Footnotes to Footnotes: Whitehead's Plato

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FOOTNOTES TO FOOTNOTES:
WHITEHEAD’S PLATO

by

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A dissertation submitted to the Graduate Faculty in Classics in partial fulfillment of the requirements for the degree of Doctor of Philosophy, The City University of New York
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Nathan Dufour Oglesby

This manuscript has been read and accepted for the Graduate Faculty in Classics in satisfaction of the dissertation requirement for the degree of Doctor of Philosophy.

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ABSTRACT

Footnotes to Footnotes: Whitehead’s Plato

Advisor: Peter L. P. Simpson

This dissertation examines the presence of Plato in the philosophical expressions of Alfred North Whitehead (1861-1947). It was Whitehead who issued the well-known remark that “the safest general characterization of the European philosophical tradition is that it consists in a series of footnotes to Plato”\(^1\) -- the purpose of this project is to examine the manner in which Whitehead positioned himself as one such footnote, with respect to his thought itself, and its origins, presentation and reception. This examination involves: first, an explication of Whitehead’s cosmology and metaphysics and their ostensibly Platonic elements (consisting chiefly in the Timaeus); second, investigation of what motivated his interpretation and appropriation of Platonic cosmology (I emphasize the influence of A.E. Taylor’s Commentary on the Timaeus); third, analysis of the aforementioned “footnote” remark, and of how Whitehead foregrounded Plato as symbolic of philosophy’s ideal goals and methodologies; fourth, discussion of the reception of Whitehead’s reading of Plato, and how in some connections it has impeded the reception of his thought, and in others (Process philosophy) has received further (especially theological) development; fifth, exploration of how Whitehead’s reading of Plato applies to philosophical interpretations of modern science (e.g. relativity theory, Big Bang cosmology, quantum physics).

Several themes emerge in these examinations. – One is that an assessment of the validity of Whitehead’s reading of Plato involves ambiguities that have their root in inherent ambiguities in the *Timaeus*, and Plato’s writing and Platonism at large. – Whitehead celebrates the *Timaeus*’ success in revealing the “forms” in the flux of cosmic process – but is a non-hierarchical Platonism with non-transcendent forms really a Platonism at all? Another theme is that just as there is an arbitrariness involved in Platonic interpretation, so is there arbitrariness in applying those interpretations (or those of other ancient philosophers) to modern science. Interpreting modern science through a Platonic lens may be at once helpful and illustrative, and problematic and unfavorable. More generally, presenting a novel system of thought as “Platonic” involves one in inextricable associations that may complicate and compromise the reception of that system, as has been, in some respects, the case with Whitehead.
My experience as a graduate student had been characterized by considerable topical wavering and ambiguity of emphasis, until I began gradually to form a preoccupation with ancient philosophy, and in particular with Plato – one would think that so conspicuous an object of preoccupation might have bludgeoned me with less delay; but he was hidden in plain sight, or perhaps obscured amidst the hectic flux of my experience. But I might never have arrived at anything to add to the plenitude of things that have been thought and said about Plato if I had not encountered Whitehead, and I might not have encountered Whitehead (at least not in time to write a dissertation about him) if it had not been for my friend Kenny Meyer, who introduced me to Adventures of Ideas after a day of hiking and conversation outside Altadena, California, and so set in motion my ideological adventure. Not long after, when I had returned to New York, I was reading that book in the Graduate Center library, and someone approached me and said, “That’s the greatest book you’ll ever read.” Then he disappeared, only to return moments later with a stack of nearly all the works of Whitehead’s that would come to occupy this dissertation. That was Jamie Lennox, whose conversation has helped me understand Whitehead a great deal more than I would otherwise, and whose understanding of him still far surpasses my own. And so, I’d like to acknowledge both Kenny and Jamie, without whose chance intersection of recommendations this study would not exist, and neither would my doctorate.

I would also like to acknowledge my advisory committee. Professor Simpson guided me through this process with a combination of directive clarity and calm and kindness that I would aspire to should I ever become a dissertation advisor myself. Professor Pappas’ conversation has enriched my understanding of Plato, and increased my confidence in writing about philosophy qua philosophy though I’m trained in Classics. Professor Yarrow was instrumental in helping me
form a theoretical framework from which to proceed, as she has done in past projects, and has also given me valuable guidance about what in the world to do with myself now that this is done.

I thank also my family, and my friends Alicia Papanek, Aramis López, Jeremy March, Nathaniel Ralston, Alessandra Migliara, Alessandro Zammataro and Hila Perry for their protracted psychical support and encouragement, over the course of however long it took to do this. Aramis and Jeremy and I were in a race to see who would finish their dissertation first: the stakes were that the losers would be compelled to tattoo the title of the winner’s dissertation on their bodies. I have won, but I congratulate them on the fact that relative to most dissertation titles mine is mercifully short. And anyway, as discussed, I am prepared to accept the terms of an alternative arrangement.

Lastly I’d like to say that while I don’t seek in this writing to espouse agreement with Whitehead’s doctrines, I do have an appreciation for him that transcends the question of whether I think he’s right or not in thus and such a way. And the same goes for Plato. The reason is this: Whitehead asserts of Plato, in effect, that regardless of any preconceived distaste you may have for Plato on the basis of apparent hierarchism, mysticism or totalitarianism, or whatever other suspicions may have first arisen, understandably, if and when someone made you read the Republic in high school or as an undergraduate – regardless of all this, there is something in Plato that fundamentally has to do with patterns of relation that arise organically in the process of the universe. All things big and small, mental and physical, alive and apparently not, are related to one another, and that relation is what everything starts from and returns to, and the characteristics of those relations, and their source, are worth investigating. If that’s in Plato and that’s in Whitehead, unspecific as it is, then I do agree with them in that; and arriving at
whatever’s implied by that agreement has begun for me the unfolding pleasure of orienting
myself to the boundless whole of which I’m a part, in this writing and in general.
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INTRODUCTION

This study examines the expression, development and consequences of the profound enthusiasm of a modern philosopher for an ancient one: it is about Alfred North Whitehead (1861-1947), and his reading of and devotion to Plato.

Whitehead once made a prefatory remark that has become far more famous than any of the ideas it was meant to introduce. He said: "The safest general characterization of the European philosophical tradition is that it consists in a series of footnotes to Plato." He then goes on to claim that "if we had to render Plato's general point of view with the least changes made necessary by the intervening two thousand years of human experience in social organization, in aesthetic attainments, in science, and in religion, we should have to set about the construction of a philosophy of organism" -- the "philosophy of organism" being the name for the original cosmology that Whitehead was at that moment unveiling.

He had established his reputation chiefly as a mathematician, and in his co-authorship of the *Principia Mathematica*, a monumental project that sought to ground all the operations of mathematics in a set of axioms representable in symbolic logic. But the lectures in which these remarks appeared were of a much different kind -- here was a foray into speculative metaphysics, and in it, with curious frequency, was the name of Plato. A mathematician's sympathy with Plato is not in and of itself surprising. But in this new phase of his work, into which Whitehead totally reoriented his energies, Plato became an increasingly significant presence -- a presence in citation, in conceptual influence, as an object of praise, and as a symbol of the aims of

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2 Ibid.
3 It is a rigorous text, with three volumes of 700 or so pages a piece; it is not until the middle of the second volume that the authors prove the "occasionally useful" proposition that 1+1=2 (A.N. Whitehead and Bertrand Russell, *Principia Mathematica* II (Cambridge: Cambridge University Press, 1962), 83).
philosophy.

The goal of this study is to examine this presence: there's an awful lot of Plato in Whitehead -- what's he doing there?

In brief, what he's doing there is that Whitehead saw in the cosmological account of Plato's *Timaeus* a precedent and inspiration for his own cosmological project (and did not shrink from giving him credit for it.) This project arose in response, in part, to his recently witnessing dramatic upheavals and advances in the progress of modern science. He felt that these developments, and their apparently paradoxical consequences, occasioned a long overdue recourse to a brand of speculative thought that had been too long excluded from science and philosophy. -- It suddenly appeared that space and time are in fact not absolute and independent categories but are unified and relational (relativity); and that certain infinitesimal bits of matter can exhibit the mutually exclusive behaviors of radiant energy-waves and material particles (quantum mechanics);4 and, not less strange a thing than these mysterious discoveries themselves, it turned out that they were to be best accounted for by an Athenian who had lived and died millennia before both Einstein and Newton. Whitehead felt that these newborn scientific constructions of nature had been presaged by the *Timaeus*’ cosmological vision of mathematical forms constituting organic unities amidst the flux of becoming. He felt too that the type of thinking needed -- "speculative philosophy" that is "not...stiffened with excessive systematization"5 -- has its perennial exemplar in the dialogues of Plato.

The present study does not have a singular, positive thesis that it attempts to demonstrate;

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4Whitehead's engagement with quantum theory is less direct and extensive than with relativity, and his most direct references to it (in *Science and the Modern World*, 1925) concern stages of its development and debate that precede the Copenhagen interpretation (developed 1925-1927); as will be discussed (chapter 5) it is unclear to what degree he kept abreast of its later developments.

rather it attempts to make a relatively exhaustive account of Whitehead's engagement with Plato in terms of its conceptual content, development, presentation, reception and applications to science. But what does emerge positively in this account is a cluster of assessments that will be iterated with special frequency throughout, in various formulations:

1. Whitehead's reading of Plato involves a very radical and perhaps problematic reading of the forms (as non-transcendent circa *Timaeus*); 2. Whitehead identifies with Plato's "unsystematic" methodology, constructing from this and his reading of the *eikos mythos* a conception of Plato as the ideal philosopher; 3. The prominence of Plato in Whitehead's thought has impeded its acceptance in the mainstream of philosophy, but has been celebrated by his followers in Process philosophy, with a disproportionate emphasis on its theological applications; 4. Applying Plato to the interpretation of modern science can be fruitful and illustrative, but also involves a degree of arbitrariness.

What can be asserted from these conclusions is that Plato offers such a multifarious array of possible interpretations that it is possible to construct very different Plato's with different idiosyncratic readings, motivated by the unique ideological and historical extractions of those readings, and the particular dispositions of those readers. Whitehead's Plato is perhaps especially idiosyncratic relative to the dominant trends of Platonic interpretation, especially in ascribing to him a successful integration, at the height of his powers, of the forms into natural process -- this at times brings him to the brink of associating Plato's view with what has often been construed as its antithesis. Yet perhaps this idiosyncrasy is justified by virtue of what he most emphasizes about Plato -- that his writings are "an inexhaustible mine of suggestion",6 and that he represents

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the unfettered production of "detached insights"\textsuperscript{7} that do not cohere in a self-consistent system, but nourish the progress of thought with their perennial suggestiveness. -- The multiplicity of possible Plato's is a consequence of the philosophically productive multifariousness of his thought.

Structure

The first chapter introduces the reader to Whitehead's work, assuming no familiarity with it, and in doing so establishes what concepts he draws from Plato (mostly from the \textit{Timaeus}). These appropriations are explicated at length, and evaluated with reference to a close examination of Plato's text. In broad summary this includes the rough equation of Whitehead's "eternal objects" with Platonic forms, his concept of God with Plato's Demiurge, his analysis of the Platonic Receptacle, and his self-identification with what he perceives to be the unsystematic character of Plato's philosophical method.

The second chapter accounts for the development of these conceptual and methodological appropriations, by looking briefly at Whitehead's intellectual background (especially at instances in which anecdotes about his personal life and manner reflect his interest in Plato), and then extensively at the Platonic scholarship of A.E. Taylor (1869-1945). Taylor's \textit{Plato: The Man and His Work} and \textit{Commentary on the Timaeus} abundantly cite Whitehead's earlier works on the philosophy of science, and the specially Whitehead-tinged reading he gives to Plato foreshadows and influences the emergence of Plato's dynamic role in Whitehead's later work. This chapter also examines the effect of certain translations of Plato on Whitehead's reading.

The third chapter examines the manner in which Whitehead foregrounds Plato in his writing. This involves a few things: first, an extended analysis of the "footnote" remark -- how or

to what degree Whitehead suggests that philosophy consists in footnote-making, and that it is perennially in reference to Plato. Second, I discuss *The Function of Reason*, wherein Whitehead goes so far as represent Plato as a kind of symbolic protagonist of the act of philosophical speculation. Third, I examine Whitehead's points of departure from Plato, especially in the relatively late work *Modes of Thought*.

The fourth chapter turns to the reception of Whitehead's construction of Plato. It suggests that the prominence of Plato in Whitehead's philosophical self-presentation inhibited the initial reception of his thought, as certain ambiguities in and dubious attitudes toward Plato have made it proportionally more liable to suspicion and misinterpretation. Following this I examine critical responses to Whitehead's reading among Classical scholars and Plato scholars. Lastly, I examine Process philosophy and Process theology, the modern philosophical traditions that succeed the "philosophy of organism", and demonstrate how Whitehead's preoccupation with Plato has been perpetuated in these traditions. This investigation arrives at an analogy between trends in the ancient reception of Plato and among Process thinkers, to the effect that in both cases Plato's theological concerns disproportionately predominate those receptions.

The fifth and final chapter examines the relevance of Whitehead's construction of Plato to modern science. Whitehead's thought has increasingly been applied to developments in science in recent years, and through this connection Plato ends up in conversations about Big Bang cosmology and quantum physics. The physicist Werner Heisenberg has a lot to say about Plato as well, and his treatment of Plato in many ways mirrors Whitehead's. The conclusion of this analysis is that while Plato's connection to these developments is fascinating, provocative and perhaps fruitful for inspiring further advances in the philosophical interpretation of modern science, there are nevertheless problematic aspects to mapping Plato onto its developments.
While the reception of Plato is a sprawlingly vast subject, Whitehead's reception of him has not been widely studied, and has been examined at length only in a few instances of which I am aware. Dorothy Emmett devotes a chapter of her 1932 study of Whitehead to connections between his thought and the *Timaeus*, noting that in doing so she recalls comparisons made by A.E. Taylor.\(^8\) -- I am indebted to her chapter for first making me aware of the connection with Taylor, which occupies a good deal of my second chapter.

The most relevant predecessor of this study is Bruce Epperly’s doctoral dissertation, *Is Whitehead a Platonist?*,\(^9\) which endeavors to show the general consistency between Whitehead's thought and Plato's. It deals in great detail with the conceptual correspondences that I treat in the first chapter of this study, but differs from my emphasis in that on the whole Epperly is concerned to demonstrate that Whitehead and Plato are essentially in agreement, which I do not mean to claim as certain. (The dissertation completed Epperly’s graduate studies at Claremont Graduate School, which houses the Center for Process Studies, whose role in the reception of Whitehead's Plato will be examined in chapter 4.) In a similar vein (of Process literature), Daniel Dombrowski\(^10\) argues for a panpsychic view of the universe on the basis of the *Timaeus* and Whitehead's interpretation of it; this too will be examined in chapter 4. While in part my study examines Epperly's and Dombrowski's work critically, I have nonetheless benefited from their extensive considerations of Whitehead and Plato.

Another relevant study is Christopher Kann’s *Fußnoten zu Platon*,\(^11\) an examination of

Whitehead’s construction of the history of philosophy. Most of it deals with Whitehead's engagements with modern philosophers, but Kann does offer an elaborate interpretation of the significance of the "footnote" remark (the "footnote thesis" as he calls it), which I will discuss in chapter 3. My chapter on the application of Whitehead's Plato to modern science had its original inspiration in Shimon Malin's *Nature Loves to Hide*. Malin was a physicist, and in this popular introduction to quantum physics, he has recourse to Whitehead, and then Plato, and then Plotinus in attempting to articulate its ramifications. Like Epperly's and Dombrowski's work, it has been a source of information, but will also be an object of analysis in assessing the gesture of applying Whitehead's construction of Plato to quantum physics. Malin passed away in March, during the course of this writing. I hope he would have been pleased that his work became such a distinct object of inquiry in this study, and that that which had comprised him as a human physicist is now enjoying its new configurations in the ongoing cosmic process.

*Methodological Note*

Whether or not Whitehead's "footnote" generalization is valid in a precise sense, there is little doubt that any name possesses a more immense legacy in the history of "Western philosophy", ancient or modern, than Plato. Accordingly the reception of Plato offers a profound immensity of interrelated material for scholarly inquiry, and preexisting scholarship. I limit this immensity by focusing this study almost exclusively on the *Timaeus* and to a much lesser extent the *Sophist*, and the works of Whitehead's that discuss and draw from them, principally *Process and Reality, Adventures of Ideas* and *The Function of Reason*.  

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14 Though of course other works will also be occasionally discussed -- e.g. *Republic, Phaedo, Laws* and the Seventh Letter.
15 And, to a lesser extent, *Science and the Modern World, Religion in the Making, Modes of Thought* and the late
In spite of this intentional limitation, the intervening history of Plato and Platonism -- the millennia of Platonic footnotes that intervene those dialogues and Whitehead's return to them -- will inform my analysis and occasionally be brought into focus. Indeed, my own analysis cannot avoid being informed in some degree by intervening receptions. It is no more possible for me to get a "pure" reading of Plato than it was for Whitehead, whose reading's influences I'm examining, which I would contrast with the "impure" product of those influences. That is, my understanding of Plato too is a product of its influences, those of which I am aware and those of which I am not. Perhaps this is a self-evident admission; yet it is relevant.

This is a study in the reception and cultivation of certain ideas. The methodology of reception studies involves the examination of the cultural histories of texts and ideas, and the patterns and tendencies that emerge from those histories. The analysis of these patterns reveals how modern receptions inform subsequent readings of the ancient (or "primary") texts themselves. While this study does not belong to the genre of “Classical Reception” as such, since its concerns are primarily philosophical rather than historical, it does seek to examine the reciprocal relationship between ancient texts and a modern readership. -- It is not a series of one-directional movements from, for instance, Plato to Aristotle, Plato to Cicero, Plato to Leibniz, Plato to Whitehead; it is a web of two-directional movements, each of which influence the others. -- Not only does the past leave its mark on the present, the present puts a mark on the past.

This backwards movement from the present into the past, and which makes a mark on the essays "Immortality" and "Mathematics and the Good". 


17Cf. Charles Martindale, "Reception," in A Companion to the Classical Tradition, (Malden, MA: Blackwell, 2010), 298: ‘the active participation of readers (including readers who are themselves creative artists) in a two-way process, backwards as well as forwards, in which the present and the past are in dialogue with each other.”
past that is legible in future encounters by future readers, is perhaps not far from what Whitehead meant by a "footnote." A footnote marks a text with its unique reading, and becomes part of that text. Whitehead reads Plato through the diffusion of footnotes written before him, whether or not they are before his eyes, or before his mind. Whitehead's statement explicitly invites reading him as an array of footnotes on Plato's pages, pages that have a vast and innumerable traffic of them, for which they at once richer, more various in meaning, and at times more obscure. And so, as its task is to very particularly annotate these very particular notations, I call the following research "Footnotes to Footnotes."18

18Which I suppose most dissertations are, or at least distinctly feel like when one is writing them. This, by the way, is a footnote to a footnote to a footnote; fortunately the limitations of formatting will not allow further descent, to a quinary order.
CHAPTER ONE: WHITEHEAD'S PLATO

The following chapter is meant to serve at once as a general introduction to Whitehead's thought, on the reasonable assumption that the reader isn't particularly or at all familiar with it, and as an account of the fundamental concepts in it that have explicit connection to Plato. For purposes of clarity and economy, this section will treat Whitehead’s thought as a relatively self-consistent whole. -- That is, I will not be extensively thematizing his thought's arcs of development and alteration, so much as trying to sum up my understanding of his general view, and what Plato has to do with it. At the same time, apparent changes in his thought will sometimes be discussed, and will subsequently be examined as the study proceeds and the historical development and intellectual context of Whitehead's engagement with Plato come to the fore.

The main texts consulted and quoted will be Process and Reality and Adventures of Ideas. These represent the height of Whitehead’s particularly self-evident conceptual preoccupation with Plato, as well as the apex of the positive and systematic presentation of his own ideas, and they are probably his most famous works in this connection. By "self-evident" I mean that in these works there is a special abundance of more or less direct appropriation of notions from Plato’s dialogues. These are far and away the works in which he mentions and discusses Plato most frequently and purposively.

As far as Plato, the main spotlight will be on the Timaeus, both because of its preeminent relevance and out of the necessity of setting some limitation on the present analysis. Since parts of Timaeus relate deeply and explicitly to Whitehead's system, one could theoretically tease out a host of other possible Platonic citations that Whitehead didn't happen to make -- connections of this kind will be made when irresistible or particularly relevant, but for

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19Throughout this study, translations of Plato and other ancient authors are my own, unless otherwise indicated.
the most part I will stick to examining the one self-described "cosmology" alongside the other. In one section however I’ll transition to focusing on the *Sophist* since this becomes an equally prominent preoccupation in *Adventures of Ideas*.

The first sections of this chapter then will introduce Whitehead in very general terms, before closing in more precisely on certain aspects of his thought and examining their relevant references to and citations of Plato. Note that I’m not trying to defend or demonstrate the correctness of Whitehead’s thought, nor to critique it Similarly, I'm not trying to encourage or discourage any particular reading of Plato. Rather, I'm trying to make clear what Whitehead's reading was, which will lay the groundwork for examining, in subsequent chapters, how he arrived at that reading and what its consequences have been.

**A Brief Summary of Whitehead’s Thought**

To introduce Whitehead’s system in its most fundamental aspects, let’s begin with an introductory excerpt from *Process and Reality*, in which Whitehead announces that he is presenting a metaphysical system concerned with

> the becoming, the being and the relatedness of ‘actual entities’: ‘Actual entities’—also termed ‘actual occasions’—are the final real things of which the world is made up….They differ among themselves: God is an actual entity, and so is the most trivial puff of existence in far-off empty space.\(^{20}\)

An example of an *actual entity*\(^{21}\) might be an electron, or another subatomic particle. As such the system is atomistic insofar as it reduces to these minuscule existents as the basis for all phenomena; however it is not a *materialistic* atomism, and in fact it is the opposite.

An "actual entity" can be synonymously referred to as an "*actual occasion*" because it

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\(^{21}\) Uniquely Whiteheadian terminology will be defined throughout this section especially, but I have also provided a glossary. Terms that are contained in the glossary make their first appearance in bold.
exists only insofar as it emerges from its state of relation with other actual occasions. These microcosmic occasions are not tiny material “things” in the manner of Democritean atomism, but “nexus” of formal interrelation; interrelation each with one another, and each occasion with the entire universe altogether. Macrocosmic entities like trees, people, cars and dolphins are “societies” of such occasions, exhibiting proportionally ever more complex matrices of interrelation in their integration of constituent occasions. In the broadest sense, the system claims to be Platonic insofar as it requires that the actual occasions themselves be understood as acquiring their definiteness by virtue of their selecting and exhibiting “forms of definiteness” which Whitehead terms “eternal objects.” The otherwise un-delineated universal flux of becoming acquires differentiation and endurance through the “ingression” of “eternal” forms, as for instance a mathematical object, or a color; hence each microscopic actual entity is less a material “thing” than a state of relations expressing an eternal possibility. These eternal possibilities must exist somewhere, and so it is asserted that they exist in God, who is immanent in the world of becoming insofar as his role is to offer to it eternal possibilities of being.

This scheme of Whitehead's, in its presentation and conception, borrows distinctively from the cosmology explicated in Plato's Timaeus. -- In the Timaeus the Demiurge furnishes forms to the world of becoming as an agent of persuasion, with a divine intelligence that guarantees the formal endurance of things in their complex interrelation. The smallest parts of created things are in the Timaeus also of an ultimately mathematical22 nature, the geometrically

22 It is important to note, here at the beginning of this study, a distinction between what is meant by "mathematics" in the sense of what it meant to Plato -- i.e. that which is what is codified as Euclidean geometry -- versus what has become available in the evolution of mathematical language since the invention of algebra, calculus, alternative geometries, and so forth. Whitehead's point, as will be discussed here, is that both Plato's practice and that of modern science seek to grasp ultimate patterns of quantitative relation that inhere in particular occasions of becoming. When Whitehead speaks of Plato as being "mathematical" in his philosophizing, this is what he has in mind, even if from the perspective of the distinction between modern and ancient mathematics he is speaking imprecisely. This should be borne in mind throughout this chapter as well as chapter 5. Whitehead's lecture "Mathematics and the Good" takes its point of departure from imagining the circumstances of Plato's famous
delineated atomic triangles through which the Demiurge constructs the elements. Whitehead’s system also draws on the *Timaeus*’ description of the universe as a living creature – a god created by a god. The nexus of actual occasions are living in so far as the interrelations that constitute them come into coherence and actuality by virtue of a kind of mutual recognition that is the simplest form of the complex kind of mutual recognition that in animate beings is called “consciousness.” Whitehead’s term for this constituting behavior of actual entities is “prehension”, and the term is meant to indicate that what human beings for instance experience as “comprehension” is a highly developed specification of the experiential mutual construction of reality that is common to and has its basis in the simplest experiences of the simplest entities. It is a universe of subjective experience, even in the sense that that connotes emotional experience. This “living” character induced Whitehead to call his philosophy “the philosophy of organism”, although in its legacy and continuation it is now known by the name “Process philosophy”.

*Explicitness of Whitehead's Debt to Plato in Presenting his System*

Presenting this system that describes eternal objects, their transmission into the process of becoming by the influence of deity, and the fundamentally organic character of cosmos, the *Timaeus* furnished Whitehead with a grand precedent by whose inspiration and example he could...

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23 *Timaeus* 53c ff.
24 *Timaeus* 30b-c. The universe is made to be "a living creature with soul and reason" (κόσμον ζώον ἔμψυχον).
contextualize and authorize his metaphysical project. Its impetus was to question the materialist assumptions of modern science -- the notion that the world was a bunch of material stuff, whose behavior could be described mechanically, as well as the assumption that that description could and should be made without reference to any metaphysical basis. Part of the project was to make a case for the importance of metaphysics -- or "speculative thought" as he often calls it -- in and of itself, and Whitehead identified Plato as the perennially relevant exemplar of that importance. Alongside Whitehead's direct, renovative incorporation of Plato's thought into the presentation of his own, an analogy suggests itself between the contexts in which the two philosophers worked, and the conversations into which they thrust themselves. -- The spirit of Whitehead's work moved against the contemporary spirit of modern scientism and positivism,25 much as Plato's work confronted strains of materialism26 and mechanism27 in his own philosophical context. I will explore this analogy further in a subsequent chapter.

The alleged need for reintegrating metaphysics into scientific inquiry arose in part from the challenges advanced against the Newtonian description of the physical world by new developments in science -- e.g. developments in subatomic physics and the advent of the theory of relativity. Confronted as science was by the difficulty of conceptualizing these developments -- e.g. that time and space are in fact not respective and independent aspects of reality but are intertwined and relative, or the consequences of the developing electromagnetic field theory,
which suggested that relational “fields of energy” are more fundamental than "concrete" material bodies – Whitehead felt that a revived metaphysics was needed, to reconcile thought with these strange features of time, space and matter that seemed to transgress common-sense, and undermine the depiction of reality that modern science had hitherto offered. He conceived of and presented this revivification, in many respects, as a return to Plato.

Acknowledging the inevitability of Plato’s presence in the background of any adventure in Western speculative thought, Whitehead explicitly foregrounds Plato right at the beginning of the largest and most systematic presentation of his philosophy, *Process and Reality*. He presents his project as a continuation, renovation and restoration of Plato’s.

>[I]n one sense by stating my belief that the train of thought in these lectures is Platonic, I am doing no more than expressing the hope that it falls within the European tradition. But I do mean more: I mean that if we had to render Plato’s general point of view with the least changes made necessary by the intervening two thousand years of human experience in social organization, in aesthetic attainments, in science, and in religion, we should have to set about the construction of a philosophy of organism.29

The statement, which is in fact the sequel of Whitehead’s most famous utterance about all of Western philosophy being Plato’s footnotes,30 is asserted with a zeal and certainty that suggest that Plato’s foundational role in Whitehead’s system is more than a debt of inspiration, and more

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28 The specific relevance of Whitehead's thought to the philosophical consequences and constructions of quantum physics is a complex topic. These consequences, as they bear on Plato and Whitehead's use of Plato, will be explored at greater length in chapter 5. Developments in relativity theory on the other hand he engaged with much more directly – even prior to his cosmological and metaphysical work, he was writing extensively on relativity, and disagreed with Einstein's model; his views on the matter would occupy much discussion in A.E. Taylor's *Commentary on the Timaeus*. This will be discussed in chapter 2, and in this chapter's discussion of the Receptacle. Cf. T. M. Forsyth, “The New Cosmology in its Historical Aspect: Plato, Newton, Whitehead,” *Philosophy* 7 (1932), 54 – 61.


30 Ibid.
than analogical—that what Whitehead presents is meant to be read as a contiguous evolution of what Plato presented. At the same time, Whitehead never refers to himself explicitly as a Platonist, or to his thought wholesale as "Platonism", and there are important qualifications he feels he must make to Plato's view as he took it to be, as he aligned himself with him to differing degrees over the course of his philosophical career. This slippage between varying emphases of appropriation, the question of whether Plato’s thought is being applied literally or analogically, and what disavowals are involved for it to make sense in its new context, will be discussed as this study proceeds.

Five years later in *Adventures of Ideas*, a work which in Whitehead presents his thought amidst a historical account of the development of Western philosophy and science, Plato has an even more central role. Whitehead remarks: "[c]enturies ago Plato divined the seven main factors interwoven in fact…All philosophical systems are endeavoring to express the interweaving of these components." What these “seven main factors” are will be discussed presently, as I consider site-specifically Whitehead’s substantive invocations of Plato in the presentation of his own system. The aim is for these invocations and citations to structure our analysis of the appropriations in finer detail, examining and critiquing conceptual analogies or identities between the two philosophers.

Parallel to the conceptual borrowings that will foreground this discussion, another central feature of Whitehead’s reading of Plato consists in a sense of *methodological* sympathy. He asserted that one of the virtues of Plato’s thought (and his own) was its non-systematic character, which allowed him to freely thematize certain key concepts arrayed in flexible and varying formations throughout the course of the Dialogues. Whitehead celebrates and draws from the

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aforementioned “seven main factors” that circulate in the maturity of his thought.

In his seventh Epistle he denounces the notion that a final system can be verbally expressed. His later thought circles round the interweaving of seven main notions namely, The Ideas, The Physical Elements, The Psyche, The Eros, The Harmony, The Mathematical Relations, The Receptacle. These notions are as important for us now, as they were then at the dawn of the modern world.32

These concepts will enter into the formulation of Whitehead’s system in varying degrees of explicitness and relevance, and with some overlap and sometimes under other names. The fluidity which characterizes Plato’s introduction, reintroduction, self-criticism and recycling of his own most prominent themes throughout the dialogue is in large part mirrored by Whitehead’s appropriations of those themes.

With this introduction made, I now proceed to examining, notion by notion, the network of affinities between Whitehead's thought and Plato's.

**General Correspondence and the Theme of "Organicism"

The overarching affinity between Whitehead's thought and Plato's consists in his claim that Plato's thought expresses a fundamentally organic view of the universe -- the universe is not a lifeless entity that has produced a subcategory of "living" entities by the chance accidents of its evolution, but is rather an orderly and living entity in which all individual entities exist by virtue of their relation with the whole. In making this alliance with Plato he does not have in mind the customary association of Plato with the doctrine of disembodied realm of transcendent ideality of which the universe is a pathetic copy -- for Whitehead, Plato is to be associated with a universe that is above all alive and intelligent in all its parts, all its parts being microcosms of its

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macrocosm. The organicist view in this sense critiques the notion of finite, self-subsistent individual substances in favor of a view of individual entities as ultimately not "individual" at all, but "social" entities that require involvement with all the interrelated factors in the universe in order to exist. Non-organicist philosophies, by contrast,

presuppose individual substance…which requires nothing but itself in order to exist. This presupposition is exactly what is denied in the more Platonic description which has been given in this lecture. There is no entity, not even God, which requires nothing but itself in order to exist.…[E]very entity is in its essence social and requires the society in order to exist. In fact, the society for each entity, actual or ideal, is the all inclusive universe, including its ideal forms. 33

*Living community* is the core characterization of the universe, whether our analysis is turned to the description of mental experience or physical experience, as these are conventionally distinguished. Every actuality in the universe is both "physical" and "mental" -- in fact these distinctions are only valid in abstraction from actuality. Individual actualities are also only "individual" in abstraction -- they are to be understood as individual only insofar as they are gathered into microcosmic living societies within the cosmos as a whole.

Life is the coordination of mental spontaneities throughout the occasions of a society.…This personal society is the man defined as a person. It is the soul of which Plato spoke. 34

But what is "the soul of which Plato spoke," in Plato's own words? The soul of which he spoke in the *Timaeus* was placed in the center of the cosmos and diffused throughout its entire

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33 *Religion in the Making* 104.
34 *Adventures of Ideas* 207-208.
sphere. It has a spiritual center and a bodily center and these correspond. It is imbued indelibly with a principle of self-motion in each of its parts and an ordering rationality that governs those parts in their organic unity. Created by god, it is itself a self-sufficient god. It needs nothing and wastes nothing, subsisting on its own waste. The god-made-by-god is itself full of gods that gather from it to make mortal things within it, borrowing from its elements to make creatures that will be paid back to it when they are dissolved and redispersed. These mortal creatures are bound together not with indivisible bonds but with tiny invisible pegs, which they share between them in their cosmic division into temporary finite bodies. Individual souls are buffeted about in the movement of this mighty river of soul, neither mastering nor being mastered, producing the motions which shake the whole unitary animal, stimulated by the elements and having sensations, and in the expression of these sensations stimulating the sensations of others. All of them, all things, dwell together as a family (xunoikon). Family life here in the unitary cosmos is inherently good and beautiful but does exhibit some imperfections that result from an inherent tendency to disorder, which is mitigated as much as possible by the persuasive agency of a craftsman deity who works with the raw materials of primordial necessity. The result of all this is the production, in the flux of becoming, of an ensouled world that has structure and order by virtue of the divine craftsman’s reference to an eternal paradigm.

In correspondence with all of this, Whitehead claims that

the organic philosophy only repeats Plato. In the Timaeus the origin of the

35 Timaeus, 34c ff.
36 Ibid., 34b.
37 Ibid., 33c-d.
38 Ibid., 42e.
39 Ibid.
40 Ibid., 43b-c.
41 Ibid., 57c.
present cosmic epoch is traced back to an aboriginal disorder, chaotic according
to our ideals. This is the evolutionary doctrine of the philosophy of
organism…. Also for the *Timaeus*, the creation of the world is the incoming of
order establishing a cosmic epoch. It is not the beginning of matter of fact, but
the incoming of a certain type of social order.42

On Whitehead's reading, there is at the heart of Plato's cosmology a commitment to and
emphasis upon the panpsychic and teleological character of nature, and an insistence that
soulless mechanism is insufficient as an independent model for describing of how the world
comes together in what endurance it has amidst the flux of constant change.

In even broader terms, Whitehead’s Platonic interests can be summed up in his opinion
that the general problem of philosophy is finding *the forms in the facts*.43 Be it as it may that this
living universe is immediately encountered as a constantly changeful flux of its constituent parts,
and none of those parts exist in utter independence from the whole, it is nonetheless equally
immediately apparent that there does happen to be some kind of permanence amidst it all -- there
are eternal forms that are expressed persistently in the midst of the flux. It is the philosopher's
job to examine these forms.44 Whitehead saw this as Plato's starting point, and also his own. This
brings us to the first and perhaps the most prominent of Whitehead's specific Platonic
appropriations: the doctrine of "eternal objects".

*The Platonic Forms and Whitehead’s Eternal Objects*

The most saliently “Platonic” component of Whitehead’s philosophy, both in its self-presentation
and in its reception and criticism, is the concept of “eternal objects”, which are something like

43 Ibid., 27, 54.
Plato’s forms. This section will consider the relation between eternal objects and Platonic forms, beginning with a brief description of what Whitehead's eternal objects are, followed by an examination of what is conceivably Platonic about them in and of themselves and in Whitehead's presentation of them, followed by discussion of the difficulties involved in this association, some of which are difficulties raised by Whitehead himself. The discussion of difficulties that concludes this section will involve further considerations of the difficulties inherent in reading Plato in the first place, which lend an underlying complexity to the interpretation of Whitehead's appropriations.

*Whitehead's Eternal Objects*

To begin to define eternal objects, let's return to the crux of Whitehead’s definition of actuality:

[T]he physical thing is a certain coordination of spaces and times and of conditions in those spaces at those times, this coordination illustrating one exemplification of a certain general rule, expressible in terms of mathematical relations. Here we have returned to a fundamental Platonic doctrine.\(^{45}\)

An actual occasion is gathered into its actuality by its selective interrelation with associated occasions, and by extension from those its relation to the entire universe. -- Or to attempt to put it in less esoterically Whiteheadian terms, every actual thing is related to the entire universe in its moment of its becoming, and becomes the actual thing it is by isolating a certain finite form of relation with the universe from among all alternative possibilities. This is its process of “concretion”, as Whitehead calls it. As this process occurs there is an “ingression” of certain “eternal objects” into that concretion which constitute it in thus and such a way, to the exclusion

of other eternal objects that are not relevant to it.

If, for example, a subatomic entity is going to form a bond with another subatomic entity (and since all entities are ultimately occasions it this very interaction that makes them actual in the first place) – then that subatomic bond (or emission, or repulsion, or whatever other constituting event in the process of becoming) must have some “form of definiteness” which it actualizes from the realm of possibility. Actuality requires potentiality, and so a realm of forms, for realization.\textsuperscript{46} The eternal objects are "eternal" not in the sense of lasting forever, but in the sense of always being available to the process of cosmic becoming as a realm of formal possibilities.\textsuperscript{47}

An occasion’s acquisition of forms of definiteness “is a real physical fact, with its physical consequences. Eternal objects of the \textbf{objective} species\textsuperscript{48} are mathematical Platonic forms. They concern the world as a medium.”\textsuperscript{49} The ingestion of eternal objects into an actual occasion is a selective process which Whitehead describes in terms of “\textit{valuation}.” Actual entities have a self-creative nature that involves their selective valuation of eternal objects in a

\textsuperscript{46} Ibid., 69. Christian notes that even in his earlier work in natural science Whitehead was concerned with preserving a firm distinction between potentiality and actuality (William A. Christian, \textit{An Interpretation of Whitehead's Metaphysics} (New Haven: Yale, 1959), 6). Whitehead was, of course, first a mathematician, and was committed to the notion that there are objective forms -- patterns and repeating structures -- observable in natural things. But, if forms are completely infused in things, then there is no freedom or creativity in the universe, and this is not what conforms with immediate experience. In other words, "[i]f 'All that is possible is actual', contingency is meaningless. He is on the other hand committed to there being process — but 'The world is not merely process. It is also reality'” (ibid.)

\textsuperscript{47} Cf. Whitehead, \textit{Process and Reality}, 121: “The mountain endures….A colour is eternal. It haunts time like a spirit. It comes and it goes. But where it comes, it is the same color. It neither survives, nor does it live.”

\textsuperscript{48} Strictly speaking there are two species of eternal objects, the objective and the subjective. The former includes things like numerical relationships and geometric shapes, the latter are on the other hand “the qualitative clothing to the raw quantitative data of the objective species. Such a subjective species is 'an emotion, or an intensity, or an adversion, or an aversion, or a pleasure, or a pain,' and so on” (Richard Elwyn Jones, “Some Platonic Implications of Whitehead’s God,” \textit{Leeds International Classical Studies} 6 (2007), 3). Because of the fundamentally experiential character of eternal objects, qualitative objects that are commonly understood as referent to consciousness (emotions, etc.) are nonetheless relevant to the constitution of occasions. The two species are bound up together as respective (objective and subjective) experiential dimensions of an occasion’s self-expression; the division in terminology distinguishes two flavors of predication, quantitative and qualitative.

\textsuperscript{49} Whitehead, \textit{Process and Reality}, 251.
gradation of relevance to their process of realization. By “gradation” and “valuation” it is meant that actual occasions articulate an order of importance among eternal objects in reference to their process of becoming. The eternal objects have individual essences in a certain sense, but only insofar as they are considered in abstraction from the relational essences that proceed from their inherence in occasions.

If that all sounds like gibberish, imagine again an electron. -- No matter what it does, impinge on a detector plate, emit a photon, absorb a photon – in a certain sense whatever “choice” it makes will be an exemplification of a possible state of relation, which Whitehead calls an eternal object. His commentator Dorothy Emmett puts it in aptly concrete terms:

> from the background of the data afforded to me by my own past, and my relations with other events, I survey alternative possibilities, and choose the one which accords best with my purpose and valuation....An actual entity is a process of self-formation through its organisation of the data presented to it by the rest of the world, and its ‘appropriation’ of these data into itself in accordance with its ‘subjective aim.”

The content of the “I” she mentions need not be restricted to a human consciousness, as for Whitehead all actual entities have a “bipolar” nature – they possess a "physical" as well as a "mental pole." The latter does not imply that atomic entities “think” in the human sense, but that their encounter with stimuli nonetheless results in a “decision” that selects an eternal object as the relevant form of relatedness embraced in that occasion. This selection "is the entity answering questions which enquire ‘How?’ Such a question seeks the ‘sort’ of occurrence" that will constitute that occasion.

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The attainment of ideals that results from the ingestion of eternal objects is a movement from the potential to the actual, and from neutrality to value.

When we examine the general world of occurrent fact, we find that its general character...is neutral in respect to the realization of intrinsic value. The electromagnetic occasions and the electromagnetic laws, the molecular occasions and the molecular laws, are all alike neutral. They condition the sort of values that are possible, but they do not determine the specialities of value. When we examine the specializations of societies which determine values with some particularity, such specializations as societies of men, forests, deserts, prairies, icefields, we find, within limits, plasticity. The story of Plato’s idea is the story of its energizing within a local plastic environment. It has a creative power, making possible its own approach to realization.\(^\text{52}\)

Whitehead asserted that Plato’s cosmological vision fundamentally represents the organic self-actualization of the cosmos by virtue of its exemplification of internal relations between entities; these forms of relation are reducible to mathematical objects.

*Platonic Basis for the Eternal Objects*

The resemblance of eternal objects to Platonic forms is not merely accidental or analogical, as is clear from their first introduction in *Process and Reality*: “by way of employing a term devoid of misleading suggestions, I use the phrase ‘eternal object’ for what in the preceding paragraph of this section I have termed a ‘Platonic form’.”\(^\text{53}\) He voices the doctrine's

\(^{52}\text{Whitehead, } \textit{Adventures of Ideas, 42. Cf. Whitehead, “Immortality,” 688: ”Each such personal sequence [of personal identity] involves the capacity of its members to sustain identity of Value. In this way, Value-experience introduces into the transitory World of Fact an imitation of its own essential immortality. There is nothing novel in this suggestion. It is as old as Plato.”}\)

\(^{53}\text{Whitehead, } \textit{Process and Reality} 70 (194). Christian emphasizes that his motivation in coming up with this terminology is to distinguish "Platonic form" from any unwanted association with "essence" or "universal" that it may have accrued in the subsequent tradition. In my reading, the gesture of distancing himself from the older term reflects a handful of factors, as described below.\)
link with Plato even before elucidating it in its full and unique significance. Nevertheless, as will be seen in this section and the next, not only do eternal objects themselves present difficulties of interpretation, but their relation to Platonic forms is complicated by the difficulties in interpreting just what Platonic forms are in the first place, and in unpacking the nuances of what Whitehead understood by that term.

As we come to that task of evaluation, I note the obvious fact that a total summary treatment of the status of the forms in Plato’s thought as a whole, its developments, evolutions, critiques and possible self-contradictions, is far too large a task for the present discussion. For present purposes it is best to focus mostly on the features of Whitehead’s interpretation of their

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54To avoid vagueness however, perhaps it may be helpful to note here in extraordinarily broad strokes what I understand as “forms” or “ideas” in Plato’s thought at large, if it is even at all possible to speak of them so generally. Forms are relevant in the dialogues to ethical, epistemological and ontological concerns, and not infrequently to all three of these at once. (I take the tripartite terminology "ethical, epistemological, ontological" from Harold Cherniss, "The Philosophical Economy of the Theory of Ideas," The American Journal of Philology 57 (1936), 445-456. This note owes much to that article.) In the *Meno* for example the discussion involves identifying the characteristics of virtue; Socrates contends that if it is possible to identify these characteristics then it must be done in reference to some definition – knowledge of the characteristics presupposes knowledge of the definition; knowledge of the definition presupposes some direct, intuitive grasp of the essence of what virtue really is, which is what it is transcendentally and in every instance of its existence. What is grasped then is a “form”. In the *Meno* and also in the *Phaedrus* this grasp turns out to be a kind of remembering (*anamnesis*). *Theaetetus* and *Republic* both explore this epistemological dimension in their discussions of the distinction between knowledge and true opinion (the *Timaeus* also employs this distinction). Knowledge cannot be the result of perception because the perceptive faculty refers back to a faculty of judgment that determines the validity of aesthetic experience in reference to stable paradigms that transcend the passage of events. All knowledge of phenomena is referent to objects of intellection that transcend phenomena. Even in the *Parmenides* where the young Socrates is challenged by Parmenides with grievous criticisms of the theory of forms, Plato has Parmenides admit that if logical reason is at all possible in the first place, intellective forms must indeed exist. Thus the theory of forms is not presented as unproblematic, yet it is presented as somehow necessary. Their ontological importance arises from the fact that physical phenomena themselves are clearly involved in a constant flux such that whatever stability is observable in their physical characteristics as they pass in an out of existence – extension, quantity, quality, what have you – must depend on substantial forms that transcend their individual iterations. As has been noted above, and as will be discussed further on, Whitehead does distinguish between the doctrine of forms as it appears in what he calls the "Middle Dialogues" from that which appears in the *Timaeus* and the other supposedly later dialogues with which he also though less frequently engages (*Laws, Statesman, Sophist, Philebus*). He holds, in general, that it is not until these later dialogues that Plato is able to locate the realm of forms in the natural world as that which is expressed by the relations that emerge in the process of becoming. He has great distaste for what he sees as the excessively hierarchical view of forms as fully transcendent and qualitatively better than nature, with the corollary that natural things are a mere inferior imitation of the forms. In the "later dialogues" he reads Plato as having demonstrated how nature is the very matrix in which the forms have their being and expression, although they are eternal since they are exemplified in nature in various occasions.
presence in the *Timaeus*, and see what Form-themed controversies become pertinent in that connection.

*Timaeus* 51b begins a digression on the nature of forms suggested by the problem of the emergence of definite realities in the Receptacle, the matrix of becoming which has recently been introduced into the cosmological narrative. It is asked whether the elements (fire and other objects) exist as “self-subsistent realities” (*auta kath’auta onta*). In addressing himself to this question Timaeus refers back to the distinction between reason and true opinion that appeared at the beginning of the cosmological account.\(^{55}\) There it was distinguished, and here it is distinguished again, that there are things that are apprensibile by reason, and there are other things that are apprehensible by opinion. The objects available for definite apprehension by reason must by virtue of their definiteness have an ontological priority with respect to their passing emergence in the matrix of becoming. The passage of these prior forms into the Receptacle supplies it with patterns that structure a transitional mixture of interrelating relationships that constitutes reality.\(^{56}\) A further contemplation of the emergence of these repeatable structures inspires the realization that whereas up to this point the physical elements have themselves been considered forms, really it is better to apply this term to the more fundamental structures and patterns of interrelation whose manifestations result in the true apprehension of this or that element.\(^{57}\) An instance of fire, then, is not an instance of the eternal form of fire being imitated by the inferior world, but rather the appearance of fire represents just "such" an arrangement of primordial patterns in their passage through the process of nature. The

\(^{55}\) *Timaeus*, 51d-52d.

\(^{56}\) Ibid., 52d-53a.

\(^{57}\) Ibid., 53b ff.
"suches" of this section of Timaeus' discourse\textsuperscript{58} thus correspond with Whitehead's "societies" -- not individual "things" (except when discussed casually, or in abstraction from the cosmic environment), but \textbf{nexus} of formal interrelations.

On the one hand Timaeus' attitude toward forms as the objects of reason (as opposed to objects of mere opinion accessible to sensation) seems to put them on qualitatively superior footing to the objects of sense, recalling the hierarchical attitude that Whitehead associates with the "Middle Dialogue" Plato. Nevertheless the innovation Whitehead sees in the \textit{Timaeus} is that here, through his construction of the solids from the primordial triangles, Plato explores the embodied passage of forms through the world of flux and so substantiates their actual relevance to experience. The world is not a humble collection of imperfect individual imitations of perfect eternal types, but is the dynamic expression of primordial patterns. In the \textit{Timaeus} these patterns reduce to the triangle, in the \textit{Philebus} they reduce to the one and the many. The specificities of the reduction are not Whitehead's main concern; but the reduction of particulars to configurations of eternal pattern is the kernel of his Platonic inspiration, and the apparent basis for what he calls eternal objects.

In the first place, the \textit{Timaeus} connects behavior with the ultimate characters of actual entities. Plato conceives the notions of definite societies of molecular entities; each society with its defining characteristics.\textsuperscript{59}

Considering the Ideas by themselves, Plato points out that any selections are either compatible for joint exemplification, or are incompatible. It thus follows, as he notes, that the determinations of compatibilities and incompatibilities are the key to coherent thought, and to the understanding of the world in its

\textsuperscript{58} Ibid., 49d ff.
\textsuperscript{59} Whitehead, \textit{Process and Reality}, 94.
function as the theatre for the temporal realization of ideas.\textsuperscript{60}

In Whitehead's reading, the \textit{Timaeus} manages to depict the forms as they actually express themselves, manifest in and strictly relevant to the process of becoming, rather than disembodied and transcendentally aloof from it. Consequent on his assumption that the \textit{Timaeus} was one of the last iterations of Plato’s philosophical output, he saw it as the maturest fruition of the doctrine of forms, since it is here that he was at last able to substantively describe the interplay of forms in the flux; this mature perspective Whitehead saw as vitiated only slightly by a lingering fondness for the precious eternal, a byproduct of his age and disposition.\textsuperscript{61}

When he talks of ‘Body,’ Plato is thinking about the turbulence of the world.

The Body is the aboriginal notion of Being. The order in the world, where there is a minimum of Soul, is by the mathematical Forms. Body, he says, is visible

\textsuperscript{60}Whitehead, \textit{Adventures of Ideas} 147.

\textsuperscript{61}Whitehead does not, of course, pointedly weigh in on controversy surrounding the dating of Plato's works, and seems to take what one might call the "traditional" ordering as an acceptable matter of fact. By "traditional" I mean the division of dialogues into the groups Early, Middle and Late, that roughly assumes that Plato's period of authorship began around the time of Socrates' death, beginning (c. 399 BCE) with "Early" dialogues starring Socrates and rehearsing Socrates' perspectives on morality and virtue, proceeding then to the "Middle" dialogues (e.g. \textit{Symposium}, \textit{Phaedo}, \textit{Republic}) in which Plato began to articulate his original contributions while still dramatically foregrounding his teacher, followed by the "Late" dialogues in which Socrates substantially fades from dramatic view, leaving Plato room to unleash the mature critical expression of his own thought. This supposes that the dominance of the Form theory as it is expressed in the Middle dialogues is replaced in the Late dialogues by theoretical frameworks that, if they incorporate the Forms in some fashion, have moved beyond them toward a more critical and coherent system. This seems to be Whitehead's assumption, and it is the notion of this transition to a new and more coherent framework that is at the heart of his appreciation for Plato. This division of the dialogues, in general, rests on little evidence -- mainly the fact that the \textit{Laws} was left unpublished, and that the \textit{Laws} can be squared with the other presumably Late dialogues (\textit{Timaeus}, \textit{Sophist}, \textit{Statesman}, \textit{Philebus}); and that the \textit{Theaetetus}, whose criticism of the Forms signals a transition to the Late dialogues, is presumed to have been a kind of memorial to its namesake, the mathematician Theaetetus, who died in 369 BCE. Again, none of this elicits any concerted commentary from Whitehead, but his interest in \textit{Timaeus}, \textit{Sophist}, \textit{Statesman}, \textit{Philebus} and even \textit{Theaetetus} is amply evidenced, while the \textit{Republic} comes up only infrequently and in a critical and contrastive capacity (as discussed throughout this study). He does once remark: "The works of Plato I return to again and again are the ones which come after the \textit{Republic}" (in Lucien Price, \textit{Dialogues of Alfred North Whitehead} (Boston: David R. Godine, 2001), 213). He expresses no interest in the "dramatic" ordering of the dialogues -- regarding the \textit{Timaeus}, for instance, he makes no mention of its dramatic setting being in plausible reference to the preceding events of the \textit{Republic} -- in fact he doesn't mention anything that happens in the dialogue prior to \textit{Timaeus}' speech itself. This study has nothing to do with a concerted discussion of Plato's chronology, except to note that the contemporary assumptions of scholarship had distinct and significant impact on Whitehead's view of Plato, so central to which was this notion of an evolved and critical reenvisioning of the Forms in his late work. The summation of traditional scholarly assumptions that I have given here is based on John M. Cooper's "Introduction" in \textit{Plato: Complete Works} (Indianapolis: Hackett, 1997), ch. II).
and tangible. Visibleness requires Fire…and tangibleness requires resistance, solidity which is Earth. He associates Fire with Light. We say that light is a form of electro-magnetic vibration. If you told Plato of Newton's law of Mass and Inertia, he would say, ‘Yes, I always thought that was an important notion.’

Then he makes a shot at mathematics, at proportion. Mathematics, thought Plato, could deal with Matter. This is true, but he thought it was easier than it was. Two thousand years of development of algebra had to come before this was possible.62

For Whitehead the incidental shortcomings of that stage of the development of mathematics were all that prevented Plato’s description from attaining to the subtlety offered by modern scientific descriptions of the cosmos—he was able to perceive that the forms entered flux, and so described these entries, arrangements and rearrangements in terms of the geometry that was available to him. A richer mathematical apparatus would have allowed him to perceive that there is a form inherent in the flux itself, and to articulate it.63

In this interpretation the point to be emphasized regarding what Plato did articulate in describing the construction of the geometrical solids is that matter is not an inert “stuff” but is itself an exemplification of a system of order that evolves from its own state of interrelations. In this description

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63"It is as if one Form gave a butterfly kiss to the universe, and then flew off again. Since that time, mathematics has moved on a bit—consider Leibniz and his completely independent introduction of a new notion to mathematics, that is, the flux, the flux which can itself have a form. This is the astounding discovery of differential calculus…..It is curious that Plato did not hit on the notion of the form of a flux as well as the flux of a form. When you describe what is going on in differential expressions, you do so in terms of the form of the flux. When you have an integral for this equation, then you have the flux of the form. But Plato did not know that, so he doesn't touch it. Because they had less detailed knowledge than we, Plato and the ancients often went off into aesthetic mysticism. But if Plato came to Harvard today, he would ask his way to the department of mathematics; I haven't the slightest doubt of it" (in Brennan, "Whitehead on Plato's Cosmology," 75). In saying that Plato lacked a "notion of the form of a flux" Whitehead means that while he had geometry, which makes mathematical generalizations about the nature of shape, he did not have calculus, which makes generalizations about the nature of change.
it is not so much matter itself that is created but rather a certain sort of order to
the natural world that is congenial to our contemporary view wherein there has
been a dissolution of material quanta into (partially self-moving) vibrations.\textsuperscript{64}

Elsewhere Whitehead will describe these vibrations as “throbs of experience” – the word
“experience” emphasizing the ultimately subjective, emotional, \textit{psychic} character of all actuality
in its elective acquisition of form.

\textit{Whitehead's Criticism of Platonic Forms}

Given that Whitehead's embrace of the Forms consisted in his perception of Plato's
successful reinvention of the theory, and his willingness to cast out the corrupt version of it as
supposedly expressed in the Middle dialogues, there is a pervasively ambivalent aspect to this
dimension of Whitehead's Platonic appropriation. The knee-jerk association with the term
"Platonic Form" would even today be much more in line with the ontologically transcendent
entities of the Middle dialogues, and Whitehead was exuberant in dissociating himself and his
Platonic allegiance from that evocation. -- Despite the centrality his gives to Plato, he is not
universally complementary toward the object of his inspiration.

Far from being willing to grant his version of the forms a status of ontological superiority,
a perfection in comparison with which the world of becoming must be considered inferior and
derivative, Whitehead is insistent about his eternal objects not existing in any way outside of
their actualization in the process of becoming. Not at all independent of their role in becoming,
they only get to \textit{be} in conjunction with their selected ingression in the actual physical occasion—
this has at a glance a more Aristotelian flavor, as Aristotle insists on the inseparable inherence of

\textsuperscript{64}As described by Dombrowski (30), a Process thinker who elaborates Whitehead's reading of the \textit{Timaeus}, whose
work will be discussed later. Cf. Whitehead, \textit{Religion in the Making} (New York: The New American Library,
1974), 111-112: “Vibration is the recurrence of contrast within identity of type. The whole possibility of
measurement in the physical world depends on this principle. \textit{To measure is to count vibrations}” [italics mine].
form in its material constitution, and form itself is matter’s constitution and actuality; this in a sense is Whitehead’s view. Whitehead became increasingly solicitous about this distinction, and even occasionally vituperative concerning Plato’s failure to realize “that his eternal mathematical forms are essentially referent to process”, a failure that caused his theory, in its legacy, to look down too haughtily from the high horse of sublime changelessness. This misplaced emphasis on the transcendent character of forms has “haunted philosophy”, “the notion of numbers…existing in a vacuum is idiotic.”

The root of the disagreement may have significant consequences for the estimation of the effectiveness of appropriating “Platonism” as such. Just as a developmental view of Whitehead’s thought reveals ambivalence about the status of eternal objects, and an accordant vacillation to and from self-identification with Plato, there has ever been, as mentioned above, rampant ambiguity about the status of the forms throughout Plato’s works. In a certain way this ambiguity is the central thematic concern of Plato’s philosophical adventure, from the definitional quagmires emerging in the ethical discussions of the so-called “Early” dialogues, to the mounting importance of the Form of the Good throughout the “Middle” dialogues, to the sharp division between the model and the made creation that sets the stage for cosmological discussion in the “Late” Timaeus. The status of forms as they stand over against the flux – the very gap between form and flux, or permanent being and fluctuant becoming – is a starting point for Plato just as much as it is for Whitehead.

For how exactly is the tension between the realm of eternal being and that of fluctuant

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65 Cf. Epperly, *Is Whitehead a Platonist?*, 196. The relation of Whitehead's thought to Aristotle in contradistinction to Plato will be discussed at length in a subsequent chapter.


