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Western Analytic Metaphysics Reduces to a Philosophy of Brahman*

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ABSTRACT

I will first discuss that the descriptions of reality given to us by Western analytical metaphysicians are ultimately given in terms of mereological and topological metaphysics: the nature of reality (allegedly) consists of interrelated parts and wholes, as also interrelated pieces of space and interrelated pieces of matter. These relations (allegedly) give rise to the structure of and to the differentiation of objects in nature. I shall then offer novel arguments for the impossibility of any sort of topological and mereological interconnections for what contemporary Western analytic metaphysicians call 'mereological nihilism', and for what could be called 'topological nihilism'. There are no parts and wholes, and there are no interconnected pieces of space or interconnected pieces of matter. I will prove so by stating novel arguments for the thesis that if any two entities located in space are not exactly collocated in space (located at identical spatial locations or regions), or if any pieces of space are not identical, then the spatially located items and the pieces of space cannot be interrelated in any way. Mereological nihilism and topological nihilism lead to the position that—contrary to the reality presented to phenomenal consciousness—reality is, in fact, partless, structureless, and devoid of any internal differentiation or distinctions, and only one thing can exist. If my reasoning is correct, Western analytic metaphysicians have not offered a logically coherent theory of reality that describes the parts and wholes or any interconnections between entities in nature. Since reality is devoid of any mereological or topological connections, the best theory that

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describes reality would be one where reality is structureless, and where reality is one, and contains no distinctions within it. Western analytic metaphysicians call such a position 'blob theory'. I shall argue that the partless blob apparently can only be self-conscious, in addition to being structureless and devoid of inner differentiation. Lastly, I will discuss that the structureless, partless, self-conscious blob is no different from the way the Brahman is described. This would mean that, due to the failure of Western analytic metaphysics, the best theory of reality we would have is the philosophy of the Brahman.

1. INTRODUCTION

The purpose of this paper is to put forward novel arguments for the thesis that the nature of reality, as described by Western analytic metaphysicians,[1] reduces to a philosophy of Brahman. In order to do so, in sections 6 and 7, I offer novel arguments for the position that, due to a hitherto unnoticed problem, the account of reality given to us by Western analytic metaphysicians reduces to what they call *mereological nihilism*: the position that parts and wholes *do not exist*. Western analytic metaphysicians allege that their metaphysics is about a coherent *mereological* reality: a reality ultimately based on the existence of parts and wholes. Few things could be more fundamental to Western analytic metaphysics than its mereological nature. But if my reasoning in sections 6 and 7 is correct, parts and wholes are impossible regardless of how obvious their existence might seem to be, and regardless of what one might believe reality is like when following the account of reality (supposedly) known by one's empirical life. If my reasoning is correct, seemingly commonsensical states of affairs such as a mane being a part of a lion, a mountaintop being part of a mountain, or a quark being part of a proton, are impossible. If it could be proved that parts and wholes do not exist, then there is only one thing: reality is partless, reality is one, and reality does not contain any differentiated objects or any structures within it. The position in contemporary Western analytic metaphysics, where reality is considered to be structureless, is called 'blob theory'.[2] Mereological nihilism and blob theory are quite like the philosophy of Brahman. Phillips writes: '... Brahman ... [is] the Absolute and Unity beyond all appearance of differentiation. Brahman is the sole reality and the single self ... The reality of Brahman entails the impossibility of coherently conceiving a diverse world.'[3] If my arguments below are correct, due to hitherto unnoticed incoherencies involved in the mereological nature of Western analytic metaphysics that I will point out in sections 6 and 7, the account of reality given to us by Western analytic metaphysicians must be *replaced* by a theory that is logically coherent. Such a theory describes reality as being devoid of parts and wholes, and thus monistic, unstructured, and—as I will argue in section 8—self-conscious, this is a description of *Brahman*, and for that reason, if my reasoning in this paper is correct—due to fatal problems to do with Western analytic metaphysics—Western analytic metaphysics reduces to, and diminishes to, a philosophy of Brahman.[4]

Western analytic metaphysicians hold that parts and wholes are obviously a primary aspect of reality, which give reality a coherent structure. All contemporary Western analytic metaphysical theories (except mereological nihilism and the blob theory) depend on the existence of parts and wholes. One can ask: What *is* it about a part that *makes* it a part? Is there something special about a part that makes it a part? The only way philosophers have been able to explain why or how a part is, in fact, a part is by inventing the notion of *metaphysical relations* that stand between a part and the whole—relations that are believed to be real constituents of nature, independent of any human mind, out in phenomenal reality.[5] These relations ultimately give rise to differentiation of parts and wholes and further promote structure in nature, according to the account of reality given to us by Western analytic metaphysicians. But in sections 6 and 7 of this paper, I will give novel arguments that show that:

1. If any two entities that occupy space are not exactly collocated in space (if they do not occupy an identical spatial location), then they cannot be connected to one another by any sort of relation or connection; and
2. If two spatial regions or spatial locations are not identical, they cannot share any sorts of relations.

If the points 1 and 2 could be argued for, mereological relations would not exist, for the reasons discussed in this paragraph. In the case

of, for example, a *part* of a lion, such as its heart, the *part* of the lion is located at a location in space that is not identical to the location of the *whole* lion, and an interconnection between the part (heart) and whole (entire lion) is an interconnection between non-collocated spatial entities. For this reason, mereological relations are relations that (allegedly) connect non-collocated pieces of matter, as described in point 1. Similar reasoning will be given below for non-identical pieces of space, as described in 2. If 1 and 2 can be successfully argued for, and if mereological nihilism, blob theory and the philosophy of Brahman each are about a reality that is devoid of inner differentiation, and that is monistic, structureless, distinctionless, eternal and timeless, and, I will argue, self-conscious—then Western analytic metaphysics reduces to a philosophy of Brahman.

Interestingly, points 1 and 2 above, if vindicated, would also show that topological relations do not exist.[6] Descriptions of reality given to us by Western analytic metaphysicians are ultimately given in terms of mereological (part-whole) *and* topological (extension, manifold) metaphysics; the nature of reality (allegedly) consists of interrelated parts and wholes, and interconnected pieces of space or matter. Although this paper is primarily about mereological relations, since topological relations are *also* ultimately behind Western analytic metaphysicians' descriptions of reality, and since my arguments against mereological relations also show that topological relations do not exist, I will also discuss in this paper that topological relations do not exist either, which could give further evidence of serious problems in relation to Western analytic metaphysics (and perhaps also for modern physicists).[7]

The belief that there are parts and wholes is so natural to the phenomenal consciousness that philosophers typically maintain that the existence of, and the coherence of, the relations that give rise to parts and wholes are obvious to the point of being unquestionable. Simons writes:

> The most obvious formal properties of the part–relation are its transitivity and asymmetry, from which follow its irreflexivity ... These principles are partly constitutive of the meaning of 'part', which means that anyone who seriously disagrees with them has failed to understand the word.[8]

But if my reasoning in sections 6 and 7 is correct, regardless of how obvious it may seem (to the phenomenal consciousness) that parts and wholes exist (and that there are relationships of part to whole), *part-whole relations do not exist*, since I will show that the seemingly straightforward account of mereological relations given to us by Western analytic metaphysicians involve contradictions.

Since Western analytic metaphysicians have only been able to describe the mereological structure of reality by way of part-whole *relations*, if it could be shown that these relations involve contradictions, whereby it was revealed that reality is devoid of these relations, then the best account of reality with us would be one where reality is without parts and without structure. This is because the theories that describe reality with structure, with distinct entities, and with parts and wholes within it, would fail to be logically coherent, and a logically coherent theory of reality as being a partless reality would be needed to replace the logically incoherent theories. If my reasoning is correct, the description of structure in reality invented by Western analytic metaphysicians is a description of an illusion, and the (topological and mereological) theories of Western analytic metaphysics do not describe reality. For these reasons, the accounts of reality found in Western analytic metaphysics are erroneous and absurd models of reality, and they can only be replaced by a consistent theory of reality, which I will show is a philosophy of Brahman.

Some might object that the mere nonexistence of part-whole relations does not lead to the position that there is only one thing. For example, in the case of two atoms that are not at the same place, since the atoms are not parts of the another, it might appear that regardless of whether or not it can be argued that mereological relations do not exist, the atoms are *distinct* items in reality, and for that reason reality cannot be one. But even though the atoms are not parts of one another, I do not know of one philosopher (or physicist) who would assert that they are *not constituents of* the universe they exist in, and if it could be shown that there really are no mereological relations, then two *distinct* atoms cannot exist, since the universe could not have parts, such as the two distinct atoms. On the standard account of non-Brahmanic reality, the atoms would each by *parts* of the universe, and so if it could be shown

that there are no parts and wholes, such *distinct* atoms could not exist, and there could only be one thing.

