central point and the point of departure for all truly creative activity. And this subject, according to him, can exist nowhere but in the mind of man. The first and foremost result of this point of view is a new version of the *theory of knowledge*. Genuine and true knowledge is not merely directed towards a simple reproduction of reality; rather, it always represents a specific direction of intellectual activity. The necessity we recognize in science, and especially in mathematics, is due to this free activity. The mind attains genuine insight not when it reproduces external existence, but only when it 'explicates' itself and its own nature.[248]

Cassirer's claim here is perfectly aligned with the interaction between modes of knowledge that we have outlined. The mind can only come to know the world insofar as it knows that it can provide unity to the potentially infinite diversity of the world. The mind can only know the world insofar as it knows itself to be unified.

This knowledge, however, is not so easily obtained. Indeed, the transcendental delimitation of the mind has proved to require quite a prolonged inquiry. We have seen how the mind delimits concepts; we have even seen how it delimits totality; but we have not seen how it achieves its own delimitation—how it achieves learned ignorance. In order to do so, we must examine how Cusa transitions from an immanent limit to a transcendental limit.

Early on in the chapter, we examined the transsumptive movement between *ratio* and *intellectus,* and we uncovered how the rational concept is grounded in its limit at the level of *intellectus.* Though the limit is established between two epistemological levels, we are still defining terms that are within the grasp of reason. In order to transition from an immanent limit

[248] Cassirer, *The Individual and the Cosmos in Renaissance Philosophy*, 41.

between concepts and a transcendental negation between the mind and God, Cusa employs a dialectic between types of negation. Stephen Gersh points to Pseudo-Dionysius' four types of negation and argues that they can be found in Cusa.[249] The four types of negation are 1) "polysemous negation representing…differentiation (non-being other than being)," 2) "superiority (non-being meaning above-being)," 3) "intensification (above being meaning increased being)," 4) "transcendence (above meaning 'surpassing being')."[250] The first type of negation is in line with the type of differential negation examined in the *Sophist* and the type of limitation that enables concepts to be determined and distinguished from each other. The latter three correspond to a vertical negation in which the superior term enters into a relationship of comparison with the lower term. Remarking on these two broader types of negation, Gersh says,

> Given that the negative represents a comparison of more or less in the second, third and fourth senses, but enters into a strict binary opposition with the affirmative in the first sense, negation as such becomes a symbol of the inseparability between the metaphysical ideas of continuum and disjunction.[251]

Gersh positions negation as the term that grounds the dialectic between limits within a continuum and disjunctive limits. It is thus possible to move from one type of limit to another; and it is possible for the limit between concepts to become a symbol for the limit between the mind and God. For Cassirer, this transition is important insofar as it enables both a critical self-assessment of reason and reason's access to truth. Cassirer claims that "The one truth, ungraspable in absolute being, can present itself only in the realm of otherness."[252] This otherness, however, is beyond the limits of reason. How then can reason have any access to truth? Following Hegel, Cassirer claims that "knowledge [cannot] set up the limit if it [has] not

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[249] Gersh, "Rewriting the *Proslogion*: Nicholas of Cusa's Transformation of Anselm of Canterbury's Proof of the Existence of God," 78.
[250] Gersh, 78.
[251] Gersh, 78.
[252] Cassirer, *The Individual and the Cosmos in Renaissance Philosophy*, 23.

already transgressed it in some sense."[253] Accordingly, one cannot rest content with merely claiming to have reached the limit of *intellectus*, one must go beyond it if this limit is to truly to be established.

This leaves us in the paradoxical situation of having the mind overcome its own limit; but, as we have seen, Cusa need not go so far, for he does not consider the limit to have any actual being. By understanding limitation in its immanent iteration, the mind understands limits to be the point at which concepts are negated. Thus, the mind can infer that its own limit is the point at which it is negated. This point is where reason is no longer itself, where it is without knowledge. Like the geometrical concept whose limit is outside of itself, reason's limit is already beyond it. The mind need not transgress its own limit in order to establish it; it need only reach it. As we have seen, Cusa's method of *transsumptio* enables the limit to be assimilated into the concept such that the ground of the concept can be thought. Cassirer suggests that the same process can be applied to a transcendental limit:

> If human knowledge can reach non-knowledge of the absolute, it thereby gains knowledge of the non-knowledge itself. It does not grasp absolute unity in its pure 'whatness'; but it does grasp itself as something different from that unity; that is to say, it does grasp itself in its complete 'otherness'. And precisely this otherness implies a *relation* to this negative pole of knowledge.[254]

Cassirer's claim here is that, as we approach the limits of reason, the absolute, in its otherness, is disjunctively revealed to us. The limit, which is understood as the point where otherness begins, reveals reason to be undeniably non-absolute. Thus, reason learns to establish the limits of its domain of operation.