67 Ibid., 67.

68 Ibid., 69.

69 See note on chronological divisions above.
becoming *supposed* to be read in the *Timaeus*? This question arises perennially every time the text is approached anew by scholarship. Broadie thematizes the perennial nature of this question itself in her recent study of the dialogue, suggesting that its core interpretational difficulties reflect a more general schismatic ambiguity in the interpretation of Platonism at large. The question is this: is the Intelligible realm / realm of forms a transcendental, trans-natural realm? or is it (merely) that in virtue of which we are able to make accounts of the cosmos? -- that is, is it the mode in which Platonic discourse refers to the possibility of making coherent statements about the universe as an ordered thing? Or put in another way, is the eternal paradigm to be understood as an ontologically transcendent entity or an epistemological framework?\(^{70}\)

Broadie offers two examples of these contrasting modes of reading among modern scholars\(^ {71}\) -- both, as it happens, closely contemporary with Whitehead. Platt in 1927: “Plato, being first and foremost a metaphysician with a sort of religious system, would not have us study anything but metaphysics and a sort of mystic religion.”\(^ {72}\) Bury in 1929: “In truth, there is but little of metaphysics in the *Timaeus*; it is mainly preoccupied with the attempt to give a ‘probable’ account of matters which belong to the science of physics and physiology.”\(^ {73}\) It is surprising that the two scholars were even talking about the same text. Broadie remarks that in grasping this interpretive contrast, "one grasps what is perhaps the central ambiguity of the tradition called ‘Platonism’, one that can be traced back to the *Timaeus* itself” (76-77). Perhaps Whitehead's Platonism is located right in between these two poles: he has no interest in mystic religiosity, and laments this element of Plato's legacy; yet he is most certainly ready to take Plato

\(^{71}\)Ibid., 61-62.
seriously as metaphysics, and is all along making a case for a return to metaphysics despite its unpopularity in the intellectual climate of his writing. And, as will be seen, these commitments do lead him to making a central place for God in his metaphysical system -- for Whitehead, God is the agent who offers eternal objects to the universe for the process of becoming, and is the actual entity in whom eternal objects are located, his very necessity posited by virtue of the assertion that everything that exists, eternal objects included, must exist somewhere.

The relation of eternal objects to God will be discussed shortly; but first, let's return to the *Timaeus*, to isolate the manner in which Whitehead's reading both appropriates and departs from its Platonic precedent. At 27d-28a Timaeus gets the cosmological account underway by introducing a profound distinction: that between being and becoming.\(^\text{74}\) The former corresponds to and is accessible by knowledge, the latter corresponds to and is accessible by opinion, belief. Based on these correspondences it is asserted that either of the two, being or becoming, may be used as a model for an artificer in producing something. When being is the model, the result will be beautiful, and when becoming, it won’t be beautiful. The discussion proceeds to inquire into which of the two was used by the artificer of this world (for there must be some cause that precedes this world if it is agreed that this world is a created thing.) On the assumption that this world is the most beautiful of all, and that its artificer is the best, it follows that the most beautiful model, that of being, has been followed. This is the principal locus of what Whitehead disparages, as the inadequate and regrettable “imitation” element in Platonic cosmology. The objects of imitation are the "forms" as we have them in the Timaeus; they are that in accord with which the configurations of soul are arranged in its permeating dispersal throughout the living

\(^{74}\) *Timaeus*, 27d-28a: ἐστιν οὖν δὴ κατ᾽ ἐμὴν δόξαν πρῶτον διαιρετέον τάδε: τί τὸ ὃν ἀεί, γένεσιν δὲ οὐκ ἔχον, καὶ τί τὸ γεγονόμενον μὲν ἀεί, ὁν δὲ οὐδὲκτει; "It is necessary then, according to my estimation, to make this initial distinction: is there something forever being, which does not admit of becoming, and something forever coming to be, and never being?"
cosmos.

Facing this initial and pivotal distinction that Timaeus so famously makes, it must be asked -- if Whitehead is fundamentally aligning himself with the Timaeus except with regard to the "notion of imitation", then what about his own doctrine of the "ingression of eternal objects" is different from the doctrine of imitation? What is imitation replaced with, in his reading?

But it is the difficulty of this very question that allows Whitehead to make his reading of Plato so selective. If Plato's claim is that the world is the copy of a paradigm, does this mean that it is a comparatively shoddy remake, or that it is the beautiful actualized exemplification of forms of order that ontologically precede it? In Broadie's terms, is the paradigm the better original and the world is the copy, or is the paradigm a recipe and the world is the delicious resulting meal, insofar as it continues to be successfully cooked within the limits of what's possible?75 Again, Broadie's thesis is that this ambiguity courses stubbornly, but also fruitfully through Plato's thought itself, and through Platonism -- it is the tension that attracts and repels, sometimes at once, those whom it has influenced. And it is along this fault line that the Timaeus offers Whitehead both positive and negative inspiration for his doctrine of eternal objects.

As Timaeus' cosmological account proceeds, Whitehead's reading navigates this tension. When he can't stomach or make good use of particular elements of the account, he sometimes reads them as metaphorical, or sheerly mythological and misread by the subsequent tradition -- and sometimes he simply disagrees.

Take for instance the invention of Soul.76 Timaeus asserts that since it is rationality which induces the artificer to exercise preference for the more beautiful model (being rather than

75 Broadie, Nature and Divinity, 62, 65.
76 Timaeus, 34c ff.
becoming), it follows that the creation must possess and exhibit the very rationality that engendered it; it must be ensouled. The details of the temporal world's imitation of the eternal are revealed in the construction of the universal soul itself. Here is described the composition of soul from an admixture of the natures of the Same and the Other, and a subsequent admixture of that resulting compound with the original natures of Same and Other. A further elaboration of the character of this admixture introduces a numerological excursus that is an example of what Whitehead indicts as “aesthetic mysticism” -- in this connection it is not always clear whether Whitehead blames the aesthetic mysticism on Plato or on the traditions of Platonic readership.

So far as the operations of soul in its admission of forms into its fluctuant constitution are concerned, Whitehead aligns himself with the Timaeus’ description. At 37b the influx of forms is described as a “shaking” of the soul, as the forms are dispersed throughout her and she “tells” them – she articulates the formal categories in their fundamental order and composite complexity. This Whitehead would view as fundamentally squaring with his own doctrine, since it expresses his principle of the fundamental interrelatedness of all entities. The world is a subjectively experiencing matrix in which every entity is related to every other, and in some way feels every other, and that subjective feeling informs all of its processes. What Plato describes as Soul's experiential "shaking" Whitehead at times describes with the analogous motor expression "throb[bing]" -- interdependent "throb[s] of experience." In this sense Whitehead aligns with Platonic cosmology in the "panpsychic" dimension of his thought, a feature which will be further thematized by later readers who respond to and celebrate his Platonism in the mode of Process Philosophy.

Timaeus' depiction of Soul's reverberations is succeeded, however, by one that prizes the

reverberations that occur in the celestial sphere of the Same, distinguished from those of the
sphere of the Other, the latter being the domain of terrestrial experience. That is, Timaeus seems
to say that the heavens themselves exemplify eternal rationality in a better and purer way, and are
truer to the original excellence of the cosmic soul; whereas individual, finite souls such as you
and I are made of an inferior grade of soul, by the time it has gotten to our embodiments amidst
the process of cosmic recycling.

Distinctions of this kind are not helpful for Whitehead's eternal objects, since there is no
place in his system for the notion that any entity or system of entities is better or worse in its
expression of the eternal patterns which it exemplifies. Cosmic "experience" is shared in
common by both fundamental actual entities (e.g. atomic occasions) and complex societies like
human agents – the selective formal self-constitution enjoyed by the former and the selective
formal perception enjoyed by the latter are flipsides of the same subjective coming-to-be-in-the-
present that results in the objective past. Items in the universe are actualized in the process of the
universe by virtue of the value that their constituent parts place on one another; and this
experience of value is what is expressed as actuality -- this is what Whitehead calls "valuation."
"Valuation" of forms is a process common to both the fundamental physical actualities and the
complex societies that proceed from them; the eternal objects that such societies express are not
inaccessible; rather it is their very accessibility that actualizes them and iterates their formative
power.78

78Stengers puts this distinction nicely: “Just as envisagement, in the metaphysical sense, confers no privilege upon
human envisaging experience, ‘eternal objects’ cannot be invoked to found any kind of privilege of those
cognitive activities for which Plato required the Ideas — to judge, to sort, to evaluate in terms of legitimacy, of
faithfulness, of resemblance — nor to appeal to any kind of a dynamics of elevation or conversion" (Isabelle
Stengers, Thinking with Whitehead: A Free and Wild Creation of Concepts (Cambridge, MA: Harvard University
and the World”), Whitehead deplores the Platonic separation of “the flux” from “the permanence” which has led
to a static God. He recognizes an interplay between that which is static and the things which are fluent and this
produces contradictions and logical dilemmas. Words like “illusion,” “mere appearance,” and “heights which
In short, Whitehead is not interested in the side of Plato and Platonic forms that gives more praise to forms than to things. Perhaps this distinction in emphasis does not require further elaboration; one might simply say that the qualitatively hierarchical tinge of Plato's writing is symptomatic of his age, but doesn't interfere with the real pith of what may be gotten from him. Nevertheless, as Whitehead's philosophical career progresses, he is increasingly inclined to thematize this distinction, centering around his contention against Plato that he had made a mistake in prizing Forms over Things, or in Whitehead's terms, "Value" over "Fact". Again, "valuation" is his term for the process whereby entities select and express eternal objects. Eternal objects are things of transcendent value insofar as they are available for repeated selection by entities in cosmic process, but they have no meaningful value in separation from the things -- the *facts* -- that have selected and express them. To prize a form over and above its particular expressions is meaningless, because forms only have validity by virtue of their interrelated expression in the actual world.

The value inherent in the universe has an essential independence of any moment of time; and yet it loses its meaning apart from its necessary reference to the World of passing fact. Value refers to Fact, and Fact refers to Value. (This statement is in direct contradiction to Plato, and to the theological tradition derived from him.)

These factors [Values] are the famous ‘Ideas,’ which it is the glory of Greek thought to have explicitly discovered, and the tragedy of Greek thought to have misconceived in respect to their status in the Universe. The misconception which has haunted philosophic literature throughout the centuries is the notion of ‘independent existence.’ There is no such mode of existence; every entity is

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only to be understood in terms of the way in which it is interwoven with the rest of the Universe….80

The distinction finds a central place in Whitehead's later writing (after Process and Reality and Adventures of Ideas.) By the time of Modes of Thought he had abandoned the term “eternal objects” and had begun to put more emphasis on the notion that what universal patterns inhere in the process of the universe are the emergent result of cosmic evolution -- the forms we witness in the present universe are merely those that dominate our "cosmic epoch." This latter notion was present in Process and Reality as well, but receives more emphasis in Modes of Thought; and correspondingly, the older, rather impressive sounding term "eternal objects" is replaced by the plainer "forms of definiteness".

This shift of emphasis has been important for the reception of Whitehead's thought, as some Process philosophers have commended and aligned themselves with Whitehead's later tempering of the eternal objects, and expressed wariness about their earlier manifestation. Immense portions of commentary on Whitehead's thought itself revolve around the difficulties involved with the concept of eternal objects, such that within the limited context of his reception they are analogous to Plato's forms in being singularly productive of scholarly controversy and problematization. Hartshorne81 was forthright in rejecting the earlier Whitehead’s term “eternal objects” and distanced himself from Whitehead's “extreme form of Platonism.”82

80 Ibid. 687.
81 Charles Hartshorne, philosopher and theologian influenced by Whitehead, who will be discussed in a later chapter.
82 Hartshorne quoted in Dombrowski, Platonic Philosophy of Religion, 54. Cf. Stengers, who feels that the status of eternal objects was too "Platonically extreme" in Science and the Modern World, but that they had evolved fruitfully circa their full expression in Process and Reality: “the possibility of philosophical comparisons rushes to the forefront…the obvious comparison with a Platonic “kingdom” of Ideas: a threatening comparison, since it would define a relation of sovereignty of eternal objects with regard to actuality. If Whitehead had put a final point upon his career as a philosopher after Science and the Modern World, the need for such comparisons would no doubt impose itself, but it so happens that the perspective in question was to disappear in Process and Reality” (Thinking with Whitehead, 206).
The eternal objects then, were in some sense discarded lest they evoke the problematic Platonic association of transcendent forms that are qualitatively superior to the world. Nevertheless, Plato's presence, and especially the *Timaeus*, remained felt in Whitehead's further efforts to articulate the manner in which the universe evolves to express what "forms of definiteness" it does. -- Plato crops up often still in *Modes of Thought*, and will return as the protagonist of the very late essay "Mathematics and the Good."83

Yet even the tempered notion of "forms of definiteness" that emerge evolutionarily in the history of the universe, constituting distinct "cosmic epochs", is an idea whose genesis Whitehead locates in the *Timaeus*. As he had stated already in *Process and Reality*, this is another point in which the organic philosophy only repeats Plato. In the *Timaeus* the origin of the present cosmic epoch is traced back to an aboriginal disorder, chaotic according to our ideals. This is the evolutionary doctrine of the philosophy of organism. Plato’s notion puzzled critics who were obsessed with the Semetic [sic] theory of a wholly transcendent God creating out of nothing an accidental universe…..Thus, on all sides, Plato’s allegory of the evolution of a new type of order based on new types of dominant societies became a daydream, puzzling to commentators.84

Whether the "ideals" or "types of order" in question are considered as emerging from disorder in a continuous evolution, or members of a realm of potentiality to be referred to as “eternal” and in some way prior to their actual instantiation, the general theme of the adventures of forms-of-being in the process-of-becoming remains present throughout Whitehead’s thought and in the continuing Process tradition, and remains closely tied to his Platonic inspiration.

The question of whether or in what sense, on the basis of his doctrine of eternal objects or

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his revision of it, Whitehead is a Platonist with a concern for something like Platonic forms, is a question that cannot be answered with any less ambiguity than the amount of ambiguity inherent in deciding what Plato meant by his “forms” at a given stage of his own career. Broadie's insistence on the ambiguity of the "paradigm" in the *Timaeus* (i.e. 'is it transcendent or not?') encapsulates this difficulty, which underlies the complexity of Whitehead's relationship with Plato in regard of the forms, and at large. It has been seen that Whitehead is at points quite particular about dismissing Platonic ontolatry, and has no use for worshipping a transcendent realm in preference to the actual world. Insofar as he ever senses that this is what Plato recommends, he voices his disagreement. Yet fundamentally he seems convinced that this is not what Plato meant, at least in his best (and latest) visions: "Plato denies that being can be conceived 'in awful unmeaningness an everlasting fixture.'" In the later dialogues, he felt, Plato had shown how being, though eternal in some capacity, only has meaning in the passing process of actuality. On his own selective reading of Plato's success in this portrayal, Whitehead's eternal objects and/or forms of definiteness are Platonistic, if for no other reason than that he was so committed to talking about them in relation to Plato. He defines them alternately by analogy with, or contrast to, what he presumes to be the typical understanding of the forms.

At an absolute minimum of correspondence, Whitehead is decidedly anti-anti-Platonistic. If the anti-Platonistic position is that uniformities of any kind exist in our world merely as “statistical averages derived from the net result of the actions and reactions and interrelations of the total multiplicity of particulars”, and that there is therefore a total arbitrariness to the manner in which we reckon and describe these interrelations, then I think Whitehead disagreed

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85 Whitehead, *Adventures of Ideas*, 154. Here he is quoting from the *Sophist*; what he gets out of the *Sophist* will be specifically treated later on in this section.
with this even up to the end of his speculations, just as his “mature" Plato continued to challenge sheer mechanism and materialism, nor could be claimed to endorse mere nominalism. That is not to say that just because Whitehead was not a certain kind of anti-Platonist, that he was therefore a Platonist. The point is that whether in agreement or disagreement, Whitehead positions his descriptions of how forms are expressed amidst the multiplicity of interrelated particulars with pervasive reference to Plato, as his inspiration and ever-relevant predecessor.

The next section broaches another transparently Plato-tinged dimension of his thought: since Whitehead liked the idea of timeless forms of order but didn’t want actuality to be "copies" of these forms of order, he had to locate the timeless entities somewhere in actuality; as will be seen, he located them in an entity called God.

**Plato's Demiurge and Whitehead's God**

Much like, and along with the eternal objects, God has a complex and somewhat mixed reception among the interpreters of Whitehead’s thought. The case might be made that the system would be no worse off had he refrained from applying that particular capitalized word to what he describes God to be; yet among some devoted Process thinkers this theistic element is precisely what is most attractive in Whitehead’s system. In a certain sense, again in conjunction with the eternal objects, Whitehead’s theology is one of the main sites of his correspondence with Plato, and it seems that in interpreting him his interpreters view his theistic and Platonistic commitments as going hand in hand.

**Whitehead's God - General Characteristics**

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88 The Platonic commitments of interpreters and adherents of Process philosophy will be treated at length in chapter 4.
Whitehead’s God may be defined as an actual entity offering formal possibilities for the process of becoming to other actual entities, as an agent of persuasion. He (and “He” is indeed personified and capitalized) exists alongside and immanent in the world, with a nature to be distinguished from that of a fully transcendent, absolute deity who creates the world \textit{ex nihilo}.\textsuperscript{89} Neither is Whitehead’s God the Aristotelian unmoved mover, but a mover who moves and is moved with the world as He offers to it modes of interrelatedness that guarantee the concretion of actual entities in their constitutive interrelation.\textsuperscript{90}

Recall the starting point of the summary at the beginning of this section -- that ‘[a]ctual entities’—also termed ‘actual occasions’—are the final real things of which the world is made up….They differ among themselves: God is an actual entity, and so is the most trivial puff of existence in far-off empty space.\textsuperscript{91} Everything that exists must exist somewhere, and the formal possibilities for existence itself exist in God, who bequeaths these possibilities to actual occasions and societies of occasions as they emerge in their processes of concretion. He must exist in order to give the infinite formal possibilities of being a place to actually be, but the ultimacy of His importance does not place Him beyond the world -- "God is not to be treated as an exception to all metaphysical principles, invoked to save their collapse. He is their chief exemplification."\textsuperscript{92}

God is not the ground of being altogether, but rather the principle of its ordering and

\textsuperscript{89}Whitehead reiterates this distinction repeatedly -- that between deity as the persuasive force of emergence into order from disorder, versus the agent of \textit{ex nihilo} creation. He portrays and celebrates the former as the Greek conception, pitted against the Semitic or Abrahamic conception, which he feels has been less fruitful for the subsequent evolution of human thought. See \textit{Adventures of Ideas}, 120 ff.

\textsuperscript{90}Jones, "Some Platonic Implications," 7: “Eternal objects are limited in scope and Whitehead’s consideration of this limitation formed his view that ‘in the place of Aristotle’s God as Prime Mover, we require God as the Principle of Concretion.’ Whitehead claims that God grades the eternal objects in terms of their relevance to one another.”


\textsuperscript{92}Ibid., 521.
valuation.\textsuperscript{93} Becoming is the creation of value, and that value, actualized in actual entities, is the product of the creative harmony of valuation that is God. “The universe exhibits a creativity with infinite freedom and a realm of forms with infinite possibilities; but this creativity and these forms are together impotent to achieve actuality apart from the completed harmony which is God.”\textsuperscript{94}

God is the vehicle, agent, artificer of the completed harmony that is an ordered universe, yet it is a harmony constituted from an original “creativity” that God does not transcend.

In all philosophic theory there is an ultimate which is actual in virtue of its accidents. It is only then capable of characterization through its actual embodiments, and apart from these accidents is devoid of actuality. In the philosophy of organism, this ultimate is creativity and God is its primordial non-temporal, accident.\textsuperscript{95}

God is not the ultimate metaphysical reality for Whitehead but the ultimate participant and ground of order.\textsuperscript{96} He is the purposive agent at the root of creative action. Actual entities emerge from the primordial creativity as they interrelate via their reception of eternal objects; it is God

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\textsuperscript{93} Cf. Epperly, \textit{Is Whitehead a Platonist?}, 33: “God is not the ground of being but the principle of order and value in the universe….God is not the creator of the forms.” It would be too ambitious to thoroughly compare Whitehead's conception God with that of other philosophers which it might evoke, but by way of orientation, I offer cursorily that Whitehead's God should also be distinguished from, e.g. Spinoza's God, the substance expressing infinite attributes, equatable with Nature itself, and expressing Himself in His infinite being from the necessity of His existence. If Spinoza was in a meaningful way a pantheist, Whitehead was not -- God is in the world, but is not the world: panentheism rather than pantheism. In this sense perhaps his conception is closer to that of the Stoics, for whom God is immanent throughout the world and governs the proper course of its development. Importantly for Whitehead God is, just like everything else, an "actual entity", comparable in this respect to any physical particle. This suggests an analogy with the Stoic notion of God as being truly part of the corporeal world, a principle sometimes identified with fire, rather than a substance that utterly transcends and subsists outside of the world. If this similarity has significance for understanding Whitehead then it probably proceeds in the first place from the relation and debt of Stoic doctrine to Platonic cosmology. Whitehead does not fail to touch on the Stoics amidst his reflections on the history of philosophy in \textit{Adventures of Ideas}, but he doesn't thematize them distinctly, nor align himself with their legacy as he does with Plato's.

\textsuperscript{94} Whitehead, \textit{Religion in the Making}, 115.

\textsuperscript{95} Whitehead, \textit{Process and Reality}, 7.

\textsuperscript{96} Cf. Epperly, \textit{Is Whitehead a Platonist?}, 33.
who massages these interrelations into actuality from the passage of moments as they emerge from their previously defined pasts. Actual entities are free in their selection of the formal possibilities proffered by deity; again, He is not coercive, but persuasive.

Moreover, the possibilities He offers are infinite, and their relevance to this or that occasion, or their status at this or that epoch, is continuously evolving out of the matrix of foregoing occasions. Since the universe's expression of the eternal ideas evolves, God evolves; in a certain sense He is conterminous with the very categories of existence, and He does not transcend them. "'He does not create the eternal objects; for his nature requires them in the same degree that they require him.'"97 The organism evolves and God evolves with it, within it, the personification of the offering of the content of its evolution and that evolution’s accomplishment, its valuation and self-enjoyment.

If we conceive the first term and the last term in their unity over against the intermediate multiple freedom of physical realizations in the temporal world, we conceive of the patience of God, tenderly saving the turmoil of the intermediate world by the completion of his own nature. The sheer force of things lies in the intermediate physical process: this is the energy of physical production. God's role is not the combat of productive force with productive force, of destructive force with destructive force; it lies in the patient operation of the overpowering rationality of his conceptual harmonization. He does not create the world, he saves it: or, more accurately, he is the poet of the world, with tender patience leading it by his vision of truth, beauty, and goodness.98

This language is the culmination of the hulking technical framework of *Process and

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98 Ibid., 345. Cf. Epperly, *Is Whitehead a Platonist?*, 32: “Creation is the result of the outflowing goodness of divinity, who seeks to bring about an orderly and beautiful cosmos, a ‘shrine’ (agalma), for the realization of spiritual values.”
Reality, and it waxes at this point a great deal more poetic, mythic, imagistic. “The image -- and it is but an image -- the image under which this operative growth of God's nature is best conceived, is that of a tender care that nothing be lost.” The essence of the concept, and its mythopoeic texture, are transparently derived from the *Timaeus*: “The creation of the world— said Plato—is the victory of persuasion over force.”

_Correspondence of Whitehead's God with Plato's Demiurge:_

_Ambivalent Aspects and Positive Aspects_

As with the analogy between eternal objects and Platonic forms, there is a curious ambivalence of emphasis involved in the theological appropriation. In the quote above Whitehead carefully qualifies his depiction of God as "just an image"; the dubious effectiveness of imagistic or analogical theological depiction is one of the things Whitehead critiques about Plato’s presentation of the Demiurge.

In the _Timaeus_, Plato provides a soul of the world who is definitely not the ultimate creator . . . . In the _Timaeus_ the doctrine can be read as an allegory. In that case it was Plato’s most unfortunate essay in mythology. The World-Soul, as an emanation, has been the parent of puerile metaphysics, which only obscures the ultimate question of the relation of reality as permanent with reality as fluent: the mediator must be a component in common, and not a transcendent emanation.

In this remark Whitehead is careful to distinguish his Platonic appropriation from the Neoplatonic tradition, which makes the Demiurge (as Nous) a more transcendent emanation than

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99 Cf. Jones, _Some Platonic Implications_, 10 ff.
100 Whitehead, _Process and Reality_ 345.
101 Whitehead, _Adventures of Ideas_ 83.
102 Ibid., 166.
the World-Soul; this hierarchism has nothing to do with his conception, which wants God in the
world, and insists that the world is all there is.\footnote{However, the relation of Whitehead to Neoplatonism is more complicated than this, and will be discussed at
length in another chapter.} He implies that the Neoplatonic misprision has
its root in Plato's choice of presenting the Demiurge as an allegorized personality, an
allegorization that made the \textit{Timaeus} susceptible to having its real significance obfuscated -- its
real significance being the full incorporation of deity into the process of the world. Just as the
doctrine of eternal objects insisted that the eternal objects have no meaning outside of their
expression in actuality, so God must dwell wholly in actuality; and this means we must be
careful when reading the Platonic "mythic image" of a Demiurge who builds the world as if from
outside of it.\footnote{The theme of the \textit{Timaeus} as mythic allegory will also be treated in a subsequent chapter when I examine the
importance of the concept of the \textit{eikos mythos} to Whitehead's reading of Plato.}

As of the systematic presentation of his thought in \textit{Process and Reality}, Whitehead had
reduced God to an immanent companion to the world of becoming, even less of a transcendent
entity than at earlier stages in his philosophy's development.\footnote{Contrast for instance the depiction of a more self-sufficient and change-resistant God three years earlier in
\textit{Religion in the Making} (1926): "Since God is actual he must include in himself a synthesis of the entire universe. There is, therefore, in God's nature the aspect of the realm of forms as qualified by the world and the aspect of the
world as qualified by the forms. His completion, so that He is exempt from transition into something else, must
mean that his nature remains self-consistent in relation to all change" (96).} The insistence on God's actuality
is presented in terms of God’s double-nature, divided into the “\textit{primordial}” and
“\textit{contingent}.”\footnote{See Whitehead, \textit{Process and Reality}, 135ff.} The \textit{primordial} nature of God refers to the quasi-transcendent aspect of God
whereby He is capable of preserving the formal possibilities for being even prior to their
actualization (in a state in which they do not as yet in a full sense exist); the \textit{contingent} refers to
that aspect of Him that is changed with the evolving world as an objective past emerges from its
process of completion and delimits the infinitude of formal possibilities that He can offer.
And so now, how much is the "dipolar" God of this cosmology really like the workman God of Plato’s?

The *Timaeus* presents the genesis of the universe as the creation of a god by a god. This creator god is a maker whose nature is difficult to articulate, but is to be derived in thought from consideration of the creation. “To find the maker/poet and father of this All is quite a task, and one impossible for the one finding it to articulate. [The question] then is to be examined in reference to [the cosmos] itself – in regard of which of the models he orders it.” Thus the whole cosmological discourse starts from a problem of ineffability, a difficulty that can only be surmounted by several interrelated suppositions: first, that there must be a cause, and further, that the cosmos is beautiful and so must have been made on the most beautiful and eternal model, and the maker must be the best of all causes, since the best model is the one he was so beneficent as to use. The eternal model is what guides the Demiurge’s persuasive negotiation toward order in spite of the chaotic nature things would have if it were not for his sake. He applies the eternal model when he parcels things into shape by means of irreducible formal relations, when he puts together the microscopic geometric entities—“proportions (συμμετρίας) in each, in relation each to itself, and in relation to one another (πρὸς αὑτὸ καὶ πρὸς ἄλληλα), insofar as it was possible for them to be harmonious and proportionate.” This is his fulfillment of his role as the “best of causes”, and in his capacity as the best cause his job is to bring chaos into order by working on

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107 *Timaeus*, 34b.
108 ποιητής
109 Ibid., 28c-29a.
110 Ibid., 53a-b.
111 Ibid., 69b.
112 Ibid., 29a. The *Philebus* also refers to this entity in similar terms, but with the neuter participle *to demiourgon* and *to poioun*, also known as the “cause of intermixture” (*aitia tes symmixeos*). There instead of geometrically assembling triangles “it” (rather than “he”) combines the bounded (*peras*) with the unbounded (*apeiron*) (see *Philebus*, 43a ff). Cf. John Sallis, *Chorology: On Beginning in Plato's Timaeus* (Bloomington: Indiana University Press, 1999), 51.
it with the eternal tools of form and number.\textsuperscript{113} His intelligence is what makes the world intelligible, and the mode of his intelligence is to persuade toward intelligibility.\textsuperscript{114}

Whitehead’s reasoning accords with this insofar as God’s primordial nature (His aspect as an actuality that preserves unrealized potentiality) is deduced from His contingent nature. That is, in less Whiteheadian terms: we have evidence of His goodness -- i.e. His capacity for inducing order and complexity -- in the goodness, order and complexity of the world. He is indeed ineffable, but the goodness that floods experience in its immediacy is clearly to be attributed to a benign intention, a theistically powered \textit{telos}. God is discovered in the world, revealed in creation. That this teleological functioning is the essential feature of the fundamentally psychic character of the cosmos indicates his persuasive immanence.

As with the relation between eternal objects and Platonic forms, Whitehead is not concerned with a rigorous justification of how his doctrine of God squares with Platonic theology in exact precision; it is sufficient for him to cite it as an inspiration. But later Process thought is distinctly preoccupied with elaborating this connection, and mapping Whitehead's conception back onto the \textit{Timaeus} -- that the Demiurge is “dipolar”\textsuperscript{115} in nature, as opposed to the “monopolar” notion of God espoused by Aristotle, which, as they have it, has been erroneously imposed upon interpretations of Plato. Daniel A. Dombrowski writes:

\begin{quote}
\begin{small}
\textbf{[C]onfusion has arisen historically regarding Plato’s view of God because scholars have generally not noticed the following ironic shift: Plato is famous for a dipolar categorical scheme, wherein form is contrasted to matter and being}
\end{small}
\end{quote}

\textsuperscript{113} \textit{Timaeus}, 53b.
\textsuperscript{114} Cf. Glen Morrow: “Persuasion, in its broadest sense, is the technique of intelligence. It is the proper means of accomplishing what we will with others—whether inanimate materials or thinking men—by understanding them so thoroughly that we can use the forces inherent in them to bring about the end we desire” (quoted in Epperly, \textit{Is Whitehead a Platonist?}, 37).
\textsuperscript{115} “Dipolarity” will be discussed at greater length in chapter 4, in discussion of Charles Hartshorne.
is contrasted to becoming, but he ends up with a cosmological monism wherein
the divine animal (the World Soul) includes all; Aristotle, by way of contrast, is
famous for a monopolar categorical scheme of embodied form, yet he ends up
with a cosmological dualism more severe than anything found in Plato’s
dialogues. This is because Plato’s theism does not involve an unmoved mover or
unmoved movers that are pure actualities that transcend altogether the clash of
potentialities found in the natural world of becoming.\footnote{Dombrowski, \textit{Platonic Philosophy of Religion}, 56.}

Dombrowski even feels he is able to defend what he identifies as the uniquely “Platonic”
theology on philological grounds, citing Wilamowitz’ observation that the Greek \textit{theos} is less a
proper subject than a predicate: He is what there is about the world—He is inseparable from it
even as He is what guides it.\footnote{“Although not a process philosopher, the great philologist Ulrich von Wilamowitz-Moellendorff helps to
counteract the tendency of many scholars...to identify Plato’s view of God in terms of static being. Wilamowitz
thinks that theos in ancient Greece is primarily a predicative notion. The Greeks would not say that God is love or
that God is an orderer but rather that love or orderliness are divine” (Ibid., 101).} He is to the world as we are to our cells.\footnote{Ibid., 15.}

\textit{Does Whitehead Misread Plato's Theology?}

Dombrowski's case for the basic identity of Whitehead's God and Plato's Demiurge is no doubt
radical, and presses the issue more itinerantly than Whitehead does; nevertheless it exemplifies a
reading of Platonic theology than Whitehead does seem to offer, and from which his conception
of God proceeds. And so it must be asked, does Whitehead's appropriation of Plato in this
connection make sense, or is it justified? As with the discussion of eternal objects and Platonic

\footnote{Whitehead quoted in Brennan, \textit{Whitehead on Plato's Cosmology}, 74. .}
forms, this question ultimately depends on nailing down an interpretation of Plato that is perhaps never fully attainable. Nevertheless, some of the possible contentions are relevant to understanding the alignment in the first place.

One interpreter of Whitehead, Leclerc, observes that not only is Whitehead's conception of God a departure from Plato, it is also in and of itself logically problematic. Making God an all-out actual entity, existing parallel to any "far-off puff of existence" would seem to jeopardize God's capacity for containing and offering the at least quasi-transcendent eternal objects to actual occasions from the storehouse of potentiality: "if one takes into account Plato’s insight, which was also that of Plotinus, that a principle, source, of actuality cannot itself be an actual being, it is clear that Whitehead’s conception of God as an 'actual entity' is unacceptable." 120

Whether or not the conception is "unacceptable", it is a legitimate question whether anything meaningfully resembling "dipolarity" of deity can be immediately read in the Timaeus. If Plato meant to present a dipolar concept of deity, does that mean that one pole (what a Whiteheadian would call the "primordial" pole) is what he portrays as the Demiurge, and the other pole (the "contingent") should be identified with the World-Soul itself? That the Demiurge is the aspect of God that unchangingly and indefatigably offers possibilities to the world from the infinite storehouse that He is, and the World is the aspect of Him that changes along with cosmic evolution? But Plato explicitly presents the Demiurge as something that orders materials that are external to Himself -- and so a reading that collapses the Demiurge and the World into one must assert that the cosmological narrative of the Timaeus is wholly and severely metaphorical, since it would make a point of dividing into two what is actually one. 121

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121Broadie broaches some of these questions in her recent study. She is skeptical that what is here called the dipolar reading is really what's going on in Plato: “The combined entity would be one that both animates the single
This returns us to the question of how metaphorical a reading is to be given to the Demiurge, and to the *Timaeus* in general. Recall the skepticism voiced in *Adventures of Ideas* as to the effectiveness of couching this crucial vision of the immanent character of divinity in such mythic terms. – There Whitehead insists that this especially “mythic dimension” has been the most unfortunate accident of Plato’s cosmological vision, in spite of the merit of its underlying conception. The whole teleological argument suggested at the beginning of the *Timaeus* and introducing the Demiurge proceeds from an admission of the troubling ineffability that inherently besets the cosmological task. What kind of God Timaeus describes is qualified by the limitations of discourse; and on this basis a Whiteheadian or Process-reading of the Demiurge requires a liberal degree of metaphorical interpretation. Of course, the question of whether the *Timaeus* is metaphorical or not is just short of being as old as the dialogue itself.122

Whitehead's understanding of Platonic deity requires the assumption that Plato, in articulating the nature of deity, had recourse to poetry. For as Timaeus admitted, "finding the poet and father of this All is a task, and one impossible for the one finding it to articulate." Similarly, *Process and Reality* ultimately takes a poetic turn as it gropes to articulate the role of God in Whitehead's system.123 A well-known (relative to Whitehead) example of the text's shift in tone

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122 Abundant commentary on the *Timaeus*, both ancient and modern, has centered around the interpretive problem of whether the Demiurge's act of creation is to be interpreted literally or metaphorically. The tradition of metaphorical interpretation began with the early Academy (specifically Xenocrates) in response to criticisms raised by Aristotle (*De Caelo* 279b32-280a1). The debate would only continue into modern scholarship -- see Donald Zeyl, *Timaeus* (Indianapolis: Hackett, 2000), xx-xxv. Taylor for instance, whose importance for Whitehead will be discussed in the following chapter, has it that the Demiurge in the *Timaeus* is literal, and can be thought of the greatest and most principal of the world's rational souls, meanwhile maintaining a very non-literalist interpretation of the dialogue as a whole. This controversy lies outside the present theme, but will come up again in later sections of this study.

are the antitheses about God and the World near the very end of the text:

It is as true to say that God is permanent and the World fluent, as that the World is permanent and God is fluent.

It is as true to say that God is one and the World many, as that the World is one and God many.

It is as true to say that, in comparison with the World, God is actual eminently, as that, in comparison with God, the World is actual eminently.

It is as true to say that the World is immanent in God, as that God is immanent in the World.

It is as true to say that God transcends the World, as that the World transcends God.

It is as true to say that God creates the World, as that the World creates God.\textsuperscript{124}

For what is an otherwise in many ways arduously systematic text, this series of antinomies seems in a series of poetic breaths to conceptually encompass and embrace the very controversies of interpretation that have characterized the reception of Platonic theology all along -- amounting in this connection to the principal question of whether God and the World are separate, and thence whether God should be thought of as a personal, separable entity at all.

Certainly it is to be assumed that \textit{Process and Reality} is meant to be read literally, and Whitehead describes God in less apparently metaphorical terms than he suggests that Plato used -- but if not metaphor, then what justifies the degree of personalization implicit even in using the masculine singular pronoun? Description of this particular role in the cosmological pageant seems to have involved both philosophers in the poetic experience of groping to articulate the poet who makes the world and is thus always beyond the grasp of speech by being before it.

Notwithstanding the interpretive difficulties involved, Whitehead's Platonic inspiration in

\textsuperscript{124} Whitehead, \textit{Process and Reality} 348.
constructing and articulating his theology was manifest. As he remarks in a conversation near the end of his life, “Plato’s God is a God of this world....Since then our concept of this world has enlarged to that of the universe. I have envisioned a union of Plato’s God with a God of the universe.”125 Like the broad arc of his philosophical program in general, he seems to have viewed his new articulation of the nature of God as a gesture of translation.

Whitehead’s "Creativity", and Platonic "Necessity" and "Eros"

The cosmological narrative in the Timaeus follows up its initial introduction of the Demiurge and eternal paradigm with a redirection, which asserts that equal consideration must be given to another component of the cosmic compound, referred to as ananke and planomene aitia.126 Whatever cosmic stuff these terms refer to, it is by their being manipulated into order by the rational exertions of deity that the world is constituted; and the stuff does not bend listlessly to reason’s omnipotence, but has to be persuaded.

This too shows up in the inventory of Plato’s cosmological concepts that Whitehead praised, appropriated and reformulated. He seems to have thought it deserved even greater pride of place than it is usually granted among the “seven main factors” he identified in Plato’s thought. He suggested even that Plato's awareness of the importance of "disorder in Nature" was so acute that it could have merited a dialogue of its own:

Plato, although he neglected to write this missing dialogue, did not overlook the

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125 Whitehead in Price, Dialogues, 214.
126 Timaeus, 47e-48b: “The preceding parts of what was spoken about, with small exception, were an exposition of what has been crafted through reason [nous]; but it is necessary also to provide an account of what comes to be through necessity [ananke]. For truly, the origin of this universe was brought about from a compound of necessity and reason — with reason governing necessity by means of persuading it, to conduct most of the things coming into existence toward the best state; such that, because of necessity yielding to intelligent persuasion, this whole (universe) was brought together in its beginning. So if one speaks about how it really came together in this way, the form of the wandering cause [planomene aitia] must be mixed (into the discourse)....". See elsewhere in the Timaeus: 46D, 48A, 53B, 56C, 68E.
confusion and disorder in Nature. He expressly denies omnipotence to his
Supreme Craftsman. The influence of the entertainment of ideas is always
persuasive, and can only produce such order as is possible.127

Whitehead’s correspondence with this particular dimension of the *Timaeus* cosmology
chiefly comes under the term “Creativity.” It is “the aimless energy of becoming” – perhaps not
precisely “stuff” in the sense of Aristotelian *hyle*, a substratum of actuality considered in
abstraction from form (though this does seem to be involved in the definition) -- but the
inexhaustible disorder in contradistinction to which the phrase “cosmic order” obtains meaning;
for in Whitehead's system “the order in the world is only explicable with reference to a
primordial limitation on mere ‘creativity’”.128 Its status as that which requires a "primordial
limitation" is what makes it analogous, regarding the *Timaeus*, to the element in the cosmos that
remains recalcitrant to the beneficent persuasive influence of the Craftsman.129

*Correspondence of Creativity and Platonic Necessity*

Certainly the English word “Creativity” has a somewhat less sinister connotation than
*ananke* translated as “Necessity”, and it is worth considering how this re-appropriation and
rebranding thus represents another aspect of Whitehead's alteration of emphasis regarding
Platonic concepts. But what was the original emphasis and meaning of *ananke*, such that it
would require translation in Whitehead's new presentation of Platonic concepts? As with the

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127 Whitehead, *Adventures of Ideas*, 148. Whitehead's specific discussion of disorder in Plato is limited to the
*Timaeus*, and so will be the present discussion. There are, as is the case with many of the Platonic concepts under
discussion here, other instances of the concept of Necessity in other dialogues. They will not receive direct
treatment here but I cite a few: *Republic* 616C, 617C, 619C, 620E–21B; *Theaetetus* 160B, 169C; *Parmenides*
149A; *Laws* 960C–D; *Laws* 892A, 896C, 899C, 959A; and *Epinomis* 988D. Much of this list is derived from A.E.
Taylor's discussion in *Plato: The Man and His Work* (London: Methuen, 1929 (1926)).


129 Cf. Epperly: "Necessity is the energy of the cosmos, which both limits and makes possible the divine activity"
(Epperly 107-108). "Even after the cosmos has been brought into being and has been given the basic structures
requisite for an ordered universe, an element in necessity remains recalcitrant, thus preventing the activity of the
craftsman from being perfect (*Is Whitehead a Platonist?*, 112)."
foregoing analyses, this dimension of the Platonic cosmology itself offers immense diversities of interpretation.

One angle on Necessity is that it refers to a primeval chaos that existed prior to the ordering of the cosmos, and now remains as a kind of echo of original disorder in the continuous process of the partially ordered universe, whence it merits the related appellation of planomene aitia (Wandering Cause).\textsuperscript{130} A related but perhaps distinct angle is that it refers to "what is necessary" in the sense that "[t]he world, even after the intervention of the Artisan, must still roll forward under its own steam…a dynamism built into it, after the manner of Anaximander…and Empedocles."\textsuperscript{131} The primordiality of ananke makes for an inexorable direction-of-things that can be adapted by the Craftsman only within limits. Another angle is that it refers to a kind of Aristotelian hyle abstracted from actualized entities -- a primordially ambiguous "stuff"\textsuperscript{132} that has the potential for being actualized in an orderly way, but which without the imprecations of the Craftsman would never attain that order. Or yet again, it has also been suggested that it refers epistemologically to the gap in our imperfect mortal cosmological reasoning; it is that for which we can find no reason, and therefore ascribe to vague and ominous Necessity, as the symbolic vanishing point of our powers of explanation.\textsuperscript{133}

\textsuperscript{130}This I take to be essentially Cornford's position: "The word (necessity)...is now usually understood as denoting what is fixed, permanent, unalterable, knowable beforehand. In the Platonic Timaeus it means the very reverse: the indeterminate, the inconstant, the anomalous, that which can be neither understood nor predicted….that the body of the universe is not reduced by Plato to mere extension, but contains motions and active powers which are not instituted by the divine Reason and are perpetually producing undesirable effects" (Francis M. Cornford, Plato's Cosmology: The Timaeus of Plato (Indianapolis: Hackett, 1997 (1935), 171-176); he cites Grote as a precedent for his interpretation.


\textsuperscript{132} Note that an interpretation of this kind is also sometimes associated with the Receptacle, as will be discussed in the following section.

\textsuperscript{133} This is Taylor's view. For Taylor ananke is not "scientific necessity" or “the reign of law” since it is “the planomene aitia, the ‘rambling’ or ‘aimless’ or ‘irresponsible’ cause….Thus it is not the ‘necessary’ but the ‘contingent,’ the things for which we do not see any sufficient reason….If we could ever have complete knowledge, we should find that ananke had vanished from our account of the world (A.E. Taylor, A Commentary
Again, we cannot expect from Whitehead a specific delineation of which types of scholarly interpretation he's aligning with and which he isn't. And in fact this particular correspondence, between what Whitehead called Creativity and what he thought Plato meant by *ananke* and/or the *planomene aitia*, has less clear and protracted expression in Whitehead's work than the other correspondences (God-Demiurge; Forms-eternal objects) examined so far, though it is suggested obliquely in *Adventures of Ideas*. But the correspondence does receive further elaboration from later Process thinkers.

Bruce Epperly, for instance, elaborates the connection in somewhat more length and detail than Whitehead did. Epperly seems to suggest that Whitehead had in mind a complex of certain distinct but interrelated interpretations of *ananke* – that it is for Whitehead at once an aboriginal disorder, and a creative potentiality abstracted from divine activity. He illustrates his analysis in the context of modern physics: the Whiteheadian conception of disorderly *ananke* would analogize the randomness or unpredictability of subatomic particles, which notwithstanding their randomness exhibit marvelously predictable order in the probabilistic schemes represented by wave functions – “necessity can be characterized as the disorderly and discordant motions of the primitive particles.” Subatomic particles are individually unruly, yet in their aggregate arrangements as organic societies, they exhibit high levels of order. Since the cosmos is ensouled, the constituents of the cosmos, as separable occasions of finite ensoulment, are liable to cause trouble for themselves and for one another by virtue of the self-motive force

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134 Epperly's work will be discussed in and of itself in a subsequent chapter. Dombrowski also examines the correspondence at length, as does Atsushi Sumi, “The Psyche, The Forms and the Creative One: Toward Reconstruction of Platonic Metaphysics” in *Neoplatonism and Contemporary Thought* (Albany: SUNY Press, 2002).


136 Ibid., 110.
that soul is -- the ensouled parts have a capacity to compete and cancel one another out. And so the task of divinity, in persuading them to be coordinated into the best-possible, complex, orderly organic societies, will be never-ending.137

This line of interpretation has its origin in an earlier respondent to Whitehead's thought, Charles Hartshorne. Hartshorne asserts that the key to understanding Necessity is realizing that it is the inexhaustible issue of the mutual interference of a multitude of self-movers.138 It is in this panpsychic sense that these two principles can be in identity, the Necessary and the Creative. The primeval psychic activity of things powers them through the process of becoming, doing so in a way that would be dangerously willy-nilly, but the divine is all the while beckoning them into collaboration toward highly ordered and complex modes of being. The slippage between this ideality and the disparate volitions of the ensouled occasions of creation is what makes creation a poetic process, a negotiation between the teleological and accidental dimensions of the universal creative advance. On this reading Necessity as Creativity is blended into a generalized notion of Soul, or that wherewith Soul comes to be. The Soul properly considered is exactly what is actualized by forms: “the Psyche as an actuality correlates with the forms as potentialities.”139 In this respect it is not un-Aristotelian: only in abstraction from this complex would what is called psyche be called unintelligible matter; but the process in fact manifests the intelligible, hence animate character of the created world. In other words, what is called the merely physical, as opposed to the psychical, is “an abstraction from the complex energy, emotional and purposeful, inherent in the subjective form of the final synthesis in which each occasion completes itself.”140

137 Ibid., 119.
138 See Dombrowski, Platonic Philosophy of Religion, 50 ff.
139 Sumi, "Psyche, Forms, Creative One," 232.
140 Whitehead, Adventures of Ideas, 186.
Correspondence of Creativity and Platonic Eros and Harmony

Creativity in this sense overlaps with yet another of Whitehead’s Platonic alignments. The happy or unhappy realizations of Soul in its apprehension of forms, these apprehensions being collaborations between the constituent members of an occasion of becoming, respectively characterize the degree of perfection attained in those apprehensions. Occasions that are successfully persuaded into complex order exhibit a harmony whose attainment can be identified with the Platonic Eros.

The Eros is that aspect of the world by which it is always pressing on to fresh creation. The world is a multiplicity of actualities, each multiplicity with its urge of the realization of certain ends. Every actuality is pressing on toward creation—the essential creativity in this world of Passage. This is a notion of confusion. So you take the Eros in its full meaning, in characterizing God, the Eros as seen in the nature of God, an urge toward perfection, towards order.141

In these remarks from a lecture, Whitehead blends a myriad of Platonic concepts into alignment with his own. Eros, aligned in this sense with Creativity, carries the world into its discrete coherences and out of them again into new ones. Eros is the urge inherent in the adventure of process: “the Unity of Adventure includes the Eros which is the living urge towards all possibilities, claiming the goodness of their realization.” 142 This "urge", chaotic and disorderly in its capacity as planomene aitia, nonetheless represents the creative potential for the completed harmony exhibited by the actual. This evocation of harmony recalls the discussion of musical harmony in the Timaeus, which directly precedes the discussion of ananke quoted at the

141 Whitehead in Brennan, On Plato's Cosmology, 77. “The entertainment of the Forms is intrinsically associated with an inward ferment, an activity of subjective feeling, and an appetite which melts into action. This is the Eros, the urge toward ideal perfection….In the second place, the Platonic Psyche is contrasted with the Aristotelian self-identically enduring substance. Without the Psyche and the Eros, we should obtain a static world” (Whitehead, Adventures of Ideas, 226-227).
142 Whitehead, Adventures of Ideas, 295.
And harmony, having motions akin to the revolutions of soul within us, was given… not for the sake of irrational pleasure (as its use now [conventionally] seems to be), but for the sake of the revolution of soul that has become ill-attuned, as an ally for its ordering and concord. And because of [soul’s] condition being without measure and lacking grace, rhythm was bestowed on us, as a helper… for these same reasons.143

Whitehead's conception of deity was transparently derived from Plato's insofar as it limited the power of deity to persuasive, rather than coercive, force, which allows for a world that freely elects whatever order it exhibits. Its freedom requires an ultimate metaphysical principle of Creativity that analogizes the corresponding Platonic notion of ananke, insofar as that notion can be interpreted as referring to the element in the cosmos that transcends the order that the cosmos exhibits. In this way Whiteheadian appropriation of it triangulates the interpretations of ananke as primeval chaos, raw potential cosmic material, and ineffable, unpredictable contingency.

It is a dimension of his Platonic appropriations that on the one hand blends diverse interpretations and concepts quite freely and perhaps vaguely, but on the other hand grounds his system in another ultimate principle, whose presence does not allow the principle of order to dominate tyrannically. In this way it again exemplifies the manner in which Whitehead's commitments to Plato involve an emphasis not necessarily typically associated with the term "Platonism" as a watchword of Western thought -- an emphasis not on order over disorder, but a

143 *Timaeus*, 47d-47e. ἡ δὲ ἁρμονία, συγγενεῖς ἔχουσα φορὰς ταῖς ἐν ἡμῖν τῆς ψυχῆς περιόδοις, τῷ μετὰ νοὸ προσχρωμένῳ Μούσαις οὐκ ἐφ᾽ ἡδονὴν ἄλογον καθάπερ νῦν εἶναι δοκείχρησιμος, ἀλλ᾽ ἐπὶ τὴν γεγονυῖαν ἐν ἡμῖν ἄναρμοστον ψυχῆς περιόδοιν εἰς κατακόσμησιν καὶ συμφωνίαν ἑαυτῇ σύμμαχος ὑπὸ Μουσῶν δέδοται: καὶ ρυθμὸς αὐτά τὴν ἁμετρόν ἐν ἡμῖν καὶ χαρίτον ἐπίδεα γιγνομένην ἐν τοῖς πλείστοις ἐξ ἐπίκουρος ἐπὶ ταύτα ὑπὸ τῶν αὐτῶν ἐδόθη.
harmony of the two. Isabelle Stengers remarks on how this exemplifies the apparent contradiction of Whitehead's philosophical self-presentation:

For Whitehead, Plato, who despised democracy, is nevertheless an heir of Pericles, whose trust he turned into a philosophical generalization. This why there is not the slightest contradiction in the fact that this philosopher whose affinities with the Stoics, Nietzsche, or Deleuze I have emphasized had, for his part, defined the European philosophical tradition as ‘footnotes’ to Plato’s text….What 'saves' Plato, for Whitehead, making him the first philosopher, is the affirmation that the divine element in the world must be conceived in terms of action that is persuasive or erotic (lure), not coercive. This implies, correlatively, that human beings are defined by their susceptibility to the attraction of the true, the beautiful, and the good. 144

In articulating the role of this cosmic "attraction" Whitehead traversed an array of Platonic (ananke, planomene aitia, eros, harmonia) and original notions, whose correlations he suggests without a great deal of systematic elaboration. In the following section however we will discuss Whitehead's fascination with another Platonic concept, which he approaches and incorporates into his own system with much more extensiveness and rigor: the Receptacle.

**Whitehead and the Receptacle**

The adventures of the primal Creativity, as mediated by God, were thematized in *Process in*
Reality as the interplay of two ultimate types, eternal objects and actual events; the former correspond to Platonic forms and the latter to their instantiation in the process of becoming. The organic process of the universe, in the language of the Timaeus, is “that which is generated” and the forms are “that in the likeness of which that which is generated is made.”¹⁴⁶ This is translated into Whitehead's system in the central conception of the ingestion of eternal objects or forms of definiteness into the primordial Creativity, which results in concrete actual entities.

In Adventures of Ideas especially, Whitehead moves on to yet another Platonic preoccupation, namely with the Receptacle, the elusive "third term" which is introduced in the Timaeus as the necessary link by which to connect the two other terms ("that which is generated" (items in the cosmos) and "that in the likeness of which it is generated" (forms.).) Timaeus explains that the forms are like the father, and that there must also be a mother, itself empty of forms and into which the forms enter, whose union results in the production of a formed thing, as offspring.¹⁴⁷

Like the other Platonic cosmological loci discussed here, this section of the Timaeus offers a sprawling expanse of interpretive complexity, which it is fortunately not the present task to sort out.¹⁴⁸ But some preliminary remarks must be made, as to just what this thing (or non-thing) that comes to be called the Receptacle (hypodoche) is supposed to be (insofar as it is).

¹⁴⁶ Timaeus, 50c-d.
¹⁴⁷ Ibid., 50c-e: χρὴ γένη διανοηθῆναι τριττά, τὸ μὲν γιγνόμενον, τὸ δ’ ἐν ὧν γίγνεται, τὸ δ’ ἀφομοιούμενον φῶτα τὸν γιγνόμενον, καὶ δὴ καὶ προσεικάσαι πρέπει τὸ μὲν δεχόμενον μητρί, τὸ δ’ ἀθεναπτηρί, τὴν δὲ μεταξὺ τούτων φύσιν ἐκγόνων, νοησίᾳ τε ὡς ὁμίχλος ἄν ἄλλο, ἐκτυπώματος ἔπαιδον ἐξέχεσθαι μέλλοντος ἴδεων ποικίλων πάσας ποικιλίας, τούτῳ αὐτῷ ἐν τῷ ἐκτυπώμενον ἔνισταται γένος τὸν παρεσκευασμένον σῶς, ἂν ἄμορφον ὄν ἀπεκκείνων ἄπασιν. Ὑπὸ τὸν ἴδεων ὀσιῶς μέλλον δέχεσθαι παθεῖν. "It is necessary to discern three kinds -- the thing becoming, that in which it becomes, and the thing, being copied, from which the thing becoming is produced. And indeed it is fitting to liken the thing receiving to a mother, the thing "from which" to a father, and the process (physis) between these two, to offspring. And also it must be understood that since the figuration (ektupomatos) [i.e. the offspring] in its diversity [of manifestation] is going to witness all these diversities [of form], it could not, in receiving figuration (ektupoinomenon), be set (enistatai) in anything, except something shapeless [devoid] of all those forms (ideon) it is going to receive from wherever -- [at least not] if it is going to be made well (pareskeuasmenon eu)."
¹⁴⁸ For discussion of historical and ongoing controversies of interpretation see Zeyl, Timaeus, lvi-lix.
The Receptacle's most salient characteristic is that as a receiver of forms it is itself "formless" (amorphon...ton ideon). The initial part of Timaeus' discussion makes it sound like a neutral substrate that temporarily takes on the forms stamped into it at thus and such a time, like raw gold that can be shaped into various gold pieces. Notwithstanding that simile however, it is not discussed as though it were raw matter or material, but rather as a characterization of space (chora) -- it provides a place for the manifest extension of particular objects in the process of becoming. Interpretive tensions arise especially from this inherent difficulty -- that the Receptacle is portrayed both as a medium out of which things are made and a spatial location in which they occur.

Plato himself thematizes the difficulty: it is difficult to express what he is trying to express, because he is trying to articulate a notion of space without reference to anything in it. But there is always something in it, for it is exactly that in which everything is. (It is important to note in this connection that in the Timaeus we are not talking about "space" as in "outer space" or "void." -- There is no such thing as void, for the cosmos is filled with itself and there is no place that is not it.) These difficulties involve Timaeus in the famous "bastard reasoning" (nothos logos) that attempts to speak the unspeakable, in articulating that principle in the universe that is in and of itself without content.

Whitehead celebrates the result of Plato's bastard reasoning avidly, hailing it not only as one of Plato's most brilliant inventions, but as the central precedent for his own radical reconsideration of the nature of space, and as a previsionary corrective for the outdated

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149 Timaeus, 51b4-6. Considered as a neutral substrate, the Receptacle too has been considered as analogous the Aristotelian hyle, or matter as potential, which was an interpretation of ananke discussed above (Sumi).
150 Ibid., 49e7–8; 50c4–5; 52a4–6.
151 Ibid., 52bff.
152 Ibid., 58a. Cf. 79b1, c2.
153 Ibid., 52b.
conceptions of space that physical science in Whitehead's day was also in the process of deposing.

Plato and Newton: Considerations of Space

A major point of emphasis in Process and Reality is the critique of Newton’s notion of absolute space. Whitehead writes as from the other side of the revelation that a notion of absolute space is no longer possible, in light of recent developments in physical science. For Whitehead, the concept is flawed ultimately as a consequence of its problematic extremity of abstraction from immediate experience -- what this means will be unpacked throughout this section.

In spite of its having been recently surpassed, Whitehead expressed great admiration for the significance of Newton's conception, and aligned its significance with that of Plato’s cosmological project and its antecedents: “Newton’s Scholium…constitutes the clearest, the most definite, and most influential statement among the cosmological speculations of mankind, speculations which first assume scientific importance with the Pythagorean school preceding and inspiring Plato.”

The matter at issue from Newton’s Scholium is the status and definition of time and space. Here is how Newton articulates that status and definition:

Absolute, true, and mathematical time, of itself, and from its own nature, flows

equably without regard to anything external….Absolute space, in its own

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154 viz. the revolution instigated by Einstein's Theory of Relativity (special relativity in 1905 and general relativity in 1915). Broadly speaking, the significance for the present discussion is special relativity's supercession of the Newtonian notion of absolute space. Replacing absolute space is the concept of the unified entity "space-time." Whitehead was deeply invested in these developments, but as a matter of fact disagreed with Einstein's theory and countered it with his own theory of relativity (in Whitehead, The Principles of Relativity with Applications to Natural Science (Cambridge: Cambridge University Press,1922); this was among the principal concerns of his earlier work in the philosophy of science. Aspects of this disagreement will come up again in the final chapter treating the relation of Plato to modern science via Whitehead's reading. See also Forsyth, “The New Cosmology.”

155 Whitehead, Process and Reality,110-111.
nature, and without regard to anything external, remains always similar and immovable. Relative space is some movable dimension or measure of the absolute spaces; which our senses determine by its position to bodies, and which is vulgarly taken for immovable space... As the order of the parts of time is immutable, so also is the order of the parts of space.\textsuperscript{156}

Time and space are absolute realities, the respective domains in which material activities, ultimately reducible to their atomic parts and predictable in their behaviors, occur. The relative aspects of these realities are merely the function of limited human perspective, when either of them is arbitrarily delineated by some particular relation of objects in perception; this latter aspect is what is termed “vulgar.”