In section 2, I will discuss the manner in which Western analytic metaphysicians ubiquitously assume the existence of and the coherence of part-whole relations. In section 3, I shall discuss that given my arguments in section 6 and 7 proving that relations between non-identical pieces of space and non-collocated pieces of matter do not exist (points 1 and 2 above), only a mereological nihilism that is *Brahmanic* survives my attacks in sections 6 and 7 below, and any non-Brahmanic account of mereological nihilism would be incorrect. Section 4 deals with the standard accounts of space and matter given to us by Western analytic metaphysicians and how the relations described in points 1 and 2 above are ultimately behind these accounts. Section 5 discusses various issues vis-à-vis mereological relations. In sections 6 and 7, I will show that relations between non-identical spatial locations, non-identical regions of space, and between non-collocated material objects do not exist. This task consists of two parts and of several arguments that are new to the vast literature on relations. I will first show in section 6 that mereological and topological relations cannot be physical entities. After that, in section 7, I will prove that mereological and topological relations cannot be non-physical entities (as I will discuss, it is standard for philosophers and mathematicians to assert that relations are not physical parts of the physical universe). If my reasoning in sections 6 and 7 is correct, mereological and topological relations *cannot be physical or non-physical*, which indicates that they cannot exist at all since this leads to a logical contradiction. Lastly, in section 8, I argue that the one thing that exists apparently can only be self-conscious.[9]

The problems with properties and particulars (relations are properties that are shared by particulars) are widely documented, and are even readily admitted by Western analytic metaphysicians. But Western analytic metaphysicians typically assume that the problems will be solved some time in the future, and the problems are not fatal for Western analytic metaphysics. Since it is standard for Western analytic metaphysicians to believe that universals and particulars *must* exist, such metaphysicians believe that the well-known and widely discussed problems to do with universals and particulars do not indicate that the

descriptions of universals and particulars are incorrect, or that universals and particulars do not exist. An example of the way in which Western analytic metaphysicians commonly overlook troubles in their theories can be illustrated if we look at the problem of non-physical minds interacting with physical brains. This is a problem often associated with Descartes, but it is also a problem which Descartes and nobody following him found a solution to, but which at any rate is a widely accepted theory of mind and is widely held to be an accurate theory even though it appears very problematic, with no known solution to the problems it involves. In this paper I, however, will not merely assume—as Western analytic metaphysicians commonly do—that problems with properties and particulars are not significant enough to throw out the theories of properties and particulars. Rather, I will hold that the problems are evidence that universals and particulars *do not exist*. The problems with universals and particulars that I point out are all hitherto undiscussed problems, and they are specifically intended to reveal *fatal* problems for Western analytic metaphysics. They are not minor problems that can merely be put aside as Western metaphysicians have chosen to do for millennia. Rather, they apparently show that Western analytic metaphysics is in error, and a relationless theory of reality—where reality is entirely unstructured—appears to be that the coherent theory needed to replace Western analytic metaphysics. I will show that the replacement theory is a philosophy of Brahman, since the philosophy of Brahman does not involve the incoherencies of Western analytic metaphysics.

2. THE ASSUMED COHERENCE OF MEREOLOGICAL RELATIONS

In this section, I will discuss how Western analytic metaphysicians ubiquitously assume that there are parts and wholes and mereological relations, and almost no Western analytic metaphysicians question their existence.

Although mereological relations are referred to in many areas such as physics, mathematics, and ordinary language, the only group that explores the *specific nature* of mereological relations are the analytic metaphysicians. Many groups, including mathematicians and physicists, discuss and make enormous use of relations when constructing their

theories, but they do not explore the specific nature of relations; instead, they merely assert that, for example, *objects x and y are related by relation R*, and no further exploration of the relation in question is carried out. This is similar to the way people commonly refer to relations in everyday speech, where statements such as, 'He is *to the left* of her', 'The hummingbird is *in* the garden', 'The sun is *behind* the cloud', are unthinkingly uttered, but where it is very rare to find a person wondering: What is the *nature* of these relations, and what are the qualities of these relations, *behind*, *in* and *to the left*?

Part-whole relations are ubiquitously assumed by contemporary Western analytic metaphysicians to be coherent and give rise to the order and structure of time, space, ordinary physical objects, and the universe as a whole. There is nearly no discussion in the contemporary Western analytic metaphysical literature over whether or not the part-whole relations exist. The only philosophers I am aware of who apparently deny that *all* parts and wholes exist (and thus deny the existence of any part-whole relations) are Rosen and Dorr.[10] The discussion of the relations found in contemporary Western analytic metaphysics consists of discussing just a select few issues about what the relations are like (are they platonistic, physicalistic, etc.), rather than whether or not they actually exist. Nature's structure is described in terms of part-whole relations, and the Western analytic metaphysician believes that instantiations of the relation are all around, and give rise to the universe; but any discussion of the *existence or nonexistence of the relation itself* is basically absent from analytic metaphysical literature. Instead, it is assumed that no discussion is needed, given the (alleged) obviousness and pervasiveness of the instantiations of the relation. Consider what Simons, who is a leading philosopher on mereology, writes at the beginning of his widely discussed book *Parts*:

> The most basic and most intuitive mereological concept, which gives the subject its name, is that of the relation of part to whole. Examples of this relation are so legion, and it is so basic to our conceptual scheme, that it seems almost superfluous to offer examples ...[11]

Given the (alleged) obviousness of mereological relations, Western analytic metaphysicians typically assert that mereological nihilism

cannot be a correct theory. For example, van Inwagen, a major Western analytic metaphysician, asserts without argument that mereological nihilism is obviously incorrect:

> Any answer to the SCQ ['Special Composition Question'[12]] must be either *Moderate* or *Extreme*. There are exactly two extreme answers: *Universalism* and *Nihilism*. According to the former, composition [of physical objects out of parts] 'always' happens; it happens, so to speak, automatically. Universalism holds that for any things (no two of which have a common part) there is something that they compose. According to the latter, composition never happens: two or more things never compose or add up to anything. (Nihilism is equivalent to the thesis that nothing has proper parts.)
>
> The extreme answers are erroneous. Nihilism is wrong because we are living, thinking animals and composite objects, therefore, exist. Universalism is wrong because, if it is right, then ten years ago I was a cloud of atoms spread throughout the biosphere; but ten years ago, I was a living animal.[13]

This is the typical position taken on mereological nihilism, where it is just assumed without argumentation to be incorrect. Consider what Hudson writes:

> Nihilism [about composition of physical objects and about reality] ... [is] roughly, the view that there are no material objects with proper parts. Nihilism is usually mentioned (as it will be here) only to be more or less immediately rejected. It earns a place among the popularly discussed theories primarily because it lies at one of the extremes along the continuum of answers ... [I]f we maintain our materialist presuppositions, Nihilism is a non-starter.[14]

I will, however, argue in sections 6 and 7 that no matter how obvious it might appear that part-whole relations exist, and regardless of the fact that part-whole relations are ubiquitously assumed to exist by Western analytic metaphysicians, part-whole relations are *contradictory*, and thus cannot exist.

The mereological structure of nature comes from a common sense description of nature. The Western analytic metaphysician is typically interested in describing the mereological reality given to her or his

phenomenal consciousness, which is very often labelled 'common sense reality'. There is a strong divergence between most Western analytic metaphysicians and philosophers of Brahman on this issue. Woodhouse writes:

> Hindu religious and philosophical thought revolves around the basic metaphysical thesis that *Atman*, the individual self, is identical with Brahman, the universal self in which all things are sustained. With a few notable exceptions, most Western philosophers have found this thesis too far removed from common sense to consider it seriously.[15]

The Western analytic metaphysician typically has enormous trust in the common sense mereological reality, and the philosopher of Brahman has no trust in it (the philosopher of Brahman will tell you: 'if does not exist', or 'it is an illusion', or 'it is mere appearance, not reality'). The contemporary Western analytic metaphysician most often holds the viewpoint that the mereological reality of *common sense* exists, the philosopher of Brahman does not. The contemporary Western analytic metaphysician tries to explain the common sense phenomenal world. The philosophers of Brahman typically try to explain its contradictoriness and nonexistence. This paper is about the latter position, where I will argue that the contemporary Western analytic metaphysicians' best attempts to describe the common sense structured reality of parts and wholes lead to contradiction.

3. MEREOLOGICAL NIHILISM AND UNCONNECTED ATOMS

If there are no interconnections between non-identical pieces of space or non-collocated pieces of matter, as I will argue in sections 6 and 7, some may, however, assert that there still can be distinct unconnected atoms. This nihilistic philosophic position is similar to the one held by, for example, Rosen and Dorr: there are only atoms, and there are no real entities, no mereological wholes, over-and-above atoms.[16] And this is apparently the philosophical position developed by the Greek atomist Democritus, and which is held by some physicists, such as Stenger, who refers to his position as a 'particle reality'.[17] If this position were correct, some might hold that the nonexistence of relations between

pieces of space and between pieces of matter would not lead to a philosophy of Brahman, since there might still be distinct *unconnected* atoms that compose reality. But I will argue in this subsection that if there are no *mereological* relations, as I will show there are none in sections 6 and 7, it can be shown that Western analytic metaphysics reduces to a philosophy of Brahman: if there are no mereological relations, it can be shown that there are no *distinct* unconnected atoms; rather, there is only *one* atom, and thus a philosophy of Brahman can be shown to be the best theory of reality we have.

I will next discuss that that if there are no mereological relations—as I will argue in sections 6 and 7—then there cannot be *distinct* unconnected atoms. Imagine that reality is somehow composed of unconnected distinct atoms. If reality is *made up of* these atoms, how can't the atoms be *parts* of reality? If one item *makes up* another, this appears to be a way of expressing that one item is a *part* of another. But if, as I discussed earlier in this article, there is no other way to describe parthood except with mereological relations, and if it can be shown that there are no such relations, as I will show in sections 6 and 7, then a reality with distinct unconnected atoms is impossible, since the distinct atoms appear to be *parts* of reality. The reductio of this section goes as follows:

1. The only way Western analytic metaphysicians have come to describe how or why there are parts and wholes is by way of mereological *relations.*
2. Reality is composed of unconnected atoms.
3. 'Composed' in the previous sentence is a denotation of a mereological relation.
4. There are no relations between non-collocated pieces of matter and non-identical pieces of space (conclusions of sections 6 and 7 below).
5. There are no mereological relations (follows from the previous sentence).
6. There cannot be any items that compose any other items.
7. Therefore, reality is not unconnected atoms.[18]

If mereological relations do not exist, a mereological nihilist reality where there are only *unconnected* atoms appears impossible. Rather, if

there are no mereological relations, there apparently can only be *one* thing which has no parts. Such a theory of reality is much like the theory of reality invented by Parmenides. A Parmenidean reality has been compared to Brahman by some,[19] and there is good reason for the comparison since a Parmenidean reality and Brahman are both monistic, unchanging, uncreated, and eternal. But Parmenidean reality is not entirely Brahmanic, since unlike Brahman, Parmenidean reality is not a reality that is self-conscious.

4. SPACE AND MATTER

In this section, I will discuss the standard accounts of space and matter that are given to us by Western analytic metaphysicians. It is relevant to briefly point out the manner in which relations of the sort described in points 1 and 2 in section 1 are used by Western analytic metaphysicians (and modern physicists[20]) before going into the arguments for the nonexistence of these relations in sections 6 and 7. Although accounts vary, the accounts of nature given to us by Western analytic philosophers are typically ultimately given in terms of one of the following:

(i) Matter and space ultimately consist of *interconnected* networks of spatial locations, and *interconnected* networks of basic (atomic) material building blocks (true philosophic atoms).