Despite the self-limitation that it establishes, this transcendental limit is more than a simple self-critique; it also enables greater precision. In *DC*, Cusa states that "negation, to which

[253] Cassirer, 39.
[254] Cassirer, 39.

affirmation is opposed, does not attain precision. Therefore, the concept of truth that rejects both opposites disjunctively as well as conjunctively is the more absolute."[255] Cusa here is pushing back against the negative theology that he endorsed in *DDI*. Though he believes that negative theology is useful, he does not pursue it whole-heartedly in the long run. Instead, he prefers a mode of discourse that can utilise both the apophatic and the cataphatic. Accordingly, Cusa claims that, not only should both sides of the binary be rejected, but the two potential relations that define this binary should also be rejected. One must think these two relations together. Such a coincidence of relations is precisely what the limit concept entails. The limit is neither one concept nor another. It differentiates the two, but it also explains their relation to each other. The limit is both conjunctive and disjunctive. By rejecting every limit that enfolds all limits and thus every possible type of limit, Cusa is able to ensure that, when he posits otherness, he is in fact negating every possibility that the mind can hold and thus delimits the mind. Indeed, if we follow the logic of disjunction up through the levels of knowledge, we see that at the level of *ratio,* through the relations of universals and particulars, plurality is allied with unity. Thus, the rational posits them as disjunct opposites, but it also brings them into dialectical relation. Thus, when one moves from an immanent limit to a transcendental limit, one occupies the space of truth that is "the more absolute."

Cusa's philosophy thus covers all of the bases that Plato's philosophy covers as far as functional logic is concerned. However, where a critique of reason and the applicability of mathematics and logic to experience are concerned, Cusa advances the transcendental method significantly. Indeed, by developing a concept of the absolute that can be determined symbolically as unconditioned, Cusa delimits not only the possibility of experience and the

[255] Nicholas of Cusa, "On Surmises," 1.5.21.

necessity of reason but grounds their connection in a more fundamental principle—the impossible. Indeed, the impossible is the also that which cannot be created. If possibility is the condition of possibility of all created things, then the impossible must be that which is not created. This determination of the impossible, moreover, proceeds from Cusa's elaboration of the immanent and the transcendental limit concept and their dialectical relationship. Through the application of limits at the level of experience, one can establish a transcendental limit; but only if the transcendental limit delimits reason and the totality of experience. As such, this reciprocal determination must be further grounded in the coincidence of possibility and necessity—the logical counterparts to the ontological determinations of the immanent and the transcendent—at the level of the absolute. Moreover, the impossible is positioned by Cusa as a limit concept that stands between the immanent and the transcendent. The force of this characterisation does not just lie in its critical capacity. Indeed, due to Cusa's particular iteration of the limit concept as an omitted middle term—as something that has no being in and of itself—the impossible is able to ground the relationship between necessity and possibility while maintaining their disjunction. Necessity and possibility cannot be resolved into impossibility, for impossibility stands only as the limit at which they coincide. As such, Cusa unifies the whole of his system in a fundamental disjunction. For Cassirer, this unity in disjunction stands as fundamental element in a transcendental method that can also sustain a logic of function. By establishing limits as the ground of reality and also positioning them as a circumscribing and thus unifying principle of totality, Cusa develops a theory of the limit that moves towards a transcendental method that offers a stable structure for a dynamic system.

Conclusion

This inquiry has looked to outline the particular influence of the philosophy of Nicholas of Cusa on the thought of Ernst Cassirer. More fundamentally, though, it has aimed at uncovering how Cassirer understands the transcendental tradition and its historical development. Indeed, it was stated early on that Cassirer holds joint commitments to functional logic and to the transcendental method. These structural commitments, moreover, evince broader allegiances, such as providing a framework for a dynamic system that can account for the emergence of new facts within history and ensuring the necessity of mathematics in order to safeguard intelligibility. Moreover, to hold these commitments together, Cassirer developed a logic of the symbol.