By contrast, Whitehead states that “[t]he philosophy of organism is an attempt...to return to the conceptions of the ‘vulgar.’”\textsuperscript{157} For Whitehead the construction of space and time is a function of the interrelation of the actual entities that comprise them. The actual entities do not simply dwell complacently in absolute space and time but themselves constitute space-time as the ground of their becoming, as they cohere into objective actuality with the ingression of eternal objects. In Process and Reality this ground is called the “extensive continuum.” “The extensive continuum is that general relational element in experience whereby the actual entities experienced, and that unit experience itself, are united in the solidarity of one common world. The actual entities atomize it, and thereby make real what was antecedently merely potential.”\textsuperscript{158}

Space-time is a meeting place that is made in the moment of meeting, and its characteristics are inherently relative to the structure of that meeting. In Adventures of Ideas Whitehead commits

\textsuperscript{156} Newton's Scholium to the Definitions of Space, Time, Place and Motion appears in Book I of his Philosophiae Naturalis Principia Mathematica (1689) -- this is from the Motte translation (1789), headings I and II (Berkeley: University of California Press, 1934).
\textsuperscript{157} Whitehead, Process and Reality, 72.
\textsuperscript{158} Whitehead, Process and Reality, 112.
himself to the *Timaeus*’ Receptacle as a device for illustrating this concept, and heralds it as a presagement of the break from the scientific assumption of absolute space that had been codified by Newton.

We speak in the singular of *The* Universe, of Nature, of *physis* which can be translated as Process. There is one all-embracing fact which is the advancing history of the one Universe. This community of the world, which is the matrix of all begetting, and whose essence is process with retention of connectedness,—this community is what Plato terms The Receptacle. In our effort to divine his meaning, we must remember that Plato says that it is an obscure and difficult concept, and that in its own essence the Receptacle is devoid of all forms. It is thus certainly not the ordinary geometrical space with its mathematical relations….I have directed attention to Plato’s doctrine of the Receptacle because, at the present moment, physical science is nearer to it than at any moment since Plato’s death. The space-time of modern mathematical physics, conceived in abstraction from the particular mathematical formulae which applies to the happenings in it, is almost exactly Plato’s Receptacle. It is to be noted that mathematical physicists are extremely uncertain as to what these formulae are exactly, nor do they believe that any such formulae can be derived from the mere notion of space-time. Thus, as Plato declares, space-time in itself is bare of all forms.159

*Articulating the Receptacle*

Space-time, like the Receptacle, is bare of forms; it is very difficult to articulate, as anything would be that has no forms of its own—indeed it is hardly an “it.” “It” lacks its own form because it is the very nexus of forms as they construct actualities in their instantiated dispersal from potentiality into becoming. Its near-ineffability is a function of its near-non-entity.

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As Plato had put it:

We say that it is in some way necessary that everything existing be in some
spot, having some place (chora), and what is not on earth nor anywhere in
heaven is nothing. Regarding these matters and others relating to them, we
cannot, because of our dream-like state, be woken to distinguish and truly
articulate the unsleeping and truly abiding process (physis) -- that [it consists] in
an image (eikoni) -- since it is not that in dependence upon which (eph' ho) it
came into being, but is borne from something else, as a phantom, in this way
coming to existence in some other thing, holding onto existence as it can, rather
than being nothing at all. 160

We are asleep to the contours of the inseparable embrace of form, the formed, and that in which
form expresses the formed -- the third term cannot be uttered without the first two. In attempting
to say the Receptacle we reach the limits of articulation, because it is not a substance to be said,
but that in which a substance comes into coherence as a substance; but even the locality it offers
is a mere function of that substantial coherence. We cannot successfully abstract our thoughts
from individual actualities enough to express the ultimate unity in which they are experienced.

Whitehead suggests: “What you can do is to stop thinking, close your mind except to certain
aspects of an object. Good! But complete abstraction is impossible. There is a unity, an essential
togetherness in the universe—this is the notion of the Receptacle.” 161

Much less an abstraction, it is a nexus of forms. It is not the mere wide-open space where
material things happen to lie and/or move about, or the absolute temporal succession of all

160 Timaeus, 52b-c. φαμεν ἀναγκαῖον εἶναι ποι τὸ ὅπως ἐν τοις τόπως καὶ κατέχον χώραν τινά, τόδε μὴ ἐν γῇ
μῆτε που κατ’ οὐρανόν οὐδὲν εἶναι. ταῦτα δὴ πάντα καὶ τοῦτον ἐν τοις τόπως καὶ περὶ τὴν ὄντον καὶ ἄληθος
φύσις ὑπάρχουσαν ὑπὸ ταὐτής ὀνομαζόμενος οὔ δυνατοὶ γιγνόμεθα ἐξαρθοῦσαι διαρισμοῦν τάληθες λέγειν, ὡς
εἰκόνιμον, ἐπεὶ περὶ σοῦ αὐτὸ τότε ἐπὶ τὸ γέγονεν ἐκατον ἑστίν, ἑτέρου δὲ τὸν ἀδιάφορον φάντασμα, διά ταῦτα
ἐν ἑτέρῳ προσήκει τινὶ γίγνεσθαι, ὑπερασχάλοις ἀντεχομένης, ἢ μηδὲν τὸ παράπαν αὐτὴν εἶναι.

things’ instants of motion and rest. It is rather the “where” corresponding to the effectuality of the interplay of forms.

It receives its forms by reason of its inclusion of actualities, and in a way not to be abstracted from those actualities. The Receptacle, as discussed in the *Timaeus*, is the way in which Plato conceived the many actualities of the physical world as components in each other’s natures.  

Whitehead's Adaptation of *Timaeus* 48d-51b

So convinced was Whitehead of the utility of the Receptacle as a precedent for his conception, he at one point in *Adventures of Ideas* makes a remarkably direct reappropriation of the *Timaeus*: he makes a protracted paraphrase of A.E. Taylor's translation of 48d-51b, inserting his own terminology in place of Plato's. This passage, some of which was quoted at the beginning of this section, is that in which Timaeus turns to discussion of the “third term” and problematizes the uncritical treatment of the physical elements, in order to introduce the notion of the Receptacle as a matrix of becoming that is itself empty of forms. Into this paraphrase Whitehead announces that he will insert his own terms, “personal unity”, “events”, “experience”, and “personal identity”, as replacements for "two or three of [Plato's] own terms." However the paraphrase is loose, and the substitutions are not always exactly clear. Here is Taylor's translation, and following it is Whitehead's adaptation.

[Taylor:] [W]e began, in fact, by a distinction between two terms, but have now to call attention to a third. For the purposes of what we have hitherto said, it was enough to distinguish between two things, our postulated intelligible and perpetually self-same model in the first place and its transient visible copy in the

163 *Timaeus*, 48e-51b.
second...now, it seems, our discourse compels us to attempt the exposition of a perplexed and obscure concept....Something of this kind: that it is the receptacle, the foster-mother as I might say, of all becoming....For it is always receiving all things....For it is there as a natural matrix [ἐκμαγεῖον] for all things, moved and variously figured by the things that enter it, but through their agency takes on divers appearances at divers times....Therefore also that which is to receive all kinds in itself must be bare of all forms...[and] if we say it is a somewhat invisible and formless, all-receptive and partaking of the intelligible in a manner most puzzling and hard to grasp, we shall not be wrong....Our third term, once more, is, in every case, space [τὸ τῆς χώρας] which never perishes but provides an emplacement for all that is born.165

[Whitehead:] In addition to the notions of the welter of events and of the forms which they illustrate, we require a third term, a personal unity. It is a perplexed and obscure concept. We must conceive it the receptacle, the foster-mother as I might say, of the becoming of our occasions of experience. This personal identity is the thing which receives all occasions of the man’s existence. It is there as a natural matrix for all transitions of life, and is changed and variously figured by the things that enter it; so that it differs in its character at different times. Since it receives all manner of experiences into its own unity, it must itself be bare of all forms. We shall not be far wrong if we describe it as invisible, formless, and all-receptive. It is a locus which persists, and provides an emplacement for all the occasions of experience. That which happens in it is conditioned by the compulsion of its own past, and by the persuasion of the immanent ideals.166

Whitehead then remarks with great understatement, that the adaptation has been made "with the

165 A.E. Taylor, *Timaeus and Critias* (New York: Routledge, 2013 (1929), 49-51 (= Timaeus, 49a-51b). I have not included all the Greek here as the selection is made from certain sentences over a handful of Stephanus pages, but specific items from the Greek will be given in the discussion below.

slightest of changes."\(^{167}\) (The remark somewhat recalls the overarching understatement that his philosophy itself constitutes a return to Plato's "with the least changes made necessary by the intervening two thousand years of human experience.\(^{168}\) Taylor's "transient visible copy [of the intelligible]" has become "the welter of events", and his "intelligible and perpetually self-same model" has become "the forms which [the events] illustrate.\(^{169}\) -- These are what would respectively have been called in *Process and Reality* "actual entities" and "eternal objects."

Whitehead's inversion of the order of the two first terms as they appear in Taylor and in the Greek (listing *actualities / events* before *paradigmatic forms / objects*) underscores the direction of emphasis being traced in these reappropriations -- reversing the typical Platonic connotation in which the formal realm is prior to and better than the experiential. Decidedly eradicated is the ontologically hierarchical terminology of "model" (παραδείγμα) and "copy" (μίμημα).

All the more radically, he renders the receptacle (ὑποδοχή) as "personal unity." Again stressing the experiential character of cosmic becoming, Whitehead conceives of the receptacle as the site at which actuality is gathered into a particular unity by virtue of its interrelations, and so merits at that point in space-time, such as it does, the distinction of being a finite unity or individual identity. Yet these finite unities are transient, much as the physical elements are described by Timaeus as finally being not "thises and thats" unto themselves but transient "suches"\(^{170}\) that pass into new forms continually amidst the cosmic flux. Each new passing instantiation is "received" into itself, and where Plato says that it receives ποικιλίας (Taylor translates simply "kinds"), Whitehead has it receiving "experiences". Plato's terminology for his

\(^{167}\) Ibid., 187.
\(^{169}\) ἐν μὲν ὡς παραδείγματος ἔλθες ὑποτεθέν, νοητὸν καὶ ἀεὶ κατὰ ταύτα ὃν, μίμημα δὲ παραδείγματος δεύτερον, γένεσιν ἔχον καὶ ὀριστὸν (*Timaeus*, 48e-49a).
\(^{170}\) *Timaeus*, 48d ff.
stubbornly ineffable receptacle is concretely analogical -- an ἐκμαγεῖον receiving ποικιλίας (a "mould" receiving "diverse markings", or even a "napkin" receiving "embroidering"). Taylor had taken his translation in the direction of the neutrally abstract (a "matrix" receiving "kinds").

Whitehead's substitutions are abstract as well, but reformulated to express the experiential emphasis of his system (a "matrix" receiving "transitions" and/or "experiences"). It seems Taylor represents in some capacity an important link in the chain of the development of Whitehead's preoccupation with Plato -- this linkage will be discussed at length in the next chapter.

For now what can be assessed about the adaptation is that it exemplifies Whitehead's simultaneous commitment to his Platonic inspiration and precedent, and willingness to alter its typical emphases. It remains ambiguous whether substitutions such as these, radical but so specific, should be read as expressing what he thought Plato should have said, or what Plato would have said if he had been Whitehead's contemporary, or somewhere in between. This question relates in turn to the larger framework of Adventures of Ideas, which is concerned with tracing the development of human thought at large, and the suggestion that Plato and Newton represent two poles of conceptions of space, with the implication that the advances in physical science in the early 20th-century have swung the pendulum back to Plato's, such that an enlightened conception of space-time very much resembles Timaeus' description of the receptacle. Perhaps because of this distinct apparent relevance, Whitehead celebrated the receptacle as particularly eminent among what he perceived to be the "main factors" of Plato's thought, and in Adventures of Ideas was even more substantive in his gesture of aligning his system with it than in the other parallels examined so far in this study.

**Being as Power**
As discussed above, while Whitehead's principal Platonic preoccupations revolve around the *Timaeus*, his interest generally embraces what he understands to be the "late dialogues" and occasionally he makes reference to other dialogues in this group. In *Adventures of Ideas*, he gives a good deal of attention to the *Sophist*, specifically in regard to his conviction that in a broad sense Plato’s ultimate metaphysical insight was his identification of "being" with "power" in that dialogue. In this provisional statement and in its subsequent elaboration, Whitehead has it that Plato “rises to the height of his genius as a metaphysician. But he also wrestles with the difficulty of making language express anything beyond the familiarities of everyday life.”\(^{171}\) In Whitehead’s interpretation, here Plato recognizes, in the full fruition of his thought, the primacy and preeminence of life and motion over changeless eternality, and glimpses the flux of forms that elsewhere he had erroneously construed as static.\(^{172}\) Whitehead quotes the passage in question from Jowett’s translation\(^{173}\) of *Sophist* 247d-e:

> My suggestion would be, that anything which possesses any sort of power to affect another, or to be affected by another even for a moment, however trifling the cause and however slight and momentary the effect, has real existence; and I hold that the definition of being is simply power.\(^{174}\)

*Context of the Passage in Sophist*

\(^{171}\) Whitehead, *Adventures of Ideas* 120.

\(^{172}\) Cf. Brennan: “[Whitehead] was delighted to point out to us that in the *Sophist* Plato seemed at last to realize the limitations of a static conception of being, offering his readers instead a quite literally dynamic concept of the real” (Joseph Gerard Brennan, "Alfred North Whitehead: Plato's Lost Dialogue," *The American Scholar* 47, no. 4 (1978), 518).

\(^{173}\) The issue of Whitehead's relationship with Jowett's translation will be discussed at length in a subsequent chapter. F.M. Cornford specifically took issue with Whitehead's celebration of this passage, as he felt Whitehead had been misled by Jowett's translation.\(^{174}\) λέγω δὴ τὸ καὶ ὅσιοναύν τινα κεκτημένον δύναμιν εἰς εἰς τὸ ποιεῖν ἔτερον ὕπον περικοκεῖεν εἰς τὸ παθεῖν τὸ καὶ ἡμερότατον υπὸ τοῦ φαινομένου, κἂν εἰ μόνον εἰς ὑπατικώς τὸν τὸν καθότατοι ὄντος εἶναι τήθεμα γὰρ ὅρον ὅριζεν τὰ ὄντα ὡς ὅτιναν οὐκ ἄλλο τι πλήν δύναμις. There are in fact other apparent identifications of being with *dynamis* in the dialogues, e.g. *Statesman*, 247B-C, *Philebus*, 27B-C, 28D-30D, *Laws*, 740A, 741C, 752D, 775C–E, 782B, 873E; *Epinomis* 979A, 983E–84C, 985D, 991B (see Dombrowski, "Platonic Philosophy of Religion," 79ff).
The immediate context of the passage\textsuperscript{175} must have readily suggested itself to Whitehead as relevant and provocative: the Eleatic stranger is taking his interlocutor Theaetetus through a hypothetical debate with materialists, who are analogized as giants, at war with the gods who in turn symbolize what we might call the idealists (the "friends of the forms"\textsuperscript{176}), the advocates of the primacy of the immaterial forms. The larger context involves a critique not only of debate between "materialism" and "idealism"\textsuperscript{177}, but of Eleatic monism that denies reality to motion and change. As will be discussed, it seems thus to have represented for Whitehead a wonderful intersection of his own most prominent philosophical concerns -- the simultaneous challenges he makes to the materialist assumptions of modern science, and to an ontologically hierarchical version of Platonism that champions immaterial forms and vilifies matter.

In the \textit{Sophist}, the Stranger's identification of being with power is a provisional one, meant to temporarily placate the more pliant materialist descendants of the giants. It is suggested that while the giants would be disinclined to accept any wholly immaterial abstractions such as "wisdom" as real, there would be at least some of them who would be willing to assent that there is such a thing as soul, since they are certainly willing to admit that there are such things as mortal animals, which they must admit possess something like embodied soul, giving soul "a place among things which exist."\textsuperscript{178} These moderate materialists may however contend that soul is in fact a kind of body, even if it is not one that someone could "squeeze their hands around," as would be demanded as a criterion for existence by the most radical materialists. And so if soul exists, at least as a motive element in the body, one that is proportionately so intangible as body

\textsuperscript{175} \textit{Sophist}, 245e ff.
\textsuperscript{176} τοὺς τῶν εἰδῶν φίλους (Ibid., 248e ff).
\textsuperscript{177} Of course these are not Plato's terms, but he seems to refer on the one hand to the atomists (Leucippus, Democritus, and their followers) and on the other to those whose doctrines give primacy to immaterial realities (the \textit{philoi eidon}).
\textsuperscript{178} \textit{Sophist}, 246e.
that it can be called incorporeal, then perhaps it is possible to offer a definition of being that is
satisfying even to the materialists: that being is simply anything which has the power to act or to
be acted upon. The provisional definition is accepted as a sufficient response to the materialists.
In their response to the idealists the metaphysical excursus is then elaborated at length, and the
term *dynamis* is replaced by a complex intermingling of the “great kinds” – being, motion, rest,
sameness and difference.

It seems from Whitehead’s remarks that he does not precisely distinguish the definition
offered to the materialists and the immediately following discussion directed to the idealists as
separate; however in the *Sophist* it seems that the idealists do not accept the "power" definition
on the grounds that action and passion do indeed characterize becoming but not being, which
they sharply distinguish.179 It would seem that Whitehead’s interpretation is that the entire
discussion, as a pinnacle of Plato’s thought, both refutes the materialists and tempers the
erroneous extremes of idealism over the course of the argument, and that the upshot and
philosophical value of the whole argument is encapsulated in the first temporary definition of
being as power.

The critique of the idealists does in fact begin by applying the "power" definition to being
whether they like it or not: the Stranger asserts that “being, as being known, is acted upon by
knowledge, and is therefore in motion, for that which is in a state of rest cannot be acted upon as
we affirm…”. If being is at all intelligible, as the friends of the forms would of course assert,
then it is acted upon by being understood. Motion and change of this psychic kind, knowing and
being known, are then identified with the nature of intelligibility.180 “Can we imagine being to be

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179 Ibid., 248c.
180 Ibid., 248e-249a.
devout of life and mind, and to remain in awful unmeaningness an everlasting fixture?” -- Can real, true being be conceived in any coherence without including in it associations of intelligence and life? With this question, the Stranger navigates between the extreme poles of materialism and immaterialism, insisting that ultimate being embraces both motion and rest, and activity and passivity.

*Whitehead's Interpretation of the Passage's Significance*

This question of the Stranger is much celebrated in *Adventures of Ideas*, and Whitehead construes the gesture of asking it as no less than the gesture that summatively characterizes the whole history of Western philosophical thought:

Thus in these passages Plato enunciates the doctrine that ‘action and reaction’ belong to the essence of being: though the mediation of ‘life and mind’ is invoked to provide the medium of activity....in this Dialogue we find a clear enunciation of the doctrine of Law as immanent. The early, naïve trend of Semitic monotheism, Jewish and Mahometan, is toward the notion of Law imposed by the fiat of the One God. Subsequent speculation wavers between these two extremes, seeking their reconciliation....Plato in the *Timaeus* affords an early instance of this wavering between the two doctrines of Law, Immanence and Imposition. In the first place, Plato’s cosmology includes an ultimate creator, shadowy and undefined, imposing his design upon the Universe. Secondly, the action and reaction of the internal constituents is—for Plato—the self-sufficient explanation of the flux of the world:—‘Nothing was given off from it, nothing entered it,—there was nothing but itself.’ We have here been examining the basic notion of the initial cosmology which dominated the world.182

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181 Ibid, 248e (Jowett).
As part of the sweeping history of philosophy offered in *Adventures of Ideas*, the being-as-power concept helps Whitehead chart his own system within the broadest possible historical context, at once foregrounding and nuancing his Platonic inspiration. On this reading the passage in the *Sophist* offers an all the more complete, mature and generalized description of the fluctuant character of actuality, pitched perpetually in the adventurous interplay of immanent forms. In the passage above Whitehead seems to imply that what Plato had *almost* managed to say in the cosmology of the *Timaeus*, he has now said in the metaphysical excursus of the *Sophist* with fully harmonious completeness, and miraculous brevity.

By the terms “*Law of immanence*” and “*Law of imposition*” Whitehead distinguishes between the cosmological/metaphysical poles that have characterized Western thought – the former mode prioritizing the passing world of becoming as the theater of formal realization, the latter conceiving of order in the world as the result of a top-down enforcement of the will of a transcendent divinity. For Whitehead, this vacillation that characterizes the history of Western philosophy plays out a germinal vacillation stitched into the fabric of Plato’s thought. The *Timaeus* subtly mixes these visions by presenting a creator whose ordering of the world is the absolute cause of any order that it exhibits, yet who goes about ordering things *persuasively* rather than *coercively*. The creator's forms of order are coexistent with himself, and they are not arbitrary but contingent on their reference to actualities, actualities which are equally informed by a primordial Necessity (or in Whitehead’s terms “Creativity”) that is ontologically on par with the forms themselves and with God himself.

The interplay of these ontological principles emphasizes the *dynamic* character of being, which this definition in the *Sophist* literalizes – to be is to be able to affect or to be affected – to move as much as to rest – to be is to become. No thing in the universe -- no "actual entity", be it
a subatomic particle, an atom, or a congregation thereof, or even God -- exists outside of relation with the rest of the universe, reacting to it and acting upon it. Every part experiences all the other parts and constitutes itself, and the universe as a whole, in this experience.

While he doesn't make as protracted and specific a use of it as he does of certain notions from the Timaeus discussed above, the Sophist's equation of being with power encapsulates for Whitehead the particular emphases of his Platonic commitments. He is able to identify with the Stranger's critique of the materialistic viewpoint that reduces all existence to inanimate matter, a viewpoint which he felt that modern science up to his own moment had problematically omitted. But he identifies too with the other prong of the Stranger's critique, which he seems to interpret as Plato's own self-critiquing gesture, wherein the formerly superior status of the immaterial forms is at last dissolved, and the wonderful realization is made that forms are only meaningful as they are expressed in the dynamism of natural process. The opposing camps, the giants-materialists and the gods-idealists (in Adventures of Ideas these are often the "Positivist School of Mere Description" and the "metaphysicians") are here reconciled. What was reconciled in this moment for Plato would not remain reconciled in the subsequent history of Western philosophy -- Whitehead observes that the two camps have warred relentlessly up to his own day (with the giants, it would seem, at that time having the upper hand). Implicitly, Whitehead's philosophy of organism is meant to reinvigorate that reconciliation, and does so in reference to the terms in which it was originally made, by Plato "at the height of his genius".

"No System of Metaphysics": Methodological Sympathies

183Ibid., 126ff. For the "Positivist School of Mere Description" see the first section of this chapter.
184Ibid., 127.
185Ibid., 120.
Whitehead's praise of the equation of being with power as the pinnacle of Plato's thought rests, as do his commitments to Plato at large, on the assumption that Plato's later works finally reveal a mature and balanced perspective to which the earlier works had not yet attained. In this connection he also celebrated Plato's perceived willingness to change and alter his doctrines -- he conceived of the intellectual inconsistency exhibited amidst the dialogues' chronology as a symptom of the fundamentally unsystematic character of Plato's speculations.

Plato in the earlier period of his thought, deceived by the beauty of mathematics intelligible in unchanging perfection, conceived of a super-world of ideas, forever perfect and forever interwoven. In his latest phase he sometimes repudiates the notion, though he never consistently banishes it from his thought....But Plato left no system of metaphysics.

Even in consideration of any one particular dialogue over the course of that development, Whitehead finds Plato “never entirely self-consistent, and rarely explicit and devoid of ambiguity. He feels the difficulties, and expresses his perplexities….Plato moves about amid a fragmentary system like a man dazed by his own penetration.”

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186 See n. 61 above, on Whitehead's assumptions about the chronology of the dialogues.
187 “In reading Plato today we have occasionally to say, ‘Poor fellow, he didn't know this...or that’; but in the main he anticipated most of these possibilities….The works of Plato I return to again and again are the ones which come after the Republic. His method is to announce his subject, then present it rapidly in numerous aspects, few of which occurred to anybody else, and which arouse eager activity in the reader's mind. Those ideas are thrown out more or less at random: this done, he begins to relate them to the lives of those people living in his own time who would be most nearly able to grasp them; then, as he goes on, he ‘communizes’ them until they seem to have been brought within the comprehension of the multitude; but, mind you, in doing so much of the virtue of the ideas will have evaporated” (Whitehead in Price, Dialogues, 213-214).
188 Adventures of Ideas 275. Cf. Whitehead in Brennan, “On Plato's Cosmology,” 73: “There is an entirely wrong tradition among the commentators that Plato is trying to bring out one definite system. In his later years, he had an entirely different notion; he was considering those important and fundamental notions without which the universe could not be understood, but these were not stated in sufficiently fundamental terms. Now in this dialectical verbalization, you can easily find contradiction. But he does not abandon his earlier notions because of the contradiction involved. What he means is that you must seek a more fundamental mode of expression, a more fitting verbalization.”
189 Whitehead, Adventures of Ideas, 154. Cf. 105: “It is unmeaning bluntly to ask of Plato, whether he be right or wrong...When any eminent scholar has converted Plato into a respectable professor, by providing him with a coherent system, we quickly find that Plato in a series of Dialogues has written up most of the heresies from his own doctrines.”
quality is another perceived dimension of Plato’s philosophy permeates Whitehead's philosophical self-presentation. Underlying the loose but pervasively referenced system of Platonic preoccupations examined so far in this study is this -- Whitehead's fundamental self-identification with Plato as wonderfully "unsystematic".\(^{190}\) Surely Whitehead is not alone among philosophers in praising and identifying with this -- but it bears special consideration as he gives voice to it pervasively and consistently amidst the developments of his thought discussed so far.

To a reader who has first-hand familiarity with *Process and Reality*, this may seem an incongruous conviction, since that work, the most extensive and ostensibly complete expression of Whitehead's ideas, is systematically structured and subdivided to a perhaps intimidating degree. Yet his subsequent works (especially *Adventures of Ideas, Modes of Thought, Function of Reason*, his late essays and lectures) he departs starkly from this style,\(^{191}\) and with increasing frequency thematized the notion of an all-important distinction between systematic and unsystematic philosophers, with an emphatic commitment to the latter camp.

**Plato as Unsystematic Philosopher**

His former student observes that “Whitehead divided philosophers into two classes, muddle-headed and clear-headed, Plato and himself in the first category, Aristotle, Epicurus, and Hume in the second….Later in these lectures, Whitehead says, ‘There is a danger in clarity, the danger of overlooking the subtleties of truth.’”\(^{192}\)

\(^{190}\) It is not the place to describe the genealogy of this sentiment, but suffice it to say that it is not unique to Whitehead -- possibly the view of Plato as "unsystematic" has its origin in 19th century Classical scholarship on Plato, e.g. Grote who denies the possibility of extracting a systematic philosophy from the dialogues as a whole, in favor of judging each of the dialogues on its own merits and embracing its particular paradoxes and contradictions (see František Novotný, *The Posthumous Life of Plato* (The Hague: Martinus Nijhoff, 1977), 523). Then again, perhaps there is even a much earlier precedent of the view in the era of skepticism in the Middle and New Academy.


\(^{192}\) Whitehead in Brennan, "On Plato's Cosmology," 70.
He founds this point of emphasis not only on his interpretation of the protean character of the dialogues themselves, but also on what is expressed in Plato's Seventh Epistle, where as Whitehead asserts "Plato denounces the notion that a final system [of philosophy] can be verbally expressed". The Seventh Epistle relates the history of Plato's acquaintance with Dion and Dionysius II of Syracuse, and the dubious engagement with Syracusan politics that proceeded from these relationships. Amidst this autobiographical material is a famous digression on the five distinct classes of entities, and attendant on this a discussion of the profound methodological problems involved in the practice of philosophy in general.194 This discussion occurs as part of a criticism of Dionysius, who had asserted that he had written a metaphysical treatise that outdid Plato. -- Plato argues that the very such claim to authoritativeness in written philosophy betrays a failure to understand it, for the true object of philosophical inquiry lies beyond the grasp of utterance.195 In Adventures of Ideas and other later works beyond Process and Reality, Whitehead returns frequently to this notion, and locates it in Plato -- the notion that philosophy can never completely articulate itself in words, and that no science will ever be complete in its self-expression.

In this sense the limits to the completeness of a philosophical system are related to the ineffability of what is ultimate in the context of a world of becoming where the ultimate can never be fully grasped amidst the passage of becoming. He locates this Platonic theme not only

193 Whitehead, Adventures of Ideas, 147. There will be no discussion here about the authenticity of the letter; no question about its authenticity was entertained by Whitehead.
194 Epistle VII, 341b-345c.
195 Ibid., 341b-c: τοσόνδε γε μὴν περὶ πάντων ἔχω φράζειν τῶν γεγραφότων καὶ γραψόντων, ὡς οἱ φασίν εἰδέναι περὶ ὧν ἐγὼ σπουδάζω...ποιότους οὐκ ἔστιν κατὰ γε τὴν ἐμὴν δόξαν περὶ τοῦ πρᾶγματος ἐπαίειν οὐδέν. οὔκουν ἐμόν γε περὶ αὐτῶν ἐστιν ἐνηγγραμμα οὐδὲ μήποτε γένηται: ῥητὸν γὰρ οὐδάμως ἐστίν ὡς ἄλλα μαθήματα... "But this I can say at least, about all those who have written, or are going to write, who say they have knowledge about what I am passionate about...it is not possible, in my opinion, for them to understand the matter. There is no treatise of mine about these things, nor would there ever be: for it is not sayable (ῥητὸν) like other studies...".
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in the Seventh Letter, but also in the *Timaeus*.196 “The *Timaeus* expresses the extreme infinitude of the universe. By taking one selection of the dialogue, you can get one approach; by taking a different one, you can get another...[so] Plato says in his *Epistles* that he has not achieved a complete systematization of his ideas.”197 Whitehead found the situation repeated in his own historical context: “Is there a twentieth century philosophy? There is no one twentieth century system, but many divergent and obviously important points of view.”198

Unsystematic vs. Systematic Philosophers

The ineffable complexity in question, as he thought, was not unique to neither of their epochs, but reflected a disposition and intuition present in both himself and Plato. He even suggests that philosophical clarity is proportionate to conceptual adumbration, oversimplification and error, the avoidance of which comes at the expense of the clarity exhibited by the “clear-headed” philosophers; thinkers can be divvied up along these lines.199 In this connection he specifically compares Plato with Aristotle:

Plato’s doctrine of ‘division’ was an anticipation, vague and hazy. He felt its value. It did not do much good, by reason of its lack of decisive clarity. Among sensible people, Aristotle’s mode of analysis has been an essential feature in intellectual progress for two thousand years. Of course, Plato was right and

198 Ibid.
199 “[T]here are people of sufficiently great metaphysical insight who become metaphysically inadequate because they get all muddled. Plato is essentially the man who is seeking adequacy [even if it be at the expense of clarity]) If you come to Plato for the first time, your first impression is: what a muddle the man’s in! But what an astounding number of unborn scientific ideas the man puts out! One's first impression of the *Timaeus* is that it is both muddled and silly. But when you look into the principles Plato is trying to express, you find he puts up a very deep metaphysical and cosmological suggestion” (Whitehead in Brennan, "On Plato's Cosmology," 70.) Cf. *Modes of Thought* 2-3: “In Western literature there are four great thinkers, whose services to civilized thought rest largely upon their achievements in philosophical assemblage....These men are Plato, Aristotle, Leibniz, and William James. Plato grasped the importance of mathematical system: but his chief fame rests upon the wealth of profound suggestions scattered throughout his dialogues, suggestions half smothered by the archaic misconceptions of the age in which he lived. Aristotle systematized as he assembled.”
Aristotle was wrong. There is no clear division among genera... there are no clear divisions anywhere.... As a practical question, Aristotle was right and Plato was muddled. 200

The remarks are provocatively contradictory -- Aristotle systematized, and in doing so was "right" while Plato was muddled, but in the grander estimation, Plato by being "muddled" "was right and Aristotle was wrong." There will be occasion in a subsequent chapter to analyze more deeply his specific contrast of Plato from Aristotle. But in general the idea is this: being philosophically right in the most lastingly meaningful sense means resisting systematicity and completeness. “We may complete the phrase ‘Now we know’ by an adverb. We can mean ‘Now we know — in part;’ or we can mean ‘Now we know—completely.’ The distinction between the two phrases marks the difference between Plato and Aristotle, so far as their influence on future generations is concerned.” 201 There is more value to the progress of thought in a wild flash of vaguely perceived, incompletely articulated insight than in the concerted congealment of any conceivable system of such insights. The theme emerges in The Function of Reason (published immediately after Process and Reality) and gains momentum in his later writing; and in one of his final published essays he extends the frame of contrast even further: “The systematic thought of ancient writers is now nearly worthless; but their detached insights are priceless. This statement can be referred to as expressing the habits of Plato’s thought.” 202 The notion of

200 Whitehead, Modes of Thought, 15. Cf. in Price, Dialogues, 213-4 “In reading Plato today we have occasionally to say, ‘Poor fellow, he didn’t know this…or that’; but in the main he anticipated most of these possibilities…. The works of Plato I return to again and again are the ones which come after the Republic. His method is to announce his subject, then present it rapidly in numerous aspects, few of which occurred to anybody else, and which arouse eager activity in the reader’s mind. Those ideas are thrown out more or less at random: this done, he begins to relate them to the lives of those people living in his own time who would be most nearly able to grasp them; then, as he goes on, he ‘communizes’ them until they seem to have been brought within the comprehension of the multitude; but, mind you, in doing so much of the virtue of the ideas will have evaporated.”

201 Whitehead, "Immortality", 670.

202 Ibid., 88-689.
"detached insights" seems to be derived, again, from the language of the Seventh Letter -- while the system can't be written down in anything resembling completion, its fragments of true significance occur "suddenly, like light cast from a leaping flame."\(^{203}\)

*Philosophy as Inherently Unsystematic*

How do these "detached insights" actually power the progress of philosophy, and what do they have to do with the constellation of Platonic appropriations that have been examined here so far?

Whitehead felt that he perceived, and that Plato had intermittently gleaned, that the internal experiential relations of things are what constitute them as actualities. There is no fixity in these relations except what aggregated actual entities transiently select from infinite formal possibilities in the passage of becoming. Space-time itself is relative to the inherently *subjective* valuation of possibilities in the process of becoming; becoming is ever-unbounded "valuation" contingent only on the past experiences of the actualities involved. Even to refer to any single finite moment in this process involves introducing an abstraction of an “instant” from the ultimate interrelation of all events in the universe. Actual entities aggregate into complex "societies" by virtue of a shared experience of the universe, and can be understood as finite and separate entities only in abstraction from the universe as a whole. Actual entities organize into these societies by the process Whitehead calls "prehension", in which they selectively order the whole universe of relations in a gradated order of relevance to themselves. A thing exists finitely insofar as it abstracts itself from the whole. But it is not really finite or separate, it is only so inasmuch as it is considered in that abstraction.

Human consciousnesses too are part of the universe, and their *comprehensions are*

\(^{203}\) ἐξαίφνης, οἷον ἀπὸ πυρὸς πηδήσαντος ἐξαφθὲν φῶς (*Epistle VII*, 341c-d).
likewise abstractive -- but no act of abstraction gathers all of the universe in its totality, only a part of it at thus and such an angle, with thus and such a domain of relevance. The task of science is to generate these abstractions in a systematic way. Philosophy's task, according to Whitehead, is to critique abstraction -- to suggest, unsystematically, critical perspectives on the physical-psychical acts of abstraction that construct the universe and through which it is understood.

“[Identification of pattern] is the abstraction involved in the creation of any actuality, with its union of finitude with infinity….It is the basis of science. The take of philosophy is to reverse this process and thus to exhibit the fusion of analysis with actuality. It follows that Philosophy is not a science.”

Philosophy is not meant to come up with systematic descriptions of the universe: it is meant to show how no apparently accurate systematic description wholly reflects what is actual. This movement of reversal too -- like so many of his most fervent assertions -- he identifies with Plato: “The abiding interest of Plato’s Dialogues does not lie in their enunciation of abstract doctrines. They are suffused with the implicit suggestion of the concrete unity of experience, whereby every abstract topic obtains its interest.”

Above and beyond the respective "main Platonic notions" from which Whitehead culls so much material for reconfiguration in his own thought, Whitehead sees Plato as the wellspring from which the central topics of philosophy are perennially diffused. As will be seen in what follows, Whitehead elsewhere represents Plato as the singular symbol and protagonist of philosophy itself.

Much has been said in a brief space here at the close of this chapter, whose purpose has been to summatively delineate the Whitehead's salient Platonic preoccupations. This methodological dimension of his attachment to Plato so conceived sets the stage for two further

204 Whitehead, "Immortality," 681. Cf. Modes of Thought 48-49: “Philosophy is the criticism of abstractions which govern special modes of thought. It follows that philosophy, in any proper sense of the term, cannot be proved.”

dimensions to be examined in the chapters that follow -- regarding on the one hand Whitehead's embodiment of this notion of the happily "muddled" Platonic philosopher, and on the other his application of the concept of the *eikos mythos*\(^{206}\) concept in the *Timaeus* as an exemplification and fulfillment of this method. On the way to elaborating these themes, the immediately following chapter will examine the origins of the conceptions described here, to ground them in the context of prevailing understandings of Plato, and to discover how Whitehead arrived at them.

\(^{206}\) In the section of *Adventures of Ideas* dealing with this theme he quotes Jowett’s *Timaeus*: “‘If then, Socrates, we find ourselves in many points unable to make our discourse of the generation of gods and the universe in every way wholly consistent and exact, you must not be surprised. Nay, we must be well content if we can provide an account not less likely than another’s; we must remember that I who speak, and you who are my audience, are but men and should be satisfied to ask for no more than the likely story’” (*The Dialogues of Plato, Translated into English with Analyses and Introductions* (Oxford: Oxford University Press, 1892), quoted in *Adventures of Ideas* 106).
CHAPTER TWO: CONCEPTION OF WHITEHEAD'S PLATO:

BIOGRAPHICAL CONSIDERATIONS AND INTERPRETIVE INFLUENCES

In what way and why did Plato gain so prominent a place in Whitehead's work, emerging into his philosophical self-presentation as Whitehead evolved from his mathematical and scientific background into his mature philosophical identity? The previous chapter examined the prominence of Plato in Whitehead's work; the present one will examine how that prominence came to be.

Plato makes a sudden and conspicuous entry into Whitehead’s *Process and Reality* and is even more prominent in *Adventures of Ideas*; and he is cast as a symbol of speculative thought itself in *The Function of Reason*. Not only does Whitehead present Plato as a helpful analogical reference point for the metaphysics he's attempting to introduce; there is beyond that, or underlying it, an apparently "personal" affinity with Plato that pervades not only Whitehead's writing but even certain anecdotes of his biography.

Below I examine Whitehead's emphatic self-identifications with Plato, looking at what motivated and disposed him to express such strong and pervasive doctrinal sympathies. Following a broad biographical sketch of Whitehead, I will examine the intellectual influences that may have contributed to his borrowings from Plato, as a writer and as a teacher. The Plato scholar A.E. Taylor, Whitehead's acquaintance and contemporary, appears to be of paramount importance in encouraging Plato's centricity in Whitehead's writing -- it is a debt that Whitehead himself briefly acknowledged, but the importance of the connection has never been explored at great length. Following this, I will discuss the influence of Jowett's translation of the

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207 *Process and Reality* ix; *Adventures of Ideas* viii.
208 However Emmet, *Whitehead's Philosophy of Organism*, 221 ff observed the connection in 1933, and used it as a springboard for her discussion of Whitehead's correspondence with Plato, in a chapter of her general study of Whitehead. This ensuing chapter, by contrast, will mostly focus on Taylor's citations of Whitehead.
Sophist on Whitehead's interpretation of "being" as "power" and the criticism it has drawn, and in general assess Whitehead's relationship with Plato's Greek.

**Plato in Whitehead's Life**

It was upon his arrival at Harvard that Whitehead transitioned from his work on the philosophy of science, most notably *The Concept of Nature*, *The Foundations of Natural Knowledge* and *The Theory of Relativity*, to the metaphysical work that is being examined here. The reminiscences of his former student Brennan suggest that he had already by the time of this transition absorbed and begun to exhibit the particular view of Plato that became so central to how he presented his thought. Brennan had the impression that

[Whitehead] was fascinated by Plato's later dialogues and held up to us the ideal

of a new *Timaeus*, a cosmological adventure which would unite mathematics and

the Good. He wanted to achieve in his own philosophy something he thought

Plato had accomplished in his--to separate out of the welter of existence a definite

number of ultimate cosmological factors.

Assigned readings for his philosophy course at Harvard centrally included the *Timaeus*, especially 28-63, along with A.E. Taylor's commentary on it. His references to Plato in lectures were frequent and fond, and gave the impression that in some way Whitehead viewed his own philosophical adventure as analogous to what Plato's had been. Brennan is even moved to ask

209 Whitehead's work can be divided into three main periods, which are distinct but not without interrelation. At Cambridge and at University College, London, he was concerned with mathematics and logic; at the Imperial College of Science and Technology, London, with philosophy of natural science; and at last at Harvard with "speculative thought", as he described it. Many interconnections exist between the work of these periods, but the evolution of Whitehead's thought as a whole goes beyond the agenda of this study (see Christian, *An Interpretation*, 1 ff).

whether "Whitehead's devotion to Plato actually led him unconsciously to repeat the pattern of the Platonic Socrates, who in middle life was absorbed in physical science but turned away from it in his old age?" While the remark is only an analogy, it is largely in conscientious analogy with Plato's thought that fundamental aspects of Whitehead's thought itself were developed and presented, as has been examined in the previous chapter. Thus in the frame of this personal analogy I wish to look briefly at certain biographical evidence for Whitehead's early engagements with Plato, and at how those engagements were reflected in the life behind his writing. This small inventory of junctures in Whitehead's intellectual development will also serve to outline the main concerns of the present chapter.

Early exposure to Classics and Plato

Like other Englishmen of his time, Whitehead's early exposures to Classical languages and civilization were a matter of course and a prominent factor in his intellectual conditioning. He had Latin at age 10 and Greek at 12. They were not foreign languages; they were just Latin and Greek; nothing of importance in the way of ideas could be presented in any other way….Our reading was closely limited to those periods of history which, if we might trust our national pride, were closely analogous to our own….Athens was the ideal city, which for two centuries had shown the world what life could be. I do not affirm that our image of Athens was true to the facts. It was something much better; it was alive. The Athenian navy and the British navy together ruled the seas of our imaginations.212

His acquaintance and biographer Victor Lowe asserts that “he maintained all his life a fine

211 Ibid., 523.
appreciation of Greek and Roman civilization, and he never lost the ability to read the Greek as well as the English in the Loeb Library editions of his favorite authors.” How dependent he was or wasn't on this or that translation of Plato will be examined later on in this chapter, where his apparent dependence on Jowett is examined. At the same time, his conversations with Lucien Prince reveal that while he continuously returned later in life to Burnett's Loeb translation of the *Timaeus*, he was vocally critical of some of its choices of translation.

While he became a mathematician rather than a Classical scholar, there is nonetheless evidence for a continued and conscientious commitment to this dimension of his intellectual background, even as witnessed its recession from its customary centrality in academic life.²¹³ His essay "The Place of Classics in Education" indicates a persistent concern for Classics and an eagerness to preserve it by integrating its importance into the presentation of novel developments in science education. “When classics was the road to advancement, classics was the popular subject for study. Opportunity has now shifted its location, and classics is in danger”²¹⁴—the essay goes on to express concern for the value of the discipline and reassert its relevance. Here as in his more well-known essay “The Aims of Education” Whitehead’s ultimate educational concern is the holistic integration of disciplines, and the avoidance of excessive segmentation of academic emphasis. In his subsequent tenure at the University of London he was part of a committee designed to inquire into the role of Classics in education; half the members were Classicists, among them Gilbert Murray, Richard Livingstone and T.R. Glover. As a

²¹³ Ibid., 213. During his tenure at Cambridge there were stirrings of shifting academic emphasis that imperiled the pride of place possessed by Classical studies -- in 1891 there was a proposal to end compulsory Greek examinations at Cambridge, and in 1904 a proposal that only one language, either Latin or Greek, be required. The impetus for these reforms was presumably to open the doors of Cambridge to students whose early education had not resembled Whitehead’s, and was supported by members of the science faculty who could sympathize with such a de-emphasis. Both proposals failed, and neither Whitehead’s votes nor his views on the proposal are known.

representative of the sciences he advocated the study of Greek science as a continued element in modern science education.215

There are glimmers of evidence for early exposures to and identifications with Plato in particular as Whitehead came into his own as a thinker. In his early years at Cambridge he was a member of the society of young men known as the Cambridge Apostles, during whose symposiastic proceedings philosophical issues old and new were discussed and debated, and the young members cast votes on various intellectual controversies. -- "The men they venerated", says Lowe, "besides Coleridge and Wordsworth, were Plato and Kant, Shakespeare and Goethe."216 One recorded debate question was simply: "Democritus or Heraclitus?" Whitehead sided with the majority for Heraclitus.217 Also among its members during Whitehead's membership were Goldie Dickinson, the Idealist philosopher who became the other of A Modern Symposium (1905), and James McTaggart, who became the leading Idealist at Cambridge, and was the figure who influenced Bertrand Russell in the latter's flirtation with Idealism prior to his collaboration with Whitehead on the Principia Mathematica.218

As will be seen below, Whitehead's Classical education remained with him as an object of continuous, conscientious reengagement -- he remained actively preoccupied, in his written work and in his pedagogy, not only with Plato but with what he concertedly hailed as the scientific and spiritual significance of Classical civilization. In the mature phase of his philosophical output, this thematization of the Classical never recedes from focus. His friend Lucien Price remarks on the particularity of this commitment: "as the twentieth century went on and so many men of

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216 Lowe, A.N. Whitehead I, 116. A further study would be possible, into how the culture of this group (as well as more general cultural factors in Whitehead's social and intellectual milieu) shaped Whitehead's choices in foregrounding Plato.
217 Ibid., 137.
218 Ibid., 132.
science were found to be lamentably lopsided, this benign balance in him between science and humanism became one of his unique distinctions. It was a common saying that ‘Whitehead has both.’ This eclecticism is reflected in his system of thought, which seeks to unite the concerns of science with those of religion and aesthetic experience in a total philosophical outlook, and, as will be seen, Plato seems to have been an exemplar for him of this very holism.

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**Platonism in Whitehead's Early Works in Mathematics and Philosophy of Natural Science**

A thorough examination of the status of Platonism, especially in the sense of "mathematical Platonism" in Whitehead's early work as a mathematician, and how it pertains to his collaboration with Russell on the *Principia*, would be too immense a discussion for the present work. I have not thematized the notion of "mathematical Platonism" as such, though of course the status of mathematical objects and the consideration of the manner in which they are (or aren't) transcendent of their particular iterations are deeply pertinent to an understanding of Whitehead's reading of Plato. -- This has been treated in the previous chapter in reference to the relationship between the Platonic forms and Whitehead's eternal objects, and it will come up again in regard of what Whitehead got from Taylor's treatment of the *Timaeus*.

Lowe observes that even in Whitehead's first major original mathematical work *Universal Algebra*, Whitehead is careful in the few out and out "philosophical" passages to assert that there is no "hint that mathematical objects have a status superior to things", but rather that they are derived from "the world of existing things" by a process of abstraction. This notion of

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220 E.g. this sentiment expressed in "Mathematics and the Good": “The abiding interest of Plato’s Dialogues does not lie in their enunciation of abstract doctrines. They are suffused with the implicit suggestion of the concrete unity of experience, whereby every abstract topic obtains its interest” (680).

221 This relegation of mathematical forms to abstraction recalls Aristotle's polemic against what he perceived to be Plato's errors as regards their status in the *Metaphysics*. -- This and other ways in which a reading of Whitehead
abstraction thematizes his subsequent early works on the philosophy of physics, which in turn
presage his de-emphasis of the notion, traditionally understood as Platonic, of a transcendent
paradigm that is prior to and better than sensible things.222 As will be seen, this is much in line
with the use that A.E. Taylor makes of Whitehead's early works in offering his revision of Plato's
paradigmatic theory -- that when Plato talks about an eternal paradigm he is referring not to a
supernal realm, but rather to the objective model which is the basis for scientific practice -- there
are "events", which constitute experiential reality, amidst which we recognize "objects." The
objects are not superior to the events, rather they exist strictly in reference to and only
inseparably from events, and "[e]vents are named after the objects involved in them."223 This will
be discussed in more detail shortly, when I examine Taylor's influence in detail.

More to the point at present are biographical evocations of the methodological affinity
discussed at the end of the previous chapter -- the idea, much reiterated by Whitehead, that the
most important thing about Plato is the notion that a scientific utterance will always have its
limits of applicability, will always need to be renewed and re-envisioned alongside the fluctuant
evolution of the world it describes, and that accordingly it is philosophically legitimate to be un-
 systematic, wise to be tentative, and okay to be "muddled".

One of Russell's recollections about their early collaboration suggests that these
convictions were operative in Whitehead's thought even prior to their full emphasis in his
speculative work. Russell describes how Whitehead awakened him to his excessive optimism
regarding the degree to which the universe admits of rigorous systemization by human thought.

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that suggest a more Aristotelian affinity than a Platonic will be discussed below.
222“Lowe, A.N. Whitehead I, 197: “If Whitehead when younger was ever attracted to an extreme Platonism, the
doctrine of evolution and the discovery of alternative geometries—both of which suggest that Nature is patient of
many patterns of order, had taken him away from it.”
223 Taylor, Man and His Work, 190.
It was Whitehead who was the serpent in [my] paradise of Mediterranean clarity. He said to me once: 'you think the world is what it looks like in fine weather at noon day; I think it is what it seems like when one first wakes from deep sleep.'...he showed me how to apply the technique of mathematical logic to his vague and higgledy-piggledy world. 224

Just as in the *Theaetetus* the Heraclitan doctrine of flux is taken as the crucial starting point for exploring the possibilities and limitations of science, Whitehead would come to suggest a return to the same starting point in grappling with the scientific developments of his own age: “The ancient doctrine that no one crosses the same river twice is extended. No thinker thinks twice; and, to put the matter more generally, no subject experiences twice.” 225

Evidently the tension between the world-of-flux and status of eternal verities amidst it characterized even the process of his writing, and manifested itself in a methodological and presentational tension between scientific description and poetic revelation that imitated his reading of Plato:

I am working at my Giffords. The problem of problems which bothers me, is the real transitoriness of things -- and yet!! -- I am equally convinced that the great side of things is weaving something ageless and immortal: something in which personalities retain the wonder of their radiance -- and the fluff sinks into its utter triviality. But I cannot express it at all. No system of words seems up to the job...there is nothing here in the nature of proof...[just] suggestions... 226

Indeed, the systematizing labor of the lectures that became *Process and Reality* is an exception among Whitehead's speculative works, as his output gave way to increasingly less systematic,
more broadly drawn renderings of his outlook in subsequent writings. Among his correspondence is a note in which a friend observes that Whitehead "likes Plato because he was always proposing, never finishing anything. It is always 'process' not frozen finality."227

A Platonic/Socratic Persona

There are also suggestions of a Platonic, or perhaps Socratic, "persona" in Whitehead's pedagogical method and presence. As mentioned above, his student J.G. Brennan remarked that Whitehead's career reechoed the narrative of Socrates' intellectual journey from initial engagement with the Pre-Socratic physicists to subsequent aporetic disillusionment, which gave way to the perpetually questioning, ultimately mystically-minded figure discernible in the Platonic dialogues (the transformation of Socrates Brennan has in mind must be that related in the Phaedo.)228 An anecdote carries the Socratic analogy further. Long after their collaboration, Whitehead introduced one of Russell's lectures at Harvard about the relation of logic to philosophy, and the role of conditioned biological reflexes in producing language. Whitehead announced that we were about to hear a missing platonic dialogue, 'the Bertrand Russell...' when the lecture was over, Whitehead closed the meeting by saying what he thought Socrates would have said as he drew his cloak about him: 'I understand now, my dear Bertrand, the meaning of the good. It is, that my mouth


228 Brennan, "Lost Dialogue," 523. In this section of the Phaedo (96a-100b) Socrates describes his early obsession with the search for the causes of things, which drew him into a period of intense investigation of physical phenomena. He found himself unable to distinguish what ultimate principle(s) or substance(s) formed the basis of the order of nature. He was temporarily relieved of his aporia when he encountered Anaxagoras' thesis that nature is ordered by nous, but was subsequently disappointed to discover that in spite of this thesis Anaxagoras offered no satisfactory explanation of how nous delineates the causal interconnections underlying natural processes. Motivated by this disappointment, he withdrew from the investigation of physical things (pragmata) and began instead to consider formal principles (logoi) to see what proceeded from them, and here the account segues into the exposition of the doctrine of forms as it constitutes a proof of the soul's immortality.
In a passing witticism, Whitehead casts Russell as the eponymous interlocutor whose views a Platonic dialogue would have teased into confusion -- and casts himself as Socrates.

It is all the more interesting to think of Whitehead as expressing a "Platonic persona" in deliberate contradistinction to Russell, his former pupil, sometime collaborator and contrastingly "Aristotelian" philosopher. The comparison of relationships is inviting -- Whitehead the mathematician / unsystematic philosopher as mentor to the eminent systematizing philosopher / logician Russell, the latter ultimately departing from and setting himself up in contradistinction to his teacher. Whitehead's biographer Lowe does not express this comparison explicitly but seems to delight in implying it, and his narrative subtly characterizes as shortsighted and biased Russell's critiques of Whitehead's ultimate philosophical views. Perhaps Lowe's mistrust of Russell's anti-Platonic critique is indicative of the Platonizing tendencies of the reception of Whitehead's thought, in Process philosophy-- a certain devotion to Plato in the discourse of some of Whitehead's relatively few but concerted followers. This tendency will be discussed in the following chapter. For Russell's own part, of the Timaeus in particular he apparently assessed that "it contains more that is simply silly than is to be found in [Plato's] other writings" -- clearly

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229 Lowe, A.N. Whitehead II, 257-258. This jocularity recalls the culture of the Cambridge Apostles, of which both Whitehead and Russell were members.

230 Lowe, A.N. Whitehead I, 263: "Whitehead liked to call Bertie the greatest logician since Aristotle."

231 Regarding the theological bent of Whitehead's mature thought, Russell apparently reflected that Whitehead "came from a long line of bishops", to which Lowe comments: "Russell, that unclerical aristocrat, could not refrain from extravagant thrusts at what he felt was the residue of vicarage atmosphere in the philosophy of his mathematical teacher...and philosophical opposite" (Ibid., 12).

232 Ibid., 250 comments on Russell's "A Free Man's Worship": "Russell had long since shed all theistic belief; his point is that the universe revealed by modern science is even more void of meaning. He assumes that this universe is entirely mechanistic, and all of man's fears, desires and acts are 'but the outcome of accidental collocations of atoms.'" The key word is "mechanistic", categorically describing the view that is inimical to Process thought. "A Free Man's Worship" is a relatively early work of Russell's; his later work strove for a more nuanced view of the relationship between mind and matter. Lowe speaks equally critically of Russell's embrace of the influence of his own pupil Wittgenstein, who for Lowe represents a troubling radicalism (to the effect that even mathematics "consists of tautologies"), to which Whitehead, unlike Russell, was too wise to succumb (Ibid., 285).
Whitehead didn't agree, for the reason that, perhaps like his own most valuable efforts, "what it lacks in superficial detail, it makes up for by its philosophic depth." 233

Reechoes of this Platonic-Socratic persona are discernible throughout posthumous constructions of Whitehead. Lowe's biography, *A.N. Whitehead, The Man and His Work*, apparently takes its name from A.E. Taylor's *Plato, The Man and His Work*. An even more substantive gesture of this kind is the book *Dialogues of Alfred North Whitehead*, recorded and set forth by Lucien Price. Price was a journalist with an apparently miraculous gift for remembering conversations verbatim, who befriended Whitehead and secretly recorded their conversations by this means, over the course of their years of friendship. Eventually he revealed this to Whitehead, who granted him permission to publish the conversations in book form. Price:

> Dialogues are interchange and I divined that he did not care to be represented as indulging in monologues or monopolizing a conversation, neither of which he ever did. Being dialogues, they proceed on the principle which he has already noted in the *Dialogues* of Plato, various speakers setting forth different points of view but without any attempt at dogmatic finality. 234

The *Dialogues* is a series of conversational windows into Whitehead's last years, as he himself, his wife Evelyn, Price and a varied cast of interlocutors wander fluidly through all manner of philosophical, political and historical topics. The referentially Platonic character at the essence at the work is transparent and immediate. Price qualifies this to a certain extent in his preface:

> *Dialogues* is merely a convenient title, though the obvious one. Any notion of its challenging the Platonic precedent would be absurd. The two are, on the contrary, antithetical; Plato’s dialogues are contrived to sound like spontaneous conversation, Whitehead’s actually are spontaneous conversation, even to the

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several speakers often obeying the Socratic injunction to ‘follow the argument
where it leads.’

Nonetheless the Platonic evocation is persistent throughout the work, and Plato himself is easily
the absent personage most frequently alluded to, cropping up almost without fail whenever their
c allerations turn to the philosophical. The friends clearly shared not only an admiration for
Plato, but a deep-seated avidity for Hellenism, and both of these enthusiasms pervade the work
and serve as a frame for Price's reverent representation of the philosopher, whom he considers "a
figure worthy of the Periclean age." When Whitehead dies at 87, Price ends the narrative with
an epigraph from the Phaedo: "Such was the end, Echecrates, of our friend, concerning whom I
may truly say, that of all the men of his time whom I have known, he was the wisest and justest
and best." Price leaves the reader with a final and direct posthumous identification of
Whitehead with Socrates, an association which had been implicit throughout his Dialogues, and
which, as seen above, was iterated earlier in Whitehead's life and occasioned similar
observations.

Certainly Whitehead must not be unique among philosophers in having so distinct and
admiration for Plato and Socrates as to consciously or unconsciously evoke them in his day to
day comportment. But these aspects of his life, both how he lived it and how it has been
remembered and presented by those who knew him, do provide a meaningful backdrop for the
combination of overt conceptual borrowing and nostalgic yearning that characterize the
engagement he makes with Plato in his work, a combination which carries over into his work's
reception and as such constitutes the background of a noteworthy episode in the history of the

235 Ibid., 13.
236 Ibid., 18.
237 Ibid., 367.
reception of Plato.

A.E. Taylor and Other Interpretive Influences

The most directly significant influence on the Platonic element in Whitehead's thought was the contemporary English Plato scholar A.E. Taylor, whose two major works on Plato, *Plato, The Man and His Work* (1926) and *Commentary on the Timaeus* (1928) abundantly cite Whitehead's works on the philosophy of physics; in turn Taylor's work influences *Process and Reality* (1929) and *Adventures of Ideas*, respectively. In the preface to *Process and Reality* Whitehead acknowledges his debt to Taylor's *The Man and His Work*, and expresses his regret that the *Commentary on the Timaeus* was published too late to make full use of it.²³⁸ But then he is able to incorporate it into *Adventures of Ideas*, and acknowledges his "constant use" of it in that work's preface.²³⁹

*Science and the Modern World*, which precedes *Process and Reality*, had been the first major presentation of Whitehead's metaphysics, as a transition from his works on the philosophy of natural science. While it does include chapters on elements of what becomes the "Philosophy of Organism" that have been categorized here as Platonic (e.g. eternal objects and God), there Plato has no distinct pride of place among the figures whom Whitehead deploys in presenting the development of philosophical and scientific thought up to his historical moment. But Taylor clearly drew inspiration from the works on natural science of which it was the culmination, and

²³⁸ "I regret that Professor A. E. Taylor's *Commentary on Plato's Timaeus* was only published after this work was prepared for the press. Thus, with the exception of one small reference, no use could be made of it. I am very greatly indebted to Professor Taylor's other writings" (Whitehead, *Process and Reality*, xiii). I have been unable as yet to determine what this "one small reference" is.

from that point forward the rapport between the Classical scholar and the philosopher is pervasive and distinct. It is as though Whitehead encountered and appreciated Taylor's abundant citation and incorporation of his earlier work into his general presentation of Plato, and was moved by those connections to foreground Plato in the full presentation of his own philosophical ideas. The publication of Taylor's *Commentary* then induces the even more central role of Plato in *Adventures of Ideas*.