(ii) Matter and space consist of *interconnected* spatial regions, and *interconnected* chunks of matter, each of which are infinitely divisible. There are no atomic building blocks.

In sections 6 and 7, I will argue that (i) and (ii) are each impossible due to serious problems involved with the *relations* referred to in (i) and (ii). In this subsection, I will first discuss (i), followed by (ii). In section 8 of this paper, I will discuss a relatively new theory called *mereotopology*, which has been developed as an attempt to avoid problems to do with topological and mereological relations, but I will argue that mereotopology is fatally flawed.

Basic building blocks of space or matter are either point-sized, or they have a magnitude. I will first discuss *discrete* space and matter, where the atomic building blocks of space or matter have a *non-zero* size (such as the size of a Planck length or a Planck cell[21]). On this

account, a relation between or among non-collocated atomic building blocks of matter (an atom that occupies space) is a relation between or among *two or more* non-identical atomic building blocks of space or matter (where, in the case of space, the non-identical atomic building blocks of space are different spatial *locations*). One of the first philosophers to discuss the discrete model of space or matter was the famous mathematician Reimann.

> If, in a case of a discrete manifold, the basis for its metrical determination is contained in the very idea of this manifold, then for a continuous one it should come from without. The reality which lies at the basis of space, therefore, either constitutes a discrete manifold, or the basis of a metrical determination must be sought outside the manifold in the binding forces which act on it.[22]

(Many of my arguments in the sections 6 and 7 specifically attack relations that connect different spatial *locations*, but I will also criticize *relationalist* theories, according to which space does not exist, only matter exists.)

If space or matter is not discrete but continuous, the atoms of matter or space are point-sized (they do not have a spatial magnitude). To my knowledge, this is the most widely accepted topology among philosophers.[23] Cohn and Varzi call it 'a normal space':

> Another important factor is the kind of topological space one considers. In particular, one may draw a line between theories that take space to be dense (*a normal space*) and those that do not. Most accounts in the literature are of the first kind, but there are exceptions. In the following we shall remain neutral on this issue and work with arbitrary topological spaces.[24] (Emphasis added)

Next, I will discuss the position that there are no atomic building blocks of space or matter, which is point (ii) above. The anti-atomic theory has been called 'atomless gunk' by David Lewis,[25] and that is the name it often goes by in current debates. Not every philosopher is convinced that there is an atomic level of nature. In a recent article, Schafer argues that not only is the position that there is an atomic, fundamental level of nature *non* self-evidently true, but it is often *assumed* to be the correct position:

> So, the question of the evidence for fundamentality is best understood as the question: What is the evidence for mereological atoms? And here there is a *presupposition* that mereological atoms, if such exist, also comprise the ultimate supervenience base, that cast of the prime realizers, and subjects of the fundamental laws of nature.[26] (Emphasis added)

Gunky space and matter consist of pieces of space or matter that are composed of interconnected parts and wholes with no atomic level. According to *gunkism*, as it might be called, any physical object, or any topological region, is further reducible into more fundamental parts, where there are no point-sized atomic building blocks that are reached in the series of divisions.[27] According to gunkism, any material object or region of space can be described as an infinite series of divisions: a spatially extended material object, for example, can be divided into halves, where each half can be further divided into quarters, each quarter into eights, ad infinitum. Part-whole relations (allegedly) connect the parts of gunky object (where according to gunkism, it might be the case that the *whole* that the parts make up, call it whole_1, that is a relatum of the part-whole relation and is a part of another whole, call it whole_2, where whole_2 is a part of another whole, whole_3, ad infinitum). If the part-whole relations are relations between non-collocated pieces of matter or non-identical regions of space, then they are the sorts of relations I attack in sections 6 and 7. If space or matter is gunky, a 'gunky topology' of space involves part-whole relations between non-identical topological regions, and a 'gunky topology' of matter involves interrelated non-collocated entities.

5. PARTS, WHOLES, AND MEREOLOGICAL RELATIONS

I will use four examples of mereological and topological relations throughout this paper: the relations, *at a spatial distance from*, *quantum entanglement*,[28] *parthood*, and *topological connectivity*. Hereafter, I will refer to the relata (non-identical spaces or spatial locations, or non-collocated pieces of matter) that are connected by relations as p_1 and p_2. (In the example I give in the sections of this paper, I will occasionally need to refer to three relata, p_1, p_2, and p_3.) The examples

of p_1 and p_2 that I will typically use are quarks at a distance from one another, a quark that is part of a proton (p_1 = quark, p_2 = proton), two protons that are quantum entangled, and I will refer to p_1 and p_2 as non-identical atomic building blocks of space, or non-identical regions of space where one region is a part of another, such as when a region of space that is a cubic nanometer is a part of the universe ($p_1 = nm^3$, p_2 = universe). There is nothing special about why I choose these examples; any other examples of non-collocated pieces of matter, or non-identical spatial locations or pieces of space, could have been used.

I do not discuss the relation that an entity may have with itself (*loves oneself*, etc.). Also, I do not discuss relations between or among *collocated* spatial entities. I only discuss that if spatially located entities do not occupy the very same topological region or basic building blocks of space, or if any spatial regions or atomic building blocks of space are non-identical, such objects, regions, or atomic building blocks of space cannot not share any relations.

I will also argue against *monadic relatedness* possessed by any composite material object, any spatial region, or any atomic building block of space. Campbell discusses this position: 'Monadists propose to replace the relational *aRb* with two monadic propositions, F*a* and G*b*, which attribute qualities of *a* and *b* individually'.[29] Monadic relatedness is given in terms of monadic facts: p_1's relatedness to p_2, where *relatedness* is a monadic property of p_1, not a shared polyadic property co-exemplified with p_2. Monadic relatedness does not exist spatially *between* p_1 and p_2. And p_1's non-platonistic monadic property, *related to* p_2, is not located where p_2 is, but only where p_1 is. I will mainly discuss relations, and not monadic relatedness, in this paper, since monadic relatedness has been discussed far less in the literature since Russell's *Principles of Mathematics*, where relations were argued to be irreducible. (One philosopher who does discuss monadic relatedness at length is Keith Campbell.) I will, however, refer to both relations and monadic relatedness at various places in the chapter, and at specific points I will mention how my argumentation applies to monadic relatedness. But I will mainly mention relations hereafter, only infrequently mentioning monadic relatedness.

I will attack theories of noncomplex relations, and theories of complex relations. Complex relations have parts: they are relations that are conjunctions of, or that are structures of, simpler subrelations. Relations are either (i) noncomplex relations that are fundamental and irreducible; or they are (ii) complex relations that are non-fundamental and reducible.[30] Noncomplex relations make up complex relations. Noncomplex relations are typically held to be primitive and unanalyzable,[31] but a certain degree of analysis of them does exist in literature, such as when relations are discussed as being platonistic (outside of space), physicalistic (not outside of space), and so on. But in general, there is very little analysis in the literature of the *precise details* of, and the *specific nature* of, relations that goes further than this. Some thinkers such as D.H. Mellor[32] deny the fact that there are any complex properties. If he was correct, this would not matter to my reasoning in this paper, since I am also going to argue that there are none. I am considering that there are complex relations in this section in order to show that complex relations do not exist.

I will refer to relations as 'entities', where I am using the word 'entity' in the broadest possible sense, and in the way that many other metaphysicians refer to n-adic properties as 'entities', such as Esfeld,[33] Love,[34] Moreland,[35] and many others. Also, there is a passage from Reinhardt Grossmann at the very start of the section below about problems in platonistic relations (alleged to exist) between or among p_1 and p_2 that involves Grossmann referring to 'abstract qualities' and 'entities'.[36]

Theories of relations discussed by Western analytic metaphysicians can be divided into two camps: (i) platonistic theories of relations, where relations are considered to be outside of space; and (ii) anti-platonistic theories of relations, where relation are not considered to be outside of space. Quentin Smith writes:

> For a large number of philosophers, platonic realism is a preposterous theory they cannot imagine believing. But it is also true that a large number of philosophers find anti-platonism, especially in its nominalist version, a preposterous theory they cannot imagine believing. (Anti-platonism includes Aristotelian realism, conceptualism, physicalism, trope theory and the many varieties of nominalism.) The debate between platonists and anti-platonists has been going on for over two thousand years without any sign of a 'knock-down argument' or a consensus of opinion among philosophers in sight.[37]

In this paper, I will state that both positions are impossible regarding relations between non-collocated spatial objects and non-identical pieces of space; and for that reason, such relations do not exist at all. It is standard to consider platonistic relations as those which are *not* in nature, whereas non-platonistic relations are not outside of nature, as Loux discusses:

> What are the issues separating the Aristotelian realists from Platonists? ... Aristotelians typically tell us that to endorse Platonic realism is to deny that properties, kinds, and relations, need to be anchored in the spatiotemporal world. As they see it, the Platonist's universals are ontological 'free floaters' with existence conditions that are independent of the concrete world of space and time. But to adopt this conception of universals, Aristotelians insist, is to embrace a two-worlds' ontology ... On this view, we have a radical bifurcation of reality, with universals and concrete particulars occupying separate and unrelated realms ... [T]here [is a] connection between spatiotemporal objects and beings completely outside of space and time.[38]

In sections 6 and 7 below, I will argue that there is a specific problem to do with any variety of the relation between or among p_1 and p_2: they apparently cannot be spatial, S, (relations that are spatial, or that are located in space, I will call *non-platonistic* relations[39]) nor aspatial, ~S (relations that are aspatial, or that are not located in space, I will call *platonistic* relations). If the relations between or among p_1 and p_2 are neither non-platonistic (S) nor platonistic (~S), they are apparently contradictory, since they would be describable as ~(S v ~S), which translates to ~S ^ S. In this section, I discuss hitherto unnoticed problems to do with non-platonistic relations (relations that are not outside of space, S). If my reasoning is correct, only *platonistic* relations (abstract relations,[40] relations that are outside of nature, outside of space, ~S) exit among p_1 and p_2. I then consider platonistic relations among p_1 and

p_2 in the next section, where I also come to serious problems when considering them, which lead to the position that relations between p_1 and p_2 and S ^ ~S. Before discussing the reason why relations between non-identical spaces and non-collocated material objects are S ^ ~S, I need to discuss a few issues to do with mereological relations.