Cassirer's philosophy of symbolic forms, in conjunction with his historical scholarship, demonstrate his belief that forms of thought change with the emergence of new facts in history. Indeed, in truly transcendental fashion, Cassirer views our activity in the world and our interaction with the world as constitutive factors of our own self-knowledge. We come to know ourselves by understanding the conditions for the possibility of our actions in the world. This transcendental view is precisely what leads him to view developments in the history of philosophy as important factors in the determination of forms of knowledge. There is no doubt that Cassirer is invested in a historical approach to history. The English-speaking world has often viewed him as a historian of philosophy and not as a systematic philosopher in his own right.[256] This view is unfair to Cassirer, however; indeed, Cassirer rejected mere historicism. For Cassirer, a certain enduring factor in philosophy has to be identified. In an essay written in 1906, Cassirer, identifies this enduring factor as the fundamental questions of philosophy:

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[256] See Krois, *Cassirer, Symbolic Forms and History*, especially 10–11.

> Wer die Gesamtentwicklung des Denkens verfolgt, dem muß deutlich werden, daß es sich in ihm um einen langsamen stetigen Fortschritt derselben gorß Problem handelt. Die Lösungen wechseln; aber die Grundfragen behaupten ihren Bestand. Alles, was gegen sie eingewandt wird, dient nur dazu, sie schärfer und klarer zu formulieren und damit ihre immer erneute Lebenskraft zu beweisen.[257]

These questions, Cassirer insists, find expression in the transcendental method. Indeed, Cassirer understands the transcendental method to bring to light these questions in their historical context. As Krois emphasises, when Cassirer speaks about idealism as a transcendental philosophy, he is referring to "the logical unity which Kant had limited to certain categories of the understanding," but that is "necessary as an original "logical function" to the foundation of any science, including the historical study of philosophy."[258] We see this logical unity in Cassirer's reception of Kant, Plato, and Cusa. In their work, he identifies the same preoccupations, the same problems, and he finds in them various yet complementary solutions. Most notably, he sees in them the development of a logic of function and its accompanying characteristics.

Accordingly, the diachronic account of history also finds a synchronous form in the transcendental account of the human mind. Though there are transformations in the modes of knowledge with which the mind interacts with the world, it is clear that Cassirer views certain fundamental traits to persist. In Modernity, the logic of function serves as a basis for the continuity of knowledge. Through a logic of function, Cassirer saw the possibility of establishing a dynamic unity that nonetheless made a claim to necessity: "The one reality can only be indicated and defined as the ideal limit of the many changing theories; yet the assumption of this limit is not arbitrary, but inevitable, since only by it is the continuity of experience established."[259] By establishing the ideal limits as the mode of reality in relationship to

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[257] Cassirer, "Der Kritische Idealismus Und Die Philosophie Des 'Gesunden Menschenverstandes,'" 34–35.
[258] Krois, *Cassirer, Symbolic Forms and History*, 18.
[259] Cassirer, *Substance and Function & Einstein's Theory of Relativity*, 321–22.

experience, Cassirer saw a way to towards a transcendental method anchored in a logic of function. This proceeds from Cassirer's conviction that, in order to account for historical progression and to ensure the applicability of mathematics and logic to experience, one must understand the transcendental method to involve a necessary dialectical relationship between the real and the ideal.

The general structure of the transcendental method that Cassirer identifies, insofar as it provides the ground for such a relationship, must operate on a principle of disjunction between levels of knowledge. Indeed, in Kant, Plato, and Cusa, Cassirer sees a system in which necessity, possibility, and impossibility stand in dialectical tension with each other such that they provide the ground for reality. In Kant, we saw that there are two types of possibility—absolute possibility, or intrinsic possibility, and possibility of experience. In Plato, we saw how Natorp and Cassirer draw out possibility as a modality of knowledge that is a condition of the possibility of thinking the real. Moreover, the modality of possibility was shown to be limited by the impossible. In Cusa, we saw that the impossible is not just the limitation of possibility but also of necessity. In this guise, it becomes clear that the impossible does not just account for a critique of knowledge, but it also provides the grounds for the dialectical relationship between necessity and possibility. Thus, we see a system in which reality is grounded in the interaction between possibility and necessity which are in turn grounded in the impossible. The impossible, as a limit, is itself grounded in the unlimited or the absolute. Importantly, none of these modalities of knowledge stand in causal connection to each other. Indeed, Kant is quite clear that possibility does not cause reality; reality is a result of the givenness of experience. Thus, possibility is only a condition for the possibility of reality. The disjunction between the modes of knowledge ensures that no causality comes into play. Each mode of knowledge is the ground for the next; but it is

also always determined reciprocally with it. Accordingly, there is no sense in which one can say that possibility precedes necessity or actuality. These disjunct modes come into being only in their interaction.