In addition to being a Plato scholar A.E. Taylor was an "Idealist" philosopher in his own right. He was in fact a Gifford lecturer not long prior to Whitehead; his most significant original contribution to philosophy, *The Faith of a Moralist*, was the product of his Gifford lectures just as *Process and Reality* was the product of Whitehead's. Apparently it was partially at his suggestion that Whitehead was invited to take the position, which had originally been offered to Arthur Stanley Eddington. It is apparent that the two philosophers were on terms of friendly acquaintance, as Whitehead makes a point of remarking in his acceptance letter:

> The honour is one which I greatly appreciate, and it gives me an opportunity to put out a systematic work on the metaphysical notions which are occupying my mind. Also, no small part of the attraction is the prospect of having some conversations with... A.E. Taylor.

Taylor's presence at Whitehead's lectures represented one of the only two exceptions, as legend has it, to the otherwise universal impression of utter incomprehensibility with which Whitehead's Gifford lectures were received. One attendee reports that after the first lecture, "the audience

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240 The Gifford Lectures were instituted by Adam Lord Gifford in 1888; their self-described purpose is to "promote and diffuse the study of Natural Theology in the widest sense of the term—in other words, the knowledge of God" (giffordlectures.org). A later Gifford lecture that will be discussed here later on is Werner Heisenberg's, which became the book *Physics and Philosophy* (see chapter 5).


242 Whitehead to Norman Kemp Smith, April 6 1927, quoted in Lowe, *A.N. Whitehead*, 220.
shrunk to two, Kemp Smith and A.E. Taylor.\textsuperscript{243} -- Perhaps the account is an exaggeration, but a
telling one in reference to Taylor's avid interest in Whitehead's thought. In hearing Whitehead
lecture, he was hearing a Platonism that he helped to renovate as such, uttered in its fullest
fruition.

This anecdote too recalls a Platonic legend -- the grand disappointment of Plato's own
"Lecture on the Good", to which the public gathered in apparent expectation of a rousing
discourse on all they deemed good in life, only to be met with an abstruse excursus on
mathematics: “And when he discoursed on the Good, the huge crowd became dizzy and drifted
away from his band of auditors, and in the end Plato was left with an audience consisting only of
his customary pupils.”\textsuperscript{244} In a late essay named "Mathematics and the Good", Whitehead recalls
the anecdote, and begins his remarks with what seems to be a quiet expression of gratitude to
Taylor:

[Plato's] lecture was a failure, so far as concerned the elucidation of its professed
topic; for the lecturer mainly devoted himself to Mathematics. Since Plato with
his immediate circle of disciples, the Notion of the Good has disengaged itself
from mathematics. Also in modern times eminent Platonic scholars with a few
exceptions successfully conceal their interest in mathematics.\textsuperscript{245}

There is little doubt that Taylor, who, as will be seen, fills his studies of Plato with Whiteheadian
linkages to modern science and mathematics, is chief among the "few exceptions" Whitehead
notes -- just as he was among the few who did not find Whitehead's grand lecture, like the
ancient audience had found Plato's, utterly impossible to understand.

\textsuperscript{243} Mason Gross, quoted in Lowe, \textit{A.N. Whitehead}, 250.
\textsuperscript{244} Themistius, \textit{Oratio} 21, trans. Penella.
\textsuperscript{245} Whitehead, "Mathematics and the Good," 666.
While this is not the place to make a general assessment of the value of A.E. Taylor's contribution to Platonic scholarship, it will be helpful to position what follows with my own broad impression of it. Taylor writes beautifully about Plato in the manner of one who seems to be on the whole very committed to agreeing with him, and this involves him in asserting that Plato has a great deal of relevance to a scientific understanding of the modern world. – Taylor concedes very few of Plato's points as irrelevant or philosophically surpassed. One of his most well-known scholarly positions is his emphasis on the monotheistic character of Plato's conception of deity, especially in the *Timaeus*, which was attacked by Cornford as anachronistic and excessively Christianizing (Cornford also criticized the conspicuous presence of Whitehead in Taylor's commentary; this controversy will be discussed below.) He is able to get a good deal of coherence out of Plato by selectively emphasizing certain positions described in the dialogues, in combination with taking into account the redactions of Plato's position found in Aristotle (in this confidence he differs from Whitehead). Other doctrines found in the dialogues that would seem to cancel out the positive doctrine must be understood as resulting from the demands of dramatic verisimilitude -- e.g., there are sections of the *Timaeus* that are the way they are simply because Plato was trying to make a good portrait of Timaeus the 5th century Pythagorean astronomer, yet amidst the details of this dramatic portrait there can be glimpsed certain elements of what Plato really thought and wanted to emphasize.246 The trouble of course is how to tell the one from the other. This tendency of Taylor's exemplifies a general tendency in certain scholarship to attempt to "rescue" Plato -- a trend that will be examined again here as it is manifested among "Process" philosophers and theologians.

246 *Commentary* viii ff.
The Scientific Theme in Taylor's Citations of Whitehead

Taylor's prefatory remarks to both The Man and His Work and the Commentary assert the importance of Whitehead's recent "work for science" and that work's efficacy in exhibiting the value of the Platonic perspective for positioning the philosophy of science, and developing a philosophically holistic view of the current state of scientific thought. He voices the hope that he has "not been too presumptuous in attempting to make the metaphysic of nature in Whitehead and the Timaeus throw light on one another." He remarks that "Dr. Whitehead finds a kindly spirit in Plato's Pythagorean", and hopes that he has "avoided layman's blunders in incorporating contemporary physics" into this explication of ancient physics. He also expresses regret that the time of publication did not allow him to make use of Science and the Modern World; thus he is working with Whitehead's earlier works that in some degree presage, yet are thematically distinct from, the metaphysical undertakings that properly begin with the "speculative" chapters of that work.

A specific scientific commitment in which Taylor sympathizes with Whitehead, and which will serve as an introductory example of their rapport, is the criticism of Einstein's theory of space. Taylor dislikes Einstein's notion of "non-uniform space with different formal properties in different regions" and prefers Whitehead's view of the "essential uniformity of space":

it is not the least merit of his philosophy of nature that [Whitehead] has been able, so far as a mere student of philosophy can see, to state the physical doctrine of relativity in a way that does not involve the enormous difficulty of ascribing a

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247 Plato, the Man and his Work vii.
248 Commentary ix.
249 Taylor, Commentary, x.
250 Ibid., x.
In this connection he cites the introduction to Whitehead's *Concept of Nature* (1920), though the matter of Whitehead's disagreement with Einstein would not be fully treated until his later work *The Principle of Relativity* (1922).

Obviously a full discussion on Whitehead's view of relativity in contradistinction to Einstein's currently accepted view would far exceed the limitations of the present topic as well as my own expertise. Rather what is of importance here is that this particular point, one that is exemplary of Taylor's employment of Whitehead, arises in connection with his discussion of the Receptacle. At issue is the significance of the "formlessness" of the hypodoche -- that it is said to be "amorphon...hapason ton ideon" (50d7). The ideai in question here, Taylor asserts, are the possible figurations of sensible bodies which the Receptacle receives. The Receptacle itself must be comprised of no figurations of its own, otherwise it would distort these bodies as they are expressed in its reception of them. This occasions his observation that Timaeus, like Whitehead, "would have had no sympathy for the way...physicists have played with the notion of a non-uniform space with different formal properties in different regions."

251 Ibid., 327.
252 "Let alone the very recent experimental confirmation of Einstein's theory, about a century after its development, in the detection of space-time ripples generated by gravitational waves -- which is another fascinating matter entirely.
253 Taylor, *Commentary*, 327. What I believe Taylor means by "a non-uniform space with different formal properties in different regions" is the feature of Einsteinian general relativity that holds that objects' mass-energy warps the space-time around them, such that the surrounding space-time is curved around those objects -- the effect of this warp is "gravity". Because the mass-energy of objects determines the shape of space-time, physical objects and the geometrical scheme of their spatiality are essentially collapsed into one category -- gravity and space are identified as one. In *The Principles of Relativity with Applications to Natural Science* (Cambridge: Cambridge University Press, 1922) Whitehead takes issue with this identification, arguing that there must be some distinction between the physical and the geometrical in order to make cosmological measurements. -- In order to make assessments of mass and energy and space, we have to be able to make a geometrical schematic of the space that they occupy; but in the Einsteinian theory, the geometry of space is determined by the objects occupying it -- thus "we are left in a position of having to know everything before we can know anything" (Gary Herstein, *Internet Encyclopedia of Philosophy*, s.v. "Alfred North Whitehead" (http://www.iep.utm.edu/whitehed)). In another sense, Whitehead and Taylor's criticism is that the notion of the "curvature" of space-time imputes a concrete reality to what is actually an abstract mode of description. For Whitehead, physical objects do affect the shape of space-time
Whitehead's insight, he believes, consists in the distinction he makes between the reality of relational time-space as the site of spatio-temporal extension, and the abstractions by which such sites are expressed in both scientific and everyday language. The central thesis of the Concept of Nature is that spatial location and temporal location cannot be thought of as simple or distinct, but that every physical object must be understood as a spatio-temporal field.

Considering only one dimension of their extension in isolation as actual amounts to "The Fallacy of Misplaced Concreteness", a prominent theme in Whitehead's later thought which has been discussed in the previous chapter, referring to the too-little examined tendency in human thought of mistaking the abstract for the concrete. Asserting the ultimate "curvature" of space makes just such a mistake because it mistakes the metaphor meant to describe the complex relational field of spatio-temporal location for the actual relational field itself. Thus, as Taylor points out in connection with the Receptacle's "bareness of forms",

> the expression 'curvature of space' is purely metaphorical....A space with varying curvature or non-uniform space would mean one in which the postulates which held for some regions would not hold for others....All Timaeus says here is that space is uniform, not that it is 'flat' or 'Euclidean'.

The implication is that there are now variant geometries (e.g. Euclidean v. non-Euclidean) because there are varying modes of abstraction from the relational matrices that objects constitute in their mutual occupation of the Receptacle.

The point is fascinating, and so is its application to Plato, though it raises plenty of interpretive questions. Why should this be what Plato would have had in mind in his emphasis on

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(in fact space-time is constituted by physical objects' fields of interrelation), but they do not alter the geometry that measures them. It is possible, of course, that both Whitehead and Taylor misunderstood the intention of the theory. The broader relevance of Whitehead's theory of space-time to Plato is discussed in the previous chapter, in the section devoted to the Receptacle.

254 Taylor, Commentary 327.
the Receptacle's "bareness of forms" -- i.e., why would he have had any concern about the possibility of variant geometries? Doesn't the apparent ultimacy in Timaeus' description of what we now call the "Platonic solids" imply the singular nature of that geometry, as the sole network of patterns expressible in the Receptacle? And how does this interpretation of Timaeus' description play into Taylor's aforementioned qualification of the dialogue as being committed to dramatic verisimilitude at the expense of scientific authenticity? While these are crucial questions, which will reenter discussion when I turn to considering the application of Whitehead’s Platonic elements to modern science, for now I will let the locus stand as an exemplary instance of Taylor's sympathy with Whitehead's stake in scientific development, and his application of it to Timaeus' physical theory. Let's now proceed systematically through the emphases that emerge amidst Taylor's invocations of Whitehead.

Taylor Making Sense of the Forms

It seems that one of the chief uses Taylor has for Whitehead is that he provides a means of making sense of the Platonic forms that is neither logically problematic nor philosophically embarrassing. The forms, in this view, are simply the objects that provide a basis for scientific practice, in the sense of the word "object" as it is used in Whitehead's *Principles of Natural Knowledge* and *Concept of Nature*, where a crucial distinction is made between "objects" and "events."

The distinction is employed amidst a discussion of the forms as they are introduced in the *Phaedo;*\(^{255}\) this is the first occasion Taylor has in *The Man and His Work* for explicating the

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\(^{255}\) *Phaedo*, 78b-84b. In its evaluation of the function of the soul, Socrates and Cebe's conversation arrives at a distinction between permanent and mutable objects. The former are what is available to intellectual experience, whereas the latter to physical experience. Such permanent objects are, by virtue of their permanence, the condition for the possibility of philosophical thought. Socrates has gotten Cebe to agree that there are things that are
doctrine of forms at large. Taylor reads the forms as strictly referring to "the kind of being of which we speak in our scientific studies", which "have a standard of the absolutely immutable." Nevertheless, in the act of observation,

the many things which we call by the same names as the 'forms' are in perpetual mutation...[t]his suggests that we may recognize two types of objects, each type having a pair of characters -- the invisible and immutable, and the visible and mutable.257

At this point in his explanation Taylor notes that the doctrine "is identical at bottom with Dr. Whitehead's recent distinction between 'objects' and 'events,' e.g. between 'Cambridge-blue' and 'Cambridge-blue-here-and-now.'"258 The former (the "object") "does not 'happen,' [but] is suggested to me by my sensation of what is 'happening'. I recognize it, am 'put in mind of it' by the event which happens." He also cites Whitehead's Principles of Natural Knowledge: "Objects are entities recognized as appertaining to events; they are the recognita amid events. Events are named after the objects involved in them."259

The reading exhibits Taylor's commitment to revising the conventional notion of Plato as prizing the contents of a transcendent realm over that of the sensible. In spite of the fact that the locus at hand in the Phaedo broaches the forms for the purpose of proving the immortality of the soul, and these objects that the soul comprehends are represented in contrast to the "drunken

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256 Taylor, The Man and His Work, 190.
257 Ibid., 190.
258 Ibid., 190 n1.
confusion" involved in physical experience, Taylor is nevertheless committed to
deephasizing the qualitative superiority of the formal realm. This commitment shows the
influence of Whitehead's work on philosophy of science insofar as Taylor imputes to Plato a
fundamental sensitivity to the "fallacy of misplaced concreteness" -- mistaking abstract objects
for experiential events -- that Whitehead pervasively critiques. As discussed in the previous
chapter, in the subsequent evolution of his metaphysical system these "objects" of Whitehead's
will come to be called "eternal objects", and the only way these are distinguished from the
traditionally "transcendent" Platonic forms is that they are strictly "referent to process", as Taylor
here argues that Plato too meant them to be. By "referent to process" is meant the qualification
Whitehead pervasively makes about his version of the forms -- that they have no meaning or
significance except when and where they are expressed in instances of actuality, and they do not
exist transcendentally in some far-off supernal realm.261 Because of this, Taylor argues, it should
be understood that the Platonic perspective does not devalue matter, as it has usually been
understood to do: "The doctrine that ‘matter’ is the source of evil is wholly un-Platonic."262

Of course, Taylor's Whiteheadian defense of the forms in no less devoid of difficulties
than Whitehead's own concept of eternal objects, which took up so much discussion in the
previous chapter. How do forms enter the flux of natural process and retain their permanent
features for future iterations without having something meaningfully transcendent about them? It

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260 *Phaedo*, 79c: ὡσαν μὲν τῷ σῶματι προσχρῆται εἰς τὸ σκοπεῖν τι ἢ διὰ τοῦ ὦραν ἢ διὰ τοῦ ἀκοῦειν ἢ δι’ ἄλλης τινὸς
αισθήσεως … τότε μὲν ἐλκεται ὑπὸ τοῦ σώματος εἰς τὰ δύσεκτα κατὰ ταῦτα ἔχοντα, καὶ αὐτὴ πλανᾶται καὶ
ταράττεται καὶ εἰλιγγιᾷ ὅσπερ ἰδέσπρον μεθύοντα, ὥσπερ τοιοῦτον ἐφαπτομένη -- "Whenever [the soul] makes use of the
body for looking into something whether through sight or hearing or any other sense perception…then it is
dragged by the body into things that never hold themselves together, and it wanders and is put into confusion and
becomes dizzy as though drunk, insofar as it is bound by such things."

261 See section on eternal objects in chapter 1.
262 Taylor, *Man and His Work*, 455n2. Cf. 492. It would be interesting to discuss this dimension of Taylor's
interpretation in the larger spectrum of Platonic interpretation -- this would be an ample topic unto itself, though
this study will broach the issue somewhat in a following chapter when I discuss how Whitehead's Plato fits in to
the spectrum of Platonic reception at large.
may be that this difficulty is not one that Taylor's presentation is adequate to solve, and plunging into this problem would be to revisit the ambiguities inherent in interpreting Platonic forms that came to the fore in the discussion of eternal objects. The important point for this discussion is that this is the (distinctly Whiteheadian) emphasis Taylor's presentation makes: the forms do not reside in a transcendent, qualitatively superior realm. They are not *better than* the process of nature, they are merely that in the process of nature which makes scientific observation of it possible. They are not ontologically prior or superior, but epistemologically necessary.

This emphasis persists in Taylor's analysis of the *Timaeus*, where he relegates the well-known and controversial distinction between being and becoming to a related consideration of the objects of science and the limitations placed on scientific practice by sensory observation. While the objects of pure physics, and mathematics, for example, are in themselves eternal, they are never exhibited as such in the process of nature because of the mutability of their expression in the temporal process of becoming. This fact however should not induce a pessimistic attitude toward the functioning of the senses amidst the natural process. On the contrary, Taylor sees Plato as optimistic about science's task of obtaining ever more precise perspectives on the eternal relationships it seeks to identify.²⁶³

In fact, for Taylor, the *Timaeus* is happily free from the "bifurcation" of mind and matter that, as Whitehead insists, mars modern scientific and philosophical thought. Taylor insists that for Plato as for Whitehead there is no division between nature as disclosed to perception and

²⁶³"What Timaeus wants to insist on is that, to use a phrase of Dr. Whitehead’s, ‘passage’ is the fundamental fact about ‘Nature’….There is nothing disparaging to the ‘natural’ sciences in this correct Platonic view. What their results lose in the way of ‘finality’ they gain in another way in interest. The correct perception that there is no finality in natural science is one of the things which most markedly distinguish Plato from Aristotle for the better”...He holds that though we can never reach finality in natural science, it is our business to get as near to it as we can. We must make our method of studying ‘that which becomes’ as nearly as possible that of strictly rational science. *Mathematical physics is what he was dreaming of*” (Taylor, *Commentary*, ad. loc. 27d5-29d3). Italics mine.
nature in itself, for the two are both part of a unified matrix of experience.

The physical world, as [Plato] conceives it, is not something ‘hidden behind the
veil’ of sensible ‘qualities’. The business of natural science is not to get ‘behind’ a
‘veil’ but to give a rational account of the sensible itself, showing the lines of
interconnexion between its constituent parts….The main point to be grasped is
that the Timaeus is wholly free from any form of the doctrine which Professor
Whitehead calls the ‘bifurcation’ of nature. …the very distinction between
‘substance’ and ‘accident’ plays no part in the Naturphilosophie of Timaeus. The
other two more elaborate forms of ‘bifurcation’ mentioned by Dr. Whitehead
(Concept of Nature, lect. ii)—the distinction between an unperceived ‘Nature as
cause’ and a perceived ‘Nature as she appears to us’—are absent from both Plato
and Aristotle264 [italics mine].

Nature is not an ineffable chaos whose true reality we cannot access, acquiescing to blindly hurl
arbitrary descriptive structures at it. We can understand its interrelated parts because those
interrelations are the stable forms coursing through its flux, forms that exist nowhere else but in
it. This holism should dissuade us from being led into the confusion that attends the logic of
substance and attribute, e.g. the problem of explaining how a universal quality is supposed to
inhere in a neutral substrate. However,

[t]here is no neutral substrate in Plato, rather coherence of qualities of which we
can predicate something taking it as a whole. The error results from imposing
grammatical logic on natural physics. The logical substrate of which I predicate,
e.g. ‘red’, is manifestly not a quality-less ‘substrate’, but the fully qualified
sensible thing of which I say that it is red, the rose or what not which is before
my eyes.

Thereupon he cites Concept of Nature 17-25 “on the harm done to the philosophy of Nature by

264Ibid., ad. loc. 28a1.
this confusion of the subject of predication with a supposed ‘substrate’ or ‘stuff’ (the ‘matter’ of materialists).”

Elsewhere, discussing in wider view the significance and efficacy of the forms for Plato's thought, Taylor asserts that the dialectical method portrayed in the dialogues is essentially analogous to the continuous, rigorous redefinition of the fundamental objects of science that characterized work in logic, pure physics and mathematics in his own day, developments in which he felt that Whitehead played an important role. The goal of dialectic is to sharpen one's scientific scrutiny of the objects exhibited in experience:

we may say that what the Republic calls 'dialectic' is, in principle, simply the rigorous and unremitting task of steady scrutiny of the indefinables and indemonstrables of the sciences, and that, in particular, his ideal, so far as the sciences with which he is directly concerned goes, is just that reduction of mathematics to rigorous deduction from expressly formulated logical premisses by exactly specified logical methods of which the work of Peano, Frege, Whitehead, and Russell has given us a magnificent example.

Taylor seems to have in mind Republic VI and VII's discussion of the function of dialectic and the Divided Line, and equates Whitehead and Russell's work on the Principia Mathematica (as well as the preceding work of Peano and Frege) as gestures of ascent on the hierarchy of knowledge that the Divided Line analogizes. The hierarchy is ascended by dialectic, and Taylor saw dialectic of this kind exemplified by the rigorous advances in formal logic with which he was contemporary. The Principia sought to ground all the functions of

265 Taylor, Commentary, ad. loc. 41d8.
266 Taylor, Man and His Work, 292-293.
267 Republic, 509e-511d.
268 Ibid., 532e ff.
mathematics in a set of axioms of symbolic logic -- to find and express the logical axioms and rules of inference from which all mathematics are deducible. This amounts, Taylor's remark implies, to a Platonically dialectical sifting from experience of the most ultimate categories of object exhibited in natural events.\textsuperscript{269} Mathematics is, in this section of the \textit{Republic}, said to be not as ultimate a mode of science as dialectic,\textsuperscript{270} and so, analogously, the \textit{Principia} sought to discover more ultimate objects than those that mathematics describes. Taylor here associates the highest modes of Platonic inquiry with the activities of contemporary logicians whom he admired, and emphasizes the continuity between them.\textsuperscript{271}

It would seem that Taylor applies this interpretation of the forms (as Whiteheadian "objects"), for which he gets so much ammunition from Whitehead, to a general view of their status as expressed throughout the dialogues. In contradistinction to this, it will be recalled from the discussion of eternal objects in the previous chapter that Whitehead expressly dismisses the forms as they are promulgated in what he assumes are the "Middle" dialogues (including the \textit{Republic}), and exclusively endorses the less real / less ontologically transcendent version of them that he reads in what he supposes are the "late" dialogues (including the \textit{Timaeus}).\textsuperscript{272} In general, it is difficult to tell what in particular Whitehead did and didn't accept from Taylor, and whether there were any points in which their construction of Plato differed, since besides his prefatory acknowledgements in \textit{Process and Reality} and \textit{Adventures of Ideas} he doesn't cite Taylor

\textsuperscript{269}Both of Taylor's works being discussed appeared before Gödel's incompleteness theorem (1931) demonstrated the impossibility of such a project -- that any such set of axioms would either be necessarily incomplete or inconsistent. Taylor's optimistic equation of the current developments in logic and Plato's methodology may have relied on the presumed success of such a project.

\textsuperscript{270} \textit{Republic}, 527a.

\textsuperscript{271}Shorey disagrees: "[t]here is no evidence and no probability that Plato is here proposing a reform of mathematics in the direction of modern mathematical logic, as has been suggested" (Paul Shorey, ed. and trans., \textit{Republic Books 1-6} (Cambridge: Cambridge University Press, 1935), \textit{ad. loc.} 533c).

\textsuperscript{272} See section on "eternal objects" in chapter 1.
specifically. Moreover, it must be remembered that Taylor draws from a phase of Whitehead's work that has moved from logic and mathematics to the philosophy of science, but has not yet crossed over to the "speculative" phase that has been discussed here. He had not yet crossed over to championing the "unsystematic" approach to philosophizing that is perhaps more readily associable with mystical insight than systematic axiomatization.

Notwithstanding these considerations, the sudden and conspicuous entry of Plato into *Process and Reality* is highly suggestive of Taylor's engagement with Whitehead's earlier work. Whitehead had been meditating on the distinction between the *actual* in the world, which flows endlessly from form to form, and the *potential* objects that are exhibited in the actuality, which have no independent existence and yet are eternal insofar as they are exhibited recurrently. Taylor's suggestion that what he meant by "objects" was essentially what Plato meant by "forms" may have spurred him to transfer them to the "realm" of "eternal objects" as he transitioned to making a total cosmological account of the universe. One can imagine the question and answer sessions in that nearly empty hall after Whitehead's lectures, in which the speaker and one of the two remaining audience members might have commiserated on the difficulty of phrasing and grasping the status of that which *is* amidst that which *becomes*, and agreeing that it is exactly this question which was formalized in the *Timaeus* near the outset of the Western cosmological tradition, a question that has returned to the fore of intellectual discourse in a new age of scientific discovery. New "objects" of scientific theory -- the formalizations of relativity, and quantum physics -- were emerging, and Taylor foregrounded how Whitehead's attempt to understand their status was analogous to Plato's. This analogy drifted, in short order, to the center of Whitehead's thought.
Taylor's Interpretation of the Eikos Mythos in the Timaeus

Since passing "events" are all we can access, our articulation of the formal "objects" they exhibit are remains in a strict sense theoretical -- the forms are properly the objects of scientific theory, the apprehension and expression of which is subject to continuous refinement in the progress of science. The importance of this theme for Whitehead's methodology cannot be overemphasized, especially as it constitutes the most pervasively expressed and consistently maintained ostensibly "Platonic" aspect of his thought (particularly in The Function of Reason and Adventures of Ideas.) I surmise that his emphatic thematization of this aspect of the progress of science, and of philosophy, can be traced back to Taylor's interpretation of the meaning and function of the eikos mythos in the Timaeus, where again Taylor abundantly cites passages from Whitehead's Concept of Nature and Principles of Natural Knowledge.

In Plato: Man and His Work Taylor uses Whitehead at the very start of his general overview of Timaeus' cosmological discourse, to position the status of the crucial distinctions with which that discourse begins (27cff): that between the world of becoming and that of being, and the related distinction between the world created by the creator and the eternal model whereby he created it. But because the scientific observer is a member of this world and not the eternal model, it is necessary for that observer to extrapolate from their worldly experience in order to generate what is at best a "likely" account of the eternal verities that consist in it.

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273 Note throughout this discussion and in subsequent chapters, the phrase eikos mythos is sometimes in the Timaeus also formulated as eikos logos (e.g. 29c ff). Taylor and Whitehead seem to treat these as equivalent. For the host of interpretive intricacies surrounding these phrases, see note 69 below.

274 Timaeus, 29b-d. I quote the passage in full since it will be of importance throughout this chapter. ὥδε οὖν περί τε εἰκόνος καὶ περὶ τοῦ παραδείγματος αὐτῆς διοριστέον, ὡς ἄρα τοὺς λόγους, ὧν πέρ εἰσιν ἐξηγηταί, τούτων αὐτῶν καὶ συγγενεῖς ὄντας: τοῦ μὲν οὖν μονίμου καὶ βεβαίου καὶ μετά νοῦ καταφανοὶ μονίμως καὶ ἀμεταπτώτως — καθ’ ὅσον οὖν τε καὶ ἀνελέγκτοι προσήκει λόγους εἶναι καὶ ἀνικήτους, τούτου δὲ μηδὲν ἐλλείπειν— τούτου δὲ τοῦ πρός μὲν ἑκάστον ἀπεικασθέντος, ὡς ἄρα μηδὲν ἡττον παρεχώμεθα εἰκότας, ἀλλ’ ἐὰν...μὴ δυνατοὶ γιγνώμεθα πάντη πάντως αὐτοῖς ἑαυτοῖς ὁμολογουμένως λόγους καὶ ἀπηκριβωμένους ἀποδοῦμαι, μὴ βασικάς: ἀλλ’ ἐὰν ἄρα μηδὲν ἥττον παρεχόμεθα εἰκότας, ἀγατὰν χρή, μεμημηνόμενους ὡς ὁ λέγων ἡγώ ὑμεῖς τε οἱ κριται φίλους ἀνθρωπίνην ἐχομέν, ὡσεν περὶ τούτων τὸν εἰκότα
Taylor foregrounds his interpretation of the *Timaeus' eikos mythos* theme with what he asserts to be its parallel in Whitehead.

There are events and there are eternal realities exactly in Whitehead’s sense and the reason it’s a likely story is that that’s the best we can expect from the physical sciences … true forms can be accessed and not improved upon in their accuracy.\(^{275}\)

Objects are "ingredient" in events in the same manner as will be articulated in Whitehead's doctrine of eternal objects; this, rather than any hierarchical discrepancy in moral value, is the substance of the distinction made in the *Timaeus* between the intelligible / eternal paradigm and the sensible world of becoming, according to Taylor's reading. It is a reading that aligns the *Timaeus* with the revolutionary scientific developments in his own moment, as an instance in which former "likely stories" were being abandoned for preciser theoretical visions of the cosmic constants inherent in fluctuant nature. While the ingredient objects / forms do not themselves

\[^{275}\text{Taylor, }\textit{Man and His Work, }440.\]
change, applied science must continuously revise its construction of their ingredience amidst the conditions of continuous flux (e.g. Taylor notes, "Newton's gravitation formula may be a 'first approximation' on which later physicists can improve; such a formula as \( \cos \theta = (\frac{1}{2} - \frac{1}{2}) \) is no 'first approximation' and there is no improving on it."

For Taylor, that to which such a formula refers is a cosmic object in the Whiteheadian sense; and the likelihood of a cosmolological account is measured by the limited but improvable accuracy with which such objects are incorporated into descriptions of cosmic phenomena. The likeliest description of in what way an object or what certain object inheres in a cosmic event is subject to continuous revision in the progress of science.

In his further discussion of the eikos mythos, Taylor goes so far as to assert that

> [t]here is an almost absolute equivalence of Timaeus' analysis with that of Whitehead...his account of the 'ingredience of objects into events' corresponds almost verbally with that given by Timaeus of the determination of the various regions of the 'receptacle' by the 'ingress' and 'egress' of the impresses of the forms. The 'receptacle' itself only differs from 'passage' in being called 'space' and not 'space-time'.

Hence Taylor's inclination to side with Whitehead against Einstein and others -- there can be no inherent "curvature" to the space-time receptacle because that would interfere with its reception of pure objects as they ingress. The difficulty of expression that the nothos concept inherently involves proceeds from its very "bareness" --

> [i]f we try to picture 'passage' as it would be if there were only 'events' and no 'objects' ingredient in them, we get precisely the sort of account Timaeus gives of the condition of the 'receptacle' before God introduced order and structure into

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276 Ibid., 440.
277 Ibid., 456.
Thus calling space-time "curved" runs the risk of confusing a "likely story" with the cosmic events it endeavors to approximate.279

The concept of divine Persuasion is also to be understood in reference to this interpretation of the "likely story" and its role in the practice of applied science.

That ‘mind persuades necessity’ is just an imaginative way of saying that by the analysis of the given datum we always can rationalize it further; we never come to a point at which the explanation actually ceases. But the ‘irrational’ is always there, in the sense that explanation always leaves behind it a remainder which is the ‘not yet explained.’280

This dimension of the interpretation again exemplifies Taylor's commitment to rationalize aspects of Plato's thought, positioning it in relevance to current scientific and philosophical concerns and delimiting the "mystical" emphasis that has previously attended it.281 Divine Persuasion is made to be not so much an ontological or theological requirement, but an

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278 Ibid., 456.
279 Specifically in reference to relativity, Taylor even asserts that it is a virtue of the contemporary controversy in science that it compels philosophy to extricate itself from the difficulties surrounding time and space instigated by the mistakes of Aristotle, and that the view of space and time as interrelated dimensions expressed returns us pretty explicitly to Plato's view: “The main philosophical interest of the Theory of Relativity seems to be that it is an attempt, forced by the progress of physics itself upon physicists with no preconceived metaphysical theories in their minds, to free us from hopeless perplexities created by the artificial separation of space and time and to return again to the conception of ‘becoming’ as presupposing not two distinct and different continua, space and time, but the one continuum of space-time…. work like Professor Whitehead’s, strikes a reader familiar with Greek philosophy at once as an attempt to get back from Aristotelian positions to the general standpoint of Plato’s Pythagorean cosmologist” (Commentary, 677-678). Further on he weighs in against Russell's attempt to defend a Newtonian view of absolute space, and lends further support to Whitehead's version of relativity and its efficacy for solving the difficulties involved. All this occurs in an appendix to his commentary on the Timeaeus concerning Aristotle's conceptions of space and time over against Plato's (see Commentary, 687-688).
280 This sentiment is reminiscent of calculus and other tools of modern algebraical analysis: new apparatus of expression may bring one closer and closer to the precise limit but never exactly to it.
281 It's not my goal to examine the lineage of Taylor's interpretations, but in general I suppose that perhaps they descend from post-Kantian trends in Platonic scholarship, that render ideas not as external things but as ultimate specific notions in human consciousness. See Novotný, Posthumous Life, 526ff for a treatment of this phase of Platonic scholarship.
epistemological metaphor. In this interpretation it is not that there is a literally uncontrolled or
chaotic element in nature that is not susceptible to order, but that there is infinite room-for-
 improvement in our project of rationally describing the order that is really there.

This is a radically metaphorical interpretation, and presents some differences from how
certain concepts from the Timaeus are incorporated by Whitehead's system, as described in the
previous chapter -- the concept of divine persuasion, for instance, has a larger role in Whitehead's
system, and is an ontological feature of what he calls God. Nevertheless, Whitehead too strictly
relegates certain elements of the Timaeus to the category of convenient myth, a device to which
he was led by the limitations of the scientific and mathematical language to which he had access.
-- "The progress of thought and the expansion of language now make comparatively easy some
slight elucidation of ideas which Plato could only express with obscure sentences and misleading
myths."282 This returns us to the theme of Whitehead's appreciation for Plato's "suggestiveness."
The "mythic" gap between the proposed notion and that ineffable to which it refers is itself
necessary to the progress of science. The Classical notion

    that there was only one coherent analysis of the notion of space…was a glorious
    mistake: for apart from the simplification thus introduced into the foundations of
    thought, our modern physical science would have had no agreed simplification of
    presuppositions by means of which it could express itself.283

This quotation is from a late lecture called "Mathematics and the Good". It was delivered
long after the aforementioned shift in his work's emphasis, when many of the Platonic elements
had receded from centrality. Yet what never recedes, but rather constantly resurfaces, is his praise
of Plato's willingness to make fruitful approximations or generalizations -- mythoi -- that serve

\[\text{282} \text{Whitehead, "Mathematics and the Good," 667.}
\text{283} \text{Ibid., 669.}\]
the evolution of thought. Taylor's analysis of the notion of *mythos* in the *Timaeus* suggests that it was meant to conceptualize this very methodology, and this interpretation pervades *The Function of Reason* and *Adventures of Ideas*.

**Taylor's Reading of the Wandering Cause**

Along similar line, Taylor's interpretation relegates the "Wandering Cause"\(^{284}\) to an analogical status, having reference to the ultimate ineffability of reality in the totality of its passing expression of objects. It refers not *ontologically* to the modicum of chaotic randomness of events but is meant *epistemologically* in reference to the perpetual slippage between the complete actuality and our inability to ken it in totality as we isolate its facts from the whole of nature:

> you cannot give a *complete* explanation of the *planōmenē aitia*, since its very nature is such that it always leaves you with a residue of unexplained ‘conjunction’ on your hands. If you ever succeeded in complete ‘explanation’, you would have seen exactly what every arrangement in nature is ‘good for’, and then there would be no *planōmenē aitia* left in your theory.\(^{285}\)

It refers to the unfillable gaps in our scientific knowledge -- those parts of the universe that cannot be rationalized in a scientific description of it. To elucidate the reason for this slippage, he again invokes Whitehead's *Concept of Nature* 141-142:

> Nothing in nature could be what it is except as an ingredient to nature as it

\(^{284}\) *Timaeus*, 48a ff: The *planōmenē aitia* refers in Timaeus' discourse to the principle of Necessity in contrast with the principle of Reason in the compound constitution of the universe. At 47e Timaeus' discourse makes a marked transition as it asserts that whereas up to that point it has dealt solely with the operations of *nous*, it must now also incorporate the operations of another force, *ananke*. The latter is also referred to as the "wandering cause", which expresses its stubborn will in the process of and is at times fortuitously persuaded by the rational cause that had been described earlier in the discourse. Whitehead's direct engagement with this feature of the *Timaeus* has been discussed in the previous chapter.

is….The isolation of an entity in thought, when we think of it as a bare ‘it’, has no counterpart in any corresponding isolation in nature….The laws of nature are the outcome of the characters of the entities which we find in nature. The entities being what they are, the laws must be what they are; and conversely the entities follow from the laws. We are a long way from the attainment of such an ideal, but it remains as the abiding goal of theoretical science."

Actuality is ineffable because nature is a complex. The inexorable intertwinement of natural events prevents any accurate theoretical isolation of the objects that constitute them. That is, in order to talk about a natural entity, it is necessarily to isolate it, somewhat arbitrarily, from the universal system of which it is a part. But the description given to this isolated part will lack a completeness proportional to its isolation from the system in its entirety. The result is a partial misapprehension of the objects (expressed as natural laws and/or in mathematical formulae, etc.) that are exhibited in the particular natural process or entity that is being examined.

The intensity of our experience of nature, in which we do encounter objects as they are expressed in events, inclines us to mistakenly refer to events as though our language were capable of encapsulating the objects they exemplify with great exactness, while in fact these objects cannot be extracted from the natural process in their ultimate discreteness. The "materialistic" description of nature, Taylor asserts, assumes that physical entities possess the discreteness and objectivity requisite for being accurately described as such; but the progress of science has shown even just so recently that "bits of matter" do not in fact behave in such a way as to justify this mode of description. Subatomic "bits" of matter, for instance, cannot be described in isolation from one another, but can only be understood and described in terms of the larger systems they comprise. It is exactly this view of nature as an inexorably complex state of things that, as Taylor has it, Plato fortuitously foresaw.

[W]e must begin by forgetting all about the artificial ‘materialistic’
interpretations of nature which assume solid bits of 'matter' as permanent things in which or between which, so to say, perceptible events go on. This interpretation of nature has, as it happens, coloured our language so deeply that it is hard for us at first to realize how very artificial an interpretation it is....nature simply [is] a great complex of overlapping events of various kinds each with its duration and volume.\textsuperscript{286}

This mode of interpretation, laden throughout with the term "event" in its Whiteheadian sense, puts Taylor decidedly in the camp of \textit{Timaeus} interpretation that asserts that its most valuable information must be derived metaphorically. The "Wandering Cause" is not to be read as an errant ontic agent instigating unsightly runs in the rational fabric of the universe, but a way of metaphorically portraying the modicum of irrationality that must enter our rational descriptions, because we must of necessity describe particular things in some isolation from the cosmos as a whole. He portrays Plato as sensitive to the fact that all we experience and observe is "a great complex of overlapping events"\textsuperscript{287}, from which it is only with difficulty and a certain amount of compromise that we can isolate the definite forms ("objects") that inhere in them. Not only is Plato sensitive to this, Taylor's interpretation would claim, but he also realizes that because of this difficulty there is something inherently metaphorical in the gesture of making a cosmological account at all -- hence the centrality of the \textit{eikos mythos} concept discussed above, which Taylor reads as a nod to the infinitude of science's task in refining its apprehension of the objects that inhere in nature's great flux of events.

Throughout these assertions, Taylor repeatedly appeals to his contemporary Whitehead, as an interpreter of modern physical sciences who has just articulated like-minded realizations --

\textsuperscript{286}\textit{Ibid.}, 313, \textit{ad loc.} 48e2-49a6; here Taylor refers the reader to Whitehead's \textit{Concept of Nature} i-ii.

\textsuperscript{287}\textit{Ibid} (italics mine).
realizations about the character of nature and the resultant character of the science that seeks to describe it. The first of these realizations is that nature is not a bunch of material stuff, but a network of formal interrelations, that is, a pattern of objects (i.e. forms) in a flux of events. The second is that it is the task of science to get a better and better read on what these objects are, but the job will never be done, enmeshed as we ourselves are in the whirl of cosmic process. He congratulates Plato on having foreseen this conception, a conception that he congratulates Whitehead on having correctly introduced into the scientific discourse of their own historical moment.

Theological Implications of Taylor's Interpretation, and Criticism

A final relevant factor in Taylor's reading of the Timaeus is its theological dimension, which constructs God as the guarantor of freedom, a construction closely related to Whitehead's presentation of Plato as balancing respective cosmological visions of "imposed" and "immanent" divine order, as discussed in the section above on Whitehead's God and Plato's Demiurge. The relation between Taylor's work on Plato and Whitehead's later work in this connection is less salient than in others, but there are points of contact worth mentioning, and moreover it sets the stage for further concerns in this study -- namely, criticism of the theological dimensions of Process thought, and the presence of Plato and Platonism therein.

As mentioned above, one of the most prominent points of concern in the critical reception of Taylor's scholarship is his apparent alignment of Platonic with Christian theology, which drew criticism especially from Cornford, whose commentary on the Timaeus appeared not long after Taylor's. Taylor, who as noted is perhaps too comfortable deciding when Plato is implying or explicitly expressing his own "positive" doctrine as opposed to faithfully dramatizing other
contrary doctrines, declares that the deity of the *Timaeus* is ultimately a personal God "who is
distinguished from [the subordinate gods] as God is from ‘creatures’ in Christian theology."

In *The Man and His Work* this model is applied also to the theology presented in Book X
of the *Laws*, in which he reads a nuanced interplay of authoritarianism and freedom in Plato's
theological commitments.

[Theology] must combine the ‘popular’ element with 'something of personal
authority,' or…unite ‘monarchy’ and ‘freedom.’ There must be some seat of
authority, but authority must not degenerate into regimentation; there must be
*eleutheria*, the freedom of the individual, but not a freedom which is
anarchical.

Here God's role in preserving the natural order of things and in influencing human life is
presented as it will be at the end of *Process and Reality* and throughout *Adventures of Ideas*, in
terms of persuasive "immanence" rather than authoritarian "imposition" -- God as a persuasive
force offering formal possibilities to creation from His infinite storehouse of eternal objects,
fostering the concretion of organic entities into complex societies who collectively attain value in

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289 At the beginning of *Laws* Book X (884a ff) the issue of prescribing religious legislation has occasioned the need
for a proof against the opinions of atheists and those whose construction of the gods is incorrect. The proof hinges
on the assertion of soul as the ultimate source of motion -- soul is capable of moving itself as well as other things
(895b). When working in conjunction with *nous*, soul orders things in the universe rightly and happily, and when
in the absence of *nous*, things go the opposite way (897b). This central point of the argument seems to be what
Taylor seizes on to assimilate it to the theological view of a deity who provides guidance to an ensouled world
persuasively. Briefly, regarding my own view of Taylor's reading of the *Laws*, I wonder whether the implications
of this ontological role of God are sufficiently integrated with his consideration of its political ramifications. As
soon as the theological proof in the *Laws* is through, the Stranger proceeds directly to enumerating the miserably
harsh punishments to be administered to atheists (907e ff); moreover the theological proof was in the first place
suggested by the apparent need for state control of religious usage. Can God be both the seat of freedom and of
absolute authority? Can a philosophical theism that has as its basic emphasis the guarantee of freedom in all
senses be tidily taken out of a context rooted in the construction of ideal authoritarianism? Taylor seems
committed to a construction of Platonic deity that can be harmonized with a liberal theological and political
worldview. In discussing this section of the *Laws* he recycles the following witticism: "Lord Acton once wrote,
improving on Dr. Johnson, that the first Whig was not the devil, but St. Thomas. It might be even truer to say,
neither St. Thomas nor the devil, but Plato" (Taylor, *Man and His Work*, 493).
their "valuation" of those offerings.\textsuperscript{291} The rapport between Taylor and Whitehead on this point is less substantiated by mutual citation than the connections discussed above; but it would appear that their interpretations of God in the \textit{Timaeus} are in harmony, and it is plausible that Taylor's interpretation of Platonic theology influenced the role given to God in Whitehead's system once he undertook \textit{Process and Reality}, just as had Taylor's interpretation of Plato's understanding of physical nature and the task of science.

F.M. Cornford was particularly critical of Taylor's construction of the \textit{Timaeus}' theology. He accused Taylor of imposing upon Plato an inherently anachronistic monotheism, an accusation that began a protracted debate (in which, as it happens, Cornford eventually conceded that there is in some sense a monotheistic bent to Plato's theology.) Amidst the same critique (in the preface to his own \textit{Timaeus} commentary), he indicts the extravagances of Taylor's imposition of Whitehead on Plato. He complains of Taylor's "practice of translating Plato's words into the terms of Professor Whitehead's philosophy", which he deems obviously problematic because "[t]hat philosophy could not have existed before the Theory of Relativity."\textsuperscript{292} He finds Taylor's pervasive suggestion of the equivalence of \textit{gignomenon} and Whiteheadian "event" -- which was seen to be so central to Taylor's reading -- to be misleading, and similarly anachronistic.

Cornford's response set the stage for the problematizing reception of the Platonic elements in Whitehead's thought, which will be investigated in a later chapter. -- For parallel to the question of whether Whitehead belongs in Plato, there is the question of whether Plato really belongs in Whitehead. For now what has been established is the immense relevance Taylor saw in Whitehead's early work, even before the latter had produced his original cosmology. Once

\textsuperscript{291}See previous chapter 1 discussion of Whitehead's God and its relation to Platonic theology and "persuasion".
\textsuperscript{292}Cornford, \textit{Cosmology}, ix.
Whitehead did so, and did so in such a way as to draw blatant lines of agreement between his modern cosmology and Plato's precedent, he transparently acknowledged Taylor's influence\(^{293}\). -- It was an influence that flowed in both directions, taking inspiration from and further inspiring a very particular brand of Platonic scholarship.

*Problems of Translation*

As is suggested by Cornford's criticism, such questions of interpretation and influence are thoroughly bound up with questions of translation. In the critique quoted above Cornford also asserts in passing that Whitehead was "profoundly influenced by Jowett's translation"\(^{294}\), and problematically so. With this in mind I will take a moment to evaluate Whitehead's attitude toward and degree of dependence on translations of Plato, as this is far from the least important factor in examining how his conception of Plato came to be. In this regard special attention must be given to the apparently Jowett-influenced equation of being with "power" in the *Sophist*, which was, as discussed, among the most celebrated of Whitehead's Platonic *loqui*\(^{295}\).

In a conversation with Lucien Price appearing in his *Dialogues*, Whitehead's reflection on his own pedagogical practices reveals an ambiguous attitude toward the problem of translating Plato, and at best a dubious stance on Jowett:

> Even the sainted Plato doesn't lose so much [in translation]. I have to teach several of his best Dialogues to successive classes of students, and I often ask myself what value there is to the ideas in them that would justify a man for the labour of going to get up the language. It being forty years since I read Greek fluently I now take a Loeb translation with the English on a parallel page, but


\(^{294}\)Cornford, *Cosmology*, ix.

\(^{295}\)See discussion of Whitehead on "being as power" in chapter 1.
with the help of Liddell and Scott’s lexicon I can generally tell where Jowett is making a fool of himself, which is about every other sentence…\(^{296}\)

Apparently he used R.G. Bury's Loeb edition of 1929 which contains the *Timaeus, Critias, Cleitophon, Menexenus* and *Epistles* to supplement his use of Jowett. The remark is also curious since it seems to simultaneously assert indifference to the importance of a knowledge of Plato's Greek for understanding him responsibly, and at the same time to express relief that he is able to amend the translation's mistakes on behalf of his philosophy students.

Later in the *Dialogues* Price relates an episode amidst their conversations wherein Whitehead is prompted to take this very same Loeb *Timaeus* from the shelf, and they go through it together critiquing translations of certain words, though this too upon examination is very curious: Price says that they open to chapter 51, whereupon Whitehead criticizes the translation "substance" for *physeos\(^{297}\)" but in fact while the word substance is there in the English, the word *physeos* is not there in the Greek at all, and what is translated as "substance" is actually supplied to handle the substantive τῷ ... μέλλοντι δέχεσθαι -- "the thing going to receive [the intelligible forms]." The "thing" in question in this section is the Receptacle, and Bury has chosen "substance" to handle Plato's apparently deliberate avoidance, by using the participle, of naming a specific "thing." The word *physis* doesn't appear anywhere in 51.

The anecdote is thus ambiguous and inconclusive (I'm not particularly concerned with trying to show how well he did or didn't remember his Greek), but perhaps it is at least suggestively representative of Whitehead's relationship with Plato in the sense that his reading of Plato as a well-spring of vague, unsystematic "suggestions" justifies him in making his appropriations freely and without particularly careful appropriation. His emphasis, after all, is

\(^{296}\)Whitehead quoted in Price, *Dialogues*, 54.

\(^{297}\)Ibid., 159.
that manner in which Plato inspires further developments in modern thought, not least his own; careful scholarly criticism of the dialogues is not his concern, and in fact he broadly deprecates the bulk of contemporary Plato scholarship, "with a few exceptions" that presumably include Taylor. -- This will be discussed further when I examine the status of Platonism and Platonic scholarship at that time.

His dependence on Jowett\(^{298}\), alleged by Cornford, offers a more substantive case for examination, since in the relevant passage of *Adventures of Ideas* he is using exactly Jowett's words. Whitehead got a great deal of mileage out of the definition of being as power (translating *dynamis*) in the *Sophist*; it justified his claiming Plato as ultimately sympathetic, in what he supposed to be his mature stage of thought, with the revelation that forms, universal though they be, are relevant only to the realm of fluctuant becoming and perishing -- he is able to claim that at least for an inspired moment Plato realized that *to be is to become*.

It was suggested in the discussion above that to a certain degree Whitehead plucks the maxim "being is power" rather haphazardly from its context, in the Stranger's hypothetical double debate with the Idealists and the Materialists. Nevertheless, it was concluded there that if the passage as a whole is read as a subtle balancing of the roles of "static being" and "fluctuant becoming" in the constitution of existence, then it is in fact an apt *locus* for illustrating one of Whitehead's central themes in *Adventures of Ideas* -- the theme of the continuous interplay of what he calls the *Law of Immanence* and the *Law of Imposition* as positions of respective metaphysical emphasis in the history of philosophy.

Let's now further examine the particular importance of Jowett's translation as it

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\(^{298}\) Oxford professor of Greek and theologian Benjamin Jowett's English edition of Plato's works first appeared in 1871 and gained great prominence in the English-speaking reception of Plato -- in the words of Sir Richard Jebb, Jowett "made Plato an English classic." Despite certain errors and objects of contention it was well received and became and has been a standard English edition of Plato. See Novotný, *Posthumous*, s.v. "Benjamin Jowett."
contributes to this appropriative reading. Brennan has noticed that the reading is "[c]entral to Whitehead's commentary on Plato," justifying his contention that "we cannot allow the real to be conceived in terms of everlasting and meaningless fixity."

But how justified is this justification? Brennan recollects:

> [r]epeatedly Whitehead called our attention to the passage in the dialogue which Benjamin Jowett translates, "I hold that the definition of being is simply power \((\text{dynamis})\)." Whitehead may have got onto the passage while discussing Plato with Professor James Haughton Woods, whose course in the later dialogues I took just before Whitehead's and which Whitehead himself had sat in on a few years earlier. Professor Woods told our little class that Whitehead 'made a good deal' out of this passage, which Woods said was a very odd one and was thought by some scholars to be a Stoic interpolation in the text.²⁹⁹ F. M. Cornford later gently scolded Whitehead for accepting Jowett's translation of the passage, not realizing that Plato said 'a mark of real being' rather than 'definition of being.'³⁰⁰ Cornford, too, thought the passage peculiar, pointed out that the construction of the Greek is obscure and difficult, and drew the moral that even a profound thinker like Whitehead may be misled by a translation.³⁰¹

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²⁹⁹The relation of the passage to the Stoic tradition and the use they make of it is fascinating, although ancillary to present purposes. Suffice it to say it is employed in justifying their materialistic view, and becomes the Stoic definition of 'body', which they held that everything is, as that which can act and be acted upon (see \textit{Stoicorum Veterum Fragmenta} 2.315, 319, 357, 381; Apollodorus 6; 2.501, 502. 12). The motivation for the definition as it appears in the \textit{Sophist} was to incorporate nonphysically perceptible things into the same ontology that includes sensible things, so this particular stage in the Stranger's hypothetical discussion with the Idealists and Materialists arrives at a definition of being that embraces both the tangible and the intangible. The Stoic and Epicurean appropriations give the definition a different emphasis, since they use it to prove that only body exists. Hahm argues that the \textit{Sophist} must have been sufficiently widespread to be available for such reemphasis (it shows up in Aristotle's \textit{Topics} 5.9.139a4-8 and 6.7.146a21-32). These citations, and this note, are derived from David E. Hahm, \textit{The Origins of Stoic Cosmology} (Columbus: Ohio State University Press, 1977), 12 ff.

³⁰⁰I am not aware of this particular scolding to which Brennan refers -- unless he means the remark made in Cornford's criticism of Taylor (see above) (F. M. Cornford, \textit{Plato's Theory of Knowledge: The \textit{Theaetetus} and the \textit{Sophist} of Plato translated with a running commentary} (London: Kegan Paul, Trench, Trübner and Co. Ltd., 1935), ix-x).

Let's first reexamine the passage in reference to Jowett's translation, and then make further considerations of the history of the passage and especially its prominence in scholarship on Whitehead.

Here is the Greek in question:

λέγω δὴ τὸ καὶ ὁποιαν οὖν τινα κεκτημένον δύναμιν εἴτ’ εἰς τὸ ποιεῖν ἑτερον
ὀτιοῦν πεφυκὸς εἴτ’ εἰς τὸ παθεῖν καὶ σμικρότατον ὑπὸ τοῦ φαυλοτάτου, κἂν εἰ
μόνον εἰς ἄπαξ, πᾶν τοῦτο δόντως εἶναι: τίθεμαι γὰρ ὃρον ὅριζειν τὰ ὄντα ώς
ἐστιν οὐκ ἄλλο τι πλὴν δύναμις.302

And here is Jowett's translation:

My notion would be, that anything which possesses any sort of power to affect
another, or to be affected by another, if only for a single moment, however
trifling the cause and however slight the effect, has real existence; and I hold that
the definition of being is simply power.303

A preliminary point is that the translation of dynamis here is self-consistent with its other
uses in the dialogue, where it comes up in the context of classifying the respective technai by
division -- such and such an art is a power of doing this, and such and such another a power of
doing that. Cornford provides the same translation304, but qualifies its role in the Stranger's
argument. He proposes that power is not a "definition" of being but a "mark" of it; and that it is
only a definition in a very provisional sense that may be changed later, employed here for the
dual function of getting the Materialists on board and getting the Idealists to admit that reality
does include change.

Plato himself might hold that nothing is real that cannot be in some way known,

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302 Sophist, 247d-e.
and yet not hold that 'to be real' means to possess whatever power of acting or being acted on is thereby implied. That he does not in fact regard this as the definition of 'real' is clear; for in a later section (249d ff.) the question, What does reality (Being, Existence) mean? is put by the Stranger to himself and Theaetetus still unanswered.\(^{305}\)

On this reading then Whitehead's "misreading" would consist in having taken a complete and final definition for a provisional one. Taylor also doubted whether the passage was ever in the first place intended seriously, and similarly emphasizes its provisional function in the argument; Findlay makes a similar assessment, and found the passage perilous, for being so readily misinterpreted.\(^{306}\) (On the other hand, Process philosophers commenting on Whitehead have expressed the judgment that Whitehead's emphasis on the passage is exactly right, and that it aptly sorts out the difficulties involved in it.)\(^{307}\)

But it must be remembered that Whitehead's preoccupation with the passage is not based on his view of its ultimacy and finality as an adequate metaphysical generalization -- it is not supposed to be the end-all and be-all of statements about being. Its efficacy rather consists in how it shows Plato thinking, navigating in the act of navigating the between metaphysical

\(^{305}\) Cornford, Theory of Knowledge, 238-239.


\(^{307}\) Dombrowski surveys critical responses to the passage and is emphatic about the success of Whitehead's reading, incorporating it into his argument for taking a panpsychic worldview seriously. He holds that the definition leads us fortuitously away from viewing the universe as static, and is happily incorporated into a panentheistic viewpoint for which he finds support in the Timaeus. This has its basis in Hartshorne's interpretation: "power must be exercised upon something, at least if by power we mean influence, control; but the something controlled cannot be absolutely inert, since the merely passive, that which has no active tendency of its own, is nothing; yet if the something acted upon is itself partly active, then there must be some resistance, however slight, to the 'absolute' power, and how can power which is resisted be absolute" (Hartshorne, Man's Vision of God (New York: Harper's, 1941), 89 quoted. in Dombrowski, Platonic Philosophy of Religion, 41). Eslick argues that the passage demonstrates the crucially "dyadic" character of Platonic metaphysics -- that "[b]eing has both an in-itself and an in-relation character" (Leonard Eslick, "The Dyadic Character of Being in Plato," Modern Schoolman 3 (1953) quoted in Dombrowski, Platonic Philosophy of Religion, 38-39.) In this way, the Whiteheadians' interpretation of the passage presages the very critique leveled against Plato as the fountainhead of Western metaphysics, e.g. Heidegger's or Derrida's of the metaphysics of presence.
extremes -- being as static and in-itself, versus being as fluid and in-relation. The importance of
the statement for Whitehead is not chiefly its verbal adequacy in collapsing these oppositions,
but its symbolic value as an instance of Plato synthesizing the opposing tendencies of
philosophical speculation, tendencies which Whitehead represents as continuing to iterate
themselves beyond Plato's age, up to the present. It exemplifies Plato's methodological
willingness to balance opposing worldviews, a balancing act that in turn exemplifies the history
of Western thought. Thus its very provisionality in its original context is part of what motivates
his preoccupation with it.

This discussion in turn exemplifies the aforementioned intertwinement of the functions of
interpretation and translation. From a certain angle Whitehead's whole appropriation of Plato is
an act of translation, remembering that at the very outset the "philosophy of organism" is
presented as an effort "to render Plato's general point of view with the least changes made
necessary by the intervening two thousand years." It seems evident that Cornford's assertion of
Jowett's influence on Whitehead is defensible -- but at the same time, here as in other
connections, Whitehead's reading demonstrates a highly selective, eclectic approach to
appropriating from Plato, such that the point to emphasize is not his reliance on a given
translation from Greek to English, but the contextual translation from the Ancient world to the
Modern that he imparts to the Platonic items he appropriates. But of course, neither gesture
precedes the other, whether it is a question of attempting to present Plato as he was, or Plato as
he pertains to the present.