5.1 Are there any Perfectly Collocated Parts and Wholes?

Before moving to my arguments for the nonexistence of relations between or among any parts and wholes of space or matter, and between to among any non-identical atomic building blocks of space or matter, I will discuss another issue. One might be tempted to hold that any arguments which attack relations between *non-collocated* spatial entities need not lead to all-out mereological nihilism, since there may be spatially extended and *exactly collocated* parts and wholes (if such mereological wholes are coherent). If this is the case, there would be some part-whole relations: part-whole relations between entities that are exactly collocated in space. I will next argue, however, that if there are no relations between *non-collocated* spatial entities, then even *perfectly collocated* entities *cannot* share part-whole relations, unless they are point-size mereolgoical wholes.

To argue this point, I will first need to consider any item that has a spatial magnitude, such as a lead ball. The lead ball has two halves. These halves, according to Western analytic metaphysicians, that are (allegedly) connected to the entirety of the lead ball by part-whole relations. Part-whole relations between non-collocated items do not exist—as I am going to argue in sections below—and the halves would not be connected. Now consider one of the halves. The quarters composing the half would not be connected to one another, if, as I will argue in sections below, part-whole relations do not exist. Considering one of the quarters of the lead ball, it is (allegedly) composed of two-eighths connected by a part-whole relation, but if there were no part-whole relations, then there could not be a connection holding together the eighths. Similar reasoning could be given for any spatial magnitude, and never could we find a spatial extension involving interconnected segments, if there are no part-whole relations between non-collocated spatial parts and wholes. Without such relations, there would be no

spatial magnitudes at all that are connected by part-whole relations, and each point of the lead ball could only be considered as *unconnected* to every other point of the lead ball. Even if spatially extended parts and wholes perfectly collocate, for reasons just given, the parts of the lead ball could only be considered as point-sized regions that are *unconnected* in any way from any other point-sized regions of the lead ball—if, that is, my arguments below are correct and there are no relations between non-collocated spatial entities.

(The reasoning of the previous paragraph does not prohibit point-sized parts, and wholes (i.e. collocated points), if there are any such mereological wholes.)

5.2 Pure Realism

The last issue I will discuss before getting to the arguments against non-platonistic relations has to do with *pure realism*, the position that property possession is *wholly aspatial*: polyadic property possession (relational property possession) cannot be discussed at all in spatial terms. Moreland discusses pure realism.

> Pure realists such as Grossmann hold on to a non-spatial ... view of exemplification. Redness is 'in' Socrates[41] in the sense that Socrates *has* or *exemplifies* redness within its very being. But neither redness nor the exemplification relation itself is spatial. Properties are not in the concrete particulars that have them ...[42]

Grossmann writes:

> I shall speak of *abstract things* (entities, existents) in general. An abstract thing is a thing which is neither temporal nor spatial. A concrete thing, on the other hand, is a thing which is temporal and/or spatial ... [P]roperties, as we assumed in the last section, are abstract things; they are not spatiotemporal. It follows that they do not belong to the universe. They are not part of the universe.[43]

Pure realism, to put it as Moreland does, involves properties and their exemplification relation[44] as being entirely outside of space. But many other platonists maintain that relations are indeed outside of space, but by the relation of *inherence* (also called *exemplification* or *instantiation*, depending on the specific philosopher and his/her position on property

possession), that connect an aspatial property to spatial particulars, aspatial relations *inhere* in space, and for the reason, platonistic property instantiation involves a physical aspect. Consider Jubien's passage about this issue:

> There are a number of different philosophical accounts of properties. Two very different kinds of account are of special interest to us here. According to one of these, properties are 'abstract' entities—they exist apart from and independently of their instances. Plato is famous for his detailed version of this position, and this more modern versions is often called Platonism ... A Platonist philosopher who holds that the concept of mass is simply the property of *having mass*, therefore, thinks that his concept is an abstract entity. It exists independently of any physical objects that happen to instantiate it, and also independently of anyone's mind or mental activity. Although the *instances* of the concept of mass are, of course, physical, the concept *itself* is not. It does not even occupy space time.[45]

Pure realist platonists hold that property possession is not describable at all in spatial terms. (Moreland: 'But neither redness nor the exemplification relation itself is spatial.') But other platonists, in opposition to pure realism, hold that while platonistic relations are indeed not in space, their *instantiations* are. On this second view, described above by Jubien, instances of aspatial relations are in space, due to the relation of *inherence*. If I understand Jubien's passage correctly, this position is apparently a platonistic position since properties are not in space, but is not a purely realist position since instantiations of aspatial properties are located in space. For these reasons, when we say 'x instantiates F', the *instantiation* of aspatial F is at least to some degree *physical*. According to pure realism, as described by Moreland, when we say 'x exemplifies F', the *exemplification* of aspatial F is *entirely non-physical*: it does not involve any spatial aspect whatsoever. The italicized words 'instantiation' and 'exemplification' denote the *linkage*, to use Loux's word,[46] between a property and a physical particular. But according to the platonistic position which is not the pure realist position, the linkage between property and particular in some way involves a *physical* aspect, whereas in pure realism, it does not do so. This is because in non-pure realist platonism, the instantiation of the property is physical.

Since a relation, if it is a platonistic relation, is entirely outside of space, in the case of pure realism or non-pure realism, the linkage of inherence between property and particular must in some way *cross realms* from the realm of the aspatial to the realm of the spatial.[47] I borrow the phrase 'realm crossing' from one of Armstrong's passages where he refers to pure realist and platonistic linkage as the 'instantiation relation' (but others might call it by different names) between or among spatially unlocated platonic universals and spatial particulars:

> Once you have uninstantiated universals you need somewhere to put them, a 'Platonic heaven', as philosophers often say. *They are not to be found in the ordinary world of space and time.* And since it seems that any instantiated universal might have been uninstantiated ... then if uninstantiated universals are in a Platonic heaven, it will be natural to place all universals in that heaven. The result is that we get two realms: the realm of universals and the realm of particulars, the latter being ordinary things in space and time ... Instantiation then becomes a very big deal: a relation between universals and particulars that *crosses realms*.[48] (Emphasis added)

Pure realists such as Grossman and Moreland hold that, in crossing realms, the inherence linkage never enters space: the inherence linkage is responsible for linking aspatial properties to spatial particulars, but it never becomes spatial in doing so. Non-pure realist platonists apparently hold that the inherence linkage does enter space (Jubien writes that property instances are *physical*). Non-pure realist platonists believe that platonistic property instantiation involves a physical aspect of some sort, but they typically do not discuss the nature of, or the coherence of, the *physicality* of the instance of a *non-physical* platonistic relation. Instead, it is standard for platonists who hold this position to merely tell us that *physical particulars have aspatial properties*, without describing how this can coherently be. An example of the way platonists typically pass over this critical issue is found in a passage from one of Lowe's recent books, where he merely tells us that aspatial platonistic

universals have spatial instances, but no further discussion follows to clarify the *specific details* of this account:

> Now, it is true that some philosophers hold that universals exist in space and time, being 'wholly present' where and when the entities exemplifying them exist [Lowe cites Armstrong, 1989] ... However, it seems plausible to claim that when the ball changes in shape and colour, *something* ceases to exist—and this could not be the universals' sphericity (of such-and-such radius) or redness (of such-and-such a hue), at least so long as other things exemplify those universals. What ceases to exist could only be the ball's particular sphericity or redness. So, modes are only concrete entities, they are concrete particulars. And, indeed, I would want to explain the ball's exemplification of the universal's sphericity and redness in terms of the ball's possessing modes which are particular instances of those universals. The ball itself does not instantiate those universals, but it 'exemplifies' them in virtue of possessing modes which do instantiate those universals ... So, whether or not one wants to say that universals themselves exist in space and time (have spatiotemporal location)—and I, for one, do not—it seems very plausible to say that there are particular qualities, or modes, which do exist in space and time and are consequently concrete entities. Anyway, that this is what I shall assume from now on. (I should emphasize, incidentally, that for present purposes I do not use the term 'particular' as a synonym for the term 'individual', but rather in contrast with the term 'universal': particulars are instances of universals but do not themselves have instances.)[49]

There are other accounts of platonistic property possession where property instantiation is not considered to be entirely aspatial. I will call these positions, and any other platonistic positions that are not what Moreland describes as pure realist positions, 'non-pure realist platonist' accounts (or just 'non-pure realist' accounts). According to these positions, properties are considered aspatial (platonistic), but instantiation involves a non-aspatial aspect or ingredient of some sort.

One version of non-pure realist platonism, which comes from Plato,[50] is *model/copy realism*, according to which, *copies* of aspatial platonistic universals are in nature. Moreland discusses this position:

> There are two major views—realist and moderate nominalist—of [for example] the 'universals' redness, with important varieties of each. First, there is the realist position with four main versions. The first two (allegedly) realist versions hold that the universal does not enter into the being of its instances and, thus, is a one-*over*-many. One example of this version is the model/copy realism, according to which, properties are abstract entities that exist outside of space and time and do not enter into the particulars that supposedly have them. Instead, each particular has a copy of that property.[51]

Another non-pure realist version of platonism position is Wolterstorff's, which appears to be a trope version[52] of what I am calling non-pure realist platonism. Wolterstorff is a platonist[53] who holds that the platonistic properties have tropes that are cases of platonistic properties. Moreland discusses Wolterstorff's position:

> [For Wolterstorff] universals are kinds or types with examples or tokens as their instances. As instances of a universal is a member of that universal. The universal, wisdom, is identical to the kind, case of wisdom. In general, a universal is a kind whose examples are cases of that universal ...
>
> Wolterstorff uses a variety of terms to talk about cases. A case is a token, occurrence, example or member of a kind. It is an aspect of a substance ...
>
> Wolterstorff explicitly states that his cases are like abstract particulars (tropes) of Stout or Williams.[54]