It is due to these fundamental disjunctions between the levels of knowledge that a theory of the symbol proves so important. Plato's philosophy presents *symbolon* as the relationship between two disjunct halves of a whole. It establishes a relationship of participation between two heteronomous parts. Accordingly, the symbolic relationship is defined by its capacity to hold disjunction in unity. Cassirer adds to Plato's account of Goethe's concept of the symbol. Goethe also understands the symbolic relationship to be between a concept and its other. However, he develops this concept of otherness such as to entail a series of particulars. Indeed, this idea is already there in Plato. When speaking of otherness in the Platonic or Goethean schema, we speak specifically of the otherness of the concept. Accordingly, the unity of the concept is held in symbolic relation to the plurality of the particulars with which it is in symbolic relation. This symbolic relationship is thus fundamentally open-ended, as the concept comes to encompass more and more moments of its particular instantiations. Thus, Cassirer understands a theory of the symbol to be an essential component in functional logic insofar as it enables a relationship between the empirical and the ideal that is both disjunctive and united.

It is, moreover, precisely this symbolic relation that enables one to erect the structured system of totality that undergirds empirical necessity. Empirical necessity, as we saw with Kant, requires one to posit a totality. In an open-ended universe, however, the concept of totality must be commensurable with the infinite. It is with Plato that we first see this notion explored. The concept of the infinite must itself be finite. Accordingly, there must be a radical disjunction

between the form of a concept and its content. The two must exist on different ontological planes.

Ultimately, though, it is Cusa's development of an immanent and a transcendental limit concept that brings this ontological disjunction into the framework of the transcendental method. Cusa, by theorizing the limit concept as an omitted middle term, is able to provide the limit with a concrete determination despite denying any being in and of itself. Accordingly, the limit is always understood along with the terms that it defines. In other words, the limit is a universal that is achieved through the maximization of terms. This maximization, however, means that the limit concept never has any being at the level of the terms that it defines. At that level, it is an omitted middle term. By understanding the limit in this way, Cusa employs the same method to move from particulars to concepts, to the delimitation of concepts at the level of *intellectus*, and to the determination of the impossible at the limit of *intellectus*. Indeed, the immanent limit concepts—the limits of *sensus* at the level of *ratio* and the limits of *ratio* at the level of *intellectus*—provide the template the template for the achieving the transcendental limit concept. That is to say, the method of *transsumptio*, by maximizing a concept such that it achieves its limit, enables one to assimilate a limit into that which it defines. This maximization, however, also involves the move to a more fundamental mode of knowledge. In other words, Cusa's method of *transsumptio* serves to reveal the conditions of the possibility of each mode of knowledge. Ultimately, though, this process cannot go on forever. Thus, Cusa, like Kant and Plato, finds a final limit in the impossible. The impossible stands as the negation of reality. For Kant, the negation of reality was a transcendental negation that avoided a problematic status by grounding itself dialectically in reality. For Cusa, the claim is similar. The impossible, as the negation of the condition of the possibility of all existing things, stands as the negation of

totality. Thus, Cusa, by determining the impossible as the limit of totality—both as reality and as mind—can dialectically ground this limit in reality. Indeed, though he also posits an absolute as the term beyond the impossible, he is able to describe the disjunctive limit between the two as the impossible.

Finally, then, Cusa is an integral figure in the development of the transcendental method because he is the first thinker, in Cassirer's view, who theorises what he considers to be the fundamental aspects of this method and unifies them into a coherent whole. Cusa's philosophy brings together the reciprocal determination of a series of particulars and the rule that governs them, the differential determination of the concept, and the provisional positing of a totality and the disjunction of the empirical from the ideal, through a concept of the limit that ensures their necessary relation to each other. More fundamentally, though, it grounds all of these concepts in the very limit of possibility. In Cusa's philosophy, then, Cassirer sees a major figure in the development of the transcendental method in its modern functional form.

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