The peculiarities of Whitehead's reading are at once the product of his rapport with Taylor
in particular, and of his willingness to interpret Plato without the philological burden of minute

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demonstration. He shares with Taylor, having perhaps directly received it from him, an avidity for gathering Platonic notions into a modern frame of reference, especially in regard to their scientific relevance. The basis of this relevance consists in his pervasive assertion, also reflected in Taylor's scholarship, that Plato offers more than anything an inexhaustible well-spring of ideas -- "guesses" that, while they may transcend the current state of science's capacity for substantiating the forms of order they suggest, nonetheless stimulate the progress of human thought. In the following chapter I examine how these principles operate in the presentation of Whitehead's thought -- how, according to his own construction of what Plato meant to do in his own writing, he presents his philosophy as a Platonic one.
CHAPTER THREE: PRESENTATION OF WHITEHEAD'S PLATO

The previous chapter offered a sketch of the development of Whitehead's intellectual life, and then zeroed in on the influence of A.E. Taylor in particular, as background elements that underlie his engagements with Plato and Platonism in his philosophy. With these influences in mind, I now examine in greater detail the manner in which Whitehead expressed his commitments to Plato in his writing. While the first chapter of this study charted his particular conceptual appropriations from Plato, and in doing so provided a general introduction to his thought, the present chapter will show how even beyond these itemized appropriations, Whitehead presents a general figuration of Plato as the fountainhead of philosophy, and even as the personification of philosophy's perennial task.

And so there will be consideration first of all of Whitehead's famous "series of footnotes" remark -- that "[t]he safest general characterization of the European philosophical tradition is that it consists of a series of footnotes to Plato" -- a remark whose quotability has outshone all the original thought it was meant to introduce. In a certain sense this "Footnote Thesis" reveals the kernel of Whitehead's engagement with Plato -- what Plato meant to him, and in the same breath what he saw as the task of philosophy. Following this I examine *The Function of Reason*, in which Whitehead broadly identifies Plato as the symbolic protagonist of speculative thought. In a sense then this chapter examines Whitehead's sweeping generalizations about Plato, and assesses what they say about his attitude toward philosophy, and Plato's conspicuous centrality in his characterization of its function. Finally, I will also note crucial connections in which Whitehead implicitly or explicitly departs from or qualifies these pronounced commitments to Plato, when his Platonic preoccupation shifts from approbation to critique.

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The Footnote Remark

It is not certain whether the famous "footnote remark" as I have called it here is just that, a mere remark, or a "thesis" as Kann calls it. Kann's study of Whitehead takes the "footnote thesis" as the jumping off point for his investigation into Whitehead's treatment of the history of philosophy, and in so doing asserts that Whitehead's whole presentation of the thought that has led up to his is in fact meant to be explicitly understood as a series of engagements with the considerations that are first formulated and thematized in Plato's dialogues. -- It must be asked, is this simply meant as a casually generalizing, highly quotable remark? Or is it a serious claim that Plato literally originates all of philosophy's perennial concerns, and that Whitehead should be read as answering to them explicitly?

The remark itself has been influential and impactful, as its extensive citation indicates, and has in turn been appropriated for others' introductory self-positioning toward or against Plato, as well as serving to introduce the philosopher-at-large to the uninitiated -- it is currently found, sure enough, the beginning of the second paragraph of Plato's wikipedia entry. Critical responses to the remark are divided -- some find it important, legitimate and ineffectual; others find it unimportant, less legitimate and ineffectual, or at least highly ambiguous. Among these responses some occur in briefly extended discussions about the remark itself, but most appear casually, amidst discussions in other contexts. -- As it is so eminently quotable, it has often served to epigraphically introduce this or that related discussion of or introduction to Plato, allowing this or that author to position themselves for against it as serves their purpose. I will

311 https://en.wikipedia.org/wiki/Plato
briefly delineate some of these responses here; in collating them I am substantially indebted to Kann's treatment of the topic.\textsuperscript{312}

\textit{Critical Responses}

Lovejoy gives the quotation a prominent and complimentary place, at the beginning of the second chapter of \textit{The Great Chain of Being}. -- He suggests that his book, which traces the origins and developments of that eponymous idea, "will serve as an illustration of [this] celebrated remark of Whitehead's."\textsuperscript{313} Lovejoy's work is underpinned by his principle of "unit-ideas", building blocks in the history of ideas that recombine variously in different eras. (This principle is closely related to Whitehead's method in \textit{Adventures of Ideas},\textsuperscript{314} which infuses investigations into philosophical history with promulgations of original speculation.) Given that \textit{The Great Chain of Being} charts the interchanges and reformulations of "unit-ideas" that have their first complete expression in Plato,\textsuperscript{315} and that then become ubiquitous in the landscape of Western thought, it is not surprising that he is sympathetic with Whitehead's remark, and considers his own work to be illustrative of its validity. For Lovejoy, the remark aptly conveys the lasting ubiquity and combinatorial flexibility of Platonic concepts.

Accepting the remark as a plausibly legitimate thesis, there is a related question as to how particular or rigorous this or that reference to Plato is meant to be in illustrating it, and whether the remark properly refers to the dialogues themselves, or to the sprawling domain of

\textsuperscript{312} Whence the preponderance below of responses by German commentators whom I would otherwise never have known. Probably there are even more remarks on the quotation among English scholars than I have so far found.


\textsuperscript{314} \textit{Adventures of Ideas} was published in 1933, and \textit{The Great Chain of Being} in 1936, though the latter was derived from Lovejoy's William James Lectures at Harvard in 1933. Lovejoy's book cites Whitehead occasionally, but only in reference to \textit{Science and the Modern World} and \textit{Process and Reality}. In \textit{Adventures of Ideas} Whitehead favorably cites Lovejoy's earlier work \textit{The Revolt Against Dualism} (190).

\textsuperscript{315} Lovejoy, \textit{Great Chain of Being}, 24.
"Platonism" at large. Wieland asserts that the statement is in specific reference to the dialogues, and that at least in some degree a positive reading of Plato's doctrine can be gotten from the accumulation of Whitehead's remarks on them throughout his works. Brumbaugh is less committed to reading Whitehead as a concerted interpreter of Plato's doctrine and suggests that "Whitehead's epigram sees something else in Plato’s relevance and impact than is brought out by analytic or doctrinal interpretation" -- that Whitehead sees something in the spirit of Plato, albeit vaguely apprehended, that remains perennially relevant for the philosophic act (viz. the identification of Plato as the typification of speculative thought itself in *The Function of Reason*, to be discussed in the following section.)

Kobusch and Mojsisch, on the other hand, treat the remark as a mere "bon mot." When analyzed in the light of Whitehead's other remarks in *Process and Reality* they find it ambivalently appropriative of the textually Platonic and the more general Platonic tradition, and so hazy. Görgemann calls it an "epigrammatische Uberreibung" ("an epigrammatic exaggeration"), and Vlastos similarly finds it "absurdly inflated." Weizsäcker indicts it as an out and out false statement, and one that involves an unintended trivialization of the tradition it endeavors to characterize. Hauskeller, while sharing the criticism, is more forgiving -- if it is not the right thing to say, he thinks he at least meant nothing deprecating by it; the trouble is that the very fame of the quotation has made it all the more easy to misunderstand. Yet another

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320 Gregory Vlastos, *Plato’s Universe* (Las Vegas: Parmenides, 2005 (1975)), xxv.
322 Michael Hauskeller, *Alfred North Whitehead zur Einführung* (Hamburg: Junius, 1994), 42 in Kann, Fußnoten,
view is that it attributes universal significance to the wrong figure -- Ferber suggests that it would be a truer statement if the footnotes were credited to Parmenides. Kabitoglou thinks it can be most useful if it is understood not in reference to the Plato of the dialogues at all, but applied equally to what is called Platonism and what is called Anti-Platonism -- that it is meant to refer to these very controversies.

Kann's Interpretation - Philosophy as "Footnote-making"

No one, to my knowledge, has read the quotation with such seriousness, or applied it so elaborately to a general interpretation of Whitehead as has Kann, who takes it as the main access point through which Whitehead's presentation of the history of philosophy is to be approached. He has digested the foregoing criticisms but feels that the vagueness of the thesis is as much its strength as its weakness, and that interpreters of Whitehead have made a grave mistake by ignoring it or treating it as a hindrance. Rather, the import of the quote is to provide a crucial hint that Whitehead's presentation of the history of thought and the content of his own original thought must be read together.

In brief, Kann's view is that the sentence embodies Whitehead's entire methodology -- it proposes that there is a continuum of thought that is Platonic whether it knows it or not, and implies that his own writing endeavors to engage that continuum and show how it has come full circle. He asserts that part of the implicit purpose of the remark is that by it Whitehead is able to distinguish the new Platonism he is about to present from the old, bad Platonisms that have

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326 Ibid., 240.
327 Ibid., 27.
brought that very appellation into confusion and mistrust. Whitehead does in fact appear to be rather explicit about this: the sentence immediately following the "footnotes" declaration reads,

I do not mean the systematic scheme of thought which scholars have doubtfully extracted from his writings. I allude to the wealth of general ideas scattered through them. His personal endowments, his wide opportunities for experience at a great period of civilization, his inheritance of an intellectual tradition not yet stiffened by excessive systematization, have made his writings an inexhaustible mine of suggestion.328

This, Kann argues, should at least dispose of any possible accusation that he meant to freely depart from the Plato that can be found in dialogues. He goes on to articulate how this very allusion must be meant in two ways -- on the one hand by doing Western philosophy at all one is writing a footnote to Plato, while in the case of the philosophy he is about to put forth, the identification happens to be especially contiguous and almost absolute: "that if we had to render Plato's general point of view with the least changes made necessary by the intervening two thousand years", it would amount to the "philosophy of organism" that he is about to represent. And so it appears, as Kann emphasizes, that what he puts forward is not a form of Neoplatonism or "nouveau Platonism"329 but a return to Plato the writer. In this interpretation both remarks have to be taken together: all Western philosophy has to do with Plato, and on that principle, here is a very direct return to what Plato himself was concerned with, reexamined and freshly formulated.

To my mind part of the difficulty in interpreting the passage, is that Whitehead does not go on at this point to discuss what he means the bona fide Plato as Plato to be (that is, he doesn't

328Whitehead, Process and Reality, 39.
329Kann, Fußnoten, 28.
discuss what he thinks really is in the dialogues) but goes straight into explaining what his own (ostensibly faithfully Platonic) philosophy of organism is. Its Platonic aspects are articulated with a generality that must suspend any strong claim to explicit faithfulness. The line along which his and Plato's philosophies are identified is that

\[ \text{In such a philosophy the actualities constituting the process of the world are} \]

conceived as exemplifying the ingress (or 'participation') of other things
which constitute the potentialities of definiteness for any actual existence. The things which are temporal arise by their participation in the things which are eternal.\(^{330}\)

These two sentences can hardly be said to encapsulate the nuances, contradictions, and difficulties with which the dialogues taken as a whole are replete. As this study is and has been attempting to investigate, Whitehead's language may suggest points of emphasis that characterize the particular Plato he happened to receive, which is the Plato of what he supposes to be the late dialogues, substantially through the lens of Taylor's characterization. The phrase "potentialities of definiteness" recalls Taylor's technical exegeses of the function of the paradigm in the *Timaeus* and the forms elsewhere, that clothe Plato in an interpretation congenial to modern science.

That being said, another and perhaps more immediately digestible facet of the "footnote" remark is its assertion of the availability in the dialogues of a huge wealth of general ideas that can and will continue to nourish philosophical discourse -- "an inexhaustible mine of suggestion." This is what Kann calls "the reservoir interpretation"\(^{331}\) -- that Whitehead means to say that Plato's dialogues are a boundless source of philosophical content by virtue of their wondrous breadth, and the fact that they are not delimited by any substantial "systemization."

\(^{331}\) Kann, *Fußnoten*, 28.
Because, according to Kann, all the main themes of Western thought can be located here or there in the dialogues, Whitehead can successfully in turn represent all the other philosophers with whom or against whom he positions himself as being also in conversation with Plato.\textsuperscript{332} --This methodology is only implicit however: Whitehead does not connect his subsequent treatments of Leibniz, Descartes, Kant, Hume, etc. specifically in terms of what he thinks they thought about Plato. Kann's point however is that these treatments of other philosophers ought to be read with the footnote thesis very much in mind, and that the content of its assertion pervades Whitehead's methodology.\textsuperscript{333}

In this way Whitehead's pervasively citational method itself consists in footnote-making, contributing self-reflectively to a continuum that it presents as inherently self-reflective. The "footnote thesis" states that all philosophers make footnotes to Plato; the distinction of Whitehead's footnotes is that, under the banner of this thesis, they are \textit{transparently} footnotes. They reveal their point of origin (Plato) by making constant reference to that origin, and frequent cross-references to other footnotes that have come before them. What this means in practical terms, if Kann's interpretation is right, is that Whitehead makes good on his thesis by increasingly incorporating, in the works that follow \textit{Process and Reality} (especially \textit{The Function of Reason} and \textit{Adventures of Ideas}), examinations of the history of philosophy into his presentation of his own contributions to it.

As Whitehead himself suggests, this footnote-making evokes the mode in which Plato himself carried out his own work, especially in his treatment and collation of the Pre-Socratics, implicitly or explicitly citing and positioning the content of his writing in relation to foregoing

\textsuperscript{332} Ibid., 35.  
\textsuperscript{333} Ibid., 35.
schools of thought (e.g. Socrates and Theaetetus coming to terms with Protagoras, Heraclitus and Parmenides in Theaetetus).\textsuperscript{334} In another sense the dialogues are inherently citational because of their dramatic nature -- they engage with figures in immediate philosophical history by biographical representation. Certainly a more literal "footnoting" gesture is undertaken by Aristotle in his habitual summations of foregoing approaches to a question at hand, and this gesture may be acknowledged as the original systematization of the tradition itself.\textsuperscript{335} But on this basis Kann asserts that Aristotle's is itself a footnote, and in a sense the prototype of such footnotes; his thought is relevant and comprehensible ultimately in reference to the content of Plato's dialogues, without which it would be unthinkable.\textsuperscript{336}

Kann's view is that Whitehead correctly implies that the practice of philosophy is (in a very broad sense) inherently doxographical\textsuperscript{337} -- it involves positioning oneself in the constellation of speculative gestures that have preceded one's own. In this metaphor of "constellation", Plato would enjoy the distinction of being the sky itself, in which the stars of speculation, whether they know it or not, are bound to hang. This would equate the act of writing philosophy with that of writing the history of philosophy -- and Plato, as Whitehead seems to claim, is the fountainhead of that history.

\textit{Further Significance of Kann's Interpretation}

\textsuperscript{335} Kann, \textit{Fußnoten}, 3.
\textsuperscript{336} Ibid., 33.
\textsuperscript{337} Modern critical terminology distinguishes doxographical writing as a subgenre of Ancient philosophy, one that is concerned with systematically listing and summarizing the tenets of foregoing philosophers and philosophical schools -- as opposed to philosophical writing that makes "independent" or "original" philosophical claims, to which citations of other philosophers are merely ancillary (this distinction effectively begins with Diels' \textit{Doxographi Graeci} (1879)) (cf. Mansfield (introductory section)). But this distinction is not cut and dry, since the philosophical method of starting from a constellation of doxai on a particular topic, and classifying these according to their similarities and differences is often the method employed by philosophers who are certainly considered as having produced original, positive doctrines (e.g. Aristotelian \textit{diaeresis}) -- Mansfield distinguishes this as doxography in the "broad" sense (Jaap Mansfield, \textit{Stanford Encyclopedia of Philosophy}, s.v. “Doxography of Ancient Philosophy” (Stanford: Stanford University, 2016), section 4).
In fact, in Kann's view the "seven main notions"\(^{338}\) that Whitehead attributes to Plato, which in the previous chapter of this study were used to organize Whitehead's appropriations from Plato, do in fact effectively thematize the whole Western philosophical tradition.\(^{339}\) Their introduction and exploration in *Adventures of Ideas* represents the fulfillment of the footnote thesis introduced at the beginning of *Process and Reality*.\(^{340}\) The assertion in the later work is that the work of all philosophy is to bring these ultimately Platonic elements into some novel coherence in accord with the progress of the current age. As such there is no final unification of them in thought -- ever new footnotes will be needful, and even Whitehead's own footnotes themselves amount to a replaceable reduction. Permanent adequacy of a philosophical system is an ideal that it is never attained -- the very inconsistency of Plato's system (or lack thereof) is a testament to this, and subsequent systems are the more successful insofar as they incorporate and reflect this crucial qualification.\(^{341}\) Thus, as Whitehead valued in Plato, the quality to be valued in a philosopher's body of work is not its systematic finality but its suggestiveness. -- By "suggestiveness" I mean that it has the capacity to suggest ever-new applications of the ideas with which it is concerned, ideas which are in themselves perennial (e.g. the "seven main notions", but under any given names) but subject to endless reinvention.

The value of a philosophical system does not consist in its completeness, but in the fact that it furnishes material for further systems, which will express new configurations and applications of its ideas. These new configurations are the result of a process of selection and

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\(^{338}\) [Plato's] later thought circles round the interweaving of seven main notions namely, The Ideas, The Physical Elements, The Psyche, The Eros, The Harmony, The Mathematical Relations, The Receptacle. These notions are as important for us now, as they were then at the dawn of the modern world" (Whitehead, *Adventures of Ideas*, 147)." For discussion of these seven notions see the chapter 1 of this study, *passim.*

\(^{339}\) Kann, *Fußnoten*, 51.

\(^{340}\) Ibid., 60.

criticism, that surveys foregoing systems and recycles their materials for redeployment in a mode that is relevant to the current age. The actual history of philosophy is a history of rearrangements of objects of thought. These objects of thought represent the potential for novel philosophical expressions, that will also be mediated and conditioned by that actual history.

The reason I attempting to describe this principle of philosophical influence in such abstract language, is that Kann carries this thematic concern of Whitehead's to a further application. He suggests that this account of the purpose of philosophy in turn evokes Whitehead's account of actual entities in the process of nature. -- That is to say, there is an analogy between Whitehead's account of philosophy's function, and the account of the universe that his "philosophy of organism" offers. I refer to this analogy as a "holism" -- what I mean is a holism of form and content; the form being the historical process of philosophy, the content being the cosmic process that Whitehead's philosophy describes, the holism being that they work in a similar way. Kann implies this holism toward the end of his study; I am further elaborating the implication here.

The holism consists in the idea that both in philosophy and in the universe at large, this is the case: from existing actual entities, there is a selection of elements that provides for the formation of novel types. Coherence emerges from this process of selection: both philosophy and cosmic process are evolutionary. Recall the summation of Whitehead's metaphysics: entities, in the process of coming to be, "choose" or "feel"\textsuperscript{342} their forms of relation to the existing universe, and in this choice express "eternal objects" or "forms of definiteness", and thus become "actual entities" with a novel state of relation to the universe of which they are a part. Analogously, philosophical speculation feels its way through the array of foregoing expressions in

\textsuperscript{342}This is an oversimplified way of referring to what Whitehead calls "prehension" -- see first chapter and glossary.
philosophical history, and in generating an original expression selects and exhibits a novel arrangement of the ideas contained in those expressions, resulting in its own expression of a novel state of relation to the tradition of which it is a part. Actual entities experience cosmic passage and respond to it by a selection of the formal possibilities of relation; philosophy surveys its history and responds to it by a criticism of its ideas. Philosophy is the critical assessment of abstractions, just as actuality is the result of the critical selection of formal possibilities as conditioned by the actual history of the universe. Certain formal possibilities are more or less fruitful and suitable for the evolution of the cosmic process, and certain abstractions are more or less suitable and profitable for the progress of philosophy in its historical evolution.

Kann equates this theme of critical assessment with the function of the *eikos mythos* in the *Timaeus*. Since Whiteheadian philosophizing involves the selection and proffering of suitable abstractions, it recalls Timaeus' claim that an *eikos mythos* is the goal and destiny of a successful cosmological inquiry. The concept of the *eikos mythos* serves as a precedent for Whitehead's method, since it simultaneously refers to the limitations set on the completeness of scientific descriptions of the universe, and asserts that the reason for those limitations is the inherent incompleteness of the constantly evolving cosmic process itself. The concept has in this way a dual efficacy, referring epistemologically to the approximative apprehension of ideals in the philosophic act (recalling Taylor's interpretation), and ontologically to the passing expression of eternal forms in the process of becoming.

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343 Kann paraphrases the concept here as "möglicher Abstraktion" -- "plausible (or feasible) abstraction." In this way his emphasis in the interpretation of the phrase *eikos mythos* is actually closer to Burnyeat's reassessment (Myles Burnyeat, “Eikōs muthos” in *Plato’s Myths* (Cambridge: Cambridge University Press, 2009), which critiques and revises Taylor's construction of it as a concessive notion -- *eikos* as "provisional." Burnyeat's response to Whitehead will be discussed in the following chapter. Still, since his concept turns on what he sees as Whitehead's commitment to philosophy's need to perennially revise itself, the precedent for which he locates in the Platonic method, Taylor's interpretation is not inappropriate either.

This configuration of the *eikos mythos* emerges as a central concept characterizing Whitehead's engagement with Plato. It imagines the history of philosophy as a quasi-mythopoeic exercise that was first articulated as such in the *Timaeus*, an exercise which all subsequent Western philosophizing was engaged in, whether or not it always knew that it was *eikos-mythos*-making. This theme first arose in this study in regard to Whitehead's fondness for Plato's unwillingness to be systematic, which he took to be a symptom of Plato's healthy awareness of this characteristic of the philosophic enterprise. One must elaborate on and/or refine and/or renovate the foregoing "mythic" utterances, in doing so reaching forward from the history of ideas into novel intellectual evolutions. This intellectual process mirrors the cosmic process of the experience of actual entities, that reach, in their "prehensions", from the past of actual fact into the infinite possibilities of the future. -- In this grasping of possibility, they exemplify patterns of relatedness, just as the gesture of doing philosophy involves grasping patterns of reality in abstraction.

Note again, however, that this interpretation -- all springing from an inquiry into the possible significance of the "footnote" remark -- is my own elaboration of what Kann suggests and implies about Whitehead's method. Whitehead does praise the concept of the *eikos mythos*, and praise and identify with Plato's perceived non-systematicity; this self-identification will be further examined in the following section treating *The Function of Reason*, where Plato is front and center in Whitehead's treatment of the goals and function of philosophy, and a thesis very much like what has been described here is set forth. But as for the footnote remark itself, while I do think that it is suggestive of the interpretation discussed here, I am hesitant to assert that it was meant to definitively orient his readers toward reading him through the lens of Plato's *eikos mythos*. (The notion of philosophy as "criticism of abstractions" should discourage us from
excessive abstract systematizing even in the present inquiry, just as Whitehead himself warned against reading into Plato.) Whitehead's commitment to and appropriation of Plato should not be oversimplified amidst the adventure of exploring it. Preoccupied by Plato Whitehead indeed was; explicit and specific about what Plato meant to him he was not -- this is after all what the present chapter is in large part meant to explore. Kann's suggestion that Whitehead "makes good" on the footnote remark, and that his work at large is a fulfillment of it, is compelling, but ultimately its relevance to Whitehead's relationship with Plato is as a symptom of a nuanced and fluid affinity that finds other expression, sometimes analogous and sometimes contrastive, in other utterances. -- This particular "footnote" utterance just happens to have the distinction of being the most famous thing that Whitehead ever said.

Whitehead's other, fuller assertions of Plato's methodological significance for his own work and for all philosophical work come in the form of a symbolic employment in *The Function of Reason* and in later works, to which our discussion now turns.

**Plato as the Protagonist of Speculative Thought**

As has been seen, from the start of the speculative phase of his intellectual output Whitehead positions Plato as the thinker of chief sympathy with his projects, and this positioning has both ideological and methodological dimensions. Front and center in the prefatory remarks to his philosophical writing, and even in the face-to-face promulgation of his ideas, there is a kind of poetic gesturing toward or performance of a particular figuration of Plato. Parallel to these elements, and in the light of them, I'll now consider what is perhaps the most pronounced, and at the same time the most generalizing, of Whitehead's deployments of Plato, in *The Function of Reason*, where the ancient philosopher is cast as a symbol of the pole of human thought that is
concerned with philosophical speculation -- the "Protagonist of Speculation"\textsuperscript{345} -- positioned over against the pole concerned with practical activity, symbolized by Ulysses.

Whitehead opines that

\begin{quote}
[t]he Greeks have bequeathed to us two figures, whose real or mythical lives conform to these two notions — Plato and Ulysses. The one shares Reason with the Gods, the other shares it with the foxes....We have got to remember the two aspects of Reason, the Reason of Plato and the Reason of Ulysses, Reason as seeking a complete understanding and Reason as seeking an immediate method of action.\textsuperscript{346}
\end{quote}

In either case Reason is understood in reference to purpose: Ulysses stands for purposive living, Plato for purposive understanding. The former is involved in "criticizing and emphasizing the subordinate purposes in nature",\textsuperscript{347} the latter is concerned with the gathering, in thought, of generalities from the flux of nature with which pragmatic agency experientially engages. The symbol is justified on the basis that Plato was the foremost in his age, in Whitehead's judgment, in occupying himself with an examination of the exemplification of universals amidst the particulars encountered in experience. Characteristically, in making this assessment it seems to be far from Whitehead's purpose to justify this summation on an evidentiary basis or with any belabored specificity -- the generalization is made and Plato is appropriated as a symbol, in the same casualness with which the footnote remark made him the fountainhead of all philosophizing.

While not necessary to everyday subsistence, intellectual preoccupation of this Platonic kind is asserted to be an end in itself: “There is a strong moral intuition that speculative

\textsuperscript{345} Kann, Fußnoten, 40.
\textsuperscript{346} Whitehead, The Function of Reason, 10-11.
\textsuperscript{347} Ibid., 28.
understanding for its own sake is one of the ultimate elements in the good life."348 This distinction itself recalls the tripartite division of the soul in the Republic -- the "Plato" principle of course recalling the logistikon part which desires truth for itself, and the Ulysses principle recalling the thumoeides part; though the epithumetikon part is left out of the discussion. (The Function of Reason makes no explicit reference to this connection, but it is so suggestive that it probably underlies Whitehead's distinction in at least an indirect capacity.)

In his characterization of the function and behavior of this "Plato-principle" in human reason, Whitehead here again represents a parallelism of matter and method, along the lines of what was revealed in the analysis of the footnote thesis. -- As the unfolding of nature itself consists in entities' "valuation" of eternalities that are offered by deity, so the dialectical process of Platonic speculation is a process of the obtainment by Reason of the ultimate objects identified as God, beauty and value. These ultimate objects are what foster and fulfill the harmonious coming-together of actuality, and constitute the universe's expression of its complexity. There is once again an analogy, or identity, between the process of nature and the functioning of philosophy. In the process of nature, eternal forms are expressed in actual things, and these forms only really exist insofar as they enter the passage of those things, amidst those entities' perishing and becoming. The forms are eternal, but they depend on the temporal flux of process for their actual expression. They are eternal, and yet their expression is a passing thing. In philosophical thought, ultimate realities are grasped by the philosopher, but also only passingly -- for the ascertainment of ultimate realities amounts only to a temporary approximation, and never rests in static fixity. As forms are to the process of things, so are

348 Ibid., 38.
349 Republic 433c ff.
350 The Republic, as has been mentioned, is largely absent from Whitehead's spectrum of Platonic preoccupations (see discussion of eternal objects in chapter 1).
philosophical insights to the progress of thought.

Moreover, just as the role of God in the process of nature is to offer eternal objects to actual entities as possibilities for becoming, doing so persuasively rather than coercively, so persuasion characterizes the progress of philosophical speculation. The constitution of the universe is not a top-down, hierarchical process whereby inert matter is made to compulsively obey the imposition of changeless rules; it is an interplay of constituent parts that mutually select forms of relation offered to it. Analogously the practice of philosophy is not a top-down positing of unalterable truths, but dialectical interchange, wherein ideas, derived from flashes of insight, are cultivated persuasively, and in dialogue. Kann paraphrases Whitehead's description of this process as the "Aesthetic of Persuasion" ("Ästhetik der Überzeugung").351 He suggests that Plato's inspired and wonderfully original hunt for universals and contemplation of their status amidst the flux of change mirrors, or rather is ultimately identical with, the reception of eternal objects in the process of concretion among actual entities. In Plato's dialogues, and as such in human Reason, this is the practice of dialectic, and in physical things it is the realization of actuality -- and both are realizations of the persuasive force of the Good.

This notion, that by engaging in speculation the philosophical temperament is getting in touch with and conversationally cultivating the divine element in the universe, of course recalls all the more distinctly analogous themes that pervade the Platonic dialogues, and especially the notion of the summun bonum that has such pride of place in the reception of Plato's thought in antiquity and beyond. Again in the Republic it is the destiny of the logikon part of the soul to apprehend "the idea of the good" that "appears last of all, and is seen...to be the universal author

351 Kann, Fußnoten, 54.
of all things good and right."\textsuperscript{352} But here also the connection is left implicit and is not further developed as such.

Whitehead attributes the dawn of this movement of Reason specifically to Plato's age, as the theretofore unique product of Greek inquiry into predication of things. He credits the Greeks with the revelation that there is a harmony exhibited by the gathering of experiential reality into overarching mathematical relationships, and the endeavor to (provisionally) systematize these relationships. While he does not fail (here as elsewhere, especially in \textit{Adventures of Ideas}) to note the important influence of e.g. Egyptian civilization toward this intellectual achievement, his celebration of the Greeks is singular, and its tone effusive. In \textit{Adventures of Ideas} the Greeks are made to be themselves the "gadfly of civilization."\textsuperscript{353} Plato's role in this is that he carries out an intellectual continuation of what Pericles began politically. The practical spontaneity of democracy prepares the way for intellectual access to the psychic spontaneity that constitutes the cosmos -- for just as democracy involves the mutually tolerant participation of its members, so by one extra step the universe is revealed in the \textit{Timaeus}, and revealed anew in the "philosophy of organism", to be tolerantly and teleologically creating itself.

Evaluating this adulation and symbolic appropriation, it must be asked whether casting Plato as "protagonist" introduces problematic or reductive assumptions. Does this gesture in \textit{The Function of Reason} tacitly reiterate the very "mysticizing" tendency of Plato reception that elsewhere Whitehead lamented and criticized?\textsuperscript{354} Plato here is explicitly made parallel to a mythic figure (Ulysses), and so becomes a mythic figure, and a metonymy for philosophy itself.

\textsuperscript{352} \textit{Republic}, 517 (Jowett).
\textsuperscript{353} Whitehead, \textit{Adventures of Ideas}, 11, 90.
\textsuperscript{354} E.g. “Plato divined the future scope of applied mathematics. Unfortunately, later on, the explicit development of Plato’s doctrines has been exclusively in the hands of religious mystics, of literary scholars, and of literary artists. Plato, the mathematician, for long intervals disappeared from the explicit Platonic tradition” (Whitehead, \textit{Adventures of Ideas}, 149). Cf. "Mathematics and the Good," 666.
It is a mythologization that for its very scope far transcends whatever original reading of the dialogues could have underlain it. The gestures of identifying Plato as philosophical progenitor, prototype and persona are collapsed into one as he appears here as the hero of philosophy, and even more than that the symbolic hero of Reason itself, in a work in which Whitehead looks back on and vastly generalizes the aims implied by the footnote remark in *Process and Reality*.

Does Plato fit the mold into which the analogy presses him? Is the principal characteristic of "speculation" as such, its disinterestedness ("disinterested" is Plato's frequent epithet in *The Function of Reason*), something that should be attributed to Plato? It is not my purpose here to come up with a defense of the appropriateness of the epithet in view of the actual contents of Plato's writing, nor make a detailed critique of it. But what I do observe is that it seems to be in accord with the other iterations of Whitehead's allusions to him, and its import is in harmony with that of the footnote thesis as discussed above, though it further generalizes it and departs from any specific commitment to mining relevant insights from particular dialogues.

What seems to be at stake for Whitehead in this characterization of Plato as "disinterested" is once again what he sees as the centrality in Platonic thought of the *eikos mythos* -- the embrace of the approximative nature of scientific inquiry as itself a facet of the transient, fluctuant nature of the world. His successors have failed insofar as they have failed to remember that their descriptions of the universe are only likely stories, and in so doing have transgressed the "Aesthetic of Persuasion", i.e. the Logic of Persuasive Approximation, that makes the process of Reason go.355 And so he can contrast this kind of thinking with that of his own near contemporary:

> no one had a keener appreciation than Plato of the divergence between the...
exactness of abstract thought and the vague margin of ambiguity which haunts all
observation. Indeed in this respect Plato, the abstract thinker, far surpasses John
Stuart Mill, the inductive philosopher. Mill in his account of the inductive
methods of science never faces the difficulty that no observation ever does exactly
verify the law which it is presumed to support....Plato knew this primary fact
about experience, Mill did not.356

Observation of the universe from the perspective of human consciousness involves a step
of abstraction from actual entities themselves, that draws it away from the continuous flow of the
world as it is actually experienced, and enters the register of approximative generalizations about
that experienced world. It is in this realm of approximative abstraction that science dwells. The
task of philosophy is to dialectically critique these abstractions of consciousness and science, and
in doing so find a way to mediate between them and the flux of actual experience from which
they are drawn. The cosmic process itself moves in one direction, as actual entities selectively
exhibit eternal forms, forms which can be approximatively grasped in consciousness as
universals; philosophy, in a reverse and complimentary movement, reveals the forms to
consciousness in their actual passage through the flux of becoming, through its method of
dialectical critique. It rejoins the forms with the flux, which in the realm of conscious experience
and scientific systematization had been disembodied from it. He returns to this theme in the late
essay "Mathematics and the Good", where he restates his view of the function of philosophy:

> All characteristics peculiar to actualities are modes of emphasis whereby finitude
vivifies the infinite....This is the abstraction involved in the creation of any
actuality, with its union of finitude with infinity. But consciousness proceeds to a
second order of abstraction whereby finite constituents of the actual thing are
abstracted from that thing. This procedure is necessary for finite thought, though

Platonic speculation in Whitehead's view mediates, in thought and written expression, between visions of ultimate ideality and contingent flux. Recognizing that the cosmos is not the predetermined result of an imposed formal order, but a collaborative evolution involving entities' free receipt and transfer of forms, it cultivates a corresponding freedom of thought wherein concepts of forms of order are critiqued, analyzed and recombined in dialectic. To put it in political language (which Whitehead had evoked in his remarks about Pericles): the cosmos is a democracy of actual entities electing forms, and Platonic philosophy is a democratic debate critiquing ideas. Speculation then is characterized by a sense of freedom, a freedom without which the progress of civilization would not be possible, in parallel with the ontological freedom enjoyed by actual entities for comprising idealities in the flux -- it opens the doors of discourse to the possibilities of social evolution. It represents the societal victory of Persuasion over force and violence.\footnote{358\textsuperscript{358}Whitehead, \textit{Adventures of Ideas}, 160ff.}

Plato's symbolic role in \textit{The Function of Reason} again reflects the apparent importance of an aspect of Taylor's reading that so deliberately incorporated Whitehead's thought in the first place. Recall that Taylor's conception of the \textit{eikos mythos} is that it is meant to encapsulate the perpetual limit incumbent on scientific statements, such that a close reading of Plato amounts to a perennial support for philosophical critique of the theoretical advances of science past and present (such as the one Taylor inveighed against Einstein in his explication of the Receptacle). As Whitehead writes, "Newton’s formulae were not false: they were unguardedly stated.\footnote{357\textsuperscript{357}Whitehead, "Mathematics and the Good," 681.}
Einstein’s formula are not false: they are unguardedly stated.”  

The "idealism" inherent in Platonic speculation consists not in a prizing of transcendent ideal objects to the detriment of their exemplification in physical particulars, but rather in the pursuit of an ideal holism of thought with fact that is always beyond thought's reach: "[t]his infinite ideal is never to be attained by the bounded intelligence of mankind." It is not concerned with devaluing the physical world, or the here and now, but with practicing an epistemological conservativeness about describing it that ultimately ensures spiritual freedom -- freedom first and foremost from dogmatic commitments to imposed universal laws.

**Criticism of 'Plato as Protagonist'**

As has been discussed throughout this study, this Plato of Whitehead's -- a Plato who embraces the physical world and whose thought symbolizes intellectual freedom -- is hardly a universally accepted construction. The ideals of "freedom" and "democracy" which *The Function of Reason* associates and even equates with Plato may read as a blatant contradiction, if the reader has in mind the Plato of *Republic* VIII, where Socrates' critiques the democratic state and citizen, whose ideals of societal freedom and political license are acutely problematized and portrayed as dangerous. But as elsewhere, in *The Function of Reason* Whitehead shows little interest in the Plato of the *Republic*. Perhaps, had he wished to discuss it here, he would have asserted that its critique of democratic freedom is a symptom of Plato's once overzealous attitude toward hierarchies of imposed order, which he had not yet come to temper, as he would in his later thought -- this would be in keeping with his criticism of the excessive transcendency the

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360 Ibid., 65.
361 *Republic* 555c ff.
Republic and other "middle dialogues" impute to the forms.\textsuperscript{362}

Given that Whitehead's estimation of Plato strictly assumes the traditional chronology, one could perhaps turn for justification to the Laws, where one would hope Whitehead could find a more amicable view of political and ideological freedom, that would accord with the symbolic stature he gives to the "mature" Plato. There in a sense the Athenian does make room for freedom, in that he asserts that the legislator's goal is to make a state that "will be free (\textit{eleuthera}), congenial to itself, and possessing reason (\textit{nous})."\textsuperscript{363} This theme could be parsed as a reflection of what Whitehead imputes to the structure of Platonic speculation, that it cultivates a free play of concepts, but orders and analyzes them in accord with a principle of reason in order to effect the harmonious progress of human thought. Taylor parses this as a balanced interplay between freedom and authority -- he has it that Plato advocates "the freedom of the individual" as long as it is "not a freedom which is anarchical."\textsuperscript{364} Perhaps in this reading too Whitehead was under Taylor's influence, as Taylor in his treatment of the Laws seems to attempt to give the authoritarian elements in it an interpretation that is tolerably sympathetic to modern democratic sensibilities. However, the Laws appears to much more obviously present an abundance of injunctions against the free society, the free society for which Whitehead asserts Plato's thought forms the historical precedent and conceptual basis. Whitehead does passingly make note of this, when in Adventures of Ideas he is citing historical examples of the ills done to the progress of thought by "dogmatic finality" -- "we find Plato in his old age advocating religious persecution, and justifying himself by the importance of the topic and his own demonstrations."\textsuperscript{365}

\textsuperscript{362}See chapter 1 for discussion of these critiques, especially the section on eternal objects.

\textsuperscript{363}\textit{Laws}, 701d.

\textsuperscript{364}Taylor, \textit{Man and His Work}, 472ff.

\textsuperscript{365}Whitehead, \textit{Adventures of Ideas}, 163. It should be kept in mind that \textit{Adventures of Ideas} was published in 1933, the year that saw Hitler become chancellor of Germany, and the further entrenchment of fascism in Italy and communism in Russia. More extensive contextual analysis of the effect of historical developments on
But he does not factor this admission into his picture of Plato at large. His citations of the *Laws* are relatively few, and besides the one above are only in passing reference to the theological excursus of Book X. Whitehead's Platonic commitments, as has been seen, are selective, and he is not concerned with furnishing a picture of Plato that is entirely self-consistent. This is understandable given that his task is not to produce sound Platonic scholarship, but rather to pursue what feels to be a Platonic inspiration, in forming a body of original philosophical work. Nevertheless, contradictions of this kind do raise questions about the effectiveness and accuracy of his appropriations of Plato, and the centrality given to them in the presentation of his thought. Some of these questions will be addressed in the following chapter, which addresses the reception of Whitehead's Platonism. But even before that, it must also be noted that Whitehead himself, although his construction of Plato is subject to some arbitrariness and omission, was not unwilling to criticize his "protagonist."

**Whitehead's Critiques of Plato**

For it would be mistaken to take from Plato's pride of place in Whitehead's works the exaggerated view, that Whitehead never saw fit to depart from him, or even that he would have explicitly identified himself as a Platonist. -- For all his citations of Plato, this is a declaration that he never literally makes (though others have made it for him). Broadly speaking, as Whitehead's career progresses, the character of his Platonic concerns shifts its emphasis from the individual conceptual borrowings detailed in chapter 1 of this study, to the more generalized methodological concerns examined in the present chapter. Here it has been seen that over and above the content of any given Platonic theory, what is perhaps even more important for

Whitehead’s thought is available in Lowe, *A.N. Whitehead*, vols. I and II.
Whitehead's concept of Plato is its freedom from dogma and perpetual incompleteness, a willing uncertainty that powers the progress of thought. The dialogues are not gospel -- or rather, the whole point is that there are infinite gospels, and Plato's happens to be one that is, in the manner described above, exemplary of their infinitude.

Because of this, Whitehead sometimes thematizes his non-conformity to certain elements of Plato's thought, defining his views in relation to Plato still, but in contrast rather than in alignment. The most crucial distinction, that between the non-transcendent ontological status of his eternal objects and the Platonic forms as he read them in the "middle dialogues", has been discussed previously, and now this and related doctrinal distinctions will be examined in more detail. These points of departure are most acute in works that post-date *The Function of Reason*, principally *Modes of Thought*.

**Late Departures and the Deemphasis of Eternal Objects**

Though there is a good deal of congeniality toward Plato in *Modes of Thought*, in this later work Whitehead makes sharp distinctions between Plato's views and his own. These alterations of emphasis are the subject of some discussion among Whitehead's interpreters.366 Jones for instance suggests that Whitehead's thought in its maturest expression is ultimately antithetical to "Platonic dualism", even if prominently inspired by Plato's articulation of it367 -- though of course asserting this involves arguing that the word "dualism" properly characterizes Plato's thought as a whole, which is in some capacity exactly what readings like Whitehead's and

367Jones: "[B]ehind Whitehead's adoption of a Platonic temper of mind, and his endorsement of a welter of Platonic suggestions, the inheritance from the classical past is no more than suggestive. For Whitehead, Plato might have been a formative influence, but...much of Whiteheadian speculative philosophy can be regarded as a reaction against the Platonic archetypes" ("Some Platonic Implications," 1).
Taylor's attempts to contradict, or at least complicate. Whether or not Whitehead thought of Plato as "dualistic" at all is part of what is at stake in this very examination of his appropriations. -- All that is clear in this connection is that he had different things to say about Plato at different times (just as Plato did about everything at issue here).

The concept of eternal objects assuredly undergoes revisions. Before his "cosmological" and "metaphysical" works, a similar concept had been referred to simply with the term "objects" (as opposed to "events"). They gain the adjective "eternal" in Science and the Modern World, which persists in Progress and Reality and Adventures of Ideas. But in Modes of Thought they become "Forms of Definiteness" or "Modes of Definiteness," a much less imposing, and perhaps less connotatively Platonic sounding term, and perhaps also a bit vaguer and less technical. The new point of emphasis under this new denomination is the evolutionary character of the cosmic process of becoming -- certain forms of order that are prominent now may not have been so at a previous epoch, and current forms of order will give way to new ones. This concept itself was not absent in Process and Reality; but the terminology has changed. Gare finds the shift to be distinctive and important, as it brings Whitehead more into accord with roughly contemporaneous philosophical developments (e.g. Bergson and Peirce) and diminishes any vestige of "Pythagorean mysticism" that vitiated his earlier works -- "Pythagorean mysticism" seeming here to mean "excessive preoccupation with the Timaeus."

The shift in emphasis represents a kind of waffling about what legacies from past philosophy should be reinvigorated or abandoned. In Modes of Thought he is ready to "revolt against this concentration upon the multiplication table and the regular solids…against the notion

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368 In Concept of Nature, etc. -- see chapter 2, in the discussion of Taylor's scholarship.
that topology, based upon numerical relations, contains in itself the one fundamental key to understanding the nature of things." Yet for all that spirit of revolt, something remains relevant, historically at least, about that "concentration..on the regular solids" -- "there is something sensible in Plato’s thematization of number in his lecture on the Good, for the praise of order involves the recognition of the primacy of enjoyment of value." Whitehead's praise is for Plato's procedure of attempting to formulate patterns of order. In terms of what he came up with, it turns out that Plato's great fault was noticing only intermittently that the patterns of order he perceived were strictly relevant to the process of actuality (and had no life of their own in a transcendent realm-of-forms): he had it right, but not always, and these very omissions, Ironically, are popularly thought of as the cornerstone of his legacy. Whitehead's work then is a belated reminder to Plato that his eternal mathematical forms are essentially referent to process. This is his own doctrine when he refers to the necessity of life and motion. But only intermittently did he keep it in mind. He was apt to identify process with mere appearance, and to conceive of absolute reality as devoid of transition.

He was right in the Sophist about what he got wrong in the Republic -- the construction of course relies heavily on traditional assumptions regarding the chronology of the dialogues. For,

when Plato thought of the realities of action, he swayed to the opposite point of

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370 Whitehead, Modes of Thought, 75.
371 Ibid., 76.
372 Whitehead, Modes of Thought, 92-93. Cf. "Mathematics and the Good": “These factors are the famous ‘Ideas,’ which it is the glory of Greek thought to have explicitly discovered, and the tragedy of Greek thought to have misconceived in respect to their status in the Universe. The misconception which has haunted philosophic literature throughout the centuries is the notion of ‘independent existence.’ There is no such mode of existence; every entity is only to be understood in terms of the way in which it is interwoven with the rest of the Universe…..An ‘Idea’ is the entity answering questions which enquire ‘How?’ Such a question seeks the ‘sort’ of occurrence” (687). And: “The value inherent in the universe has an essential independence of any moment of time; and yet it loses its meaning apart from its necessary reference to the World of passing fact. Value refers to Fact, and Fact refers to Value. This statement is a direct contradiction to Plato, and to the theological doctrine derived from him” (684, italics mine).
view. He called for life and motion to rescue forms from a meaningless void. In these lectures Plato’s second doctrine, of life and motion, has been adopted. The mathematical modes of fusion, such as ‘addition,’ ‘multiplication,’ ‘serial form,’ and so on, have been construed as forms of process. The very notion of ‘multiplicity’ itself has been construed as abstraction from the form of process whereby date acquire a unity of issue into a novel datum.\(^\text{373}\)

**Not a Platonist but an Aristotelian?**

If this is the case, and the only trouble with Platonic forms is that they are too transcendent, is it fair to simply say that Whitehead is not so much a Platonist as an Aristotelian?\(^\text{374}\) This question has come up before among interpreters of Whitehead.\(^\text{375}\) Lowe, Emmet and Leclerc insist on the greater conceptual influence of Aristotle. Kann on the other hand contends that asserting this involves also asserting that Whitehead misinterpreted his philosophical history, for the simple fact that Plato is unquestionably the figure that he foregrounds, if not to the utter exclusion of Aristotle, then at least in marked preference to him.\(^\text{376}\) In this way Kann sees the historical import of Whitehead's return to Plato as representing an effort to undo the damage done to philosophy by the substance-attribute logic that has dominated it since Aristotle.\(^\text{377}\)

\(^{373}\) Whitehead, *Modes of Thought*, 97.

\(^{374}\) I.e., insofar as Aristotle asserts that the forms exhibited by individual things are neither transcendent of nor separable from the actuality of those things. Form is not transcendent of material things but is its very actualization; it is separable from actuality only in abstraction and by analogy (*Metaphysics* 1084b1-4). In *Metaphysics* Z (and elsewhere) Aristotle considers and ultimately dismisses Plato's conception of forms as transcendent. -- Certainly this distinction and this critique are a vast topic of their own; this note is merely a brief point of reference for what I assume to be meant by "Aristotelian" among the interpreters of Whitehead who would call him that.

\(^{375}\) Cf. Lowe, Emmet, Leclerc.

\(^{376}\) Kann, *Fußnoten*, 118.

\(^{377}\) Whitehead, *Process and Reality*, 209 refers to Aristotle as the “Apostle of Substance and Attribute”. Cf. Ibid., 50: “The principal of universal relativity directly traverses Aristotle’s dictum, ‘(A substance) is not present in a subject.’ On the contrary, according to this principle an actual entity *is* present in other actual entities. In fact if we allow for degrees of relevance, and for negligible relevance, we must say that every actual entity is present in every other actual entity. The philosophy of organism is mainly devoted to the task of making clear the notion of ‘being present in another entity.’ The phrase is here borrowed from Aristotle.”
way part of Whitehead's mission, in Kann's view, is to correct the traditional adumbration that represents Plato as the spokesman of the ideal and Aristotle the spokesman of the sensual.

Once again, the doctrinal dimension of his treatment of both Plato and Aristotle is less emphatic than the methodological dimension. He portrays Aristotle as the harbinger of "The Positivist School of Mere Description", the mode of inquiry that supports rigid systemization but runs the risk of mistaking abstract descriptive forms for the actualities to which it refers. Over against this he portrays Plato as having been willing to make vast mathematical generalizations that were incidentally wide of the mark, but nonetheless, for their very breadth and inherent tentativeness, manifest the quasi-poetic gesture that is the essential function of speculative reason. While Aristotle appeared correct (and then, about certain physical things, decidedly wasn't), Plato gave us what is needed -- a cavalier willingness to apply broad mathematical speculation to intangible things -- that is, a penchant for devising and casting an eikos mythos.

The Aristotelian tendency, as Whitehead represents it, hurts Reason as much as it helps it, because the excessive systemization to which it is prone can make it blind to the full extent of all actual entities' boundless interrelatedness. In this way Aristotle is relegated to being a mere synthesizer and systematizer of Plato\textsuperscript{378} -- he is, as Kann puts it, after all just a footnote.\textsuperscript{379}

I don't intend to defend this relegation of Aristotle's role in the history of philosophy, but I do hope to have demonstrated the separability of the fact that certain aspects of Whitehead's

\textsuperscript{378} See Adventures of Ideas 104ff.
\textsuperscript{379} Kann, Fußnoten,137. Cf. Whitehead in Price, Dialogues, 165: “Aristotle invented science, but destroyed philosophy” And: “[1]f you had talked to Aristotle about him at that time, no doubt Aristotle would have remarked to you privately, ‘Poor old Plato! All bogged down in those useless mathematical ideas.’…Now, as a matter of fact, in Plato’s time those mathematical ideas were useless, and they remained useless for roughly sixteen or seventeen centuries. Then, beginning at about the twelfth century A.D. those mathematical ideas which had so excited Plato, made possible the modern world” (309). Cf. also "Mathematics and the Good": “We may complete the phrase ‘Now we know’ by an adverb. We can mean ‘Now we know — in part,’ or we can mean ‘Now we know—completely. The distinction between the two phrases marks the difference between Plato and Aristotle, so far as their influence on future generations is concerned” (670).
thought are in harmony with his, from the fact that his symbolic value for Whitehead is as an implied antagonist to the figuration of Plato that has been discussed here. The distinction recalls once again the biographical evidence for Whitehead's Platonic pedagogical persona and its contradistinction to the persona he seems to have imprinted on Russell. If there is anything in Coleridge's saying that "everyone is either a Platonist or an Aristotelian" then Whitehead is in the former category for reasons that may be more subjective, dispositional and circumstantial than those based in any rigorous doctrinal conformity. Circumstantially, it is clear that his background in mathematics importantly informed his taste in this regard, a science for which Aristotle had a great deal less use -- and had Whitehead been a biologist, Western philosophy may well have been a series of footnotes to him instead.

The possibility that there is a degree of arbitrariness in the self-identification that this study examines, as in any such self-identification or concerted reception or renovation, is a theme that this study will continue to explore in the ensuing chapters. This chapter and the last have shown what factors conditioned Whitehead's attitude toward Plato, and how that attitude fluctuates between extreme praise and deliberate critique, but remains grounded in a deep and extensively articulated methodological sympathy. The following chapter examines how notwithstanding these nuances, in much of his own reception, Whitehead's thought is inseparable from his reception of Platonism, such as he presents it -- quite often where Whitehead goes, Plato goes.
CHAPTER FOUR: RECEPTION OF WHITHEAD'S PLATO

In the previous chapters, I have explored how Whitehead foregrounded his debt to Plato in the presentation of his original philosophical thought, and positioned his own work, and the work of philosophy at large, as a citational response to a practice that Plato's dialogues originated. I have also explored what influences induced this preoccupation with Plato as such, and how that preoccupation permeated Whitehead's work and life even beyond his direct articulations of it. I now turn to an examination of what effect this Platonic element has had on the reception of Whitehead's thought, and reciprocally, what effect Whitehead has had on the further reception of Plato from the latter half of the 20th century to the present. These investigations will lead up to a concluding assessment of how Whitehead's reading of Plato fits into Platonic reception at large. The crux of this assessment will be the observation that the multiplicity of possible readings of Plato make the act of appropriating Platonic elements an inherently ambiguous gesture -- and aligning oneself in some capacity with Plato, as Whitehead did, can result in being received by one's readership through the lens of that readership's preconceived notions and biases about the status and meaning of Plato in the history of Western thought. Furthermore, it will appear that the impulse to align with Plato, which is evidenced in a good deal of philosophical work that directly continues Whitehead's legacy, expresses itself as a deep and concerted devotion to Plato, and an accompanying imperative of incorporating him into modern thought, a devotional imperative that has the capacity to transcend the relevance of that incorporation. In short, a pattern of Platonic reception emerges that shows that thinkers may align with and incorporate Plato, or conversely set themselves against Plato, apparently for its own sake and as a matter of principle.

Immediate Reception of Whitehead's Thought

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If Whitehead is a "household name" in the house of philosophy, that familiarity cannot be said to extend to a general acquaintance with his mature works of "speculative philosophy" which are being discussed here, either for the average person or the professional philosopher. His name seems commonly to evoke one or both of two associations: with Bertrand Russell, for the *Principia Mathematica*, and with Plato, for the footnote remark. Besides a very general awareness of these items -- making him usually "the *Principia Mathematica* guy?" or the "the guy who said everything was footnotes to Plato?" -- he has remained, at least initially, far from the center of modern philosophy. Yet, important engagements with Whitehead in the domains of biology and science, as well as critical theory, have arisen in recent years, and these will be discussed further on, especially as they bear on the transmission of Platonism into those contexts.

Presently however I address the dubious initial reception of *Process and Reality*. While its predecessor *Science and the Modern World* had fared well and contained in germ the rudiments of "the philosophy of organism", its full exposition in the Gifford Lectures that became *Process and Reality* was infamously confusing to its audience. As mentioned above, Plato scholar A.E. Taylor was, as legend has it, one of fewer than a half-dozen auditors left in attendance by the time the lectures were finished. Another colleague, the mathematician Sir Edmund Whittaker, expressed "that if he had not known Whitehead well, he would have suspected that the lecturer was an impostor, making it all up as he went along."

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appearance in published form hardly mitigated their apparent obscurity: when *Process and Reality* was later re-published in 1963, it listed 228 corrigenda from the original publication in 1929, discrepancies which must have been all the more problematic in a work that invents for itself so much original terminology. Whitehead's biographer remarks that "we possessed a better text of Plato's *Republic* than Whitehead's magnum opus."384

Leaving aside even these technical difficulties, it was apparently clear to Whitehead even from the start that what he was putting forward was likely to have an ambiguous reception on account of its distinct unfashionableness. He wrote in a letter to his son North while composing the lectures,

I do not expect a good reception from professional philosophers. It deserts the ordinary way of putting things at the present moment. Also, it is more speculative than philosophy in the recent past. In my opinion philosophers have been running into funkholes and so the subject has lost all interest.385

Whitehead was aware that while there was indeed a contemporary demand for a philosophical articulation of the momentous developments of modern science, which he had largely succeeded in making with *Science and the Modern World*, there was less of an appetite for the expression of the absolute metaphysical generalities that came into view in reference to those developments -- though for Whitehead, as discussed above, these speculatively grasped generalities are the crux of philosophical practice, and they are exactly what a reading of Plato encourages a thinker to perennially produce. His former student Brennan reflects on this contextual tension, as it manifested itself in Whitehead's pedagogy:

He wanted to achieve in his own philosophy, he told us, something he thought

384Ibid.
Plato had accomplished in his: to separate out of the welter of existence a definite number of ultimate cosmological factors - a procedure that John Dewey down at Columbia thought was the philosophical sin against the Holy Spirit, although he did not believe in the Holy Spirit. To Dewey, Whitehead's method of singling out "general features" of our experience and allegedly using them to explain the particularities of that experience constituted precisely the wrong way to go about philosophizing - a misconception inherent in Western philosophy, according to Dewey, since the days of Whitehead's beloved Plato.  

It should also be emphasized that Whitehead's devotion to metaphysics and cosmology constituted a radical and very surprising shift from the previous concerns with which he had been associated -- here was the co-author of the *Principia Mathematica*, an immensely ambitious and categorically technical multi-volume work that attempted to ground the foundations of mathematics in the axioms and inference rules of symbolic logic, suddenly holding forth on Plato and God with a host of neologistic metaphysical terminology. W.V. Quine, for instance, had studied the *Principia* as an undergraduate, and attended Harvard as a graduate expressly for the purpose of studying under the great Whitehead, and was so disappointed by his redirection of emphasis that he left Harvard for Vienna to work with the Vienna Circle of logical positivists. Quine reflects: "[w]hat he said had little evident bearing on problems that I recognized. His lecture hours were mercifully short....My notes were crowded with doodles."  

Isabelle Stengers' recent treatment of Whitehead reflects at length on these initial and in some degree continuing impediments to his reception, and sums the problem up bluntly: he ignored “what every serious philosopher knows today: it is illusory to deal in a positive way with

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the truth of God, or of the universe."\textsuperscript{388} Whitehead's system was centered around a concept of value. He alleged a continuity between the metaphysical principle of "valuation" which is manifested in the atomic "prehensions" of actual entities, whose actualization is an inherently subjective and "valuational" process, and an ethical and historical principle of "valuation" as a continuous iteration of novel evolution in human life and society, and in the life of the universe. This point of emphasis is out of keeping with more prominent contemporary developments of Western thought -- the advent of "logical positivism, existentialism, Wittgenstein, Heidegger, other men and other movements."\textsuperscript{389} Whitehead recognized that his contrasting emphasis on "value" in the universe was a certain genus of idealism, whether in a Platonic sense or a general sense, that ran counter to the current attitudes. He reflects the view later in life, in one of his conversations with Lucien Price, that "no period of history has ever been great or ever can be that does not act on some sort of high, idealistic motives, and idealism in our time has been shoved aside, and we are paying the penalty for it." Price replies with the observation that "[t]he very word 'idealism'...has been a point of derision since the first world war."\textsuperscript{390} In the context of their conversation, "paying the penalty" seems to be in reference to the Second World War, which had just begun at the time his conversations with Price were recorded. There is a sense in these conversations of nostalgic yearning for another, more ancient and earnest way of seeing the world, without which humanity is exposed to great moral dangers -- a way of seeing that throughout those conversations, and in his writing, Whitehead associates with Plato.