My arguments against non-platonistic relations in this section, in addition to being against non-platonistic relations, are also against the tropes, copies, or non-aspatial instances involved in non-pure realist platonistic property possession. This is because the non-aspatial instances, tropes, or physical copies of platonistic relations *are apparently connections between objects that are not outside of space*. (Recall that Lowe writes, in the passage above: 'so, whether or not one wants to say that universals themselves exist in space and time (have spatiotemporal location) ... it seems very plausible to say that there are particular qualities, or modes, which do exist in space and time and are consequently concrete entities'.) If copies, tropes, or non-aspatial instances of aspatial properties are not

outside of space, and are apparently entities that do their connecting in space, this would be a similarity that the copies, non-aspatial instances, or tropes involved in aspatial platonistic polyadic property possession have with non-platonistic relations, which are also spatial, or spatially located, connections between entities: both the *non-platonistic relations* of physicalism, Aristotelianism, Armstrongianism, weak nominalism, and so on, and the non-pure realist copies, tropes, or non-aspatial instances, *are all interconnections that are not aspatial.*

This implies that the physical copies, tropes, or instances of non-pure realist platonism also might involve any problems that non-platonistic relations might happen to involve, since the physical copies, instances, and tropes, much like non-platonistic relations are interconnections that do their interconnecting spatially. One of my goals in this paper in section 6 where I attack non-platonistic relations is to argue that there cannot be any non-platonistic relations, and there cannot be any aspects or ingredients (copies, tropes, non-aspatial instances, etc.) of platonistic polyadic property possession that are not *entirely* aspatial.[55]

If my arguments against non-platonistic and non-pure realist relations reveal that there are no non-platonistic relations and no physical non-pure realist instances of platonistic relations, then we can only consider the position that the exemplification of relations is *only entirely outside of space*, without any spatial aspect. Such an account of property possession, where the exemplification tie and the relation are entirely aspatial, is devoid of copies, tropes, spatial instances, or any spatial aspect of any sort. In other words, if my arguments in section 6 are correct, the only leftover coherent theories of polyadic property possession would be those in what Moreland calls 'pure realism'.[56]

My introductory remarks are concluded and I will next move to my arguments against non-platonistic and non-pure realist relations.

6. THE IMPOSSIBILITY OF NON-PLATONISTIC RELATIONS BETWEEN P_1 AND P_2

Subsections 6.2–6.9 pertain to problems about non-platonistic or non-pure realist relations. In these subsections, I will assume (toward reductio) that there *are* various kinds of non-platonistic or non-pure realist relations between or among p_1 and p_2: between any non-collocated spatial entities, or between or among non-identical spatial regions or non-identical building blocks of space. First, I discuss problems to do with *noncomplex* non-platonistic and non-pure realist relations (subsections 6.2–6.5). Second, I discuss problems to do with any *complex* non-platonistic and non-pure realist relations that are not affected by the reasoning against noncomplex non-platonistic and non-pure realist relations (subsections 6.6–6.9). In subsection 6.10, I discuss problems to do with monadic relatedness, and first in subsection 6.1, I discuss an issue about relations that (allegedly) hold together regions of space.

6.1 Non-Platonistic and Non-Pure Realist Relations can only be Occupants of Space

I will next argue that non-platonistic and non-pure realist relations between p_1 and p_2 can only be considered as *occupants* of space. This is relevant to my reasoning below where I argue that non-platonistic and non-pure realist relations between p_1 and p_2 are contradictory.

On the non-platonistic and non-pure realist accounts, it is standard to hold that the non-platonistic and non-pure realist relations that contribute to the makeup of space (the spatial relations that connect spatial locations and spatial regions), along with the basic building blocks of space, are not *occupants'* space, but rather, are relations that contribute to the *makeup* of space. Cohn and Varzi write:

> ... our focus will be on the logical spectrum of theories concerned with the topological structure of space, as opposed to things *located* in space. This makes our study independent of question of location, which call for a different sort of theory ...[57]

If there are non-platonistic and non-pure realist relations contributing to the makeup of space, since they interrelate p_1 and p_2—non-identical topological regions or non-identical spatial locations—the non-platonistic relations must *coincide with* those spaces that they interrelate. Further, such a relation must coincide with the *entirety* of the spatial regions or non-identical spatial locations it coincides with, regardless of whether or not the interrelated spaces are spatial regions or atomic building blocks of space. If a non-platonistic and non-pure realist relation

only coincided with a *part of* one of the spaces it interrelates, then statements such as 'p_1 is related to p_2' would be false, since only parts of p_1 or p_2 would take part in the co-exemplification of the non-platonistic and non-pure realist relation (and instead, statements such as, for example, 'p_1 is related to part of p_2' would be true). For example, if one cubic nanometer (p_1) is related to the entire universe (p_2) by the relation *parthood*, it can only be the case that the *entire* cubic nanometer coincides with the relation in order for the cubic nanometer in question to be a relatum of the relation, *parthood*. If only part of the cubic nanometer coincided with the relation, *parthood*, then the statement 'the cubic nanometer is part of the universe' would be false, and, for example, the statement 'part of the cubic nanometer is part of the universe' would be true. Similar reasoning holds for Planck basic building blocks of space. For example, it cannot be the case that, with respect to a Planck space, the relation only contacts the surface of, or a left side of, a single Planck unit of space. (Also, it is unclear that what has just been written about a Planck space is coherent, given the fact that it is unclear whether a 'side' or 'surface' of a Planck space can even be discussed at all, since 'side' and 'surface' *may* be references to *parts of* the Planck space, or aspects of the Planck space not identical to the entirety of the single unit Planck of space, rather than the entire Planck unit of space, and this is not possible single there are no parts or aspects of a Planck space that are not identical to the entirety to the Planck space.) Of course, if a relation did not attach or link to its relata (where 'attach' and 'link' denote the special exemplification tie that holds relations to their relata[58]), then there would be a discontinuity of some sort between the non-platonistic relation and its relata (spaces p_1 and p_2)—the relata and the relation would be at a spatial distance from one another—which is absurd, since the relations then would not attach or link to their relata, and thus they would be relations that do not interrelate their relata.

For reasons just given, non-platonistic and non-pure realist relations that are constituents in the makeup of space must *coincide* with the entirety of the spaces that they interrelate. I will next discuss the implication that non-platonistic and non-pure realist relations that contribute to the makeup of space *cannot also be spatial locations*,

even though the spatial relations are *constituents* of space. If, in addition to the spatial locations, the relations that contribute to the makeup of space were *also* spatial locations, in that case spaces *and* the relations that connect the spaces to one another would coincide (overlap), where these coinciding entities *would each be spatial locations*. This has obvious problems, however, since two spatial locations that spatially overlap or coincide are not at a spatial distance from one another, and cannot *each* be spatial locations, unless they are identical. But this cannot be the case since a spatial relation must be *distinct from* its relata. This implies that if there are non-platonistic and non-pure realist relations between non-identical spaces and spatial locations, and which contribute to the makeup of space, since the non-platonistic and non-pure realist spatial relations are in space but are not spatial locations, then they could only be *located at* places in space, in order to avoid the problems just discussed. But if that is the case, then non-platonistic and non-pure realist spatial relations that are constituents of space would be *spatially located* relations that *occupy* space (that are *located in* space). Hereafter, for reasons just given, I will only discuss non-platonistic and non-pure realist relations of *any* sort as being *occupants* of space, regardless of the fact that they are alleged to be constituents of space or not.

6.2 The Impossibility of Noncomplex Relations of Non-Zero Spatial Size between p_1 and p_2

It appears that there are two ways to conceptualize a non-platonistic and non-pure realist relation, if the relation is between or among p_1 and p_2.

1. A non-platonistic and non-pure realist relation is *spatially extended between* p_1 and p_2 (and for that reason is apparently a relation that is some sort of a *material object* connecting other material objects, perhaps roughly analogous to the way a rope connects a boat and a dock).

The position that relations are spatially extended objects is a position that, to my knowledge, has not been held by any philosopher, and which is rarely discussed in the literature, if at all, since relations are typically considered to be spatially *unextended*: relations are considered

to be either platonistic, and for that reason, of no spatial side at all, or when relations are considered non-platonistic or non-pure realist, they are also typically considered spatially unextended. I am going to discuss spatially extended relations just to cover all the possibilities there might be. I will discuss varieties of this sort of relation in this subsection, and in parts of other subsections of this section, where I will discuss relations that, in connecting p_1 and p_2, are spatially *in-between* p_1 and p_2.[59]

I am surprised that any discussion of this sort of relation is not found in existing literature. It may seem odd to consider that a relation would be like a material object, but from the perspective of the empirical mind, there may be many kinds of matter not at all familiar to us and not observed by us, and which could perhaps be 'relational matter'. 'Material relations' might be composed of matter that humans do not perceive in the manner they perceive ordinary matter (rocks, electrons, clouds). Perhaps one type of matter is the ordinary matter (electrons, quarks, protons, etc.) studied by physicists, and perhaps *another* type of matter is responsible for connections between entities in nature. Physicists tell us that there are apparently many varieties of matter *different than* 'ordinary', familiar matter ('light matter'), such as neutrinos, dark matter (if dark matter is *not* neutrinos), so-called 'exotic matter', and so on—each of which is a type of matter that either does not interact much with the familiar, ordinary matter that humans perceive, or if it does interact with ordinary matter, it does so in a way humans cannot detect.[60] Indeed, we are now also told by physicists that what we call 'ordinary matter' may be actually the *rare stuff in the universe*, vastly less common than other types of matter, such as neutrinos. It is not immediately apparent to me why there could not be a sort of extended matter that gives rise to *extended material relations* between material objects, and which only interacts in a special manner with ordinary matter. Perhaps such spatially extended material relations could collocate with and interpenetrate ordinary, familiar matter, so that when, for example, a spatially extended relation such as the relation, *at a distance from*, stands between the earth and sun (much like a rope between a boat and dock)—perhaps in their orbits Mercury or Venus could pass through, and temporarily partially collocate with—the extended relation between the earth and sun, since the two types of

matter (relation-matter, and planet-matter) might not interact in that scenario. It is interesting to speculate about such relations, but in this paper, I will argue below that if relations are extended and material, they are apparently contradictory entities.

2. The second way to conceptualize non-platonistic or non-pure realist relations between p_1 and p_2 is by considering non-platonistic or non-pure realist relations as *not spatially extended between* p_1 and p_2. This is the commonly-held position, where spatially located relations are considered as spatially *unextended* entities which do not resemble material objects, even if the non-platonistic relation in considered to be *physical* (as in Armstrong's realism), or if the relation is considered to be either a trope of, or a physical instance or copy of a platonistic universal.