As was suggested in chapter 2, this yearning for "value" echoes concerns Plato voiced through Socrates, as for instance in the intellectual autobiography Socrates relates in the

\textsuperscript{388} Stengers, \textit{Thinking with Whitehead}, 8.
\textsuperscript{389} Lowe, \textit{A.N. Whitehead I}, 3-4.
\textsuperscript{390} Price, \textit{Dialogues}, 272-273.
Phaedo.\textsuperscript{391} -- There Socrates describes his period of interest in Anaxagoras, which ultimately led to a deep disillusionment. Socrates had a desire to know the ultimate cause(s) of things -- but what he found in Anaxagoras was a mechanical description of the universe, that mistook the question of "why?" for the question of "how?". This mode of accounting for things, he remarks, is no more to the point than to say that they are there conversing in prison because of the bones and sinews that allow them to sit there, or the motion of the air producing the sounds of their voices -- rather than that they are there because the Athenians condemned him to death, and he thinks it best to undergo that penalty.\textsuperscript{392}

Whoever talks in that way is unable to make a distinction and to see that in reality a cause is one thing, and the thing without which the cause could never be a cause is quite another thing. And so it seems to me that most people, when they give the name of cause to the latter, are groping in the dark, as it were, and are giving it a name that does not belong to it...[T]hey do not look for the power which causes things to be now placed as it is best for them to be placed...and in truth they give no thought to the good \textit{to agathon}, which must embrace and hold together all things.\textsuperscript{393}

These sentiments are distinctly echoed by Whitehead's critiques of mechanism, and his assertions of the inadequacy of the materialistic assumptions on which modern science has been based, critiques which preface the positive statement of his system in his major works. Not only does Plato furnish Whitehead with conceptual and methodological precedents congenial to his own, but he offers a prototype of a kind of philosophical alarmism that characterizes this aspect of work -- the protest against "mere description" of the universe, and the catastrophic omission of

\textsuperscript{392}\textit{Phaedo}, 99a.
\textsuperscript{393}\textit{Phaedo}, 99b-c, trans. Fowler.
our sense of the goodness and value that inhere in it. The arguably "unfashionable" status of these notions, and of Plato insofar as he is symbolic of a value-system as such (as Whitehead makes him be), in large part colors Whitehead's reception.

**Whitehead's Reception in the Context of the Contemporary Status of Platonism**

Given the frequency with which he contrasts "value-based" thinking with what he perceived as being currently prevalent, it would seem that Whitehead was aware of the particular radicality, and potential unwelcomeness, of casting the philosophy of organism as a return to Plato. While Whitehead's Plato, as I have examined here, is certainly not everyone's Plato, nonetheless the very utterance of the name carries with it a host of associations that a readership is unlikely to wholly untangle. The status of the term is so exploded as to perhaps be inherently problematic. Monique Dixsaut has written about how identity of the "-ism" has sprawled forth far beyond the bounds of any stable connection with its namesake:

> The histories of Platonism and anti-Platonism are constantly interacting, so that the term ‘Platonism’ tends to become more and more devoid of content and is commonly used to point to some great ‘error’ – transcendental realism, idealism, elitism or totalitarianism. It refers little or not at all to what Plato wrote, but rather to the representation one has of it. Yet, if Platonism is a variable, what consistency could conceivably be found in the numerous anti-Platonisms?395

Conceivably the most common knee-jerk association with the term is that it refers to a view of things that splits existence into two realms, one of fluctuant appearances and another of

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395 Monique Dixsaut, “Anti-Platonism, from Ancient to Modern” in *The Continuum Companion to Plato*, (New York: Continuum International 2012), 305. This tendency is what allows Foucault to suggest the very antithesis of the footnote remark (whether Whitehead was in mind or not): “Are all philosophies individual species of the genus ‘anti-Platonic’?” (Michel Foucault, “Theatrum Philosophicum,” *Critique* 282 (1970)).
transcendent forms, the latter being prior and superior to the former. Given this association, it was an ironic and risky move for Whitehead to foreground Plato as such, even if in part was to revise this unnuanced view of Plato's thought. The revision consists in his claim that in the *Timaeus* and *Sophist* at least, Plato managed to get the forms into the flux, and in doing so avoided and antedated the problematic "bifurcation of mind and matter", as Whitehead puts it, that did so much harm to Western thought. The revision is not unprecedented. As discussed earlier, Taylor's point of insistence, in which he got so much leverage from Whitehead, was that the notion that Plato despised matter in favor a transcendent realm misses the mark completely. As has been examined above, it seems that the fullest application of Whitehead's Platonism involves conceiving Plato as symbolic of, or offering an ever-relevant precedent for, the act of philosophizing itself -- an act that involves intuitively, artistically and creatively identifying the uttermost generalities about the process of nature. But this is of course not how the name "Plato" necessarily reads when encountered into the opening remarks of a book of modern philosophy.

What in fact that name meant at the time of *Process and Reality*’s publication, and/or what it has meant for subsequent readers since that time, are variable and ambiguous considerations. Rodier surmises that

> [m]ost contemporary writers in their discussions of Whitehead's 'Platonism' have in mind the interpretation of Plato which has tended to dominate late nineteenth-century and twentieth-century scholarship. This interpretation of Plato and Platonism originates, as far as the English-speaking world is concerned, in the efforts of the Arnolds and Jowett to construct a secularized Platonism to serve as the basis of an educational reform which would produce gentlemen devoted to a liberal and secularizing state. Crucial to this reform...was the separation of Plato from his successors. Platonism needed to be constructed as a tradition without
Whitehead's own writing shows the mark of this crucial separation insofar as *Adventures of Ideas* is clearly concerned with distinguishing the content of the dialogues in question (principally the *Timaeus*) from the mysticizing aberrations that have attended them in the later Platonic tradition. His possible debt to Jowett's translation has been discussed above, and it is reasonable to assume that this current of interpretation permeated his thought to some degree, especially in his dual endorsement of Plato and Pericles as respective protagonists of intellectual evolution in philosophy and politics in *The Function of Reason*. At the same time, this study has shown that his specific appropriations of Plato were in many respects radical and revisionary in their apparent intent, and also that he was aware of the possible unpopularity of this alignment, along with the metaphysical disposition of his project at large. Whatever the intent, it is plausible that some of his contemporary readers may well have associated, and may still associate the name of Plato not with "this nineteenth-century [liberal-democratic] interpretation...but rather the reactionary and totalitarian Plato of Popper and Ryle," and many subsequent readers with "the homophobic and misogynist Plato of the post-moderns." Even if we restrict our consideration to scholarly or popular opinions of the *Timaeus* at the time of Whitehead's writing, the situation is characterized by significant ambiguities. Is the great intelligible pattern from which the ensouled world is deduced in Timaeus' speech a metaphysically transcendent, ultra-natural thing, or simply that in virtue of which, epistemologically speaking, we are able to make accounts of the cosmos? Recall from the

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397 E.g. *Adventures of Ideas* 32, 129, 149; also see below.
398 See remarks on *The Function of Reason* in the previous part of this study.
399 Rodier, "Between Platonism and Neoplatonism," 185.
400 I am indebted to Sarah Broadie's formulation of this question in her recent study, which I where I found the two
previous discussion these two relatively contemporaneous introductory remarks the *Timaeus*, from 1927 and 1929, respectively:

“Plato, being first and foremost a metaphysician with a sort of religious system, would not have us study anything but metaphysics and a sort of mystic religion (Platt, 1927).”

“In truth, there is but little of metaphysics in the *Timaeus*; it is mainly preoccupied with the attempt to give a ‘probable’ account of matters which belong to the science of physics and physiology (Bury, 1929).”

Between these two exactly opposite, and almost exactly contemporaneous claims, the first would probably have struck Whitehead as an excessively mysticizing reading; as noted, he occasionally critiques the mysticizing and excessively theologizing tendency in the Platonic tradition. At the same time, the idea of Plato expressed in Whitehead's writing does present a unity of theological and scientific concerns, concerns which have the virtue of not being problematically and artificially divided from one another, as they are in the modern context. “All philosophical systems," Whitehead generalizes, "are endeavoring to express the interweaving of these [Platonic] components. Of course, it is most unscholarly to identify our modern notions with these archaic thoughts of Plato.” He recognized that not only was it not fashionable to do philosophy in Platonic terms, but that it also was not exactly fashionable to study Plato in sincerely philosophical terms.

quotes that follow above (Broadie, *Nature and Divinity*, 60ff).
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403 E.g. *Adventures of Ideas* 32, 129, 149.
404 *Adventures of Ideas* 159.
Zeyl notes in his introduction to his 2000 *Timaeus* translation that in general, by the mid-twentieth century, interest in the dialogue had declined, especially in the English speaking world, as the anti-metaphysical turn of logical positivism and “linguistic analysis” were predominating - “Plato’s theory of Forms came to be seen as a tissue of linguistic confusions, of which Plato began to disabuse himself only in his later period, in dialogues like the *Parmenides, Theaetetus,* and *Sophist.*”405 The popularity of the *Timaeus*, from the 19th century onward, had been far eclipsed by that of the *Republic*406, of which Whitehead is largely dismissive.

As has been seen, Whitehead's reading puts the *Timaeus* in this group of late, mature, and profounder dialogues, in his view diminished only by its doctrine of "imitation" of the *paradeigma*, a fault which is mitigated by its success in explicating the role of the forms in actual process via mathematics. Whitehead makes clear in *Adventures of Ideas* that he sharply distinguished the effectiveness of Plato's mathematical commitments from the numerological mysticism of the Pythagorean and Neoplatonic traditions, and views the historical tendency for the latter to be emphasized in the reception of the dialogue as a great misfortune.

Plato drew the conclusion that the key to the understanding of the natural world, and in particular of the physical elements, was the study of mathematics….Of course the Academy inherited the Pythagorean tradition of Mathematics….Plato divined the future scope of applied mathematics. Unfortunately, later on, the explicit development of Plato’s doctrines has been exclusively in the hands of religious mystics, of literary scholars, and of literary artists. Plato, the mathematician, for long intervals disappeared from the explicit Platonic tradition.407

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406 Ibid., xiv.
While this distinction is crucial to understanding the particular use Whitehead makes of Plato, it cannot be assumed to diminish the prejudicial association with which some readers may have received, and may still receive the evocation of Plato in their encounter with Whitehead. Notwithstanding the importance of the distinction that Whitehead, Taylor and others make between the content of the *Timaeus* itself and the corruption of it in the hands of the later tradition, it is possible that its susceptibility to this interpretation proceeds from an ambiguity of emphasis inherent in the dialogue itself, and in other dialogues. The tension between two modes of reading the *Timaeus* -- between emphasis on the transcendency of the paradigm versus understanding it as merely the epistemological requisite for the possibility of science -- is itself essential to grasp in reading it.\(^{408}\)

The question here is whether this ambiguity plays into one's reading of Whitehead -- how does this ambiguity affect the reception of his thought, and does it potentially compromise it? If Whitehead's engagement with the philosophical tradition is, by its association with the term Platonism, “more obscured, rather than illuminated”\(^{409}\), does the centrality of Plato in Whitehead's self-presentation impede the success of the "philosophy or organism" or Whiteheadian "Process philosophy" at large? In this connection it is important to note that occasional readings of Whitehead have been somewhat repulsed by certain Platonic elements.

Arran Gare, in an article published in a Process philosophy journal,\(^{410}\) notes how the

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\(^{408}\) Cf. Broadie, *Nature and Divinity*, 62: "In grasping it one grasps what is perhaps the central ambiguity of the tradition called 'Platonism', one that can be traced back to the *Timaeus* itself." Cf. also Broadie 76-77 -- Broadie suggests that the confusion between the two is understandable also because of other hints and tendencies of that kind elsewhere in Plato’s writing. This might manifests itself within a given dialogue (e.g. difficulties or multiplicities of interpretation of sustained discourse on forms or intelligible in *Republic* 510d5 - 511a1) or across dialogues (e.g. the relation of the critique of the forms in *Parmenides* to other dialogues.)

\(^{409}\) Rodier, "Between Platonism and Neoplatonism," 184.

\(^{410}\) *Concrescence: The Australasian Journal of Process Thought.*
grounding of Whiteheadian thought in the *Timaeus* links the underpinnings of his Process philosophy to Pythagoreanism and Neopythagoreanism, and that this linkage expresses itself in the context of modern science as an impetus to the (potentially misguided) quest for a mathematical "theory of everything". Gare sees this as in fact the greatest threat to the success of Whitehead's legacy, since it does not harmonize with Process philosophy's vision of a universe, which is a vision of dynamic creative processes that consist in mutually constructive evolutionary structures, rather than a top-down hierarchy of formal possibilities expressible by mathematical formulae.\(^4\) That is, while Whitehead makes clear that mathematics is ultimately an abstraction from the dynamic processes, the pride of place that he gives to the distinctly Pythagorean *Timaeus* jeopardizes this circumvention of the "fallacy of misplaced concreteness" by virtue of a dubious historical association. Be it as it may that Whitehead feels that the *Timaeus* doesn't have to be read as championing a transcendent, ontologically superior paradigm, of which the world is an inferior copy -- nevertheless the *Timaeus* is so susceptible to that reading that it makes it an ineffective choice for positioning a system of thought that appears in fact to be antithetical to it.

Given this risk, why usher so much talk of the *Timaeus* into things? In Gare's view the prominence of the *Timaeus* in Whitehead's writing was motivated by his desire to preemptively rescue the philosophy of organism from the charge of anti-intellectualism with which other new and ultimately sympathetic systems of thought were being met. Whitehead remarks in the preface to *Process and Reality*: "I am...greatly indebted to Bergson, William James, and John Dewey. One of my preoccupations has been to rescue their type of thought from the charge of

\(^{4}\)Gare, "Whitehead and Pythagoras," 8.
anti-intellectualism, which rightly or wrongly has been associated with it. Thus Gare reads Whitehead as distinguishing his own project by making a concerted appeal to a Pythagorean-Platonic locus classicus. "[H]is philosophy manifests the quest to both affirm the achievements of the Pythagoreans while going beyond it to give a central place to creative becoming". From this perspective the Timaeus in introduced in order to, so to speak, increase his project's cultural capital. As has been discussed, the eminence he grants to Plato only increases as his writing continues, and he expresses his appreciation even for Pythagoras at length in one of his last publications, "Mathematics and the Good." I will examine further on how this commitment to a self-justifying locus classicus, and to Plato in particular, emerges as a pattern in the Whiteheadian Process tradition.

If Gare's is an plausible depiction of the motivation to foreground Plato -- beyond the self-evident fact that Whitehead was clearly and simply inspired by him, and no doubt by Pythagoras as a mathematician -- then we are left with the irony that the Platonizing-Classicizing element in Whitehead may be precisely one of the factors that has diminished the success of its reception. Other thinkers whose ideas gained much more immediate success certainly also engaged with the Greeks, and specifically with Plato and Aristotle -- Heidegger, for example -- but the tone and emphasis is importantly different. Broadly speaking, what characterizes many of these parallel engagements with Plato is the impulse to critique; while much of what

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413 Gare, "Whitehead and Pythagoras," 8.
414 This trend characterizes 20th-century Continental philosophy it is examined at length in Hyland's *Questioning Platonism: Continental Interpretations of Plato* (New York: SUNY Press, 2004). Take for example Heidegger's starting point of examining aletheia in what he supposes to be its etymological foundation as "unhiddenness" -- he accuses Plato of being the first to problematically warp the notion of aletheia as truth in the sense of "correctness" (by exact contrast with Whitehead, Heidegger asserted the perennial value of Aristotle, and felt that Plato fell far short of him) -- cf. Hyland 17ff. Hyland also treats critiques of Platonism in Derrida, Gadamer and others. That said, it is not as though Continental philosophy categorically dismisses Plato (e.g. Lacan on the Symposium in *Seminar VIII: Transference*, Foucault on the Symposium also in *The History of Sexuality*).
characterizes Whitehead's engagement, at least on the surface, is nostalgia.

This consideration recalls the earlier discussion of Whitehead's occasionally effusive and "oracular" style of writing. Quite often his "oracularity", his tendency to broad historical generalization, dwells particularly on the theme of the glory of the Greeks, be it Plato or Pericles or Classical Greece in general; and there are instances of this kind which plausibly brink on a tone of idolatry -- which may evoke in the reader, depending on the reader, red-flags of a sense a retrospection rather than progressivism. There are plentiful remarks of this kind, e.g.: “There is reason to believe that human genius reached its culmination in the twelve hundred years preceding and including the initiation of the Christian epoch.”

By extension from the praise of Plato as the ultimate exemplar of the function and excellence of human speculation, *Modes of Thought* praises the Greeks as the prototype of the intellectual creativity that drives the evolutionary advance of science -- the rest of the world was behind them, and was excessively conservative.

We can imagine that an Egyptian country gentleman at the beginning of the Greek period might have tolerated the technical devices of his land surveyors, but would have felt that the airy generalizations of the speculative Greeks were tenuous, unpractical, and a waste of time. The obscurantists of all ages exhibit the same principles. All common sense is with them.

This is a distinct irony of Whitehead's Classicism -- Plato and the Greeks were for him symbols of progressivism, whereas they are liable to be (mis)read, in their prominence in his writing, as symbols of intellectual conservatism. Whitehead's emphasis was on *creation* of concepts --

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416 Whitehead, *Modes of Thought*, 65. He does, however, note on the heels of this that this legacy entails the burden of our being continuously tangled in their erroneous propositions.
which is exactly what he credits Plato for exemplifying, a free and endlessly plentiful creation of
concepts -- but it came in an age where by contrast the critique of concepts is what came into
vogue.418

Resonances of Whitehead's Reading of Plato in Subsequent Platonic Scholarship

I turn now to the relationship of Whitehead's Plato to constructions of Plato since that time, and
to an inventory of responses to Whitehead's reading on the part of Classical scholarship. While
the relation is rarely direct, there are detectable resonances of Whitehead's line of thought in
subsequent scholarly meditations on Plato, even if they are unacknowledged and unintentional.
Some scholars, on the other hand, are explicitly aware of Whitehead's appropriations from Plato,
and position their work as an attempt to ward off the alleged anachronisms that those
appropriations entail.

In the first place, it is self-evident that one should not look in Whitehead for a wholly
self-consistent, historically grounded interpretation of Plato, as he was not himself a Classical
scholar, though his educational background in and continued relationship with the Classics have
been noted. Thus he is able to assert the efficacy of this or that of Plato's ideas without having to
sift out which of Plato's "suggestions" are more important -- or more originally or genuinely

418 Cf. Latour, "Why Has Critique Run out of Steam?," 244: "Whitehead is the only one who, instead of taking the
path of critique and directing his attention away from facts to what makes them possible as Kant did; or adding
something to their bare bones as Husserl did; or avoiding the fate of their domination, their Gestell, as much as
possible as Heidegger did; tried to get closer to them or, more exactly, to see through them the reality that
requested a new respectful realist attitude. No one is less a critic than Whitehead, in all the meanings of the
word...Those who now mock his philosophy don’t understand that they have resigned themselves to what he
called the “bifurcation of nature.” They have entirely forgotten what it would require if we were to take this
incredible sentence seriously: ‘For natural philosophy everything perceived is in nature. We may not pick up and
choose. For us the red glow of the sunset should be as much part of nature as are the molecules and electric waves
by which men of science would explain the phenomenon’ (CN, pp. 28–29). All subsequent philosophies have done
exactly the opposite: they have picked and chosen, and, worse, they have remained content with that limited
choice."
Platonic -- than others, nor does he have to concern himself with justifying an interpretation of what those suggestions are on the basis of Plato's Greek, or a scrupulous account of the context of their expression. All the same, the uses to which he puts Plato and the centrality of Plato to his system make him relevant to an examination of the scholarly perspectives on Plato in the 20th Century.

Preliminarily it is interesting to note that what little Whitehead had to directly say about some of the Classical scholarship on Plato up to his own time is decidedly deprecatory. In his conversations with Lucien Price he laments, on several occasions, the pedantic approach of Classical scholarship and pedagogy to Plato -- that the minuteness of their concerns obscures the fact of Plato's immense relevance and fundamental universality.

“I question the value to the average student of digging out the niceties of meaning from the texts. The Greeks themselves wouldn't have done such a thing. And when Greek scholars tell me, ‘Yes, but what our author really meant was…’ they aren't helping along the thought….This backward-looking traditionalism came in at the Renaissance. It wasn’t Greek.”419

The remark is reminiscent of Nietzsche's ironizing comparison of the pedantic intellectuality of his fellow Classical philologists with the idealized, heroic intellectuality of their objects of study in We Philologists. Both views are grounded in a type of Classicism that idealizes ancient Hellenic culture for its unequalled inventiveness, as Whitehead repeatedly expresses in The

419Whitehead in Price, Dialogues, 54-55. In "Mathematics and the Good" he also appears to express regret that modern Platonic scholarship has failed to dwell on the analogy between Plato's "mathematical" methodology and that of modern science. "Since Plato with his immediate circle of disciples, the Notion of the Good has disengaged itself from mathematics. Also in modern times with eminent Platonic scholars with a few exceptions [Taylor!] successfully conceal their interest in mathematics” (666). I assume that among the few exceptions he is thinking of Taylor. Taylor, while he is aware of the distinction between Plato's use of geometry as it stood and the modern physicist's use of mathematical physics (which is on the other side of the invention of algebra, calculus, alternative geometries, etc.), honored like Whitehead (and through Whitehead) Plato's methodological penchant for articulating broad generalizations of quantitative pattern (see section on Taylor in chapter 2).
Function of Reason and elsewhere. The notion is that the Greeks call us to do anything but study them -- that the brilliant abundance of ideas that Plato generated should not beckon a painstaking passive systemization of those ideas but a novel, creative reenvisioning or application of them. Elsewhere in these conversations Whitehead expressed the hope that this type of scholarly pedantry was to be escaped by the yet-unfettered intellects of the New World -- he remarks to Price that "you [Americans] are like the Greeks yourselves, creating a new world." This sentiment fits happily into the personal mythology of Whitehead's life -- the British mathematician transplanted to an American philosophy department, where he expounded a novel philosophy that eschews systematic completion.

It is again this notion of asystematicity, that is at the heart of his reading, that justifies Whitehead's apparent distaste for scholarly treatments of Plato.

"in the work of his prime he is careful, as he says in one of his letters, that he does not give us a 'system' of Platonic philosophy. He says there is none, yet in the nineteenth century how the German classical scholars labored to construct a Platonic system of philosophy! 'Now what, exactly, did Plato mean?' He was at pains never to mean anything exactly."  

Perhaps this view is what is inherently irreconcilable between Whitehead's Plato and the Plato of a Classical scholar -- that even if the latter would agree that no unified positive doctrine is expressed the dialogues, their job is to explicate what is said and what is not said in them, which involves them in a minuteness of argument for which Whitehead had no use. As will be seen, the

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420 Whitehead in Price, Dialogues, 114.
421 Ibid., 302. He does not say what German classical scholars he means. It may be he point backs to a shift that begins with Friedrich August Wolf toward efforts to trace a unitary positive doctrine amidst the sprawling plurality of Plato's thought -- Wolf wrote on the Symposium, Euthyphro, Phaedo and Apology. See Novotný, Posthumous Life, 519 ff. for a summary discussion of the Classical scholarship of this era, especially German. Novotný, in his history of Platonism, identifies this era as the origin of the discipline as it has existed since, whose criterion is a scientific approach to a knowledge of ancient authors, and evaluates the role of this new approach in shifting engagement with Plato away from philosophical concerns to literary-critical concerns.
perceived generality and imprecision of Whitehead's reading are what substantially attract the criticisms of later Plato scholars.

*Gregory Vlastos*

The most obvious culprit of this excessive generality is the "footnote" remark. When Gregory Vlastos introduces his book on the *Timaeus, Plato's Universe* (1975), he makes a point of disassociating his view of Plato's modern relevance, especially his relevance to the continued progress of philosophy and science, from Whitehead's (notwithstanding the fact that he had written his philosophy dissertation under Whitehead's direction forty or so years before!):422

> Why Plato? Why give him the lion's share? My reasons have nothing to do with that absurdly inflated estimate of his place in European thought which is conveyed in Whitehead’s oft-parroted remark that the whole subsequent history of Western philosophy consists of footnotes to Plato. We do not need to pay Plato such extravagant compliments to be assured of his greatness as a thinker and writer and to feel the peculiar interest of his own responses to the major intellectual currents of his age.423

In general, over the course of his long career of Platonic scholarship Vlastos takes a middle position on Plato's modern relevance -- between the position that Plato inhibited the advance of science by virtue of his obscurantist and reactionary attitude to the Presocratic physiologists, and the position that puts him in accord with modern science from Galileo to Heisenberg.424 The latter of these is of course congenial to Whitehead's view, since he sees Plato as having successfully presaged, in methodology at least, the importance of mathematics for modern science, and in his accordant willingness to make speculative leaps. Vlastos has been

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422 From Brisson's introduction to Vlastos, *Plato's Universe*, xi.
423 Vlastos, *Plato's Universe*, xxv.
424 From Brisson's introduction to Vlastos, *Plato's Universe*, xi.
credited with returning Plato to a position of philosophical relevance, making Platonic scholarship a conversation that is equally important to philosophers and Classicists, insofar as he applied the rigorous, logical and language-based methodologies of contemporary philosophy, methods associated with what came to be known as Analytic philosophy, to Plato's dialogues. This gesture rescued Plato from relegation to merely historical relevance, and rescued the contents of the dialogues from being associated, from the standpoint of philosophy, with naive logical fallacy and conceptual confusion. Vlastos' contribution to Platonic scholarship (and those of others, especially in English scholarship -- e.g. Austin, Ryle and Owen) manifests, shortly after Whitehead's lifetime, an analogous and related concern with taking Plato seriously, and a willingness to expose the dialogues to forms of analysis that proceed from contemporary intellectual contexts.\footnote{See Alexander Mourelatos, "Gregory Vlastos," \textit{Gnomon} 65, no. 4 (1993) for a summation of Vlastos' legacy.} Contrastingly though, while their revolution in scholarship succeeded in integrating Plato with the dominant trends of 20th-Century English-language philosophy (e.g. logical positivism, linguistic philosophy), Whitehead's project, along with its Platonic elements, failed to integrate with and even positioned itself in antithesis to those concerns, insofar as he set out to produce, like Plato himself, an original metaphysics and cosmology.

\textit{F.M. Cornford}

Other scholarly responses to Whitehead are more specifically directed and less ambiguous in their significance. F.M. Cornford's commentary on the \textit{Timaeus}, which was published shortly after Taylor's and positions itself as an attempt to correct its predecessor's errors of conception, explicitly problematizes Taylor's "practice of translating Plato's words into the terms of Professor Whitehead's philosophy. That philosophy could not have existed before the Theory of
Relativity; and its author, having very unfamiliar ideas to express, uses common words in senses so peculiar and esoteric that no one can follow him without a glossary.426

In spite of the fact that, as Cornford concedes, there is in Whitehead's eternal objects "a definite affinity to Plato's eternal Forms", nevertheless Taylor's repeated implication -- that forms are exclusively expressed in passing Whiteheadian "events", such that for Plato nature is, as Taylor says in Whiteheadian terms, "a process of 'ingredience' of objects into events"427 -- is for Cornford inherently misleading to the reader. Cornford by contrast insists on emphasizing Plato's declaration that the forms "never enter into anything else anywhere"428 -- that is, Plato's view is explicitly not Aristotle's, that forms are located only in actuality and not in a realm that is ontologically prior to and transcendent of the physical universe. This recalls the possibility of an implicit, understated debt to Aristotle over and above Plato in Whitehead's thought, which has been discussed this previous part of this study. Cornford asserts then that Taylor's excessively Whiteheadian reading credits Plato with views that are actually the product of Aristotle's criticism of Plato. Thus Cornford's ultimate justification for another commentary on the Timaeus is that Taylor's is compromisingly anachronistic, and by extension Whitehead's presentation of Plato is too anachronistic to be helpful in understanding Plato on the latter's own terms.

Myles Burnyeat

A more recent critique of Whitehead's intrusion into Timaeus scholarship comes from Burnyeat, who takes to task what he sees as long legacy of misconstructions of the eikos mythos, which, as discussed above, is of paramount importance for Whitehead's vision of Plato, which

426 Cornford, Plato's Cosmology, ix.
427 Taylor, Commentary, 16.
428 Timaeus 52A quoted from Cornford, Plato's Cosmology, x.
perhaps has its origin in Taylor's construction of the term. Burnyeat argues that a proper reading of the eikos mythos reveals it to be "[a] far cry from the empiricist philosophies of science which so many scholars have projected anachronistically back into the Timaeus..."\(^{429}\). It should be read neither as a "merely likely story" in the sense of being delimited in its accuracy (a view which Burnyeat associates with Cornford), nor as in analogy to a perpetually "provisional" scientific hypothesis, as Taylor presents it to be in what Burnyeat calls his "Whitehead-inspired gloss."\(^{430}\) Thus he views the use Whitehead makes of Plato in connection with modern science, construing Plato as a prophet of its progress and original self-conscious articulator of the mechanism of its evolution, as fundamentally anachronistic. At the same time, his simultaneous critique of Cornford puts him proportionally more in line with Taylor and Whitehead's reading, which challenges the assumption that the interpretation of the passage, and the dialogue at large, rest on an understanding of the physical world as qualitatively inferior to its transcendent model. He argues that the correct interpretation is "far away...from the cautious atmosphere of modern empiricist philosophy of science -- but also...from the atmosphere engendered by the metaphysical downgrading of the sensible world."\(^{431}\) The latter term of this distinction is exactly the emphasis of Whitehead's and Taylor's revisionist reading -- nevertheless it seems that Burnyeat finds their reading to be based in anachronistic motivations.\(^{432}\)

\(^{429}\)Burnyeat, "Eikōs muthos," 186.  
\(^{430}\)Ibid., 167.  
\(^{431}\)Ibid., 173.  
\(^{432}\)Burnyeat's own view is that the eikos mythos should be understood as a kind of exegesis (eulogos exegesis) -- the key to understanding it is the pious axiom with which Timaeus begins, that a supremely good creator made the world as best as it could possibly be. He made it by wisdom, but as there is a distinction between practical and theoretical wisdom, and his act of making is an exercise of the former, our description of his process must belong generically to that category of discourse. "Practical wisdom cannot aspire to the same standards of rigour as theoretical wisdom can, so if we are learning to be connoisseurs of a product of practical wisdom, we should not ask our teacher to be more than an eulogos exegete, a reasonable exegete of the reasonable order of things" (ibid., 186).
There are other scholars who, whether explicitly or implicitly, or whether consciously or unconsciously, exhibit more favorable resonances with Whiteheadian views of Plato.

*Raphael Demos*

One of these is Raphael Demos, who was Whitehead's assistant at Harvard. When they met Demos was 32 and had been Instructor and Tutor in Philosophy at Harvard for two years. What united the two thinkers even beyond their professional association was a mutual absorption in metaphysics and a passionate admiration for Plato. While Demos was equally concerned with Plato's political thought, his interpretations of Platonic cosmology seem to betray the lasting influence of his association with Whitehead. Like Taylor's *Commentary*, though to a lesser degree, Demos' *The Philosophy of Plato* allows an influx of Whiteheadian terminology into his interpretation of Plato, and makes such connections with a sensitivity to Plato's relevance to modern science. This is evident in his treatment of the Receptacle, which he describes in Whiteheadian terms, reminiscent of Taylor: "The receptacle is a principle of relatedness among the many concrete things. The passing events meet and merge in it. It is the common background of the interpassage of things." "Events" and "principle of relatedness" are Whiteheadian expressions, and in this description he cites *Adventures of Ideas*. Elsewhere he parses the receptacle in modern scientific terms as "a space-time continuum."

Demos also praises Whitehead's emphasis on the persuasive character of divine agency in Platonic cosmology, an aspect of divinity which eluded Christian disciples of Plato "in their zeal to emphasize the omnipotence of God at all costs." -- here too he cites *Adventures of Ideas*,

433 Lowe A.N. Whitehead II, 139.  
434 Demos, *The Philosophy of Plato* (Chicago: Charles Scribner’s Sons, 1939), 35.  
436 Demos, *Philosophy of Plato*, 34.  
437 Ibid., 119.
where Whitehead discusses the Christian Platonists.\textsuperscript{438} In this respect Demos' scholarship aligns with the agenda of Process Theology, with its Platonic-Whiteheadian view of a God that changes with the world -- Process Theology will be discussed shortly.

Finally, perhaps the most distinctly harmonious point of emphasis between Demos and Whitehead is the assertion that the unity of the dialogues does not consist in their conceptual self-consistency but their methodological underpinning, which is a commitment to a free and non-systematic exploration of concepts. As Demos remarks in the preface to \textit{The Philosophy of Plato}, "[t]he unity is not one of doctrine but of an intellectual personality."\textsuperscript{439} The common thread of Plato's writing is not reducible to a discrete set of positive doctrines, but the magnetism of the authorial expression of a diversity of concerns.

\textit{Unacknowledged Resonances}

Whiteheadian resonances of this distinctness in Platonic scholarship are few, but occasionally others are detectable in tacit form. A full survey of unspoken or incidental agreements with Whitehead's reading in Platonic scholarship would be too boundless an exploration for this study, but I will discuss a few exemplary pieces of scholarship, both from the era immediately following Whitehead's output, and from more recent scholarly work, that reecho Whitehead's reading, either by evoking its concepts or recalling its terms.

A first example is Glen Morrow's 1950 article "Necessity and Persuasion in Plato's \textit{Timaeus}", which is concerned with how the \textit{Timaeus} presents the world as an intelligible entity, and in light of that interpretation evaluating what claims modern science has to making an intelligible account of the world, insofar as it does or does not allow itself to incorporate

\textsuperscript{438}Whitehead, \textit{Adventures of Ideas} 213ff.
\textsuperscript{439}Demos, \textit{Philosophy of Plato}, x.
teleology into its description.

“Nature, as her picture is being drawn for us by modern science in increasing fullness of detail, is a texture of events, each of which is determined by antecedent events, or at least follows upon antecedent events in accordance with causal laws that have a high degree of statistical reliability. This picture of nature affords no little satisfaction to our minds; it is intelligible. If a working intelligence is also involved in all this or in any part of it, we should also be able to fit its operations into the picture without destroying the intelligibility of the whole. The problem, to state it pointedly, is how to make the working of intelligence intelligible….The difficulty of the problem…more than any absence of cosmic emotion or cosmic faith, is the real reason why philosophers and scientists today are reluctant to make commitments to teleology.”

Morrow goes on to note that in spite of this reluctance, teleology must enter into a full description of nature in some capacity, if it assumed that any creature is able to exhibit any purpose whatsoever, e.g. if a tailor is able to make a suit. Concerning this reluctance he observes that "[t]here is a pathetic confusion in contemporary thought. We talk confidently about a 'design for living,' a 'planned economy,' and 'social engineering,' while our theories of nature and human nature are steadily making less conceivable the control by intelligence which these visions presuppose." Our intellectual situation then, is analogous to Plato's, in that a great deal of progress is being made as to accounting for how things work, to the exclusion of the question of why they work. Morrow describes how it was this gap that led Plato to search for the "intelligent cause", and to locate purpose in the process of nature. In the Phaedrus, where this problem is most explicit, the search leads to the identification of the role of the good in composing the world

-- "there is the pregnant assertion ...that the good operates by 'binding things together' (99c)--a phrase which will become clear from the *Timaeus*."\(^{442}\) The *Timaeus* picks up on this identification by explicating the process by which the world cooperates with the influence of the good in its becoming.

As it proceeds, Morrow's interpretation of the process of becoming as described in the *Timaeus* is evocative of Whitehead's "prehension" and "concretion":

> "The actual world of concrete becoming is, so to speak, the result of a selection, from among the various possible collocations of causes, of those particular collocations which will most readily serve [the Demiurge's] purposes. The actual world is just one of many possible worlds, any one of which may have come about by a variation in the modes of co-operation of the works of necessity."\(^{443}\)

Recall that "prehension" or "uncognitive apprehension"\(^{444}\) refers to an atomic actual entity's quasi-awareness of or access to the array of possibilities for becoming (cf. "the various possible collocations of causes"); "concretion" is the full actualization of the "choice" made by that actual entity to manifest itself in thus and such a way as it emerges from its historical route. In doing so the entity is conditioned by its objective history but subjectively enjoys an infinity of formal possibilities for its renewed expression in the present of its becoming. This infinity of formal possibilities is offered to it by God, and what the actual entity expresses in making a selection from among these possibilities is a form, an eternal object. The object emerges into physical expression by virtue of a communication between the preceding state of formal relations in the actual entity's history and its acceptance of a novel eternal possibility in its renewed expression of itself.

\(^{442}\)Ibid., 425.
\(^{443}\)Ibid., 434.
\(^{444}\)So it is defined in *Science and the Modern World* 69. For "prehension" and "concretion" see glossary.
Morrow, analogously, reduces the cosmology of the *Timaeus* to a "co-operative" interplay between forms of possibility and objects of preceding actuality, the former corresponding to the divine force of persuasion and the latter to the cosmic necessity, or the world as it would be prior to the entry of the intelligent cause. Morrow's reading of *necessity* is that it refers to effectively mechanistic causal order, which however represents but one pole of the process of becoming, the other being an actual thing's reception of new possibilities for its actualization by virtue of divine *persuasion*. The Demiurge's persuasive ordering of the raw materials of the cosmos is what ensures its evolution from an otherwise inert, mechanistic succession of accidents to an ongoing process capable of effecting harmonious, fortuitously coordinated collaborations, or what Whitehead would call complex societies of actual occasions (like rocks, trees and people.) Quite simply, as Morrow iterates, such complex harmonious societies are good, and it is the good that encourages their coming-together.

There is also, Plato suggests at several points in the *Timaeus*, an intrinsic good realized by persuasion, a good distinct from the end which the collocation of forces brings about. Persuasion is a process of eliciting co-operation among powers and forces that were previously indifferent, if not hostile, to one another. The creator makes them "friends" (32c, 88e) and thus produces, not merely a more stable foundation for higher ends, but also an intrinsic good, the kind of good that is essential to any community.445

While Morrow makes no acknowledgement of Whitehead, the points of concern in their respective interpretations are almost identical. Their most salient similarity is their presentation of Plato's cosmological concerns as essentially amounting to a dichotomy between animism and

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mechanism\textsuperscript{446}, and in this connection he even exactly reechoes Whitehead's assertion of the importance of this dichotomy for understanding the importance of the upheavals in modern science in the early 20th Century:

\begin{quote}
In thus regarding strict necessity as a relation, not between things but between ideas, and in insisting on the distinction between the intelligible world and the world of facts and events Plato really seems to be nearer to us than the nineteenth-century determinists.\textsuperscript{447}
\end{quote}

This is exactly the analogy Whitehead offers, preliminarily in \textit{Process and Reality} and as an extended theme in \textit{Adventures of Ideas} -- that just as Plato was responding to the trend toward mechanistic description in the science of his own day, a trend that occasioned great advances in the capabilities of scientific description, yet dangerously omitted the teleological aspect of inquiry that led to answering the ultimate "why?", so must Whitehead, and the modern reader, respond to the shortsighted omissions of early modern scientific descriptions, admitting their historical importance but acknowledging their failure to survive new discoveries, and their unfortunate and artificial scission of physical from psychical reality.

Another resonance that I will briefly mention is in Sarah Broadie's recent work, \textit{Nature and Divinity in Plato's Timaeus} (2001), which has already been of much use in this study. Like Morrow, she makes no mention of Whitehead, but it is not improbable that she has some familiarity with his reading, especially since she makes use of Burnyeat, who, as discussed, responds to Whitehead directly. The resonance I mention here is verbal, and in my view somewhat ironic.

Broadie, as has been discussed, makes a distinction between two modes of interpreting

\textsuperscript{446}Ibid., 424.
\textsuperscript{447}Ibid., 435.
the "paradigm" in the *Timaeus*, and suggests that a given scholar or philosopher tends to embody one or the other view. The two camps, as she has it, divide along the line of whether the paradigm is to be viewed as a truly separate, ontologically prior and metaphysically superior entity that utterly transcends the physical world -- this she calls the "thick intelligible" view -- and a contrasting view that takes the paradigm as an epistemological benchmark for the possibility of discovering intelligibility in the world at all ("thin intelligible." The "thin intelligible" interpretation holds that the eternal paradigm Timaeus speaks of simply refers to the fact that the physical world exhibits certain objective structures that we are able to identify and scientifically describe. In this "thin" view the paradigm is merely that in virtue of which cosmic order is able to be recognized and understood, whereas in the "thick" view it is the unambiguously better, ever-beyond and prior world on which this imperfect one is based. Another way she puts the distinction is "realism" versus "hyper-realism" respectively. Broadie notes that the ambiguity between these two emphases courses not just through the *Timaeus* but through the whole Platonic corpus and constitutes, in its various manifestations and points of concern, the central ambiguity of Platonism itself. Now Taylor at least, in the use he makes of Whitehead, would certainly be in the "thin-intelligible camp", and Whitehead himself is explicit about dismissing the "thick-intelligible" view, and even, as has been noted, criticizes Plato for junctures in which he appears to have slipped into something resembling paradigm-worship.

It is ironic and interesting then, that Broadie's term for "forms" as particular manifestations of the "thick-intelligible" type of paradigm, is "eternal objects." For Whitehead an eternal object does, like it sounds, exist potentially without respect to its temporal expression since it resides in the primordial and ultimate actual entity, God; however it only exists actually

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as it is expressed by an actual entity. They are said to exist in God in the first place because everything that is, according to Whitehead's "Ontological Principle" has to exist in an actual somewhere, as an expression of an actual something, and so God is posited on that basis. -- Whitehead is careful to distinguish them from the "hyper-realist" account of a Platonic form that exists in a supernal realm, to which the things that participate in it are inferior. Yet of course, insofar as the concept of "eternal object" evokes "Platonic form", it makes that evocation in all its capacity for paradox and all its ambiguity -- and so here, ironically, Broadie uses the same term for a meaning that Whitehead could not possibly have endorsed as a feature of his system. Yet again, the eternal objects are probably the most controversial, difficult and criticized aspect of that system -- and also perhaps the most distinctly Platonic. Accidental or not, Broadie's employment of the term "eternal object" as a parse for a certain interpretation of a "form" exemplifies the ambiguities at play in Plato's thought itself, and in the subsequent interpretation of his thought, and by association also in Whitehead's thought, and in his interpretation of Plato's.

I read a third, especially distinct phantom resonance of Whitehead in Brisson and Meyerstein's *Inventing the Universe*. Their study examines the *Timaeus* in the light of Big Bang cosmology, and endeavors to show how both cosmologies proceed from fundamentally analogous assumptions regarding the intelligibility of the universe. It asserts that any cosmology, ancient or modern, must begin its reasoning from fundamentally undemonstrable propositions, and on this basis the *Timaeus* and Big Bang cosmologies can be examined in parallel, by comparing the axioms that they respectively presuppose.\(^{449}\) They observe that the dependence on

\(^{449}\)The first axiom of the *Timaeus* for instance is that there is a paradigmatic ideal realm in relation to which the world is constituted; the first axiom of Big Bang theory is that the universe is a geometric object (and so it can be understood and described by geometry.) These are axioms "T1" and "B1" respectively, each of which set off a list and analyses of correlating axioms (Luc Brisson and F. Walter Meyerstein, *Inventing the Universe: Plato's*
these assumptions illustrates the limitations of scientific knowledge, and in the face of these limitations they assert that the progress of science requires perpetual reformulation of its sets of axioms, starting points which can never be proved:

“‘true’ knowledge (episteme) can never issue from the natural sciences as they are nowadays understood, and...the only remaining available option is the unrelenting reformulation of the questions, the ceaseless restating of the questions worth asking.”450

At this climactic point in their analysis, having carried out their comparison of cosmologies and made this assertion, they weave their study into the context of 20th-century philosophy -- not with Whitehead in mind, but with Heidegger. Heidegger is hardly an irrelevant point of reference, but this theme, the notion that the function of philosophy is to continuously reformulate itself according to new intuitions in new epochs, is precisely what Whitehead emphasizes so explicitly, and presents as having originated in the Platonic eikos mythos. The presence of Heidegger at the point in Brisson and Meyerstein's study exemplifies the vastly greater amplitude of his legacy in 20th-century thought, a philosopher whose reception of Plato is characterized by critique -- and this instinct toward critique colors and characterizes the reception of Plato in these contexts. Whitehead's manner of reading Plato consists in the opposite movement -- he finds in Plato what other philosophers and critics assert in spite of Plato. (Brisson and Meyerstein will return to the discussion at greater length when I examine the relation of Whitehead's construction of Plato to modern science, in chapter 5.)

While the foregoing resonances of Whitehead's Plato in later scholarship are noteworthy, it must also be acknowledged that Whitehead's reading, especially entangled as it is with

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450 Brisson and Meyerstein, Inventing the Universe, 149.
Taylor's, is itself part of a spectrum of Platonic interpretation — and of course a scholar could very well arrive at a rather Whiteheadian take on the *Timaeus* without having read Whitehead at all, especially if Whitehead's reading does have even the remotest value or relevance. Ultimately Whitehead's reading itself is to be understood in its relation to the constellation of developments in Platonic reception that have occurred in the past century, especially, as regards the *Timaeus*, those motivated by contemporary developments in science and cosmology — a subsequent section of this study will be devoted to Whitehead's role in the relevance and appropriation of Plato in these contexts. But first, let's examine how Plato is received in the Whiteheadian tradition itself, in the tradition of "Process" philosophy that identifies Whitehead as its progenitor.

**The Successors - Platonism in Process Thought**

Plato's importance for Whitehead himself is reechoed by the attention he receives from thinkers who are categorized as "Process Philosophers" and "Process Theologians". Generally speaking, "Process" thought is an expansive category that may encompass diverse philosophical legacies. The term most broadly refers to the type of thought that identifies change, dynamism or becoming as ultimate metaphysical principles, in preference to any kind of static being; thus it consists in the metaphysical critique of the notion of individual, permanent substances, and the exploration of the consequences of that revision not only for philosophy but for the physical sciences. While this is indeed very Whiteheadian, and while a lot of self-identified Process literature presents Whitehead as its effective progenitor, the term has broader relevance than the use of it that I mean to specify here. In what follows I am not talking about "process" thought in the general sense, as referring to the critical reaction of various Western philosophers, whether
"Analytical" or "Continental", to the reigning paradigm of "substance metaphysics" as it proceeds from Aristotelian metaphysics forward\textsuperscript{451} -- rather, I mean to discuss the specifically "Whiteheadian" Process (capital "P") tradition, whose writers in some capacity present themselves as successors of Whitehead.\textsuperscript{452}

As in Whitehead, there is a striking Platonic preoccupation in some Process literature, and this preoccupation has several dimensions. First, Plato is in general an important topic in Process thought insofar as it tasks itself with the interpretation, elaboration and application of Whitehead's writings. Process philosophy has placed a great deal of emphasis upon the 

\emph{theological} aspects of Whitehead's thought, with the result that in conversations outside of the domain of this nascent Process movement, discourse surrounding Whitehead has had the appearance of being predominately theologically-themed and Platonically-flavored, and perhaps to an exaggerated degree. Given the intellectual climate -- the developments of logical positivism and linguistic approaches to philosophy, and the relative mistrust of metaphysics, as discussed above -- this Platonic-theological ambience was not conducive to a swift and congenial reception of Whitehead's ideas. And so the first thing to be examined in this section is how Process theology's Platonism has in some degree inhibited Whitehead's reception.

Secondly, but in connection with that, I read also in some Process writing a tendency to


\textsuperscript{452}Compare, for example, the respective entries on "Process Philosophy" in the \textit{Internet Encyclopedia of Philosophy} (Hustwit, 2017) and \textit{The Stanford Encyclopedia of Philosophy} (Seibt, 2017). J.R. Hustwit's IEP entry describes Process Philosophy as the direct outflowering of Whitehead and Charles Hartshorne, whereas the Johanna Seibt's SEP entry, speaking more generally, begins its description with Heraclitus, then dwells on a host of philosophers, mostly early modern to modern -- Leibniz, the German Idealists, C.S. Peirce, Samuel Alexander, William James, John Dewey, Henri Bergson, Martin Heidegger, Gilles Deleuze. Whitehead and Hartshorne are indeed in the mix, but as part of a sprawling constellation of schools and thinkers, that have what is perceived to be a common impetus.
celebrate and insist upon the presence of Plato in Process discourse, apparently as an end in itself -- an insistent faithfulness to Whitehead's footnote remark, and the opinion that Plato practically prophesied our evolving modern view of the universe with a bare minimum of changes necessitated by intervening millennia. While Plato is not invoked by Process writers without justification, there are respects in which the invocation suggests a kind of idolatry or fetishism, an obsequiousness toward Plato, or Plato as conceptually commingled with Whitehead, as an inherent source of ultimate philosophical authority. In this connection I note, in broad terms, an analogy between Process thought's reception of Whitehead and ancient Platonism's reception of Plato. The ironic tinge to this analogy, as will be discussed, is that while Whitehead was careful to distance himself from the mysticizing/religious dimension of the Platonic tradition, his incorporation of Plato has made his own work highly susceptible to appropriation by modern theism and religious apologism.

First let's return to the immediate reception of Whitehead's thought, and its theological emphasis. Stengers begins her recent book on Whitehead with a brief history of this early reception, along with the personal admission that if it were not for the subsequently less theologically minded treatments of Whitehead which only emerged much later, Whitehead's thought would never have appealed to her, who was by training a physical scientist. Latour summarizes this tendency: “Among his many misfortunes, Alfred North Whitehead had the very bad one of provoking too much interest among theologians and too little among epistemologists. His reputation in America is thus skewed toward his theological innovations to the detriment of his epistemological theories.” Lowe similarly observes that while “[a] few natural and social

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453 Latour's introduction to Stengers, *Thinking with Whitehead*, 1. Cf. Stengers 5: “The God conceived by Whitehead…earned him and improbable survival through the intermediary of American theology. And the consequence of this intermediary was an initial mode of reading that was rather peculiar: that of a theism that sought to elaborate, by rational arguments alone, the definition of a God conceived as 'perfection,'” but which
scientists have made use of Whitehead’s philosophy...theology is now [still] the main area of its influence.-process and reality went out of print in England not long after Whitehead died in 1947, and it was almost exclusively in the context of American theism that the thread of his thought's transmission immediately continued. The figure mainly responsible for this transmission was American philosopher Charles Hartshorne.

Charles Hartshorne

Hartshorne's view of God is in harmony with the general features of Whitehead's metaphysical system, and embraces and incorporates its appropriations of key Platonic concepts. For Hartshorne metaphysical systems can be grouped into three classes -- the dualist viewpoint that fundamentally separates matter and soul, the materialist viewpoint that reduces soul to matter, and the panpsychist viewpoint that reduces matter to soul; this last is what he endorses. Effectively he identifies God as the psychic entity that permeates and constitutes the physical universe, aligning this entity specifically with the World-Soul of the Timaeus. It is a God, then, that like Whitehead's ultimately expresses itself not as an absolute and changeless and omnipotent entity, but one that changes with the world -- "the fellow sufferer who understands." \(^455\) The changefulness and chance nature of the universe should dissuade us from the notion of a static, omnipotent deity, yet the abundance of order that it does exhibit should equally dissuade from the notion of the absence of any ordering entity at all. In his insistence on order only as it is expressed amidst the process of change he draws heavily and purposively, like Whitehead, on the identification of being with dynamis in the Sophist. These emphases set the

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\(^{455}\) Whitehead, Process and Reality, 351.
agenda for the development of Process Theology.456

A consequence of Hartshorne's theistic development of Whitehead's thought is that certain of its concepts have since been put in the service of Christian theology. Whitehead had been raised Anglican and was the son of an Anglican priest; he had also had a flirtation with Roman Catholicism. Yet prior to the inception of the work that would lead to his joining the philosophy department at Harvard, he had abandoned Christianity and arrived at his own re-conception of deity through the working-out of his metaphysical system, which was, as discussed, a broadly Platonic conception of deity as the entity which offers modes of relation in the form of "eternal objects" to the world of becoming as an act of persuasion, and thus guarantees the possibilities of the continuity of becoming. Hartshorne's elaboration of this concept served to link the divine characteristic of "persuasion" with Christian theology. The concept of the "fellow-sufferer" is readily assimilated to the figure of Christ, and the non-coercive character of deity to the ultimate benevolence of Christian deity, and the ability of creatures to freely enjoy the love that the divine offers.457 These overlaps have been the ground for the flowering of Process Theology among Anglicans, Roman Catholics and other Christian denominations. These applications have received further development by John B. Cobb, who

456This is a very broad sketch of Hartshorne's thought, as this is not the place to introduce it in full depth. The summary here is on the basis of The Divine Relativity: A Social Conception of God (New Haven: Yale University Press, 1964. (1948)), as well as his remarks on the theologies of various philosophers in Philosophers Speak of God (Chicago: Chicago University Press, 1953) (with William L. Reese). I am also indebted to Donald Viney, The Stanford Encyclopedia of Philosophy, s.v. "Process Theism" (2014), and Dombrowski, The Stanford Encyclopedia of Philosophy, s.v. "Charles Hartshorne" (2017) -- Dombrowski's own work in Process philosophy will be discussed below.

457Cf. Jones, "Some Platonic Implications," 14: "[I]n keeping with the Platonic implication, Whitehead himself very often asserted the persuasive rather than coercive nature of God. God “is the lure for feeling,” and can only produce such order as possible. Thus the notion, for instance, of creatio ex nihilo was anathema to Whitehead, whose metaphysics in this respect was much more Platonic in accepting some sort of creation out of chaos. This serves to remind us of the specifically Christian aspect which evolved out of Process and which led to an influential Process theology inspired mainly by Charles Hartshorne. Hartshorne had much more than Whitehead to say about God, but Whitehead also expressed a fascination for Christianity."
began his career as a Protestant theologian, and came to embrace Process theism, making further
syntheses of Whitehead and Christian theology.458 Along with Protestant minister David Ray
Griffin he founded the Center for Process Studies, an organization devoted to the exploration and
application of Process thought, which is attached to the Claremont School of Theology.459

What does all this have to do with Plato? Whitehead's philosophy of organism, regardless
of its intended emphasis (he was obviously not uninterested in the theological aspects of his
system, but neither does he give them disproportionate pride of place), offers material for the
development and justification of religious ideas, specifically Christian doctrine. This tendency
suggests an analogy with the fate of Plato's legacy in the context of Ancient Platonism, especially
the mystical-religious emphases of Neoplatonism, and the translation of those emphases into
early Christian theology. Ironically, Whitehead addressed and problematized this very tendency
even in the midst of his most forthright alignments with Plato in Adventures of Ideas. In some
sense Whitehead's preoccupation with Plato had to do with the self-assigned errand of correcting
the view of Plato as being ultimately a religious mystic. Recall the qualification he makes, that
the portrayal of divinity in the Timaeus, while ultimately so effectively infusible into his own
speculations, has historically run the risk of being problematically adumbrated, especially when
the Timaeus' cosmology is reduced to a mere allegory of the relationship between a powerful,
benevolent creator and the created world that is merely subject to Him.

Plato provides a soul of this world who is definitely not the ultimate
creator. ...[But] in the Timaeus the doctrine can be read as an allegory. In that case
it was Plato’s most unfortunate essay in mythology. The World-Soul, as an

458 See for instance A Christian Natural Theology Based on the Thought of Alfred North Whitehead (1965), and The
Call of the Spirit: Process Spirituality in a Relational World, co-authored with Bruce Epperly, whose dissertation
of Whitehead's Platonism is discussed here.
459 Griffin, "John B. Cobb, Jr.: A Theological Biography" in Theology and the University: Essays in Honor of John
emanation, has been the parent of puerile metaphysics, which only obscures the ultimate question of the relation of reality as permanent with reality as fluent: the mediator must be a component in common, and not a transcendent emanation.\textsuperscript{460}

It would seem that Whitehead was specifically wary of this theologically dogmatic dimension of Platonic cosmology -- it must not be meant to allegorize, once and for all, a fundamental state of relation between creator and created, but was rather, like all of Plato's inherently tentative utterances, an exploration, in this case of the mediative presence of the divine amidst the adventure of becoming. In *Adventures of Ideas* he emphasizes the *unsystematic* character of Plato's theology, which it shares with every other feature of Plato's thought; in spite of that, the potentially "unfortunate essay in mythology", because of the strength of its imagery, has been susceptible to sublimation and excessive suggestion of certainty at the hands of its inheritors (Whitehead specifically discusses the Neoplatonists). There was some ironically predictive power in this sentiment, insofar as it was perhaps by virtue of the prominence of his own embrace of Platonic theological elements into his philosophical self-presentation that his own work became susceptible to a similar tendency. His Platonizing gesture made him eligible for subsumption into Christian apologism, offering a conceptual toolbox for theology to effectuate necessary evolutions.

*John C. Cobb*

John C. Cobb's *A Christian Natural Theology Based on the Thought of Alfred North Whitehead* sets itself the task of revitalizing and reexamining the concept of God in Christian theology, and does so on the pretext of fulfilling an urgent need for such revitalization --

\begin{quote}
It is widely recognized that we live in a time when the categories in which the Christian message has traditionally been presented have lost all meaning for
\end{quote}

\textsuperscript{460}Whitehead, *Adventures of Ideas*, 129.
major segments of the population....The crux of the matter has to do with the concepts of man and of God....For much of the culture that is growing up about us and within us, "God" has become an empty sound.461

He suggests that Whitehead's thought has the capacity to fill that empty sound with new meaning. While he is careful to note that his appropriation of Whitehead differs from an interpretation of Whitehead on his own terms, he is confident of Whitehead's distinct applicability to the context. He even compares his gesture to Classical precedents of Christian appropriations of Greek thought.

I see the relation of the Christian theologian to Whitehead’s philosophy as analogous to that of theologians of the past to the philosophies they have adopted from the Greeks. Whitehead’s work is obviously already Christianized in a way Greek philosophy could not have been. Hence, it proves, I am convinced, more amenable to Christian use. Nevertheless, the questions in the foreground of concern for the Christian theologian were on the periphery of concern for Whitehead. Philosophy of science, epistemology, ontology, logic, and mathematics, along with broad humanistic concerns, dominated his thought. He never organized his work extensively around the doctrine of man or the doctrine of God. Hence, the theologian approaches Whitehead’s work, asking questions the answers to which are not readily available. He must piece together fragments from here and there. Furthermore, at certain points, more crucial to the theologian than to Whitehead, the questions are simply unanswered or are answered in ways that do not seem philosophically satisfactory when attention is focused upon them.462

In this way Cobb makes transparent the very irony of the predominance of the theistic

462Ibid., 176.
reception of Whitehead -- it is not what Whitehead might have intended, but it is in fact the connection in which the world was prepared to accept his ideas. As Christian Natural Theology proceeds, he emphasizes the uniqueness of Whitehead's thought among his contemporaries in offering to modern theology a philosophical vision of a universe that makes a place for the meaning and value of the human soul, and connects that vision with Whitehead's commitment to Plato. E.g.: "Whitehead is remarkable among recent philosophers for his insistence that man has, or is, a soul....The understanding of the human soul is one of the truly great gifts of Plato and of Christianity, and Whitehead does not hesitate to associate his own doctrine with these sources." He goes on to describe how Whiteheadian psychology represents an evolution of "those of Platonism and historic Christianity", and how that content of that evolution can be beneficially applied to modern Christianity.

Cobb apparently encountered Whitehead at a crucial time in the personal development of his faith. He describes an intellectual experiment he performed while a student at the University of Chicago -- he set out to test his faith by acquainting himself with ideological objections to Christianity: "I was determined to expose my faith to the worst the world could offer. Within six months of such exposure my faith was shattered." In the midst of this crisis he joined the University of Chicago Divinity School, where his faith was rejuvenated by the influence of Charles Hartshorne, who introduced him to Whitehead's philosophy. Cobb's story reminds me of the narrative in the Confessions, where Augustine encounters the Neoplatonists not long prior to his conversion, as a provisional stepping stone on his path to faith -- "You [God] procured for me...certain books of the Platonists, translated from Greek into Latin. And there I read, not in the

463 Ibid., 18.
465 Griffin, "Theological Biography," 228.
same words, but to the same effect...that in the beginning was the Word, and the Word was with God, and the Word was God..."\textsuperscript{466}

The similarity is of course only analogical and is perhaps a commonplace in the intellectual development of a philosophical person of faith; nevertheless the analogy exemplifies the fundamental translatability of Platonistic thought to Christian doctrine, transferred to a modern context. Cobb's Process Theology ushers Plato into a novel subgenre of modern Christian theology through Whitehead's mediation. Thus the Christianization of Whitehead -- e.g., Cobb and Griffen's Center for Process Studies, which functions as an arm of the Claremont School of Theology, and the generally theological associations that have pervaded Whitehead's initial reception -- can be seen not as anomalous but as a typical iteration of the reception of Platonism. As will be discussed below, Cobb's continued development and application of Whitehead beyond theology into ecological and political spheres offers further comparison to precedents in ancient Platonism.

\textit{Daniel Dombrowski}

Specifically \textit{Christian} theology however, does not universally determine the theological reception of Whitehead's Platonism. Daniel Dombrowski's \textit{Platonic Philosophy of Religion} offers a counterpoint, endorsing not a Christian but a concertedly "Neoclassical" Process view of Platonic divinity. I include Dombrowski here because of his prominence in the domain of Process theism, and because he is exemplary of its concerns with Plato. Dombrowski makes it clear that he is not interested in reinforcing a Christianized Plato via Whiteheadian Platonism; on

\footnote{\textit{Augustine, Confessiones, 7.9}: \textit{procurasti mihi...quosdam Platonicorum libros ex graeca lingua in latinam versos; et ibi legi non quidem his verbis, sed hoc idem...quod in principio erat verbum et verbum erat apud deum et deus erat verbum.}}
the contrary, what he calls "neoclassical theism" is concerned with extricating Plato from this very implication. Be it as it may that what Plato foresaw in his theism inspires some readers to see its realization in an international religion like Christianity, what Plato really and most importantly offers is a way to understand the transient behavior of \textit{physis} in terms of the operations of a cosmic soul. Thus the goal of Dombrowski's version of Process theism is to provide "a disciplined rational account of the existence of God on the basis of Plato's writings" and in doing so defend it "against the charge that Plato's theism is a type of ontolatry, a worship of being in contrast to becoming" -- in spite of the fact that "the influence of Plato's alleged ontolatry on the history of philosophical theology, however, has been enormous."\footnote{Dombrowski, "Platonic Philosophy of Religion," 12.} But, as Dombrowski asserts, by thinking with Whitehead, Process thought can effectively extract the original pith of Platonic theism from the Christian framework that makes it susceptible to being misunderstood as a top-down, transcendent theism, revealing a theology that is "both archaic...and future oriented."\footnote{Ibid., 31.}

Dombrowski is explicitly concerned with extricating Platonic cosmology from the charge of "ontolatry" -- he wants to distinguish "[b]ad" Platonism from "moderate neoclassical Platonism", as the latter avoids the "fallacy" wherein independent, transcendent reality is attributed to the forms.\footnote{Ibid., 93.} In making this defense he makes much use of Taylor's interpretation of the \textit{Timaeus} -- even more direct use than Whitehead makes of it -- specifically of Taylor's insistence on Plato's monotheism, and argues that Taylor glimpsed, by virtue of his Whiteheadian inspiration, the "dipolarity" of God. "Dipolarity" refers to the compresent aspects of God as an independent eternal entity who contains or "envisages" the eternal forms intradeically, and as the

\footnote{Dombrowski, "Platonic Philosophy of Religion," 12.}
\footnote{Ibid., 31.}
\footnote{Ibid., 93.}
Thus taken in a grand view, Dombrowski has it that "Plato ends up with a cosmological monism in which the world soul embraces all."\textsuperscript{471}

Wrong or right, Dombrowski's reading once again exemplifies the "central ambiguity"\textsuperscript{472} of Platonism and of the \textit{Timaeus} in particular. It is possible, apparently, to get out of it two diametrically opposed views at once: that of the world as an imperfect "copy" of a perfect, static, eternal predecessor, and that of an inherently dynamic expression of a living divinity who both creates it and \textit{is} it.\textsuperscript{473} Dombrowski's version of Process theism sides decisively with the latter. But the greatest difference between Dombrowski's Whitehead-inspired reading and Whitehead's own is the degree to which they respectively attempt either to draw the dialogue into a conceptual holism with itself on the basis of what is being appropriated from it, or to let it subsist in its own contradictions. Whitehead, as has been frequently discussed here, was equally ready to borrow from and praise the \textit{Timaeus}, and to excoriate it within pages of that praise, for falling into the old supposedly "Middle Dialogue" trap of "the feeble doctrine of imitation."

Dombrowski's purpose is to unite Plato not only with himself, but apparently even with the Neoplatonic tradition, by a creative elaboration of his apparent monotheism, and even ascribing to him a kind of monism. The project is the grand reconciliation of "ontolatry" and "gignolatry", and attempts the rescue of Plato from his own reputation. For Whitehead on the other hand, the

\textsuperscript{470}Ibid., 12, 29. See section on God in the first chapter of this study.
\textsuperscript{471}Ibid., 56.
\textsuperscript{472}Broadie, \textit{Nature and Divinity}, 60 ff.
\textsuperscript{473}Broadie, as it happens, would disagree with Dombrowski's view: Broadie, \textit{Nature and Divinity}, 14 and 26: "The combined entity would be one that both animates the single cosmic god and produces directly or indirectly the multiplicity of mortal rational creatures. But I do not think that such a two-sided notion makes sense.....Since each causes by a different kind of causality, they are distinct principles according to the theory, and each is necessary....Any impulse to unite them in a single being probably stems from a purely theological assumption which we have no reason to think that Plato shared."
principal virtue of Plato's theology as it appears in the *Timaeus* was that while Plato does seem to consistently emphasize divine persuasion, his vision as a whole *wavers* between respective poles of emphasis.\(^{474}\) Whitehead was not interested in "squaring" Platonic theism with his own theism - he felt that Plato alternately offered a vision of a God that changed with the world, which inspired the God that Whitehead describes, *and* supplied the groundwork for the problematically transcendent deity who so much preoccupied subsequent Western theological thought.

_Bruce Epperly_

Some Process scholarship concerns itself with Whitehead's Platonism even more directly. -- Bruce Epperly's dissertation *Was Whitehead a Platonist?* is the only work I know of that treats Whitehead's use of Plato on as expansive a scale as I have attempted to do here. But unlike this project, Epperly's seeks to demonstrate, by detailed comparative analysis of both philosophers, that there is as a matter of fact a fundamental holism between Whitehead's and Plato's thought. Epperly's emphasis is similar to Dombrowski's in that he feels that this holism justifies "the recognition of an organic metaphysics which is good measure overcomes the dualism of being and becoming which is often highlighted in Plato's philosophy."\(^{475}\) His project is impressive in the sense that it draws together a great diversity of Platonic concerns and puts them in the service of an explanation of Whiteheadian metaphysics, incorporating _loci_ from the dialogues that don't receive much or any attention in Whitehead's writing,\(^{476}\) and elaborating with greater detail and

\(^{474}\) The doctrine should be looked upon as one of the greatest intellectual discoveries in the history of religion. It is plainly enunciated by Plato, though he failed to coordinate it systematically with the rest of his metaphysical theory. ....the greatest metaphysician, the poorest systematic thinker. The alternative doctrine, prevalent then and now, sees either in the many gods or in the one God, the final coercive forces wielding the thunder. By a metaphysical sublimation of this doctrine of God as the supreme agency of compulsion, he is transformed into the one supreme reality, omnipotently disposing a wholly derivative world. Plato wavered inconsistently between these diverse conceptions. But he does finally enunciate without qualification the doctrine of the divine persuasion, by reason of which ideals are effective in the world and forms of order evolve" (Whitehead, *Adventures of Ideas*, 166-167).


\(^{476}\) E.g., he makes especially elaborate use of Socrates' story of intellectual self-discovery in the _Phaedo_, in which
specificity how this or that Platonic concept should be understood in the Whiteheadian system. --
In demonstrating the apparent profundity of the Whitehead's connection to Plato, he creatively
adds content to that connection.

For instance, he parses Timaeus' Necessity as the general energetic principle that
Whitehead sometimes calls "the aimless energy of becoming."\textsuperscript{477} "Necessity is the energy of the
cosmos, which both limits and makes possible the divine activity."\textsuperscript{478} -- and specifically,
elaborating on the application of Whitehead's system to the physical sciences, "Necessity can be
characterized as the disorderly and discordant motions of the primitive particles."\textsuperscript{479} By invoking
the "primitive particles" in this connection Epperly takes a step toward integrating, on a new
level of specificity, Whitehead's reading of Plato into a philosophical interpretation of modern
science. If I understand this invocation correctly, he means that the motions of the "primitive
particles" are "disorderly and discordant motions" insofar as subatomic particles' behavior
exhibits randomness at the quantum level, and yet by virtue of the persuasive force of divinity,
quantum phenomena reveal patterned order in the wide view, making possible the probabilistic
science of quantum mechanics, which effectively finds the divine patterns that inhere on the
macro-level, of what are from another perspective random and unpredictable quantum
phenomena.\textsuperscript{480}

\textsuperscript{477} See chapter 1.
\textsuperscript{478} Epperly, \textit{Is Whitehead a Platonist?}, 108.
\textsuperscript{479} Ibid., 110. This would make "Necessity" analogous to entropy, the principle in statistical mechanics that refers to
disorder and randomness in physical systems (i.e. the measure of their disorder and randomness). To my
knowledge Whitehead has no extensive remarks about entropy (nor am I certain that he would have agreed with
Epperly's interpretation.)
\textsuperscript{480} A more thorough exploration of the application of Whitehead and Plato to quantum mechanics will follow in
chapter 5.
Epperly's will to discover and demonstrate an utter holism between Whitehead and Plato, with such specificity, and his collation of a great deal of Platonic scholarship in executing it, make his project an impressive one. What Epperly does not address is what I see as the most salient sympathy of Whitehead for Plato -- what Whitehead ascribes to Plato as a methodological willingness to remain incomplete, and to self-contradict. -- Like Dombrowski, he is on a mission to incorporate Plato into the philosophy of organism with an even greater degree of wholeness. His titular question, "Was Whitehead a Platonist?" -- to which he answers "yes" -- also seems to become "Was Plato a Process philosopher?" -- to which, in a way, he also answers "yes." Thus my project is indebted to his not only for its invaluable analysis of Plato and Whitehead, but also for having given me the first inkling of the culture of Platonic preoccupation in Process thought that I'm presently examining. Epperly's dissertation was written under John C. Cobb at the Claremont School of Theology, and he went on to become a Process theologian and minister, and continues to write and publish in the Process philosophy conversation, as well as on matters of Christian theology.

*Process Thought and 'Modern Platonism'*

Parallel to Process literature's allegiance to Platonism is modern Platonism's and Neoplatonism's allegiance to Process thought -- using Whitehead to ground and gain relevance for Neoplatonism, mirroring the way Whiteheadian Process thought uses Plato to ground itself and gain authority. In the preface to a collection of papers from a congress of the International Society for Neoplatonic Studies, Atsushi Sumi uses Whitehead to orient and clarify what a modern Platonism means, and what it can offer the world philosophically and socially. He admits that "an attempt to restore Platonism...sounds incurably anachronistic", yet he finds such a
restoration necessary since it "offers an antidote to the view...that philosophy must accord with 'common sense'". He relates this spirit of intellectual revolution to a notion of social responsibility, the responsibility to reorient the world around Platonistic principles, but specifically understood in the Process-oriented sense of a recognition of the shared relevance of beings as constituent expressions of the universal creature. On this note he quotes *Adventures of Ideas*: “The mere compulsion of tradition has lost its force. It is our business…to re-create a reenact a vision of the world, including those elements of reverence and order without which society lapses into riot, and penetrated through and through with unflinching rationality. Such a vision is the knowledge which Plato identified with virtue.” Whitehead's Platonism, which ultimately associates Plato with the human intellectual adventure and its perpetual self-evolution, make him a suitable avatar for a revisionary alignment of Platonism with intellectual progressivism -- but a progressivism that is not without moral principles, rather retaining and reenstating principles that possess an ultimate metaphysical basis.

It should be noted that not all Platonists go around calling themselves Platonists -- Whitehead himself, if he can meaningfully be called one (which is in large part being examined here), never outright branded himself as such -- nor of course do I mean to imply that everyone who writes fervently about Plato must be a Platonist. -- That said, some who do, self-descriptively are. Robert Brumbaugh identified himself this way, in the first sentences of his 1962 book *Plato for the Modern Age* (and claims, perhaps gratuitously, that Whitehead

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481 Sumi, "Psyche, Forms, Creative One," 221.
483 The aforementioned International Society of Neoplatonic Studies' "members...vary in the degree to which they sanction Neoplatonism as a philosophy. Some see it as an important element in understanding the history of Western Thought, but judge it to have only antiquarian value, while others see some elements of it to be quite viable for modern times" (R. Baine Harris in preface to *Neoplatonism and Contemporary Thought* (Albany: SUNY Press, 2002), xiii -- this volume collects papers from the 1995 ISNS congress).
explicitly did so too). Brumbaugh produced scholarship on Plato as well as original speculative philosophy, and even wrote specifically on Whitehead and Process philosophy. In this particular work he strove to make "a consistent Platonic book about Plato's philosophy...a philosophic contribution to contemporary Platonism." This goal is motivated by the assertion that "the philosophy of A.N. Whitehead, the great modern Platonist...[shows] how Plato's central insights and ideas can be adapted and applied to our modern world."

Like much of the Process scholarship discussed above, Brumbaugh's book persists in seeking to demonstrate Plato's relevance, and Whitehead appears severally in this endeavor. He sees Whitehead as explicitly a Platonist himself, having "set himself the task of devising a modern Platonic cosmology which would simultaneously do justice science's concern with fact, common sense's practical concern with adaptation and control, and religious and aesthetic concern with value." Thus he sees Whitehead as offering hope for Platonism insofar as its Whiteheadian manifestation attempts a synthesis of the disparate concerns of the modern world, an attempt to bring a range of problematically discontinuous viewpoints into a unity that has been lost, but which had existed for Plato himself. He admires Whitehead abundantly, but is doubtful of his system's complete success, or perhaps the success of its reception -- he notes wistfully, that "such a Platonic synthesis as Whitehead proposed is necessary; even though there may still be some question as to whether it is possible." In spite of the assertion that

485 Ibid., 212.
489 Brumbaugh, Plato for the Modern Age, 5.
490 Ibid., 5.
491 Ibid., 197.
492 Ibid., 197.
Whitehead "offers a high point in modern Platonism,"⁴⁹³ he has doubts too about whether Plato himself would have accepted "Whitehead's adaptation" to his thought. Brumbaugh suggests that Whitehead's emphasis on the restless creativity of the universe, a universe that chooses its own novel forms in its continuous evolution, diminishes some of the viable objective hierarchism of Plato in his purity -- that there is "a loss of the strongest feature of Plato's original position: that there is such a thing as an objective standard of right and wrong, good and bad, which can be the basis for ethics and law, as well as for logic and, perhaps, art."⁴⁹⁴ In this way Brumbaugh is unusual among commentators that possess equal and intertwined enthusiasm for Whitehead and Plato -- he doesn't need to have them agree, and his efforts are not spent in demonstrating such an agreement. He finds Whitehead efficacious for renovating Plato in a modern context, but within limits of faithfulness, limits which Whitehead himself in various forms and at various junctures observed.

There are also engagements with Whitehead in modern Neoplatonism. The aforementioned proceedings of the International Society of Neoplatonic Scholars contain a chapter by David Rodier which, while less explicit about making an outright intellectual endorsement of Platonism or Neoplatonism on the part of its author, identifies in Whitehead an antidote to the current of reactionism against Plato and Platonism in the latter half of the 20th century -- an antidote against the association of Platonism with excessive dualism and hierarchism. Whitehead is amenable in this way, as Rodier argues, because his Platonism is in fact closer to Plotinus than to Plato and to what is now called Neoplatonism than Platonism. He identifies the traditional, potentially distasteful elements of Platonism as including the

⁴⁹³ Ibid., 212.
⁴⁹⁴ Ibid., 213.
metaphysical dualism of soul and body, the devaluation of physical existence, and the childishness of the Demiurge as the arbitrary establisher of the world order; whereas a Plotinian Platonism allows for denial of radical body-soul duality, a rejection of the devaluation of the physical world, and the notion that the perfection of the world is not the result of a creator's arbitrary will but the world's own reflection of eternal forms.495 Rodier argues that Whitehead brings this contrast into greater effectiveness and relevance because he analogizes Plotinus' idea of the soul looking upward to the *nous* and downward to the *physis* with the notion of the compresent mental and physical poles of actual entities.496 Thus, for Whitehead and for Neoplatonism properly understood, the universe is not the result of a top-down act of ordering but of the spontaneous self-creation of its parts -- which, Rodier reasonably imagines, is much more attractive to post-modern sensibilities.

*Concluding Remarks on Process Platonism*

The running theme of these Process readings of Plato and Whitehead is that they generally strive to bring the ancient philosopher happily into the parameters of a more contemporary taste, and find the 20th-century philosopher effective in justifying this incorporation. All these readings hark back in this way to Taylor's, who found so much support in Whitehead for the project of presenting a Plato who harmonizes with the developments of modern science, with any disharmony being explainable as intentional myth-making or dramatic verisimilitude. Their gesture of integration is of course also reminiscent of certain respects of Whitehead's own, though with the difference that I have iterated -- that Whitehead's ultimate emphasis is on the *provisionality* of the Platonic method: that the central importance of the notion of the "living

495 Rodier, "Between Platonism and Neoplatonism," 186.
496 See chapter 1 (and glossary) for the dipolarity of actual entities, amidst the summary explication of Whitehead's system.
universe" is not the notion itself alone, as a glorious previsionment of the scientific realizations of the distant future, but its status as an *eikos mythos*, a will to re-envision perennially, as a groundwork for inseminating new realizations. On this basis there should be Platonic notions that *do* restore themselves to our thought in shifting degrees of relevance as they pertain to successive epochs, but there should at the same time be others, sometimes part and parcel of the same relevant utterance, that must be abandoned -- it has to be okay to draw from Plato and not be a Platonist, and to leave the difficulties and paradoxes operative in that term unresolved.497

Even leaving interpretive ambiguities aside, what Process thought distinctly perpetuates in its reception of Whitehead's Platonism is its *devotion* to Plato himself, and the worldview that that disposition is supposed to embody, along with all of its difficulties. This perpetuation exemplifies a broader theme identifiable in the legacy of the *Timaeus*, essentially the tendency that Whitehead discussed in *Adventures of Ideas* -- its history of emotional resonance as a text that accesses theoretically the relationship between the divine creator and the cosmic creatures -- what Glen Morrow, in the article discussed above, has called "Plato's Cosmic Faith":

The *Timaeus* is an impressive record of this faith; it is, as Shorey has said, ‘the chief source of cosmic emotion in European literature’. And its appeal is little affected, for those to whom it does appeal, by the change from the finite spherical universe of the ancients to the still finite but unbounded and perhaps expanding universe of modern physics. It would seem, however, rather futile to argue much with those to whom it does not appeal. Final convictions on such matters depend

497 I am reminded of Cherniss' remarks, which appear in the context of controversies about dating the *Timaeus*, but which apply to the interpretation of Plato generally, regarding "the attempt to squash the significance of problematic things like the paradigm…to escape from the “shadow” of the ideas as they stubbornly show up in the *Timaeus* and retreat to the more enlightened critical dialogues and have them be an evolution…we must reckon with the possibility that Plato even in the ultimate stage of his, whatever it was, may in fact have enunciated ‘paradoxes’ in the sense of propositions which in their logical consequences are or seem to be self-contradictory or inconsistent with one another" (Harold F. Cherniss, “The Relation of the *Timaeus* to Plato’s Later Dialogues,” in *Studies in Plato’s Metaphysics* (New York: Routledge, 1965), 347, 349).
on conceptions of value and ultimate attitudes toward the world — whether of trust or mistrust, of loyalty or defiance— that probably no parade of empirical evidence will ever be adequate to justify the belief of those who believe or overcome the objections of those who doubt.498

This remark, though it is about the reception of the Timaeus in general, encapsulates the Process attitude for which Whitehead set the precedent, whether intentionally or not. It recalls too the present study's theme of a certain "dispositional" affinity that united Whitehead and Plato, an affinity that transcended and perhaps preceded doctrinal debt. The influence of this "personal" affinity itself permeates the culture of the school of thought it helped to create.

I don't accuse Process thinkers of intentionally warping their philosophical stances because of a Platonistic fetish; what I mean to do is acknowledge the apparent power of a trend of discourse, and the manner in which effort is made to refurbish and repackage elements that traditionally appear under the vast associative umbrella of the Platonic legacy into new contexts. In such repackagings it may be the case that some elements are helpful and relevant, some of them less so, but nonetheless they all stubbornly travel together by virtue of Plato and Platonism's symbolic power. Plato himself, and the Timaeus itself, are available to philosophical discourse the way "mythic" images are available to social discourse in Roland Barthes' Mythologies; they have the stature of vast, superlative symbols whose evocation will always necessarily signify more than what is required of them. Whitehead's devotion to Plato, though not without its critical aspects, makes a hero out of Plato and ideological heroes out of the principal Platonic notions that he sifts from the dialogues, and it is hard to invoke heroes without brinking on hero worship. The perpetuation of this devotion, however, arises also in part from a reactionary impulse, reaction against the categorical dismissal of Idealism, of metaphysics, of

Platonism as the symbol of "some great error", of excessive hierarchism, of tyrannical shortsightedness. This culture of dismissal influenced the conception of Whitehead's philosophy and won Plato pride of place in it, and his role as champion persists in the discourse of Whitehead's successors.

But resonances of this kind are not necessarily pernicious, nor without charm and importance. -- I offer another Platonic analogy in the career of Process theologian John B. Cobb, which was in fact one of the chief inspirations for this dissertation. In the past decade Cobb has imported Process thought into China, where it has won the enthusiasm of Chinese intellectuals, and the official endorsement of the Chinese government. Under Cobb's direction, eighteen Process-based universities have been established by The Institute for Postmodern Development in China, devoted to various aspects of Whitehead's philosophy. The attraction is that the Process vision of a cosmic community harmonizes with Chinese Neo-Marxism, and simultaneously offers a way to reintegrate societal connection with China's spiritual legacies (Buddhism, Taoism, Confucianism, suppressed at the advent of Chinese Marxism), as well as offering a holistic framework from which to address the country's growing ecological crises. Again, by way of analogy: when I encountered this story it reminded me very much of Plotinus' apostolic attempt to convince the emperor Gallienus to convert an abandoned settlement in Campania into an ideal city in accordance with Plato's *Laws*. Not only does Plato shine through Whitehead in his reception by his Process successors; his legacy is elaborated by his successors with an active and enthusiastic holism that recalls Ancient Platonism's reception of Plato. Whitehead modeled himself on Plato in his intellectual and pedagogical persona, and the model remains relevant in

499 Dixsaut, “Anti-Platonism,” 305.
501 See Porphyry, *Vita Plotini* 12. Plotinus was less successful than Rev. Cobb.
Process philosophy's continued elaboration -- and diverse *application* -- of his work.

This anecdote is a curious and singular example, but it is suggestive of the diversity of developments that Whitehead's thought has received within the small but growing extent of his posthumous influence. As Plato was the symbolic protagonist for his own project, Whitehead himself becomes the protagonist for "constructive post-modernism", the critical response to the heretofore more prominent "deconstructive post-modernism" -- where the latter sees in reality absurdity and ideological coercion, and thus couches itself in conceptual critique, the former sees a cosmic community, and concerns itself with a perpetual creation and recreation of concepts.502 The result is a conversation that constitutes a mash-up of historically unrelated or even inimical concerns, which finds Plato, who was so dear to the one who started the conversation, in its midst:

‘Whiteheadians’ are recruited among both philosophers and theologians, and the palette has been enriched by practitioners from the most diverse horizons, from ecology to feminism, practices that unite political struggle and spirituality with the sciences of education. This forms a world that is astonishingly disparate…in which a New-Age type of thought can rub elbows with metaphysicians discussing Plato.”503

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503 Stengers 6.
CHAPTER FIVE: WHITEHEAD'S PLATO IN MODERN SCIENCE

The following chapter examines further applications of Whitehead's thought, in the domain of modern science, particularly quantum physics and Big Bang cosmology, and by virtue of those applications, the entry (or reentry) of Plato into scientific thought. As nothing in my training as a Classicist prepares me to discuss astrophysics or quantum mechanics without risk of embarrassment, this will be the boldest leap afield taken by this study, one which already skirts and perhaps transgresses the limits of my philological expertise. Hence my treatment of the developments of modern physics will be extremely rudimentary, and strictly limited to their general capacity for bearing on Plato and Whitehead.

Still, it is important territory to broach, since the Timaeus' attempt to describe the structure of the universe must ultimately be understood as part of the same continuum of attempts at such descriptions, and indeed Whitehead's incorporation of it into his own metaphysical description in large part emphasized that very continuity. Furthermore, this will not be the first time analogies have been articulated between Plato's cosmology and modern science - as will be seen, such connections have been voiced throughout the course of the modern era both by students of Plato and scientific luminaries. This section will explore these connections and evaluate their relation to Whitehead's injection of Plato into his philosophical scheme.

**Plato's Relevance to Modern Science**

Zeyl's introduction to his 2000 translation of the Timaeus suggests that the advent and popularization of Big Bang cosmology in the 20th century has beckoned the dialogue back into relevance -- where formerly

the prevailing naturalism in modern science since the 17th century made creation stories obsolete, perhaps of some historical interest but irrelevant to a contemporary scientific understanding of the universe...the widespread
acceptance of Big Bang cosmology has given new life to the question of what, if anything, caused the Big Bang to occur — thus giving room to the idea that the universe might have been created.\footnote{Zeyl, \textit{Timaeus}, xiii.}

Zeyl's prefatory justification for new work on an old text proceeds from its apparently renewed pertinence to our epoch, as scientific rationalism regains its capacity to be curious about, or perhaps to philosophically require, some source or inceptive event behind the cascading evolution of time-space. Not only this, but connections have been drawn between Plato's conspicuously mathematical approach to the practice of scientific inquiry and the centrality of mathematics to modern physics and astronomy -- while the formulae are of course utterly different than those described in the \textit{Timaeus}, there may be a sense in which physical science has never been nearer to Plato's approach to describing the universe, since Plato described it.\footnote{This, again, is Whitehead's own claim: "at the present moment, physical science is nearer to it than at any period since Plato’s death. The space-time of modern mathematical physics, conceived in abstraction from the particular mathematical formulae which applies to the happenings in it, is almost exactly Plato’s Receptacle" (\textit{Adventures of Ideas} 192-193).} This is a claim that should not be made without qualification, although it is made quite distinctly and substantively by a scientist no less conspicuous in modern history than Werner Heisenberg -- the content of his claim, and its relation to Whitehead's comparable claims, will be discussed in this section.

Whitehead had been heralding these aspects of Plato's scientific relevance both in his written works, especially \textit{Adventures of Ideas}, and in his teaching. He asserted the methodological continuity of Plato's scientific inquiry with that which was being practiced in his own moment, and made the concept of that continuity a cornerstone of his own philosophical work. Brennan's lecture notes give the impression that he had a habit of drawing this connection:

when you look at the history of the universe, you find an element that is
seemingly so completely understandable that it is almost out of the way of history. The heavens exemplify perfection, for example, by beauty. When Plato discourses on the nature of a circle, or a solid, you have history which has become more than history -- the link between the world and the Demiurge. The whole thing is integrated in much the same way -- although more satisfactorily -- in the modern theory of relativity and the quantum theory.\textsuperscript{506}

Whitehead praises Plato for his implicit trust in the benefit to science that can be derived from metaphysical speculation, and finds evidence in the science of his own day for the success of that integration. The success of mathematics in discovering features of the physical universe constitutes, for Whitehead, the victory of an ultimately Platonic metaphysics over Positivism. An instance of this is the delight expressed in \textit{Adventures of Ideas} over the discovery of Pluto, which Whitehead adduces as an illustration of the fortuitous evolution of scientific formulae -- Whitehead felt that the process of discovery would have made Plato very happy. Existing formulae were failing to describe observed deviations in the orbits of Uranus and Neptune; further observation led to a new formula

which describes the observed deviation. Such a formula will be of the most elementary mathematical character. It will consist of a few numerical components defining their periods, with other numerical components defining their amplitudes, and other numerical components defining their epochs...Altogether a description of charming simplicity, which would have delighted Plato by its exemplification of his most daring speculations as to the future of mathematics.\textsuperscript{507}

This celebrated "exemplification" illustrates what is distinct about Whitehead's appreciation and

\textsuperscript{506} Whitehead quoted in Brennan, "On Plato's Cosmology," 74.
\textsuperscript{507} Whitehead, \textit{Adventures of Ideas}, 126-127.
appropriation of Platonic formalisms -- it is not that the formulae themselves have an inherent eternality or transcendence, but rather that formulae represent ever revisable and evolvable iterations of description in reference to patterns that are eternal, the selected "ingressions" from the infinite plenitude of eternal objects available to an event in its process of becoming. The revisability of the descriptions corresponds, once again, to the notion of the *eikos mythos*. After the above remark he goes on to describe how he adjudges all thought since Plato to be a struggle between metaphysicians and Positivists. Whitehead's position on the applicability of Plato to the continuing development of science seems to consist in a sense of trust, that he shares with Plato, in the efficacy of bold mathematical predictions for successful elucidation of the functioning of the universe.\(^{508}\) This does not mean that the math itself *creates* the universe in a numerologically mystical, Pythagorean way, but it does require the existence of relational *patterns* that precede actualization insofar as they occupy a realm of eternal possibilities, the eternal objects. It is his conviction in the existence of these that distinguishes his scientific outlook, despite his admission and even celebration of the mutability of scientific formulae, from what he calls "The Positivist School of Mere Description." And again, Whitehead's system requires that this realm of eternal objects have its ground in the ultimate entity called God. Whitehead's scientific Platonism in this sense is in the foreground of the sea change in scientific and philosophical

\(^{508}\) As noted at the beginning of this study, but of particularly crucial importance here, is the distinction between what is meant by "mathematics" in the sense of what was available to Plato -- which is what is codified as Euclidean geometry -- versus what has become available in the evolution of mathematical language since the invention of algebra, calculus, alternative geometries, and so forth. Whitehead's point is that both Plato's practice and that of modern science seek to grasp ultimate patterns of quantitative relation that inhere in particular occasions of becoming. This should be borne in mind throughout this section, both in regard of Whitehead's reading of Plato, and subsequently in the discussion of Heisenberg's. "Mathematics and the Good" takes its point of departure from imagining this Platonic practice as the theme of the famous "Lecture on the Good", and considers the expanding possibilities of that practice in the light of the evolution of mathematics. In Plato's case, his expression was limited by the expressive powers of his mathematical language. "The progress of thought and the expansion of language now make comparatively easy some slight elucidation of ideas which Plato could only express with obscure sentences and misleading myths" (Whitehead, "Mathematics and the Good," 667).
attitude with which Zeyl prefaces his recent *Timaeus*:

the observation that the fundamental constants underlying the physics of the
universe are so finely tuned and integrated as to give the appearance of design—
the so-called Anthropic Principle — has revived in some minds the possibility
(and in others the specter) of a divine creator. The mere fact that at the turn of the
millennium these questions are once again hotly debated by scientists and
philosophers is testimony to the continuing appeal of seeing the world as the
handiwork of an intelligent mind.\(^{509}\)

I don't mean to suggest that Whitehead was the solitary and unique harbinger of this trend
toward renewed openness to a Platonic cosmological attitude. There were comparable trends
even among his contemporaries and countrymen -- Arthur Stanley Eddington, an astrophysicist
whose articles helped transmit and popularize Einstein's relativity to the English-speaking world,
posited some ultimate spiritual principle as the beginning and motive force of the world;
mathematician and physicist E.T. Whittaker, who also worked on relativity, postulated a creative
Artificer as source of the universe's origin.\(^{510}\) Among Whitehead's distinctions in this respect,
besides the fact that he became a full-fledged philosopher who devoted himself to describing that
creative origin in an original system, is that his speculations in the light of scientific
developments moved him to dwell so specifically on Plato's methodological and theoretical
precedents.

It is, however, perfectly possible to agree with the notion that the progress and practice of
modern science are fundamentally analogous to Platonic science, and yet not to share
Whitehead's apparent optimism and approbation of the similarity. Brisson and Meyerstein's

\(^{509}\) Zeyl, *Timaeus*, xiii.
Inventing the Universe exemplifies this contrasting attitude -- they examine, in more specific detail than Whitehead ever had occasion to, the analogous qualitative principles and axiomatic systems that govern the logic of the Timaeus and that of Big Bang cosmology. In each axiomatic system they notice the central status of the principles of "symmetry" and "simplicity", both on the level of the astronomical and the celestial, and the microscopic and elemental. The only thing, they argue, that has obscured this similarity, or even identity, is the mythical language the Timaeus employs.

The entire universe is reducible to simple mathematical interactions between simple mathematical elements. The result will be an ordered world, a kosmos. And this order is the consequence of the symmetries introduced axiomatically in the description of the universe...mathematically expressible symmetry is promoted to the rank of the necessary a priori condition for any scientific knowledge of the sensible world.

Their work also thematizes the perennial scientific impasse of the eikos mythos, and like Whitehead's, credits Plato with the insight that every theory is provisional. Unlike Whitehead, they have little faith in the actual success or justifiability of these theoretical systems, whether

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511 By the thematic of "symmetry" they refer to the notion in the Timaeus that the cosmos' quality of being summetros is what is established by the Demiurge, and what makes it possible for it to be described mathematically -- as opposed to the ametros quality of the original chaos as it would be without measure. We can be scientific about the universe because it is "with-measure" as opposed to "without-measure." They draw a parallel between this and "the concept of symmetry which intervenes...in the [modern] mathematical theories modeling the universe": i.e. continuous space-time symmetries (e.g. "the invariance of the physical phenomena under the operation of translation through space"), discrete particle symmetries (e.g. the theoretical symmetries that govern the allowed behavior of particles in a given interaction), internal particle symmetries (e.g. symmetries descriptive of new quantum phenomena exhibited by particles in accelerators) and dynamic symmetries (e.g. conservation of electrical charge) (see Brisson and Meyerstein, Inventing the Universe, 127-130). "[S]ymmetries are the most fundamental 'explanation' for the way things behave...in the universe. Symmetry manifests itself in that the basic mathematical description of some physical systems does not change under certain transformations...[S]ymmetry is the fundamental attribute conferring some degree of classifications of the physical world. Symmetry is that property which allows us to give names to things, to perform the measuring operation, and to allow comparisons to be established. Accordingly, for Plato the contrary to summetros is ametros, that disordered (complex) state where no measure is feasible, no comparison possible" (Ibid., 130).

512 Brisson and Meyerstein, Inventing the Universe, 11 and 28.
Plato's or the current iterations:

In cosmology…The object considered is our unique, irreplaceable and unrepeatable universe….we have no access to any event outside the horizon of our past light cone, which therefore constitutes our only source of information. That is why the building of a cosmological model requires, for Plato as well as for contemporary scientists, bold extrapolations, introduced as drastic simplifications in the analysis of available observations (homogeneity, galaxies as points, and so forth).…The position of the axioms is enigmatic in both models. Whereas Plato appeals to intelligible Forms under the dominance of the Good plus a demiurge, which finally explains strictly nothing, contemporary cosmology does not seem to worry about the status of its axioms; it is enough that ‘they work’.\(^{513}\)

Bold extrapolations are exactly what Whitehead so admired about Plato's method. Moreover, among his own contentions with modern science was that it lacked boldness in failing to care to proceed beyond verification that this or that formula "worked" -- that is, failing to proceed beyond mere description. He argued by contrast that the more thoroughly Platonic methodology, which involved accessing, taking seriously, and dialectically critiquing absolute principles, was ultimately more efficacious for scientific progress -- in short, as has been said, that speculative philosophy is good for science. The reason it is good, is that, done the way Plato does it, it asks questions -- questions that open up territory for further development, and create the intellectual spaces in which new theories may evolve. And above all it is the cosmological questions that Plato asks and his method of attempting to answer them, that resonate with modern physics and cosmology, even if the answers themselves do not.\(^{514}\)

But Whitehead's assertion of the importance of this kind of Platonic questioning for

\(^{513}\)Brisson and Meyerstein, *Inventing the Universe*, 115 and 136-137.

modern science amounts to more than just praise for Plato's habit of open-ended thinking. That is to say, while he would probably have agreed with Brisson and Meyerstein that there is a fundamental analogy between the assumptive arbitrariness of the axioms from which both Plato and a modern cosmologist must begin, he would emphasize the difference between the attitudes in which their respective assumptions are made. Brisson and Meyerstein portray contemporary cosmologists as being essentially instrumentalists (which not all of them necessarily are) -- "instrumentalism" in this sense meaning the view that the criterion for success in scientific theories does not consist in confirming their literal reality but in their ability to make successful experimental predictions. It's not about what's really there, it's about what works.\textsuperscript{515} For Whitehead, this is not enough for the cosmological task. The cosmologist should, like Plato, be attempting to generate accounts of the universe as it really is (which may involve making assertions about its value, not just its functioning), or else they are engaged in no more than what he would call "mere description." (The legitimacy of such inquiry depends, of course, on the assessment that there are real objects and comprehensible schemata in the process of the universe for science to apprehend.) It is permissible and in fact advantageous to science for its accounts of these to admit of variation and revision; but it is not enough to stop at mechanistic descriptions that schematize "how" the universe works without being interested in "why". In other words, he feels that physical science is nourished by embracing metaphysics, and that Plato provides a precedent for and symbolic reminder of this. He would not ask every scientist to be also a metaphysician, but he protests against what he perceived to be contemporary science and philosophy's categorical dismissal of metaphysical concerns.

\textsuperscript{515} Cf. Papineau 410. This is scientific instrumentalism in the most general sense, though there are diverse variations of it.
With this in mind, I now examine specific intersections between Platonic metaphysics and cosmology, and modern physics and cosmology -- evaluating what Zeyl attests to as the newly popularized applicability of Plato in this context, and the manners in which Whitehead's take on Plato's helpfulness has influenced this trend directly or indirectly. I'm not claiming that Whitehead is responsible for all of Plato's intrusions into modern science, but identifying how certain developments in science bear general relation to his interpretation of Plato, or in some cases directly proceed from his work. Perhaps the chosen array of modern scientific concepts will appear somewhat arbitrary and general, but I have sought to include what seemed to offer the richest parallels within the limits of the discussion (as well as within the limits of my own lay understanding of mathematics and physics.)

Whitehead's Plato and the Big Bang

As Zeyl noted, the concept of the Big Bang ushers back into the popular imagination the question of whether the universe had a beginning, and wondering what such an event would have involved, or what the notion of such an event could mean. These are of course central questions to the Timaeus, to which, depending on which side of a historically very intense controversy of interpretation one finds oneself, Plato answers affirmatively: it did have a beginning.517 Up

516 Anthony Leggett's chapter "Plato's Timaeus: Some Resonances in Modern Physics and Cosmology" does a beautiful job of aligning Plato's cosmological questions with those of Big Bang theory -- this section on the Big Bang draws substantially on his work.

517 Abundant commentary on the Timaeus, both ancient and modern, has centered around the interpretive problem of whether the act of creation is to be interpreted literally or metaphorically -- that is, does Plato mean to have Timaeus say that the universe literally did begin from a creation "moment" at a fixed point, from which point time begins to unfold (since time itself is coterminous with the universe), or does the creation process it describes analogize the continuous process of cosmic becoming, and this process is eternal just as the paradigm on which it is based is eternal? The metaphorical reading has its first iteration in Aristotle, who rejected this element of the Timaeus outright, because he could not accept the idea of the universe having a literal beginning, as that would involve a beginning in time when there was as yet no time. -- The early Academy's defense against this problem is that the dialogue must be read metaphorically, and the description of a literal beginning merely serves a stylistic and pedagogical function (this is the view attributed to Xenocrates) (see De Caelo 279b32-280a1). The
through the late 19th century and into the early 20th century, physicists would not necessarily have shared this affirmation, until Hubble's discovery in 1929 of what is called the "red shift" -- the phenomenon of galaxies observably receding from the earth at a speed proportional to their distance from it, giving the impression that the universe is expanding like a balloon.\footnote{He first published this discovery in "A Relation Between Distance and Radial Velocity Among Extra-Galactic Nebulae", \textit{Proceedings of the National Academy of Sciences} 15 (1929).} Imagining the reverse process leads the Big Bang cosmologist to assert that going back in time the universe would have been increasingly dense and hot. Opinions vary as to whether it will continue to expand and cool at a constant rate, a decreasing rate, or whether it will ultimately once again contract ("the big crunch").\footnote{Cf. Leggett, "Some Resonances in Modern Physics," 32ff.} The formalization of the Standard Big Bang Model incorporates Einstein's general relativity, and offers a highly sophisticated mathematical model of the evolution of the universe.\footnote{Cf. Brisson and Meyerstein, \textit{Inventing the Universe}, 75.} Alongside general relativity, the other axiomatic pillar of the model is what is known as the "Cosmological Principle" -- the assumption that the universe is homogenous and isotropic -- that is, that on a grand scale, galaxies are distributed fairly evenly throughout the universe, such that it looks about the same to an observer gazing in any given direction.\footnote{Cf. the concept of "symmetry" as discussed in Brisson and Meyerstein -- see n 511 above.} -- This amounts to only an extremely general summation of the theory, but one that will suffice for our purposes.

metaphorical interpretation thrived throughout the history of the ancient Academy. However the debate continues among scholars to this day -- see Zeyl, \textit{Timaeus}, xx-xxv. Whitehead does not weigh in specifically on this controversy, though, as has been noted elsewhere in this study, the value he gets out of the dialogue seems to draw on the metaphorical interpretation, since what is important to him is Plato's vision of a universe of continuous process always involving the active inter-participation of the divine entity and the eternal objects in the flux of actual becoming. The literal interpretation would have plausibly distressed him, as it would imply that the creator finished his work and then left the universe to its own mechanical devices, which is exactly the worldview he is working to overturn. Recall too that he refers to the \textit{Timaeus} as an "unfortunate essay in mythology" insofar as the simplistic (literal) reading has traditionally obscured its profundity (Whitehead, \textit{Adventures of Ideas} 129). At the same time, as will be discussed presently, Whitehead does favorably entertain and discuss what was for him the very recent dissemination of the Big Bang theory and could conceivably have appreciated the \textit{Timaeus}' application to it; but he does not discuss the connection specifically.
One of the most conspicuous points of possible analogy between Plato's cosmology and this modern one is the notion that prior to the universe, there was no time. Just as the Big Bang imagines a coterminous outfolding of time and space -- the splaying-out of the fabric of what we now refer to as time-space -- Plato has Timaeus observe that "days, months and years did not exist, prior to the universe coming to be; [the creator] devised the inception of these together with the establishment of the universe."\textsuperscript{522} There can be no measurement of time without measurement of matter -- in fact it was with a view to creating "time" that the Demiurge fashioned "the moon and sun and five other stars, that bear the name 'planets'."\textsuperscript{523} It is their motion that gives the appearance of the progression of time, though Timaeus is careful to note that our temporal expressions are in fact misnomers, since "was" and "will be" are not appropriate predicates of the eternal paradigm of which the created world is an expression. Yet they can be properly applied strictly to the world of becoming since the principal characteristic of the world of becoming is motion -- "was" and "will be" can be applied to it because they are both motions.\textsuperscript{524} He goes on to say that Time came into existence along with it, "for the purpose that, having been begotten together, they might also be dissolved together, should there ever be such a dissolution; and [it was made] according to the pattern of the eternal nature."\textsuperscript{525}

This section of the Timaeus is of course central to the aforementioned sprawling debate, ancient and modern, as to whether the dialogue recounts a literal finite origin of the universe, or metaphorically expresses its continuous and unending process of coming to be. Clearly the analogy with the Big Bang is more immediate under a literal reading. Under the literal reading,

\textsuperscript{522} Timaeus, 37c: ἡμέρας γὰρ καὶ νύκτας καὶ μῆνας καὶ ἔννοιας, οὐκ ὄντας πρὶν οὐρανόν γενέσθαι, τότε ἄμα ἔκεινον συνισταμένο τὴν γένεσιν αὐτῶν μηχανάται.
\textsuperscript{523} Ibid., 38c.
\textsuperscript{524} Ibid., 38a: τὸ δὲ ἦν τὸ τ᾽ἐσται περὶ τὴν ἐν χρόνῳ γένεσιν ἱόδισαν πρέπει λέγεσθαι—κινήσεις γὰρ ἔστων.
\textsuperscript{525} Ibid., 38b: χρόνος δ᾽ ὄν μετ᾽ οὐρανοῦ γέγονεν, ἦν ἄμα γεννηθέντες ἄμα καὶ λυθόσιν, ἀν ποτε λύσις τις αὐτῶν γίγνηται, καὶ κατὰ τὸ παράδειγμα τῆς διαιωνίας φύσεως.
the dialogue presents the phenomenon of time as being inherently bound up with matter, and motion, and this correlates meaningfully with the modern view. That is, the beginning of creation, understood literally as having taken place at a finite point "prior to" time, understands the beginning of time as coterminous with and related to the beginning of matter and motion.

Time in the strict physical sense, for modern science, is measured by an 'atomic clock' that measures the state transitions of a cesium atom. Problematically however, there were apparently no cesium atoms until hundreds of millions of years after the Big Bang. The alternative is to measure time prior to that epoch by a more elementary particle -- but the theory also holds that the conditions of the universe at such an early phase of expansion exhibit such a constant flux of particle fusion and mutation that the notion of a particle's mass may in that context be meaningless. Ultimately reckoning time in this way requires that time be defined in reference to some given density of energy, and the measurement of its alterations. If, hypothetically, scientists had an unlimited ability to theoretically calculate retrospective measurements of given energy densities, by what criterion would a particular energy density selected as a unit of time, if the conditions of matter and motion with which time is intertwined continue to change in the theoretical temporal regress? Thus "the date of the Big Bang could recede infinitely into the past". In this way both theories occasion the problem of interpretation that arises from the impossibility of imagining a state before the emergence of successive temporal states. Modern theoretical considerations of the manner in which a temporal regress back to the beginning of the universe could be measured do not simplify the problem of

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526 The paradoxicality of this phrase is, of course, what motivates the critique of the literal reading from Aristotle onward.
528 Ibid., 33.
construing an atemporal point from which the temporal process began to emerge. Simply put, the interpretation of the modern theory encounters paradox in attempting to imagine a literal beginning, just as the Timaeus does.

But what relates Big Bang cosmology to Platonic cosmology with even greater relevance to the present discussion, is the question of why the Big Bang. Plato's answer, put succinctly, is that the Artificer deemed it good that there should be a world. And so he went about making the world in such a way as to best conform with the Good that characterizes and constitutes the eternal pattern on which any such world could be based, within the constraints placed upon that construction by Necessity. This is, as Brisson and Meyerstein explore, an unprovable presupposition that grounds the axiomatic framework from which Timaeus' discourse proceeds. Big Bang cosmology occasionally makes attempts at getting around the apparent arbitrariness of positing a beneficent creator or creative force -- indeed some of the history of Big Bang cosmology has been characterized by a conviction that talking about "what came before" would inherently transgress the bounds of science, thereby condemning the question to illicit irrelevance.

One attempt to address the question within those bounds is the theory that the universe originates as a "quantum fluctuation of the vacuum", introduced by Edward P. Tryon. A "quantum fluctuation" is a temporary alteration in the quantity of energy in a given point in space-time, a phenomenon that is one of the corollaries of Heisenberg's uncertainty principle. In short, the mathematical formalism of quantum mechanics apparently suggests, and the experiments undertaken with particle accelerators apparently demonstrate, that new particles can

529 In an article called "Is the Universe a Vacuum Fluctuation?", Nature, 1973. One day I hope to write an article with as intriguing a title as that.
530 Heisenberg's Uncertainty Principle will be discussed further below.
be produced spontaneously from the vacuum\textsuperscript{531} -- Tryon's theory posits that this universe ultimately proceeds from one such spontaneous production. The significance of Tryon's theory for this discussion is that it is an attempt to broach the question of the "why" of the universe without looking to any other intellectual domain than the laws of physics. His defense of the theory leads him to remark: "I offer the modest proposal that our Universe is just one of those things that happen from time to time".\textsuperscript{532}

\textit{A Platonic Interpretation}

But while this theory does manage to locate a "why" within the framework of the descriptive model of quantum theory, it does not, as Plato does, strive to ask or answer "why" there is the state of relationships in the first place, such a state of relationships as quantum mechanics describes, whose potential for spontaneous fluctuation could result (or not) in so vast an accident as this universe. And if the vacuum "prior" to the quantum fluctuation had the property of being subject to fluctuation, must it be said that in spite of having been mere nothingness, it was nonetheless a nothingness with that positive feature (i.e. the feature of possessing the relational structure that could produce that quantum event?)

Perhaps the Platonic response would be that the very existence of the mathematical relations in the quantum field that make such fluctuations possible corresponds to the notion of an ontologically prior \textit{paradeigma} from which the created universe is derived. My suspicion however is that he would not have been thrilled about the idea that these fluctuations are spontaneous and random, and that the universe subsequently evolves only spontaneously and randomly, but would have preferred that the "original" fluctuation proceed from the vacuum with

\textsuperscript{531} Leggett, "Some Resonances in Modern Physics," 33.
\textsuperscript{532} Tryon quoted in Leggett, "Some Resonances in Modern Physics," 33.
the potential for conveying the incipient universe from a state of disorder and randomness toward order and harmony. And so perhaps he would imagine the aboriginal fluctuation(s) as corresponding to the disorder that the Demiurge, in his freedom from envy, and his congenial desire that everything be as much as possible as excellent as himself,\textsuperscript{533} has since encouraged to evolve into the ostensibly beautiful and good state of complexity that it now exhibits. And this process of evolution would be an operation of the universe's soul, since the Demiurge determined also that it would be better for the creation to be animate than inanimate.\textsuperscript{534} In a sense then, perhaps the Platonic response to this dimension of Big Bang cosmology would be to reckon the fluctuation of the quantum field as a birth -- even if it was a spontaneous birth sprung from the aboriginal disorder, it is substantiated as a birth in its evolutionary unfolding, by the Demiurge's persuasive ordering of it into an ensouled creature, in accord with the eternal patterns of relation that are available to it in its process of becoming.

Timaeus' the assertion of the ensouled character of the world proceeds from the important distinction that it is in the first place constructed from preexisting, though disordered, materials. Thus strictly speaking it is not a question of \textit{why the world exists and has a beginning at all} -- since Timaeus' discussion assumes the existence of an original chaos -- but rather \textit{why the world exhibits order and proceeds from a source of order}.\textsuperscript{535} Analogously, Big Bang cosmology does not lead back to an \textit{ex nihilo} creation, but, like the \textit{Timaeus}, to a question of how (if not always why) the universe has evolved as it has from an infinitely dense, undifferentiated original state.

This leads to a further question -- if the \textit{Timaeus} does not offer an \textit{ex nihilo} creation, but assumes an original chaos, does it get any closer to an account of the origin of the universe than

\textsuperscript{533} \textit{Timaeus}, 29e ff.
\textsuperscript{534} \textit{Timaeus}, 30b-c.
\textsuperscript{535} Cf. Zeyl, \textit{Timaeus}, xxxvi-xxxvii.
Big Bang cosmology (assuming that it does mean to describe a literal "beginning" in the first place)? If the original chaos corresponds to the quantum field in the vacuum, aren't both of these already the existence of something, even if they haven't yet become the evolved state of the universe as we know it? Perhaps Plato's answer to this would be that insofar as the universe exists, it does so by virtue of its expression of the patterns of order that it has come to acquire. The seminal principle of Timaeus' discourse is that there are two categories -- that which is and is never becoming, and that which always becomes and never truly is. The universe is a created thing that continues to undergo the process of becoming and in that capacity belongs to the second category; but it is modeled according to the content of the first category. Forms of order of the kind that Timaeus uses to describe the construction of the physical solids (the triangles) belong to the first category as well. To describe the being of the universe is to describe its order - this would honor the etymological sense of the term, that it is an account of the kosmos. And so to ask either cosmology, Plato's or the Big Bang cosmologist's, to account for what "existed" "prior to" there being something does not, in a sense, fall within its scope.

That said, Timaeus is clear about stating that the universe, as a created thing, has a cause. In the case of this universe, the cause is its maker. The maker is difficult to find and impossible to articulate, but it can be said that he caused it, and he did so in such a way that it is modeled after the eternal pattern that makes it the best universe possible, because he is the best of all possible causes. Self-evident though it may be, this must be said to distinguish Plato's cosmology from the Big Bang cosmology being discussed here -- nothing about a spontaneous

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536 Timaeus, 27d ff.
537 Ibid., 28c.
538 Ibid.
539 Ibid., 29a.
quantum fluctuation of the vacuum **necessitates** the intervention of an agent who causes that spontaneous event because it would be "best" for it to occur. A Big Bang cosmology may accommodate such a cause on the prerogative of its author, but it is not obliged to do so, and some such cosmologies have had a vested interest in leaving it out. 540 But, the consequence of leaving it out is that the quantum conditions of the original vacuum, from which the universe had the potential to spontaneously spring, are given no explanation for their existence, no prior cause.

But what the cosmologies have in common 541 is that they go back, in their description, from the ordered state of the present universe to a minimally ordered state that may theoretically have preceded it. They are both "evolutionary" accounts. It is in this connection that Whitehead, and his interpretation of Plato, bear relevance.

**A Whiteheadian Interpretation**

Whitehead does not dwell specifically on Big Bang Cosmology, though its inception was contemporary with the first promulgations of his own cosmology. He does make an assertion, however, of the universe's evolutionary character. In *Process and Reality* he explores the concept

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540 For instance, in 2012 a book of popular cosmology was published called *A Universe from Nothing: Why There is Something Rather Than Nothing* (New York: The Free Press, 2012) by the physicist Lawrence M. Krauss. Krauss argues, on the basis of these fluctuations of the vacuum, that modern cosmological science has in fact provided the answer to "The Question" (i.e. why there is something rather than nothing). Since empty space is a non-zero energy environment (that is, there is energy in empty space, whence it is subject to quantum fluctuations and the spontaneous production of particles (Krauss, *Universe from Nothing*, 307-308)), it must therefore be said that "nothing" is in fact "something" (ibid., 285 ff). The conceit of the book at large is that this once and for all divests us of the need for positing a creator. Richard Dawkins writes the afterword, and declares zealously on the final page: "Even the last remaining trump card of the theologian, 'Why is there something rather than nothing?' shrivels up before your eyes as you read these pages" (ibid., 378). But these claims are of course problematic, for the same reasons described above -- if what is being called "nothing" is a quantum field from which come fluctuations, if it is in fact "something", then we have not really gotten any nearer to the question of "why" the universe exists, we have only gotten down to a bizarre and fascinating theoretical possibility of "how". Krauss does admit that it is always possible to keep asking for further "why's", but he also seems to claim that this current theorization on the part of scientific cosmology definitively obviates the need for any theistic element in cosmology. The book seems to have been met with considerable skepticism, most conspicuously in the form of a feud with physicist-philosopher David Albert (see Albert, *New York Times*, March 23, 2012.) Shimon Malin, whom I will discuss later on in this chapter, is an excellent foil for Krauss -- a physicist who went in the exact opposite direction (headlong into theology).

541 Again, only assuming the *Timaeus* creation is to be read literally.
of the "cosmic epoch" -- this refers to the particular juncture of cosmic evolution at which the universe exhibits a certain array of natural laws, laws which are not absolute or ontologically prior to physical process, but are expressions of the relationships of the actual entities throughout the universe, at a given phase of its evolution.

In other words, in the present cosmic epoch, things follow a certain pattern of behaviors, which our current system of natural laws describes. Our current epoch features large-scale structures like galaxies, solar systems, planets, humans, cells, molecules and atoms, and the prevailing natural laws correspond to the manner in which macrocosmic entities such as these are interrelated -- their interrelations are governed by familiar forces like gravitation, electromagnetism, etc. Previous cosmic epochs however were characterized by conditions in which these forces had not yet emerged, and the entities that populated the universe were of a different kind. In previous epochs, for instance, the universe did not allow for anything so stable as atoms to provide the building blocks for the large-scale structures in the present one, and the natural laws that characterized those epochs were different. This is essentially in line with the view of Big Bang cosmology -- prior to this epoch was the "photon epoch", preceded by the "quark epoch" before photons could even form, preceded by the "Planck epoch" before those quarks could form. The distinction of Whitehead's concept is that it treats the progression of successive epochs as the result of the "cooperation" of the actual entities involved. A cosmic epoch is defined by a certain type of cooperative order that has arisen evolutionarily from disorder.

A society arises from disorder, where 'disorder' is defined by reference to the ideal of that society....Thus a system of 'laws' determining reproduction in some portion of the universe gradually rises into dominance; it has its stage of endurance, and passes out of existence with the decay of the society from which
It emanates....Here the phrase 'cosmic epoch' is used to mean that widest society of actual entities whose immediate relevance to ourselves is traceable. This epoch is characterized by electronic and protonic actual entities, and yet more ultimate actual entities which can be dimly discerned in the quanta of energy....These...are the reasons for the electromagnetic laws... \(^{542}\)

Note that the current division of epochs in Big Bang cosmology was not available to Whitehead - - quarks, for example, would not be discovered until the early 60's. He observes fortuitously that the present epoch is comprised of "electronic and protonic actual entities", these being the most fundamental particles of which he was aware, but leaves room for others to be discovered that are "yet more ultimate." Whitehead imagines that while we are presently enjoying an electromagnetic epoch that allows on the one hand for existence as we know it, and on the other hand for the ability to formally describe it in the manner we do -- and yet other cosmic epochs are possible, since the laws of nature themselves arise as expressions of the interrelation of actual entities, grouped on vast scales into societies whose behavior expresses those laws.