I will discuss spatial extended non-platonistic and non-pure realist relations that—in connecting atoms and parts and wholes of material objects—*occupy* spatial locations and spatial regions. Furthermore, I will discuss spatially extended non-platonistic or non-pure realist relations that contribute to the *makeup* of space; for reasons given above, these are also non-pure realist relations that *occupy* spatial locations and spatial regions. In either case, I am only considering relations of non-zero spatial size *that occupy at least two non-identical spatial locations*. For the remainder of this subsection, I will call the spatial locations, p_1 and p_2

I will next state my argument against non-platonistic and non-pure realist, *spatially extended*, *noncomplex* relations between or among p_1 and p_2. Such relations *occupy* at least two of spatial locations—call them p_1 and p_3. If spatially extended, noncomplex, non-platonistic or non-pure realist relations between non-collocated spatial entities *occupy* at least two non-identical spatial locations, then they are apparently contradictory, for the following reasons.

If a spatially extended relation is partless (noncomplex), it is a *single* entity. If a spatially extended, noncomplex relation is describable by a statement, since it is partless, then the *entire* relation is describable by the statement. For example, the entire relation located at two spatial

locations, p_1 and p_3, would be describable by the statements, 'located at p_1' and, 'located at p_3'. If the relation is located at p_3, and if $p_1 \neq p_3$, then by being at p_3, the noncomplex non-platonistic or non-pure realist relation is describable by the statement, 'non located at p_1'. This could be said of any location that the non-platonistic or non-pure realist noncomplex relation occupies that is not p_1. If the relation occupies more than two spatial locations, and for that reason is located at three locations, p_1, p_2 and p_3, then at locations p_2 and p_3 the relation would be describable by the statement, 'not located at p_1'. These are, however, statements that lead to contradictory descriptions of the relation: since the relation is one, partless entity, if it is 'located at p_1', and 'not located at p_1', each of these statements must describe the *entire* noncomplex, non-platonistic or non-pure realist relation, and that implies that the entire relation would be describable by self-contradictory conjunction of the above statements: 'located at p_1 and not located at p_1'.

6.3 Spatially Extended Relations Only Located at Entire Spaces

In this subsection, I discuss an objection to the reasoning given above, where non-non-platonistic and non-pure realist noncomplex relations were found to be contradictory if they occupy two or more spatial locations.

Philosophers who hold that relations are spatially extended may assert that if a relation is located at a certain spatial location p_2, this does not imply that it, therefore, *does not* also have the property of being located at some other spatial location, p_1. Such philosophers may maintain that non-platonistic and non-pure realist relations can be *wholly located at two different spaces*.

For a philosopher to hold this position, he or she would merely need to avoid my reasoning above where I held that there are statements such as 'not at p_1', that describe the non-platonistic or non-pure realist relation; instead, he or she must hold that such statements do not describe noncomplex, non-platonistic and non-pure realist relations between p_1 and p_2. This might be done by holding the view that the spatially extended non-platonistic or non-pure realist relation can only be considered at the *entire space* it is located is at. To hold this objection

is to hold that in the above subsections, relations have been inaccurately described, since it may be the case that a spatially extended, noncomplex, non-platonistic or non-pure realist relation might only be accurately described as being *at its entire spatial location* (call it $p_1p_2p_3$), not at a *part* (sub-location) of its spatial location, such as the basic locations, p_1, p_2, or p_3. According to this objection, the spatially extended non-platonistic or non-pure realist relation that connects p_1 and p_3, where p_2 is between p_1 and p_3, is *not* located at the basic spaces, p_1, p_2, and p_3, of the spatial locations, $p_1p_2p_3$. Rather, only *the entirety of* $p_1p_2p_3$ can be called the noncomplex, non-platonistic or non-pure realist, spatially extended relation's location. On this scenario, the statement,

> 'The noncomplex, non-platonistic or non-pure realist relation between p_1 and p_3 is located at space $p_1p_2p_3$',

is true and the statements about the relation being at any non-atomic subspace of $p_1p_2p_3$ (i.e. space p_1p_2, or space p_2p_3), or at the individual atomic subspaces of $p_1p_2p_3$ (locations p_1, p_2, and p_3) are all false, such as the statements,

> 'The noncomplex, non-platonistic or non-pure realist relation between space p_1 and p_3 is located at p_1',
>
> 'The noncomplex, non-platonistic or non-pure realist relation between spaces p_1 and p_3 is located at p_2', or
>
> 'The noncomplex, non-platonistic or non-pure realist relation between spaces p_1 and p_3 is located at p_3.'

In this section, I will argue that this objection fails. The problem, I will ague, is in considering a simple (partless) entity at a non-simple space. Or, to put in similar words: there is a problem in considering a non-basic space containing an irreducible, noncomplex (partless) relation. According to this objection, the spatially extended, noncomplex, non-platonistic or non-pure realist relation between p_1 and p_3 is at spatial location $p_1p_2p_3$, but aspects of the relation at only p_1, p_2, or p_3 cannot be discussed, since there are no such aspects of the relation that are not identical to the entire relation. Nevertheless, since the relation extends spatially between spaces p_1 and p_3, it is important to note that all of the individual atomic building blocks of the entire space $p_1p_2p_3$, which are

atomic spaces p_1, p_2, or p_3 can only be occupied by something to do with the relation. By this, I merely mean that when we consider the sub-locations of $p_1p_2p_3$ (which are the spatial locations p_1, p_2, or p_3, spaces p_1p_2 or p_2p_3) and when we ask the question of whether or not, for example, the atomic sub-spaces (p_1, p_2, or p_3) are occupied, we apparently can only conclude that they are *not unoccupied* with respect to the relation. The reason that p_1, p_2, or p_3 must be occupied by something to do with the relation is because the entire spatial location, $p_1p_2p_3$, that the noncomplex spatially extended non-platonistic relation is at is a topological space that is made up of more fundamental spatial locations, and if the relation is at a non-basic spatial location (such as space $p_1p_2p_3$) and, accordingly, occupies the entire spatial location, it must also be the case that the relation occupying $p_1p_2p_3$ leads to each of the more basic spatial locations (p_1, p_2, p_3, p_1p_2, or p_2p_3) that make up $p_1p_2p_3$ *also* being occupied.

A spatial location would not be occupied at all if none of its sub-locations that compose it were occupied. In other words, if a relation occupying a spatial location ($p_1p_2p_3$) does not occupy the more fundamental non-atomic spatial locations (p_1p_2, or p_2p_3), or any of the atomic spaces (p_1, p_2, p_3), of the spatial region $p_1p_2p_3$, then the noncomplex spatially extended non-platonistic or non-pure realist relation does not occupy the *entire* spatial location. For these reasons, the spatial relation's being at $p_1p_2p_3$ must also lead to all of the sub-locations of $p_1p_2p_3$ being occupied. But this poses a serious problem for the noncomplex, spatially extended, non-platonistic or non-pure realist relation at spatial location $p_1p_2p_3$: if the relation can be described as occupying sub-locations of $p_1p_2p_3$, the problems of the previous subsection ensue.

The reasoning about spatial locations, just given—where non-basic spatial locations were discussed as being composed of sub-locations, and of basic sub-locations (if space is not infinitely divisible)—is the case for any non-atomic spatial region, since any non-atomic spatial region is made up of more fundamental spatial locations. If a non-atomic spatial region such as $p_1p_2p_3$ were *not* made up of more fundamental, or atomic, spatial locations, then an extended and non-atomic spatial location would not be made up of anything, and it would not be a spatial location at all. For these reasons, a non-atomic spatial location is composed of more fundamental spatial locations, or atomic spatial locations, and a spatial relation's occupying a non-atomic spatial location, must accordingly result in the more fundamental spatial locations, or atomic spatial locations, also being occupied. The noncomplex, spatially extended, non-platonistic relation, for these reasons, cannot be located at $p_1p_2p_3$, since the relation cannot be located at any of the spatial sub-locations that make up $p_1p_2p_3$. This sets up a fatal problem for the coherence of the spatial relation: no sub-locations of the spatial relation's entire spatial location ($p_1p_2p_3$) can have *anything* to do with the relation, and for that reason, the non-platonistic or non-pure realist relation, which is not outside of space, cannot be a spatially located entity at all, which is a contradiction.

The argumentation denoted to this point need not apply only to spatially *extended* non-platonistic or non-pure realist relations, but also to the spatially *unextended* non-platonistic or non-pure realist relations that I will discuss next. This is because the arguments just given deal with nothing more detailed than *connections between non-identical spatial locations (or non-collocated objects that occupy space)*, which apply to *any* sort of non-platonistic or non-pure realist relation, whether spatially extended or unextended.

6.4 The Impossibility of Spatially Located, Spatially Unextended, Noncomplex Relations between p_1 and p_2

I will next discuss the position that (somehow) a non-complex, non-platonistic or non-pure realist interrelation of p_1 and p_2 does not involve a connection *across* space, *extending between* p_1 and p_2. Rather, the interrelation of p_1 and p_2 exists *in space*, where p_1 and p_2 are, but the noncomplex, non-platonistic or non-pure realist relation is spatially *unextended*, since on this account, the spatial relation is located where and only where p_1 and p_2 are.

One thing to note before I move into my arguments is that if p_1 and p_2 are each *extended* topological regions, or *extended* material objects, but the non-platonistic or non-pure realist relation between them is spatially unextended (point-sized), it is unclear how the spatially unextended non-platonistic or non-pure realist relation can relate to

them, since the relation would only be able to attach to one point of each extended objects or spaces p_1 and p_2. The non-platonistic or non-pure realist spatially *unextended* relation has no extension with which it can coincide with *all* of p_1, or *all* of p_2, in its interrelating p_1 and p_2. For this reason, a spatially unextended non-platonistic or non-pure realist relation between p_1 and p_2 cannot interrelate p_1 and p_2 if p_1 and p_2 are extended spaces or spatially extended material objects. Perhaps this issue could be avoided if continuum, many spatially unextended non-platonistic or non-pure realist relations were involved, connecting every point of p_1 to every point of p_2—if, that is, both p_1 and p_2 were constituted of continuum-many spatial points if p_1 and p_2 are extended spaces, or if p_1 and p_2 are spatially extended material objects. But this is not how topological relations or non-platonistic or non-pure realist relations between material objects are typically discussed. Philosophers typically discuss relations as if one relation relates *all of* an object or space p_1 to *all of* another object or space p_2 via one primitive relation. I see this as a serious problem for spatially unextended non-platonistic relations between p_1 and p_2 if p_1 and p_2 are extended spaces or extended material objects. I will, however, not focus on this issue, since I want to point out a different, apparently more pressing problem with spatially unextended non-platonistic or non-pure realist relations between p_1 and p_2.

It would appear that the above reasoning, where I found spatially *extended* non-platonistic or non-pure realist noncomplex relations between p_1 and p_2 to involve serious problems, would also apply to non-platonistic or non-pure realist noncomplex spatially *unextended* relations. When discussing extended relations, I discussed apparently serious problems to do with noncomplex relations when they are considered to be at their entire spatial locations. In the case of spatially *unextended*, noncomplex, non-platonistic relations, they, of course, are also at their entire spatial location (which might be a spatially scattered location), and thus the same problems would ensue. But I am still going to discuss yet more problems to do with spatially unextended non-platonistic or non-pure realist relations between p_1 and p_2 in a different light, since spatially unextended non-platonistic relations are

quite different from spatially extended non-platonistic or non-pure realist relations.

First, I will consider p_1 and p_2 as parts and wholes of material objects (objects that occupy space), where the relation, *parthood*, between or among p_1= quark (part), and p_2= proton (whole), is a spatially *unextended*, noncomplex, non-platonistic relation. On this account, the connection among p_1 and p_2 is a connection among *non-collocated* spatial entities, since pieces of p_2 are not collocated with p_1: p_1 (part) is at p_2's (whole's) spatial locations, but p_1 does not collocate with all of p_2's spatial locations, such as where the two other quarks that make up the proton are, and also where the gluons that are exchanged between the quarks, and which also go into the makeup of the proton, are located. For these reasons, the relation, *parthood*, between p_2 (whole) and p_1 (part), connects spatially non-collocated entities, which is the very sort of relation I am concerned with in this article.

This situation has the following restrictions. Being a spatial entity, quark p_1 cannot fail to be at a spatial location; call p_1's location, a_n (which is the topological region or the point in space or the atomic building blocks of space that p_1 occupies). This implies that p_1 only participates in the co-exemplification of polyadic properties (such as *parthood*) at a_n and nowhere else, since the spatially located entity p_1 is nowhere else *but* at a_n. If one of the spatially unextended, noncomplex, non-platonistic relation's relata is not at a_n, then p_1 is not one of the relation's relata. Proton p_2, being a spatially located entity, also cannot fail to be at a spatial location, b_n (which is the topological region or the atomic building blocks of space that p_2 occupies). This implies that p_2 only participates in the co-exemplification of non-platonistic polyadic properties at b_n and nowhere else, since spatially located object p_2 is nowhere else *but* at b_n. If one of relation's relata is not at b_n, then p_2 is not one of the relation's relata.

I will next explain that these restrictions imply that quark p_1 and proton p_2 could *not* be related by the non-platonistic or non-pure realist spatially unextended relation, *parthood* at the spatial locations that *they are not collocated at*. If quark p_1 is only at a_n, and if proton p_2 is only at b_n, and if many of p_2's spatial locations are not identical to p_1's spatial location(s) (they are not identical since if $a_n \subset b_n$, then $a_n \neq b_n$),[61]

and if on this account the non-platonistic or non-pure realist interrelation of p_1 and p_2 is not being considered as spatially *between* p_1 and p_2, then at those spatial locations where p_1 and p_2 do not collocate, p_1 and p_2 apparently cannot have any sort of dealings with one another (such as being interrelated by the relation, *parthood*). It appears that in order for p_1 to, for example, participate in the co-exemplification *parthood* with p_2, p_1, which is wholly at a_n, must also be at all of b_n's spatial locations, and thus must apparently take on the characteristics that involve contradiction, since p_1 would be at a_n, and not at a_n.

I will next consider p_1 and p_2 as atomic building blocks of space[62] which are connected by the topological relation, *connectivity*. Atomic building block of space, p_1, for example, participates in the co-exemplification of polyadic properties (such as the spatial relation *connectivity*) at p_1, since it is not identical to any other atomic building block of space. If one of the spatially located relation's relata is not identical to atomic building block of space p_1, then p_1 is not a relatum of the spatially unextended, noncomplex, non-platonistic relation. If atomic building block of space p_2 is a spatial location, then p_2 only participates in the co-exemplification polyadic properties at p_2, since it is not identical to any other atomic building block of space, such as p_1. If one of the relation's relata is not p_2, then p_2 is not a relatum of the relation.

These restrictions imply that any non-identical atomic building blocks of space, p_1 and p_2, could not be related by a noncomplex, spatially unextended, non-platonistic or non-pure realist relation, for the following reasons. Since $p_1 \neq p_2$, and since on this account the non-platonistic interrelation of p_1 and p_2 is not being considered a spatially *between* p_1 and p_2, but only at locations p_1 and p_2, then p_1 and p_2 apparently cannot have any sort of dealings with one another (such as being interrelated by the topological relation, *connectivity*). It appears that in order for p_1, for example, to contribute to the co-exemplification of a spatially *unextended* relation of the sort I am discussing here, which is a non-platonistic or non-pure realist, noncomplex relation shared with p_2, p_1 *must also be identical to* p_2, and thus must apparently take on characteristics that are self-contradictory (e.g. p_1 is identical to p_2 and is not identical to p_2). Similarly, in order for p_2 to share a spatially unextended, noncomplex, non-platonistic or non-pure realist relation with p_1, p_2 *must also be identical to* p_1, and thus must apparently take on characteristics that are self-contradictory.

As a last example, I will consider p_1 and p_2 as non-collocated spatial objects, more specifically two photons, which are connected by the relation, *quantum entanglement*. Photon p_1, for example, participates in the co-exemplification of polyadic properties (such as the relation *quantum entanglement*) only where it is, since it is not located anywhere else but where it is. If one of the spatially located relation's relata is not identical to p_1, then p_1 is not a relatum of the spatially unextended, noncomplex, non-platonistic relation. Another photon, p_2, only participates in the co-exemplification polyadic properties where it is and nowhere else, since photon p_2 is only located where it is. If one of the relation's (*quantum entanglement's*) relata is not p_2, then p_2 is not a relatum of the relation.

These restrictions imply that any non-identical photons p_1 and p_2 could not be related by a noncomplex, spatially unextended, non-platonistic relation, for the following reasons. Since $p_1 \neq p_2$, and since on this account the non-platonistic or non-pure realist interrelation of p_1 and p_2 is not being considered as spatially *between* p_1 and p_2, but only at the non-identical locations that p_1 and p_2 are at, then p_1 and p_2 apparently cannot have any sort of dealings with one another (such as being interrelated by the relation, *quantum entanglement*). It appears that in order for p_1, for example, to contribute to the co-exemplification of a spatially *unextended* relation of the sort I am discussing here—which is a non-platonistic, noncomplex, not-platonistic or non-pure realist relation shared with p_2—p_1 must be located where p_2 is, and thus must apparently take on characteristics that are self-contradictory (e.g. p_1 is located/is not located where p_2 is, but must be located where p_2 is). Similarly, in order for p_2 to share a spatially unextended, noncomplex, non-platonistic or non-pure realist relation with p_1, p_2 must be located where p_1 is and, thus, must apparently take on characteristics that are self-contradictory.

If my reasoning in this sub-section is correct, then noncomplex, spatially *unextended*, non-platonistic relation relations cannot account for any connection between or among p_1 and p_2.

NOTES

1. Throughout this paper, when I use the word 'analytic' while referring to contemporary Western *analytic* metaphysics, I am not referring to phenomenologists such as Paul Ricoeur, Jean-Paul Sartre, Martin Heidegger, Quentin Smith in his early philosophy, Max Weber, Robert Sokolowski, and Max Scheler. Nor am I referring to any metaphysicians that do not clearly fall into the analytic tradition such as Schopenhauer, Kierkegaard, Eugene Gendlin, Nietzsche, Henri Bergson, or Hubert Benoit. Philosophers such as these are metaphysicians, but they do not clearly fit into the group of philosophers labelled *analytic metaphysicians*, and they are not considered *analytic* metaphysicians by the large group of contemporary Western analytic metaphysicians.

   By 'Western' analytic metaphysics I am, of course, not assuming that philosophers in the Indian tradition have not explored many of the same issues that Western analytic metaphysicians have explored through the centuries. I am merely discussing the Eastern and Western philosophy as I see others have done before me, where those philosophers under the label of 'Eastern philosophers' tend to be more oriented toward idealism, monism, and the *illusion* of phenomenal reality, and where those philosophers under the label of 'Western philosophers' tend to be more oriented toward realism about phenomenal reality, and about a (purported) distinction between the observer and the observed.
2. Armstrong 1989, 38; Maddy 1990, 273; Moreland 2001, 74. Blob theory is a position endorsed by virtually no Western analytic philosophers—not even by the few who tell us that they are mereological nihilists, such as Rosen and Dorr (2002), who hold that what exist are only atoms, no wholes (this is what I mean by 'atomistic mereological nihilism' and I will argue in a section below that only Brahmanic mereological nihilism is coherent, not atomistic mereological nihilism).
3. Phillips 1995, 2. I discuss what Phillips means by Brahman as 'the single self' in a section below.
4. In this paper, I make every attempt to *only* use arguments for my positions, and if possible, to never use belief or opinion that are not solely based on argument. Philosophy, as any introductory philosophy book will reveal, is based on argument: she/he who has the best argument wins. This is, however, sadly ignored by a few highly regarded analytic philosophers. A good example is Peter van Inwagen, in his *Material Beings* (1990, Ithaca: Cornell University Press). Others have noted the lack of any argumentation by van Inwagen in *Material Beings*. Hirsh writes: 'An initially surprising feature of his [van Inwagen's] book is that van Inwagen does not purport to offer any knockdown argument for his seemingly incredible thesis.' (1993, 687) Other examples, unfortunately, can be found. I am not suggesting that it is *typical* for analytic philosophers to *not* use inferences in their work; I am just discussing that too often this however occurs, and I have made every attempt for it not to be my method of philosophy in this paper, in order to hopefully assure that I only *argue for*, rather than *demand*, *preach*, or *assert*, my conclusions. At any point in this paper, I will only be doing one of three things: (1) explaining as best I can the theories of others since their work is relevant to my arguments in this paper; (2) presenting arguments; and (3) discussing the conclusions of arguments.
5. I use 'phenomenal reality' in a way that is synonyms with how Gupta uses 'phenomenal sight':

   > Here, a distinction is made between two kinds of sight: the phenomenal and the eternal. The former takes place with the eyes; such seeing is an accidental attribute of the self that has a beginning as well as an end. However, the sight that the self possesses by its very nature, like the burning of fire or the shining of the sun, is eternal. Eternal seeing is an essential attribute of the self. When it is associated with phenomenal sight, its limiting adjunct, it is described as the seer and is differentiated into the seer and the sight (Gupta 1998, 25).