This recalls the feature of Big Bang cosmology that must suppose the breakdown of natural laws as we know them as one recedes, in theory, farther and farther back along the timeline of cosmic evolution. Whitehead goes on to say that the electromagnetic laws are themselves not even ultimate in this epoch, but are superseded by more general laws that correspond to the laws of geometry and spatio-temporal extension. (And so if Tryon's quantum fluctuation is right, it is because the quantum laws on which it is based are more general and ultimate than, for instance, the current laws of electromagnetism.) \(^{543}\)


\(^{543}\) Ibid., 91-92. It is a difficult question, as to just what elements of the current epoch Whitehead views as contingent, and what absolutely general laws might be necessary in all possible epochs. In my understanding he considers something like the current state of extension, i.e. our four-dimensional space-time, as contingent; whereas extension itself he considers necessary -- in book IV he develops a theory of extension as an aspect of the absolute relations (prior to any given dimensionality or metrics) that would hold in any cosmic epoch. I am
Whitehead links this concept explicitly with Platonic cosmology:

But the arbitrary factors in the order of nature are not confined to the electromagnetic laws. There are the four dimensions of the spatio-temporal continuum, the geometrical axioms, even the mere geometrical character of the continuum -- apart from the particular number of dimensions -- and the fact of measurability....Indeed, in the *Timaeus* Plato seems to be more aware of [this] than any of his successors, in the sense that he frames statements whose meaning is elucidated by its explicit recognition. These 'given' factors in geometry point to the wider society of which the electronic cosmic epoch constitutes a fragment.

This passage exemplifies once again the particular bias of Whitehead's reading of Plato. It would seem to suggest, insofar as it assimilates Plato to the evolutionary theory he is describing, that Plato divined, and would have agreed with the notion that apparently ultimate laws -- even those of geometry -- are subject to change insofar as they are merely expressions of a dominant global order at a certain cosmic epoch. By "dominant global order" is meant that the laws are not imposed from without on the actual entities in the universe, but that those entities' mode of relating as a whole -- the particular character of their cosmic society, taken altogether -- is what determines the conditions of a given phase of cosmic evolution. The eternal objects that actual entities express in their interrelation are infinite, and so the forms of interrelation, the geometric forms themselves, are infinite in their variation -- in the realm of eternal objects, there are theoretically infinite possible geometries, that is, infinite possible forms of relation which geometries could be constructed to describe. Cosmic actualization takes place cumulatively, over the course of the universe's evolution, as these possibilities are actualized in the matrix of becoming that he calls the "extensive continuum", which he thinks of as a modification of Plato's

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indebted to my friend Jamie Lennox for helping me understand this distinction.
If this is what Plato meant, it would make the *Timaeus* very anti-Pythagorean, especially for a *logos* that is dramatically set as proceeding from the lips of a Pythagorean philosopher. While the explorations we are making here are in large part concerned with the very possibility of reading the *Timaeus* in this radical way, it must be noted again that this is not how it is necessarily or customarily read. In order to literally reflect the Whiteheadian view, the triangular geometrical relationships that are the most rudimentary actualities expressed in the receptacle would have to be contingent and subject to replacement by alternative geometrical relationships, and that's something that Plato certainly doesn't explicitly say. Either the Whiteheadian reading must relegate that specifically geometrical discourse to the status of parable and metaphorical expression that it attributes to other elements of the dialogue (which Whitehead is never explicit about), or we must understand that what Whitehead is taking from the *Timaeus* is not the notion of the particular geometry that Plato describes, but the broader notion of the universe as a matrix of becoming that expresses relations.

Lying behind these distinctions is the principal pervasive difference between the contents of the dialogue and Whitehead's reading in this regard, a difference which arose above when comparing it to Big Bang cosmology. -- This is that, where Timaeus' reasoning tends to proceed from the assumption of the priority of what is *best* -- i.e. the creator is good, and wants the creation to be as close to being equally good as possible\textsuperscript{545} -- for Whitehead it is a matter of the subjective interactions of the actual entities themselves. While the guidance of the process of becoming in the *Timaeus* is enacted not by coercion but by *persuasion*, it would be possible

\textsuperscript{544} See section on the receptacle in chapter 1. 
\textsuperscript{545} *Timaeus*, 29e.
nonetheless to read certain elements of the enactment of cosmic ordering, such as the shaping of
the atomic triangles, or the distribution of the world-soul according to its proper proportions, as
reflecting the actualization of transcendent, inherently good and qualitatively superior principles.
This returns us to the pervasive ambiguity of the *Timaeus* -- the tension between the
transcendent, hierarchical, paradigm-imitation reading (Broadie's "thick intelligible"), and the
"Process" reading that recognizes the forms only as expressions of the flux.

Notwithstanding this tension, Whitehead's reading and reemphasis of Plato's recognition
of the role of disorder in the universe, and the understanding of order as an evolutionary
emergence from it, sets a precedent for philosophical interpretations of the significance of the
dominant strains of modern cosmology, especially the Big Bang. Whether or not his reading is
right (and whether or not a wholly right reading is possible), it is clear that Big Bang cosmology
requires a view of the universe that allows for the emergence of order as we know it from a
previous state that would not have exhibited such an order. As discussed above, insofar as the
*Timaeus* is explicit about there having been (or metaphorically, there always being) a disordered
state from which order emerges, Big Bang cosmology is analogous to Platonic cosmology. This
evolutionary interpretation is one that Whitehead radically imputes to Plato, even before the
extensive development of the Big Bang model.

The passages of *Process and Reality* quoted above segue into Whitehead's
aforementioned proposed parallelism between the *Timaeus* and Newton's *Scholium* as "the two
statements of cosmological theory which have had the chief influence on Western thought."\(^{546}\) --
The latter offered a vision of the universe wherein the rules were set by God and then proceeded
mechanically, while the former, for Whitehead at least, presaged a universe whose rules emerged

from its own processes and interrelationships. Big Bang cosmology would in this sense belong on the Platonic side of that binary, such that modern science does return us, as Whitehead claimed at the outset of his philosophical work, to the Platonic view. As will be seen, Whitehead's application of Plato to contemporary scientific developments finds even more specific and extensive expression in his engagement with quantum mechanics.

Whitehead's Plato and Quantum Mechanics

There have been recent publications exploring the efficacy of Whitehead's thought for advancing philosophical interpretations of various domains of the physical sciences, and one of these domains, which has already occasionally surfaced in this study, and which has special relation to Whitehead's treatment of Plato, is quantum mechanics. Given that quantum mechanics was


548 Quantum mechanics (or quantum physics or quantum theory) is the branch of physics that deals with atomic and subatomic scale physical phenomena. It contrasts, as discussed in earlier parts of this study, with classical physics in that subatomic entities exhibit certain behaviors that would be incomprehensible on a macroscopic scale. They exhibit the characteristics both of particles (minute, localized quantities of matter) and waves (repetitive variations propagated in a medium.) The name "quantum" refers to another of its non-classical attributes, that individual quantities of energy are absorbed or emitted in discrete "packets" called "quanta" -- magnitudes of energy or matter that are able to possess only certain values. Central to the theory is "Planck's constant" (h), which refers to the minimal energy value of the electromagnetic wave-particle. Another way of summarizing the difference between classical and quantum mechanics is that the latter uses Planck's constant, the former does not. While there is a popular notion that the difference is merely one of scale -- that classical physics handles the macroscopic and quantum the microscopic -- this is misleading, as in fact classical physics is derivable from quantum physics, and functions only on a large scale because of its abstraction from atomic and subatomic phenomena. Another important difference is that whereas classical physics is deterministic, in the sense that exact knowledge of the causal forces in a system allows for making accurate predictions about their effects, quantum physics is probabilistic, in the sense that the predictions it makes, and the mathematical formalisms it uses, provide probability amplitudes about wave-particles' attributes, such as their position and momentum. There are apparently inherent limits to the definiteness with which these values can be known, and inquiring into the value of one property delimits one's ability to accurately measure the value of the other -- this is Heisenberg's Uncertainty Principle, which will require a note of its own below. As with Big Bang theory, I am hardly qualified to hold forth on the technical intricacies of quantum theory, and perhaps even less so, as it is something even its experts profess not to understand -- Richard Feynman is said to have remarked, "if you think you understand quantum mechanics, you don't understand quantum mechanics." In my case my ignorance does not proceed from my expertise. But hopefully this extremely brisk description sets the stage at a bare minimum for the ensuing discussion of Whitehead and Plato's application to the theory's interpretation. This summary is the result of my encounters with popular introductions to the subject by physicists -- I found especially helpful Richard Feynman's Q.E.D.: The Strange Theory of Light and Matter and Heisenberg's Physics and Philosophy. There is also Hawking's famous A Brief History of Time, which first kindled my lay interest in these things, as it has for many.
rapidly evolving contemporaneously with Whitehead's philosophical work, he engaged with and wrote about these developments in varying degrees of specificity and at times, depending on the text in question, seems to have had in mind a different stage of the theory than at another.\textsuperscript{549}

While Whitehead's work need not be understood as predominately motivated by these developments, it has been seen here how central they are to his thought, whether or not he consistently positioned them as such\textsuperscript{550} -- and there are those who herald his work as offering a vital contribution to the further development of the science, and its related sciences.\textsuperscript{551} Here I examine how Plato, intertwined with Whitehead's apparent relevance, gains relevance in this context too.

\textit{Whitehead and Quantum Realization}

Epperson, who has a book exploring Whitehead's application to quantum mechanics, declares that

\begin{quote}
Whitehead’s repudiation of fundamental materialism and Cartesian dualism
\end{quote}

\textsuperscript{549} There is a distinction between the "old" quantum theory, centered around Planck and Einstein's theories of the quantization of electromagnetic energy transference and Bohr's orbital model of the atom in the first decades of the 20th century, and the "new" quantum theory that emerged from the proceedings of the Solvay Conference of 1927, and brought the theory into a greater degree of standardization, as well as raising a host of philosophical problems of interpretation -- a phase of foundation-building, followed by a phase of formalization. The latter developments were going on at the same time that Whitehead was preparing the Gifford Lectures that became \textit{Process and Reality}. Most of the statements in \textit{Process and Reality} seem to be in reference to the early foundations of the theory, whereas others suggest that he was keeping up with the developments of the "new" theory -- see Epperson, \textit{Quantum Mechanics and the Philosophy of Alfred North Whitehead} (Fordham: Fordham University Press, 2012), 122-123.

\textsuperscript{550} Another excerpt from his student Brennan's reflections portrays him as aware of the connections of his thought to the developing science, yet noncommittal about the specificity of those connections. -- "Strange that after Whitehead's early work on relativity, his interest in physics did not seem to keep pace with the dramatic advances in that science. The most brilliant work on quantum and wave mechanics was done in Europe after he left the Imperial College for Harvard. The attack on the atomic nucleus began in the early 1930s; the neutron was described in 1932; artificial radioactivity became a fact in 1934-35, the year of our course with him. Yet Whitehead's references to quantum theory in his definitive metaphysical book Process and Reality, although wholly approving, are not sustained, and at least part of that approval seemed based on his satisfaction that physicists were now explaining chemical facts would have pleased Plato" (Brennan, "Lost Dialogue," 522-523).

\textsuperscript{551} E.g. Epperson, \textit{Quantum Mechanics and Whitehead}, 106: "Since his death in 1947, the influence of Whitehead’s philosophy has grown steadily, if not rapidly. And in the coming years, as quantum mechanical phenomena grow to become the very heart of our everyday technology in the form of quantum transistors, superconducting devices, and quantum computers, the popularity of Whitehead’s philosophy is likely to undergo a rapid expansion."

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echoes loudly in the work of recent theorists…whose repudiation of fundamental materialism and ‘quantum-classical’ dualism is the most recent attempt to solve a philosophical problem whose roots extend all the way back to the problem of XORISMOS introduced by Plato—the supposed chasm separating what is from what appears to be.552

By "XORISMOS", Epperson explains, he means the gulf-like separation between "necessary forms" and "contingent facts" which, as he sees it, has its roots in Plato and burdens the whole trajectory of Western philosophy and science. He sees the era of quantum theory, and of relativity theory along with it, as finally healing the rift between forms and facts insofar as it manages to reckon the facts as being themselves constitutive of the forms. "In the general theory of relativity, Einstein bridges Plato's XORISMOS by deriving the formal geometry of spacetime from the events themselves."553

Whitehead's system then is a philosophical formalization, and systematic articulation of this process, wherein events are taken as the starting point, and it is seen how they selectively manifest, in an evolutionary way, novel forms of interrelation and order in their process of becoming (what he sometimes calls their "concrescence."). This viewpoint, as opposed to the top-down viewpoint that envisions an inert universe governed by inveterately imposed, absolute laws of order, is exactly what Whitehead so praised the Timaeus for -- as the moment when Plato finally revealed his forms in the flux.554 Though these forms of order exist strictly in reference to their novel expression in the flux of becoming, as forms they are capable of being reckoned as mathematical formulae, which can be used to make predictions about the novel expressions of

553Ibid., 5.
554In this connection as in others, the viability of Plato's relevance to this depends on accepting Whitehead's disputable assertion that the forms in the Timaeus don't enter the world of becoming in a "top-down" way but emerge from the interrelations of entities in cosmic process (see discussion of eternal objects in chapter 1).
entities in their actualization. -- In this way Whitehead's system harmonizes with the quantum formalism, which makes predictions about actual states of matter in accordance with its formulaic “principles capable of representation as rule-governed, mathematically describable constructions.”555 But they will always only remain predictions, since a crucial dimension of the quantum theory is that no completely deterministic description of any system is feasible; all quantum mechanics can do is to predict the possibilities556 -- possibilities actualized in what Epperson calls "a non-deterministic, nonmaterialistic process that both Whiteheadian concrescence and quantum mechanical state evolution describe."557

The interwoven possibilities of actualization in a quantum system are mathematically formalized by a wave function that represents the superposition of several states ("eigenstates"). - - Upon actualization this superposition is said to "collapse" into a single state, and this collapse is said to occur at the moment of observation or measurement. -- The notion of this moment of observation occasions the famous paradox of Schrödinger: a cat, a vial of poison, and a radioactive substance are placed in a box, with an internal monitor that detects radioactive decay. At such a time as the monitor detects the decay of an atom in the radioactive substance, the poison is released and the cat is killed -- but this may or may not happen, it is indeterminate whether or not the decay will occur. But insofar as quantum theory has it that the quantum system of that potentially decaying atom is in a state of superposition until it collapses, the system is theoretically envisioned as a wave pattern simultaneously expressing the subatomic relational states of both its decay and its persistence. Hence, until observed, the cat is both alive and dead. The paradox is meant to provoke the question of when the superposition of states

556 See introductory note 548 to quantum mechanics, above.
described by quantum mechanics become one state or another -- or in other terms, when can one go from a quantum to a classical description of an object or event? Or in yet other terms, if there is an interdependency in quantum systems of superimposed states and an observer who causes their collapse, an interrelation of object and subject, then is there any realization without there being observation? And observation by whom?

Just as troubling as this thought experiment is the troubling abundance of literature, scientific and philosophical, that has been written to grapple with it. I will broach almost none of it, except to note a few interpretations that claim, with varying points of emphasis, that Whitehead's system can solve the problem.

Epperson implies that the Whiteheadian interpretation would be that the "act of observation" consists in the mutual subjective interaction of all entities in the system. And every system ultimately contains all entities in the universe, though at graded degrees of relevance to this or that incipient event. Thus there is a continuous process of "collapse", as the mutual interrelation of all respective entities determine one another. Epperson notes that this is essentially in line with "decoherence" interpretations of the problem: "decoherence-based interpretations...make use of the concept that the universe itself is the only truly closed system, and therefore all facts englobed by this system are necessarily mutually interrelated and ontologically incapable of isolation; and by this principle, the role of the 'observer' in orthodox quantum mechanics is always fulfilled." 558

This type of interpretation is connected with Whitehead's Ontological Principle, which is central to Whitehead's system, and the anchoring point by which Epperson applies to quantum mechanics systematically:

558 Ibid., 84.
Every condition to which the process of becoming conforms in any particular instance, has its reason in the character of some actual entity in the actual world of that concrescence, or in the character of the subject which is in the process of concrescence.\textsuperscript{559}

In concrescence, actual entities "feel" the influence of past occasions, and accordingly orient themselves toward the reception of new interrelations in their actualization. This process of orientation involves the "physical pole" of the actual entity, which receives the data of antecedent actual relations with the environment, and the "mental pole" which entertains novel possibilities for further actualization (eternal objects).\textsuperscript{560} Epperson's interpretation seems to emphasize the operation of the physical pole, insofar as his interest is in how Whitehead's system can reflect on the problem of how quantum systems interact with the classical environments in which we experience them as human beings.

\textit{Platonism and Quantum Realization}

Other Whiteheadian interpretations of quantum realization made along these lines give more emphasis to the "panpsychic" element of Whitehead's thought, and accordingly segue toward its Platonic elements. The operation of the "mental poles" of actual entities is what Whitehead loosely relates, and later Process thought more concertedly relates, to the operation of the World-Soul in the \textit{Timaeus}. Under this interpretive emphasis, the "agent" that causes quantum collapse into a finite state is the localized iteration of the psychical agency that pervades the universe. Quantum collapse is the world-soul choosing its own self-ordering. The aforementioned Process thinker Dombrowski declares on this note that, "contemporary physics has vindicated Plato’s flirtation with panpsychism…Plato was wiser than he knew; little did he know that in twentieth-

\textsuperscript{560} See chapter 1, especially section on eternal objects.
century physics universal mechanism would give way to a cosmic dance.\footnote{561}

Another enthusiastic proponent of this connection of Whitehead and Plato to quantum mechanics is Shimon Malin, whose approach mingles, in tone and content, the technical with the mystical. Malin was a physicist, and his lay introduction to quantum physics culminates, on the heels of an excursus into Whitehead's metaphysics, in a vindication of an ultimately Platonic interpretation of the attainments of modern science:

> The mystery, which is known as ‘the collapse of quantum states,’ is the process whereby the potential becomes actual. An analysis of this process of collapse indicates that the principle of objectivation has to be transcended, and, in addition, it provides broad hints about the alternative paradigm. Similarities between the process of collapse and the ideas of Plato lead to the following questions: Is it possible that seemingly inanimate objects are alive? Was Plato right in believing that the whole universe is alive?\footnote{562}

Malin answers decidedly "yes".

The plan of his book, *Nature Loves to Hide: Quantum Physics and Reality, a Western Perspective* (the title of course is drawn from Heraclitus),\footnote{563} is remarkable. It is essentially a primer for the non-physicist on the basics of quantum physics, its history and its principles and the bizarre and fascinating aspects of the theory -- at least in the first half. Halfway through the book Whitehead is ushered in as a segue to the suggestion that the best way to make sense of such a strange universe as this is to think of it in *panpsychic* terms, and then Plato is brought in to further validate this view, but specifically the Process construction of Plato that has been discussed here and in previous chapters. In a specific nod to his Platonic enthusiasm, Malin's

\footnote{561} Dombrowski, "Platonic Philosophy of Religion," 20.  
\footnote{562} Malin, *Nature Loves to Hide*, 86.  
\footnote{563} Fr. B123 DK.
exposition is occasionally broken up by sections written in *dialogue form* between two physicists, one of whom plays a Socratic role of elenchic questioner (Julie), and the other the typical role of the Platonic interlocutor (Peter), who is eventually divested of his self-contradictory views -- in this case the misconceptions of which Peter is disabused are the commonplace, common-sense views of early modern materialist physics, which are replaced by a more encompassing, and even mystical understanding of the exceptional consequences of quantum physics. The book, which began as a layman's guide to quantum theory, ends in mystic ecstasy.

Climactically, Malin asserts that even Plato is not enough, and that the ancient philosopher we really need in order to understand quantum physics is Plotinus! This declaration is prefaced by an excursus on the cave allegory from the *Republic* -- the analogy is that the physicist fails to grasp the meaning of quantum mechanics because of the limitations of the faculties of physical perception, and must find a way to access the atemporal realities that lie beyond (or before) observation and commonsense understanding. And so, Malin asserts, in order to understand the consequences of apparently strange quantum phenomena, like superposition and wave-particle duality, which transcend the perceptual and cognitive strictures within which we operate, we must ultimately access the *noumenal* realm -- in the Plotinian sense. A quantum system is a network of interrelated possibilities that transcend their experiential actualization, and so a conception of quantum mechanics must embrace something analogous to the Platonic-Plotinian conception of an atemporal realm belonging to the Nous, which transcends the sequentially temporal realm belonging to the Soul.

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565 Ibid., 196ff.
sensible world has no being of its own. It is the product of nature's contemplation, as a dream is a product of the dreamer's mind....[but] [t]he image of the sensible world as a reflection of the noumenal is merely a metaphor....In the case of reflections is a mirror there is a spatial separation between the object and its reflection....No such separation exists between the separable world and Nous. Nous is the being of the sensible world. Time and space distinctions are not applicable to the Nous, because, while the being of anything may be associated with appearances in time and space, being, qua being, is not in space and time.566

This discourse appears in the third and final part of Malin's book, called "Physics and the One", which begins just after he has completed his introduction to Whitehead as a recommendable metaphysical underpinning for quantum physics.567 He ultimately equates the Plotinian "One" with the universe in its totality, embracing both its actuality and its potentiality, the embrace that grasps both the phenomenal and noumenal realms. The One encompasses both the being and non-being of Schrödinger's cat. As Malin has described it, a quantum event is understood as a wave of probabilities representing the compresence of diverse states like "cat alive" / "cat dead", which must, in the process of actualization, "collapse" into a certain state. But how is that selection made, and what occasions that particular quantum collapse, or realization? He finds in Plotinus, as he did in Whitehead, a way of thinking about an answer -- nature contemplates, and as a result of that contemplation, makes a choice. Albeit on much different terms and with much more explicitly and emphatically Platonic emphasis, Malin's philosophical presentation of quantum realization arrives at the same interpretation as Epperson's, relying on the Whiteheadian notion of the subjective character of actual entities, which in turn draws on the Platonic notion of a living cosmos.

566 Ibid., 197.
567 Ibid., 191ff.
Malin goes on to recount how he initially found Plotinus to be "strange, arbitrary, abstract and verging on the meaningless", but that continued meditation allowed him to realize its efficacy for understanding the philosophical implications of quantum physics. Thoroughly weighing the merits of relating quantum physics specifically to Plotinus would be its own critical project that will not take place here, but what must be noted is that Malin's thesis is another instance of devoted recasting of Platonism's relevance, through the mediation of Whitehead -- recall too Rodier's writing on the greater applicability of Whitehead to Plotinus than Plato amidst the proceedings of the International Society for Neoplatonic Studies.\textsuperscript{568} It is another instance of Process-minded enthusiasm for the applicability of Platonism to the developments of modern science, but it is perhaps even more radical. Even interpreting the \textit{Timaeus} in a "bottom-up" manner, that sees the presence of form in the world as an \textit{emergence} from the flux of becoming rather than an imposition of it from a transcendent source, has involved difficulties to which the bulk of this study have been addressed. Plotinus however can be read as being even more hierarchically-minded than Plato whom he interprets, and the difficulties involved in rigorously squaring him with Whitehead, or with quantum physics for that matter, would be proportionally proliferated.

Nevertheless, while Malin is not utterly explicit about saying so, given that he has prepared the reader for this climax by several chapters relating Whitehead to the theory, it is clear that Whitehead is the lens through which he has encountered Platonism and Neoplatonism meaningfully. Further in this section, he relates philosophy to poetry on the same terms as Whitehead did in \textit{Modes of Thought},\textsuperscript{569} and even recycles quotations of Wordsworth and

\textsuperscript{568} See chapter 4, in discussion of Process Platonism.

\textsuperscript{569} "Philosophy is akin to poetry, and both of them seek to express that ultimate good sense which we term civilization. In each case there is reference to form beyond the direct meanings of words" (Whitehead, \textit{Modes of Thought} 174).
Shelley\textsuperscript{570} that Whitehead had included in \textit{Science and the Modern World}. In Whitehead they are meant to illustrate the "Romantic reaction" against the deterministic materialism of eighteenth century science, a reaction which presages his own. For Malin they are meant to positively illustrate the beautiful holism between the realms of transcendent potentiality and actuality as it is experienced, and imply a further holism between a Platonic view of the world, a poetic view of the world, and a Process view of the world -- these are, for Malin, the natural complex of views attendant on a full intellectual absorption in the apparent mysteries of modern science. His book provides another instance of the distinct enthusiasm with which some of the few disciples of Whitehead apply his thought, and Plato along with it, to a vision of the universe that combines sensitivity to the revolutionary advances of science with distinct sympathy for, and renovation of, the precedents of that vision offered by antiquity. His distinction from the scholars discussed above is that he is not by extraction a philosopher, Classicist or theologian, but a physicist. Subsequent to his climactic excursus on the Physics and the One, he narrates and celebrates the Platonic revelation of another physicist, Werner Heisenberg -- this will be discussed in the section following.

Whitehead was not so direct about precisely correlating specific features of the \textit{Timaeus}' panpsychism with specific features of quantum theory; but the inspiration he recurrently and transparently drew from it did lead him to make remarks that prophesy a reprisal of the role of Greek thought in the philosophical revolutions that attended the advent of quantum physics, in a more general way, and in a less demonstrative a committal capacity.\textsuperscript{571} It has been the self-

\textsuperscript{570} Malin, \textit{Nature Loves to Hide}, 198; \textit{Science and the Modern World} 85 and 86. Wordsworth from \textit{The Prelude}: "Ye Presences of Nature in the sky/ And on the earth! Ye visions of the hills!/ And Souls of lonely places!" Shelley from \textit{Prometheus Unbound}: "I spin beneath my pyramid of night,/ Which points into the heavens,—dreaming delight,/ Murmuring victorious joy in my enchanted sleep:/ As a youth lulled in love-dreams faintly sighing,/ Under the shadow of his beauty lying,/ Which round his rest a watch of light and warmth doth keep."

\textsuperscript{571} E.g. Whitehead, \textit{Process and Reality}, 309: "In the language of physical science, the change from materialism to

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assigned task of thinkers responding to Whitehead, in scientific contexts as in philosophical
contexts, to link the content of this general analogy or prediction with the specifically Platonic
content of his cosmological system. Just as Whitehead declared the applicability of Greek
thought to the revolutionary developments of quantum physics, so Whitehead's proponents
prophesy the applicability of Whitehead's thought to the further progress of that science, which
so extensively permeates the modern world. Through that latter connection, the Platonic
connection that first inspired Whitehead is ideologically packaged into the transmission. Another
scientist who did not fail to notice the connection for himself, and who experienced a parallel
inspiration, was Werner Heisenberg.

**Heisenberg's Plato**

Plato gains relevance to discussions of modern science often in the context of its philosophical
articulation to a popular audience; its concepts, in generalized form, invite comparison, if not
literal agreement or agreement, with forerunning iterations of such general concepts about the
process of nature made by the ancients. Werner Heisenberg has written popular works\(^{572}\) that
capitalize on these analogies, and in his remarks he has foregrounded resonances of the *Timaeus'*
cosmology with the ramifications of quantum theory. -- One of these works, incidentally, is
drawn from his Gifford Lectures, delivered about thirty years after Whitehead delivered his own,

which became *Process and Reality*.\textsuperscript{573} As will be seen, Heisenberg's philosophical presentation of quantum theory, while by its nature less philosophically systematic than Whitehead's, shows close parallels to the Platonic elements of Whitehead's system, and moreover parallels to some of the pervasive Platonic preoccupations of Whitehead's writing, and subsequent Process thought.

*Plato's Immaterial Atomism*

Heisenberg is a particularly appropriate expositor of the standard interpretation of quantum theory -- known as the Copenhagen interpretation -- because he was central to its development.\textsuperscript{574} In this exposition of it, the analogy he identifies in Plato, which recalls the

\textsuperscript{573} *Physics and Philosophy* (as a lecture, 1955-1956.)

\textsuperscript{574} Broadly speaking, the development of the Copenhagen interpretation was motivated by the disturbing dissonance in early quantum theory between what were supposed to be mutually exclusive properties: quanta of light were found to exhibit the properties of both particles and waves, depending on the experimental situation. In 1926 Heisenberg, Schrödinger, Niels Bohr and other physicists gathered in Copenhagen to attempt to make sense of this difficulty -- the result of their discussion is the standard interpretation (though not the only interpretation) of quantum mechanics, known as the Copenhagen interpretation. By Heisenberg's own description, the practical upshot of the Copenhagen interpretation is the notion that while the revolutionary changes wrought by quantum physics, and the ruptures with classical physics that the theory involves, require the supercession of the descriptive models of classical physics, nevertheless those classical models must still, for practical purposes, be employed in the interpretation of quantum theory, since the models used by classical physics are idealizations of the way human beings perceive the world. "We must keep in mind this limited range of applicability of the classical concepts while using them, but we cannot and should not try to improve them" (Heisenberg, *Physics and Philosophy*, 18). Central to this interpretation is Heisenberg's "uncertainty principle", which asserts that the mathematical structure of quantum theory is such that while it can provide measurement information about particles, it cannot measure both the particle's position and momentum simultaneously with equal accuracy -- and in fact the greater the precision with which the one property is measured, the less precision with which the other can be measured. Related to this is Bohr's concept of "complementarity", which further articulates the consequences of the uncertainty principle and states that the experimental arrangements for measuring these respective properties are themselves mutually exclusive, as are the properties themselves of having a well-defined position and having a well-defined momentum. The uncertainty principle formalizes an epistemological limitation on our ability to simultaneously measure a particle's position and momentum; the concept of complementarity makes the ontological claim that the particle can only actually have one or the other property in a well-defined way at one time (cf. Barad, *Meeting the Universe Halfway*, 97 ff). Both of these dimensions of the Copenhagen interpretation emphasize the manner in which quantum measurements must necessarily take into account the measuring apparatus, including the observer who operates the apparatus. Whereas classical mechanics involves observations on such a macroscopic scale that measurements of a system can be made as though that system operated in isolation, in the case of quantum mechanics the system under observation is immediately related to, and affected by, the experimental situation. That is, you can drop two balls of different weights from the same height and watch them fall at equal rates without fear that you are interfering, for your scientific purposes, with their plummet; but you cannot observe a quantum of light without introducing at least another quantum of light, for the purposes of observation, into the system of which the first is a part without profoundly affecting that system. These considerations then underlie the thematic of interrelatedness that characterize the interpretations discussed here -- the universe is the only closed system, all of its constituents related to all of its constituents, and in the first place constituted by that very relatedness. See note at the beginning of the section on quantum
Whiteheadian interpretations discussed above, consists in his assertion that elementary particles are not *beings* but *possibilities* -- “the smallest units of matter are, in fact, not physical objects in the ordinary sense of the word; they are forms, structures, or—in Plato’s sense—Ideas, which can be unambiguously spoken of only in the language of mathematics.”\(^{575}\) In Heisenberg's reading, much as in Whitehead's, Plato's elementary triangles are not bits of matter but relational schemes, whose very relation itself constitutes matter in its actualization. He is careful to emphasize the analogical nature of the connection -- he does not credit Plato with having presaged the quantum theory, or even having approached the same question -- but it is clear that in attempting to philosophically position the formalism he had helped to develop, he found in Platonic cosmological discourse a fortuitous point of reference for what he meant to articulate. He develops this point of reference at some length in *Physics and Philosophy* amidst a summary examination of ancient Greek natural science and philosophy as the underpinning of the evolution of Western physical science at large -- here he comes to the conclusion that

modern physics takes a definite stand against the materialism of Democritus and for Plato and the Pythagoreans. The elementary particles are certainly not eternal and indestructible units of matter, they can actually be transformed into each other....[And] the resemblance of the modern views to those of Plato and the Pythagoreans can be carried somewhat further. The elementary particles in Plato's *Timaeus* are finally not substance but mathematical forms.\(^{576}\)

These views are reiterated in a later work, *Physics and Beyond*, in a chapter called "Elementary Particles and Platonic Philosophy",\(^{577}\) wherein he recreates a conversation with his associates at


\(^{576}\) *Physics and Philosophy* 45.

\(^{577}\) *Physics and Beyond* 237ff.
the Max Planck Institute for Physics and Astrophysics in 1958. Among these physicists debating the progress of the development of a unified field theory, and what such a theory would mean, Heisenberg represents his contributions to the conversation as consistently referent to the *Timaeus*: he states that "[o]ur elementary particles are comparable to the regular bodies of Plato's *Timaeus*. They are the original models, the ideas of matter. These primitive models determine all subsequent developments. They are representative of the central order."578 What Heisenberg means by "the central order" will be unpacked further on in this section; for now it is sufficient to note that he repeatedly emphasizes the interpretive theme that the modern conception of atoms has it they are not material substances but relations of mathematical order -- forms, shapes, ideas.

He is not the only pioneer of quantum physics to frame the situation essentially in this way. -- Schrödinger's terminology, in similarly aimed popular works that aim to establish continuity between foregoing Western philosophical thought and modern atomic science, evokes the same idea:

"Let us now return to our ultimate particles and to small organizations of particles as atoms or small molecules. The *old* idea about them was that their individuality was based on the identity of matter in them….The *new* idea is that what is permanent in these ultimate particles or small aggregates is their shape and organization. The habit of everyday language deceives us and seems to require, whenever we hear the word ‘shape’ or ‘form’ pronounced, that it must be the shape or form of *something*, that a material substratum is required to take on a shape….But when you come to the ultimate particles constituting matter, there seems to be no point in thinking of them again as constituting some material. They are, as it were, *pure shape*, nothing but shape; what turns out again and again in successive observations is this shape, not an individual speck of

If Heisenberg's description can fairly be said to be evocative of Plato, then this description should as well. -- Interestingly however, it is a description from which Plato is decidedly absent: while both works make systematic engagements with the Greek philosophical tradition, they arrive at contrary readings. Schrödinger, by contrast, dismisses Plato as irrelevant and misguided, and praises the prefigurative genius of Democritus. Methodologically, he sympathizes with two elements of what he presumes to have been Democritus' philosophical development: first, that he proceeds on geometric principles, and within the limitations of the geometry available arrived at a satisfactory atomic mechanics. Second, the limitations to the accuracy of his insight, from our perspective, can be forgiven since he "himself regarded his insight as a creation of the intellect" -- that is, that he realized that his model rested upon the limited penetrative capacities of human sense perception. It seems that Schrödinger admires Democritus for handling the concept of atoms in a manner analogous to that of the modern particle physicist, insofar as both of them construct the atoms by virtue of deductive methods that reveal necessary mathematical relationships (though the modern physicist has also the aid of technological means of observation), and also for the fact that he managed to distinguish between the content of his atomic model and the ultimately unknowable or indeterminable character of what that model was meant to describe. -- (Much like the provision of the Copenhagen interpretation of quantum mechanics, which asserts that quantum phenomena must be described in terms of classical physics, because these are the terms that conform to human logic and proceed from perception, but qualifies that description with the admission that it does not quite do justice to the atomic

579 Science and Humanism 17 [qtd. in Malin?].
580 Schrödinger, Nature and the Greeks, 84.
581 In this connection he adduces fr. D 117, among others: "We know nothing truly, for the truth lies hidden in the depth" (qtd. in Nature and the Greeks 89); he follows Bailey's translation.
events themselves.) Democritus, implies Schrödinger, thought this way because "he was intensely interested in geometry, not as a mere enthusiast, like Plato."582 Later, this crucial distinction "got muddled up with metaphysics" by Plato and his followers.583

This is not the place to examine Schrödinger's claims about Democritus in analytic detail; but a glance at his construction of the ancient philosophers at hand, in comparison to Heisenberg's, is illustrative of a degree of arbitrariness, hinted at before in this study, in determining which Greek does or doesn't deserve commendation for or analogical alignment with the modern view of the world. Heisenberg's remarks on the subject emphasize the difference between Democritean material atomism584 and modern theory, while in turn emphasizing the fortuitousness of Plato's immaterial atomism. Both physicists' remarks resemble the ground on which Whitehead founds his claim about the distinct relevance of Plato in their contemporary moment -- methodological commitment to discovering the hidden parts of nature by consideration of mathematical interrelationships, combined with a willingness to suspend certainty about the theories that result from those considerations. As it happens, Heisenberg, very much like Whitehead, finds a model of these attributes in Plato (over against Democritus), whereas Schrödinger doesn't seem to have much use for Plato at all (and praises Democritus). It is as though the respective ancient philosophical alignments of these two pioneering physicists boil down to mere dispositional affinities, like the contrasting affinities Whitehead with Plato and Russell with Aristotle.585

583 Ibid., 85.
585 See above in the second part of this study. While this is another story altogether, I note that for some time Heisenberg and Schrödinger were also proffering alternative, though eventually harmonized, formalizations of quantum theory -- Heisenberg with matrix mechanics, Schrödinger with wave mechanics -- more than one way to skin the cat (see H. Rechenberg, "Erwin Schrödinger and the Creation of Wave Mechanics," *Acta Physica Polonica* B19 (1988)).
Heisenberg's Platonic Inspiration

Another writing of Heisenberg's exemplifies other elements of the Whiteheadian Platonism that have been examined throughout this study. *Physics and Beyond* begins and ends with Plato, in first and last chapters that meditate on the relation of the *Timaeus* to the contemporary state of physics, and do so in a distinct aesthetic mode -- they are in fact (predominately) dialogues! The latter dialogue between Heisenberg and his colleagues has been discussed above. The opening of the book tells the story of Heisenberg's early interest in physics through conversations with his friends as a youth, as well as a reminiscence of his reading of the *Timaeus*.586

I will describe the opening chapter in very brief summary. The young Heisenberg expresses to his friends his perplexity at an artist's representation of the combination of atoms into a molecule in his chemistry textbook. This leads to an epistemological discussion of the limits of humankind's ability to describe phenomena to which it doesn't have direct perceptual access, which in turn leads to a discussion about the origin of ideas -- whether they come from perception, are innate, or come from participation in divine reason. The latter thesis is defended by one member of the group (who has been reading Malebranche), and is attacked by another. Heisenberg's take on the debate is troubled and indecisive. His feeling of troubled uncertainty is, as he describes it, mirrored by the outside world, as this is all taking place in Germany in the wake of the First World War. He describes his simultaneous experience of intellectual and socio-political confusion, as more factions than he can keep track of battle for power all around him, and he finds himself inundated by a general sense of chaotic disorder. Nevertheless, his friend's Malebranche-inspired thesis of a divine order infusing the world inspires him to reread Plato's *Timaeus*. At first he is disappointed by the apparent naïveté of Plato's identification of the basic

building blocks of matter with triangles, yet he is impressed by the continuity between the concerns of Plato's inquiry and those of contemporary science, and preoccupied by its relevance to his own current questioning -- he "kept wondering why a great philosopher like Plato should have thought he could recognize order in natural phenomena when we ourselves could not."587

The narrative then shifts to another episode wherein Heisenberg attends a gathering of fellow young people, who are exchanging impassioned speeches, expressing their opposing views about the current political circumstances, and the future of the country. Once again he is troubled by the disorder of the environment. But then, as he describes, he experiences a sudden reverie, an intuition of a "central order" transcending that present disorder:

This [chaotic environment,] I felt, was only possible because all these types of order were partial, mere fragments that had split off from a central order; they might not have lost their creative force, but they were no longer directed toward a unifying center. Its absence was brought home to me with increasingly painful intensity the longer I listened. I was suffering almost physically, but I was quite unable to find a way towards the center through the thicket of conflicting opinions. ...There was a hush as, high above us, [a young violinist] struck up the first great D minor chord of Bach's Chaconne. All at once, and with utter certainty, I had found my link with the center....The clear phrases of the Chaconne touched me like a cool wind, breaking through the mist and revealing the towering structures beyond. There has always been a path to the central order in the language of music, in philosophy and in religion, today no less than in Plato’s day and in Bach’s. That I now knew from my own experience."588

This same phrase "central order" is what apparently resurfaces in Heisenberg's philosophical

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587 Ibid., 9.
588 Ibid., 7ff.
debates with his fellow physicists over half a century later, such that the book represents his legacy in physics as infused with a fundamental Platonic inspiration, apparently based on his reading of the *Timaeus* concept of the emergence of a transcendent order amidst chaos. While the palpable mysticism of this reminiscence is hardly central to the full scope of Heisenberg's scientific and philosophical thought and self-presentation, the narrative offers a parallel with the Platonic alignments of the Process tradition, and evidences its intersection with modern science from a distinctly personal angle. Malin, the aforementioned physicist who sets himself the task of explaining quantum theory through Whitehead, Plato and Plotinus, celebrates Heisenberg's narrative as an exemplary instance of the intersection of science and mysticism he recommends - he implies that Heisenberg's scientific vision has its root in a glimpse of the Neoplatonic One. Heisenberg does not explicitly veer into mysticism as such, but his narrative, and the last chapter of *Physics and Beyond* as well, end in descriptions of music, and make affirmations of aesthetic value in the universe, over against random disorder and mechanical fact -- an affirmation that is the central concern of the Whiteheadian Process tradition.

The impression given by Heisenberg's appropriation of Plato, one that runs parallel to and in many respects harmonizes with Whitehead's, is one that once again exemplifies the patterns of ideological appropriation that have been emerging in this study. Heisenberg shows a sort of ineluctable proclivity for Plato that induces him to foreground Plato's cosmology, on analogical grounds at least, in his philosophical presentation. Schrödinger, by contrast, arrives at similar popular systemizations of the problems and developments of quantum theory but invokes Greek thought that is represented as being symbolically antithetical to Plato (by invoking Democritus, who by contrast in Whitehead's system of appropriations is the figurehead of the mechanistic,

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589 Ibid., 246-247.
corpuscular atomism which his own system is meant to undo.) Malin and Epperson, the two Process-minded interpreters of quantum theory discussed in this chapter, both affirm the harmony of Heisenberg's thought and the Copenhagen interpretation with Whitehead's metaphysics, and by extension with its Platonic underpinning -- but this perceived harmony is not universal among physicist-philosophers.

As a counter-example, another physicist-philosopher, Karen Barad, presents her interpretation in terms that blame Heisenberg and praise his former teacher and collaborator Niels Bohr, positioning the two as ideological archetypes of the respectively problematic and progressive directions of interpreting quantum theory. Moreover, Barad prefaches her book with a discussion of the Michael Frayn play Copenhagen, which dramatizes an infamously famous visit between the two scientists -- in examining the play she explores the controversy surrounding whether Heisenberg was working actively for or secretly against the production of an atom bomb while he was working under the Nazis.\textsuperscript{590} I mention this not to examine the controversy in itself, but to offer a counter-example in which Heisenberg as a figure is by contrast implicitly vilified rather than valorized. He too can be employed and received, in a philosophical presentation, as an associative symbol for better or worse depending on the reader or the reading, just as have Whitehead and Plato, and these figures may be associatively intertwined in their reception. Barad, as it happens, is silent about Plato, but decidedly inimical toward Aristotle, and critical of Classical philosophy in general -- in fact she casts it as antithetical to the philosophical perspectives she advances.\textsuperscript{591}

\textsuperscript{590}Karen Barad, \textit{Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning} (Durham: Duke University Press, 2007), 3ff. Barad relates the great historical debate about whether Heisenberg, during this visit, revealed that he was secretly trying to sabotage the bomb project (which a letter he later wrote to a journalist would seem to claim) or not (Bohr apparently denied the ostensible claim of Heisenberg's letter).

\textsuperscript{591}Cf. Barad, \textit{Meeting the Universe Halfway}, 45, 378. Barad's own thought blends philosophy of science, her own first-hand knowledge of quantum physics, and diverse elements of feminist theory -- she draws pervasively on
The principal point is this: within the domain of philosophical interpretation of the developments of the physical sciences, Plato, and other ancient philosophers, are deployed as precedent-setting justifications of the philosophical articulations that seek to make sense of novel scientific circumstances, or as contrastive symbols against which the supposedly new worldview is brought into greater relief. The same ancient philosopher, the supposedly same Plato, can be used for opposite purposes by different authors, even when the viewpoints of those authors would seem to ultimately harmonize, or at least align in the broader picture of the development of modern thought (e.g. Heisenberg's alignment with Plato versus Schrödinger's with Democritus against Plato, an opposition which may be compared with Whitehead's alignment with Plato versus Heidegger's alignment with Aristotle against Plato.) The respective application of this or that ancient author may be the result of the aesthetic disposition or ideological prejudice of the commentator, whose reading of that author is in the first place largely mediated by preceding constructions. These histories of construction impose a symbolic value on that author, that make them eligible for invocation as a protagonist or antagonist as the case may be. Plato and Platonism can be championed for modern science, but it is a Platonism radically reconfigured by Whiteheads and Heisenbergs -- and the influence of such reconfigurations persists even when the demonstration of Platonism's relevance ostensibly returns to Plato's texts (or Plotinus', for Malin.) Conversely, Plato and Platonism can provide the opposite symbolic significance when

Niels Bohr, Judith Butler, and Foucault. Her framework of "agential realism" advances the thesis that "phenomena are the ontological inseparability of intra-acting agencies" (ibid., 206). Her starting point is her account of the manner in which a quantum system under examination and its measuring apparatus (including the human observer) are all inseparably interrelated, and that matter itself emerges from this interrelation -- she calls these interrelations that produce phenomena "material-discursive apparatuses" (ibid.) Since the act of measurement and that which is measured are all actually bound up in their actual coming-to-being, Barad treats ontological, epistemological and ethical concerns as all part of the same inquiry -- her theory is "ethico-onto-epistemological" (ibid., 185). I mention it at length because, while her view is in many respects not dissimilar to Whitehead's, but draws on different traditions in presenting it, and represents the traditions on which Whitehead draws as inimical to it.
appropriated by a differently disposed interpreter (e.g. Schrödinger.)

In the concluding remarks which follow this chapter, a final summative account can now be made of these competing Plato's -- their extraction and their employment in modern science, and in the other domains examined in this study.
This ambiguities reached in the discussion of Plato in modern science return us to the theme of the ambiguity coursing through Platonism, an ambiguity which is as palpable as anywhere in the *Timaeus* -- is Plato ultimately a figure who fitly symbolizes the ideological ethos of a transcendent idealism, or the harbinger of a now more than ever scientifically substantiated vision of worldly dynamism, a world whose ultimate importance is in becoming and difference, whose patterns consist in and emerge from a living process? Or both?

Whitehead's answer seemed to be "both", or that Plato had in mind one or the other at different times, and had the charming fastidiousness never to definitively pick either. He attests to the presence and modern applicability of the latter, "dynamic" Plato, but does not fail to also attest to its inconsistency. Whitehead's own readers have not always emphasized this bivalency – a good deal of his descendants in Whiteheadian Process philosophy and its offshoots concern themselves with maintaining Plato's relevance. Yet, any subsect of Process thought that insists on preserving Plato's presence in it "for its own sake" is missing the point of Whitehead's brand of Platonism: ultimately for Whitehead, the virtue of looking back to Plato is supposed to be that it yields novel configurations of age-old ideas; the point is not that Plato's presence be itself systematized within the Process tradition. Even Process thought, whose metaphysical aesthetic consists in fluidity and limitless novelty, is susceptible to dogmatism and conservatism of taste.

Any system of thought that would invoke Plato must be sensitive to the fact that the name Plato, and the term Platonism, are loaded words, and that their invocation involves diverse associations, judgments and assumptions. But this sensitivity should correlate with a willingness to augment its associations. It is in fact the surprise that I felt, on encountering Whitehead, that someone *could* understand Plato in this unforeseen way, and pursue it to such conclusions, that
motivated this dissertation. -- I would not say that as a result of writing it I have become a confirmed Process philosopher nor even a Platonist, but I would say that with this encounter as a part of my past, I cannot imagine returning to an understanding of Plato that excludes the possibility of reading him the "Process" way -- Plato is "both" Plato's for me now; my text of the *Timaeus* has been indelibly marked by Whitehead's footnote.

In a general sense then, though this would hardly be a qualification unique to Whitehead, the only definitively Whiteheadian Platonism consists in this principle of being tolerant of Plato's ambiguity, and cognizant that that very ambiguity can be productive. Though, as has been seen, his earlier Platonic preoccupations (in *Process and Reality*, *Adventures of Ideas*) are full of direct conceptual borrowing, deliberate renovation and ideological sympathy, as his career progresses these points of emphasis in some degree dissolve. But Plato does not disappear from his discourse, for what is left is the refrain praising his inexhaustible suggestiveness.

Whitehead's own reception is characterized, by virtue of his pervasive incorporations of Plato, by the remnants of a Platonism that perpetuates the very ambiguous array of interpretations that have existed since the time Plato wrote. Quite often where Whitehead goes, where and by whomever he is engaged, the specter of Plato, for better or worse, relevant or not, clearly understood or not, follows. In many ways the question of the value or relevance of Plato in those encounters depends ultimately on the interpreter, on their own disposition and sense of relationship to Plato -- their convictions, prior prejudices and associations. The significance of this for Whitehead's legacy has been seen in the somewhat retarded acceptance of his thought outside of its theological applications, which I have argued results in some degree from the theistic associations that historically surround Plato and Platonism. But, the positive significance of these developments for the general status of Plato in the modern world is that as Whitehead's
thought comes into greater favor, in the contexts of the physical sciences, and in the diversifying applications and appeal of Process philosophy in both the specific and the general sense of that term, Plato's legacy evolves as well, and grows out of the strictures of association that have at times characterized it.

In the end this fits happily with Whitehead's own reading -- that ultimately Plato's greatest continued significance is as a perennially relevant well-spring of ideas, and as a model not of any particular brand of Idealism, whether Subjective or Objective, or of Ontolatry or Totalitarianism, but of free and creative speculation, -- the genesis of big ideas on their incipient historical "adventures." For Whitehead, this ideological genesis is but a macro-level iteration of the genesis of actuality itself in the free, subjective experience of actual entities in the process of becoming. As these actual entities accept and express forms of relation that are eternal, yet in each iteration they are uniquely substantiated in each new occasion, so Whitehead's reading of Plato, like any renewed reading and re-expression, is an adventure into novel reception from the springboard of a complex history of readings, beckoned into an increasingly complex future.
GLOSSARY OF WHITEHEADIAN TERMINOLOGY

There is no shortage of idiosyncratic technical terms in Whitehead's writing, and throughout this study it's been necessary to employ them liberally, though I've tried to consistently reiterate their meanings throughout. Hopefully this glossary will be serviceable for instances where the context of the discussion does not allow for elaborate re-explanation *in mediis rebus*. There are more or less extensive discussions of all these items throughout the study, especially in the first chapter, and so I have mainly aimed here for brevity and straightforwardness. But since Whitehead invented or appropriated these terms in the first place to express things that required him whole books to explain, those qualities are purchased at the price of considerable oversimplification. This little glossary is much indebted to Sherburne's *A Key to Whitehead's Process and Reality*.

**actual entity** - *Actual entities* are "the final real things of which the world is made up."⁵⁹² In this way they are like atoms, but importantly they are *immaterial* -- they are not bits of "stuff", but "units of process"⁵⁹³ or "drops of experience."⁵⁹⁴ The state of existence of each of these consists in its relation to all the other actual entities in the universe -- they exist by interrelating with one another. And so they can also be called *actual occasions* -- they are atomic "happenings." -- They are *atomic* in the etymological sense, but not isolated. A good example is a subatomic particle. **God** is also an actual entity.⁵⁹⁵ They are aggregated together in complex systems called **societies** or **nexus**.

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⁵⁹⁵ Technically God is the only actual *entity* that is not also an actual *occasion*, since Whitehead uses the latter term to refer to actual entities occupying a specific space-time in cosmic process, and God is neither temporal nor spatial (cf. Sherburne, *A Key to Process and Reality*, 207).
actual occasion - see actual entity

concretion - Concretion, also termed conscrescence, refers to the actualizing process of interrelation and mutual feeling that constitutes actual entities, and their aggregation into complex societies. -- All actualities are constituted by this literal "growing-together."

contingent [nature of God] - see God and dipolarity

cosmic epoch - Cosmic epoch refers to a given juncture of cosmic evolution, at which certain natural laws are prevailing, which entails the predominance of certain eternal objects in that epoch. It is analogous and related to the terminology of modern evolutionary cosmology (e.g. the "quark" epoch, the "hadron" epoch, or the "habitable" epoch which we are currently enjoying.)

creativity - Creativity is an ultimate principle in Whitehead's system -- it is the raw and total "ongoingness"

596 of the universe, its driving force of continuous process and novelty. It is the undifferentiated energy which is limited and given coherence by specific actual entities' expression of specific eternal objects. It is not in itself an actual entity, but refers, as a category, to the general and ultimate fact that actual entities are, and that the universe is and continues to be.

dipolarity - Dipolarity refers both to actual entities, and to the nature of God. Actual entities have both physical and mental "poles." -- The former refers to their being objective physical

596 Sherburne, A Key to Process and Reality, 219.
facts; the latter refers to their capacity to feel the rest of the universe and choose what forms of definiteness to express in their relation to it. Correspondingly, the nontemporal actual entity God has two "poles" or "natures" -- his primordial nature refers to his role as the provider of eternal objects that are offered to the world, while his contingent or consequent nature refers to his capacity to feel the world's expression of itself.

**eternal object** - *Eternal objects* are nontemporal possibilities of formal interrelation between actual entities. They are *forms* that actual entities "select" and express in actuality -- they are "Pure Potentials for the Specific Determination of Fact." They are also called *forms of definiteness*. They come in two kinds. -- The *objective* species includes, for example, numerical and geometrical relations; the *subjective* includes emotions, pleasures, pains, etc. In either the case they are the *forms* that actualities exhibit in the process of nature. They temporally transcend actual occasions, but they do not dwell in a far-away, sanitized realm of transcendental ideality -- rather, they only exist insofar as they are expressed in actual things. But since they are eternal and infinite, and not all may be being expressed in actuality in a given epoch of space-time, they are all ultimately housed in **God**, the one nontemporal actual entity.

**event** - *Event* is a prevalent term in the works that precede *Process and Reality*, whereupon it is usually replaced by *actual entity*. It is defined in opposition to an *object* or *eternal object*. -- Whereas the latter is some definite eternal form, an event is the instant of such objects' temporal passage through the world. They are effectively equivalent with actual entities because actual

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entities are not material "things" but "happenings" of eternal objects in the passage of the world.

**extensive continuum** - The *extensive continuum* refers to the field of spatio-temporal extension within which *actual entities* experience and express their interrelations -- it is "that general relational element...whereby the actual entities experienced, and that unit experience itself, are united in the solidarity of one common world."\(^{599}\) It is not that the interrelations of actual entities occur *in* the extensive continuum, but that they comprise it in their interrelating. In a sense it is analogous to the "space-time" of modern science, and in another sense to the Platonic "Receptacle", as discussed.

**Fallacy of Misplaced Concreteness** - This *Fallacy* is the error of mistaking the abstract for the concrete; the import of this for Whitehead is that there is no such thing as simple spatial or temporal location. One should not think of "points" in space or time as concrete things, but rather think of space-time as the relational matrix of *objects*.\(^{600}\)

**form of definiteness** - *see eternal object*

**God** - *God* is an *actual entity*, but the only one that is nontemporal. That is to say, he is not an ultimate metaphysical principle that is external to the world, but a thing that is part of it, albeit eternally. He is that thing in which *eternal objects*, which are also nontemporal, dwell, and it is he who provides them to the world to give form to its process of becoming. He is "**dipolar**" -- he

\(^{600}\) See Whitehead, *Science and the Modern World*, 64, 72.
transcends the world of becoming insofar as he is nontemporal and contains the eternal objects, and yet he is part of the evolving world and changes along with it.

**Immanence, Law of** - The Law of Immanence or Immanent Law refers to the kind of worldview that imagines the laws of nature as emergent and evolutionary, springing from the relationships between the things and forces that are in the world; its contrary is the Law of Imposition or Imposed Law.\(^{601}\)

**Imposition, Law of** - The Law of Imposition or Imposed Law refers to the kind of worldview that imagines the laws of nature as stamped once and for all upon the world, after which the process of the world simply follows those laws mechanistically and deterministically; its contrary is the Law of Immanence or Immanent Law).\(^{602}\)

**Ingression** - Ingression is the process whereby eternal objects are received into actual entities. In Platonic terms, it is how forms become "present in" particular things -- hence, it is much akin to Platonic "participation."\(^{603}\) The word is constructed in analogy with the substantive adjective "ingredient" in order to illustrate the image of a form being in an actuality.

**mental pole** - see dipolarity

**mode of definiteness** - see eternal object


\(^{602}\)Ibid.

nexus - see society

object - see eternal object

pole - see dipolarity

Positivist School of Mere Description - This "School" is what Whitehead sets up as his intellectual antagonist in *Adventures of Ideas*. It refers generally to the school of thought that dismisses metaphysics as irrelevant and illegitimate, refuses to speculatively posit ultimate cosmological principles, and is content to simply describe the universe without making any real account of it. It represents the antithesis of his own project, and he laments that it has dominated Western thought since the advent of modern science up to his own moment.

prehension - Prehension refers to the means by which actual entities enter into relation with one another, and so with the universe as a whole. It is "comprehension" with the "com-" omitted, to evoke the sense in which this process is analogous to, and is the most primitive iteration of, what appears in much more complex form as consciousness. Thus prehension is a kind of non-cognitive mutual awareness (i.e., not the same as but related to "awareness" in the sense of human consciousness) that actual entities have of one another, on the basis of which they selectively receive an external object that actualizes their relation to the world in a particular way. In other words, it refers to the process of things in the world feeling and reacting to the

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604 The construction of the name, and the concept, is in some degree based on Leibniz’ "perception" and "apperception" on the part of monads (cf. Sherburne, *A Key to Process and Reality*, 236).
other things in the world, which leads to their expressing forms of relation with the world, and thus constituting the world.

**primordial [nature of God] - see dipolarity**

**society [of occasions] -** A society or nexus of actual occasions or actual entities is an aggregation of those microcosmic entities or occasions into a larger, complex macrocosm by virtue of the formal relations that inhere in it. In other words, it is a vast conglomeration of subatomic, atomic and molecular events that result in any number of physical things — rocks, trees, goldfish, hedgehogs, humans, humpback whales. The point of calling these things societies or nexus is to discourage us from thinking of macrocosmic things as finite, individual entities possessing finite, individual essences — the term society on the other hand illustrates that we ourselves, and all other macrocosmic physical things, are the continuously evolving products of the vast collaborations practiced by the atomic entities that comprise us. Societies endure, howsofar as they endure, as long as that collaboration is continuously renewed.

**valuation -** Valuation is the process whereby actual entities select eternal objects to express in their actualization. In prehension atomic entities feel the rest of the world, and then in valuation they choose how to relate to it by selecting some form of relation from the storehouse of infinite relational possibilities. Everything in the world is relevant to everything else in the world, but not equally relevant. Valuation refers to an entity's process of orienting itself toward all those other things in a gradated order of relevance, with the result that it settles on a certain form of relation to them. A single quark, for example, is related to all the universe, but proportionately more
related to the other two quarks in collaboration with which it comprises a proton. It orients itself in reference to these most relevant relations, which it expresses in the form of a certain formal relationship to those fellow entities (quarks for instance have certain complementary "flavors" and "spins"). **God's** role in this process of *valuation* is to offer possibilities of relation that encourage maximal systemic complexity and harmony of parts.
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At the time of this writing, I live in New York City; I’m originally from Snohomish, Washington.

In addition to these academic exertions, I occupy myself by making poetry and music, performing under the moniker Sir Kn8, and in the duo Killin H8. Come see a show and afterward we can discuss Plato, Whitehead and whatever else.