6. Philosophers and scientists understand nature in terms of not only parts and wholes and the mereological relations between parts and wholes, but additionally, for many centuries, theories of space, matter, and atomism have primarily taken the form of *topological* theories. Topological theories are an array of theories that involve various sorts of *networks of interrelated items*. Alexanderoff, in his classic text, where he discusses the topology of space, writes:

   > The concept of topological space is only one link in the chain of abstract space constructions which forms an indispensable part of all modern geometric thought. All of these constructions are based on a common conception of space which amounts to considering one or more systems of objects—points, lines, etc.—together with systems of axioms describing the relations between these objects. Moreover, this idea of a space depends only on these relations and not on the nature of the respective objects (Alexanderoff 1961, 9).

   Topological networks do not just describe only space, but also other entities that are (allegedly) composed of networks of relations interconnecting various sorts of items, such as times and matter particles. Zimmerman writes:

> In Bernard Bolzano's account of continuity, for example, we have 'the first attempt at a mathematical formulation of the topological notion of connected' (Wilder 1978, 721). And Bolzano's definition is meant to apply to physical substances as well as to space and time (Zimmerman 1996, 148).

7. If modern physics—relativity and quantum mechanics—were also ultimately devoted in terms of relations, it too would reduce to a philosophy of Brahman. Although most of the debates in physics are beyond the scope of this paper, it appears, however, that modern physics *may*, in fact, ultimately be describable in terms of the relations I am concerned with in this paper. Consider a passage from a recent article on quantum mechanics by Jenann Ismael, a philosopher:

> The heart and soul of quantum mechanics is contained in the Hilbert spaces that represent the state-space of quantum mechanical systems. The internal relations among states and quantities, and everything this entails about the ways quantum mechanical systems behave, are all woven into the structure of these spaces, embodied in the relations among the mathematical objects which represent them... This means that understanding what a system is like according to quantum mechanics is inseparable from familiarity with the internal structure of those spaces. Know your way around Hilbert space, and become familiar with the dynamical laws that describe the paths that vectors travel through it, and you know everything there is to know, in the terms provided by the theory, about the systems that it describes (Ismael 2000, section 1).

   If quantum mechanics is based on mereological and/or topological relations, then modern physics would not be aligned with a philosophy of Brahman, and instead, my arguments in this paper would reveal that modern physics is based on philosophical contradictions, and must be *replaced* by a philosophy of Brahman. This would be in opposition to the many theorists who have attempted to argue that modern physics is in accord with a philosophy of Brahman (such as Panigrahi 2002; also see Lathief 2003, for discussion of Panigrahi's work).
8. Simons 1987, 10–11.
9. Some may object that a Quinnean nominalist or a conceptualist account of reality may be able to avoid these issues, since on those accounts, properties, such as polyadic properties (relations), are typically considered to be mere names, concepts, or ideas one has about nature, not real mind-independent constituents of nature. Quinnean nominalists tell us that according to their philosophy, relations (polyadic properties) are mere words, and not actual ontological building blocks of nature. But the Quinnean nominalist's entire philosophy makes use of the relation *set membership*. If that relation is contradictory—as I argue it is in sections 6 and 7—for any regions of nature larger than atomic building block of space or matter, then Quinnean nominalism would be contradictory, if it is an attempt to describe sets of entities in a region larger an atomic building block of space or matter, that are (allegedly) grouped in a set by the relation *set membership*. If the *set-membership* relation of Quinnean nominalism does not avoid my arguments in sections 6 and 7, then it cannot be an account of reality that avoids the problems I will discuss. As for conceptualism, it may not be entirely against the conclusions I make in this paper, *if* conceptualism supports the thesis that true reality is an unstructured blob beyond all categories and appearances: space, time, and causality created in the concept forming mind (the phenomenal mind). But this is very far from the *typical* conceptualist position.
10. Consider a passage from Rosen and Dorr.

> ... when the [quantum physicist] says that three quarks together make a proton, or when the cosmologist says that billions of stars and planets and specks of interstellar dust together make up the Milky Way, or when the voice of common sense says that twenty cards make up a house of cards—what they say is false, strictly speaking. There are no protons or galaxies or houses of cards. There are, rather, billions of simple particles arranged proton-wise and galaxy-wise and house-of-card-wise. The most radical view of this sort is compositional nihilism, according to which there is no such thing as a composite entity. On this view, it is probable that you do not exist. You just might be an absolutely simple Cartesian soul. But if not—if the only objects in your vicinity are material objects—then strictly speaking, there is no such thing as you. There are, rather, many simple things arranged 'person-wise' and engaged in various collected activities. Since you are not any one of these particles, and since there are no other candidates, the compositional *nihilist* maintains that strictly speaking, you do not exist (Rosen and Dorr 2002, 152).

11. Simons 1987, 9–10.
12. Markosian: 'The Special Composition Question is, roughly, the question *Under what circumstances do several things compose, add up to, or form, a single object?* (Markosian 1998, 213).
13. van Inwagen 1993, p. 684.
14. Hudson 2001, 81–82.
15. Woodhouse 1978, 109.
16. Rosen and Dorr 2002.

17. Stenger writes:

> The standard model [which is the currently widely accepted theory in quantum physics, according to which fields, such as the gravitational field, are composed of particles] offers a picture of elementary quarks and leptons, interacting by the exchange of a set of elementary [particles called] bosons ... In this book, I am making the unremarkable suggestion that the [particles called] quarks, leptons, and bosons of the standard model can be safely regarded as elements—perhaps the only elements—of an objective physical reality ... The alternative ontology in which continuous fields are 'more real' than particles was discussed in the previous chapter. First, we saw that a dual ontology of fields and particles, as existed in the nineteenth century [physics], contradicts the one-to-one correspondence between particle and field in modern quantum field theory. We can have either a reality of fields or a reality of particles (or other localized objects). We cannot have both without asserting some new physics not described by relativistic quantum mechanics. Such an assertion is uneconomical—not required by the data ... Second, we saw that any viable field ontology based on relativistic quantum fields necessarily entails a Platonistic view of reality (Stenger 2000, 253–54).

18. I have argued for this thesis in this section, but if my argumentation is incorrect, and there *are* distinct unconnected atoms, but which are somehow not considered *parts* of the reality they make up since they are not the relata of part-whole relations, then reality would appear to not be one; but rather, would appear to be two (or more), and thus would appear to not be Brahman after all. But at least one philosopher (McEvilley 30, 2002) may be implying, if I understand him correctly, that a quasi-atomism consisting of atoms that are entirely identical even though they are at different places, and may give rise to a theory of Brahman that some Upaniṣads put forth.
19. Gangopadhyay 1980, 47. McEvilley suggests that there is a historical link between Parmenides and the philosophy of Brahman (McEvilley 2002, 25).
20. Even if physicists have not always recognized it, unless there are no items in their physics except unconnected and unrelated true philosophic atoms, metaphysical relations and connections are ultimately behind their descriptions of the structure of matter, space, fields and forces of their physics. Jammer writes:

> With the rise of Newtonian dynamics and its interpretation along the lines of Boscovich, Kant, and Spencer, the concept of force rose almost to the status of an almighty potentate of totalitarian rule over the phenomena. And yet, since the very beginning of its early rise to power, revolutionary forces were at work (Keill, Berkeley, Maupertuis, Hume, d'Alembert) which in due time led to its dethronement (Mach, Kirchhoff, Hertz). This movement in mathematical physics, from the time of Newton onward, was essentially an attempt to explain physical phenomena in terms of mass points and their spatial relations (Jammer 1999, 242).

21. Many have held the position that the basic building blocks of space are of non-zero size *and* simple (partless), including Democritus (Democritean atoms) (see Hoffman and Rosenkrantz 1997, 13, 150–51) and perhaps Aristotle (minima), although whether or not Aristotle held this position is controversial, and I take no position on it (see Pyle 1995 for a lucid discussion of minima). Many contemporary physicists and philosophers hold the position that so-called Planck cells, or Planck lengths, are basic entities which have a non-zero size.
22. Quoted in Jammer (1993, 187). This sort of topology is often espoused by quantum gravity theorists, who hold the view that the fundamental particles of nature are not points, but are rings, 1-dimensional strings, cells, or sheets. One of the most widely discussed quantum gravity theories today is the string theory. In this theory, strings vibrate in spaces that (allegedly) have many more dimensions than is typically ascribed to the four-dimensional phenomenal world.
23. For example, see Esfeld (2003), Grünbaum (1952, 1955, 1967), Smith (1993), and Roeper (1997), just to name a few. Relativity theorists such as Smith (1993), Hawking, and Einstein also hold this position.
24. Cohn and Varzi 2003, 359.

    In the quantum field theory, and Einstein's relativity, space is considered to be continuous, consisting of continuum—many interrelated point-sized basic building blocks, where there are relation between or among the spatial points, and where any point in the extended continuum of space is not immediately next to any other points. (See Hawking 1996, 4; Stenger 2000, 76–78, 85. Also see Quentin Smith 1983, 1995.)

    An example of someone who holds that space is dense (continuous) is Stephen Hawking, in his 1994 book with Roger Penrose:

> Although there have been suggestions that space time may have a discrete structure, *I see no reason to abandon the continuum theories that have been so successful.* General relativity is a beautiful theory that agrees with every observation that has been made. It may require modifications on the Planck scale, but I don't think that will affect

> many of the predictions that can be obtained from it. It may be only a low energy approximation to some more fundamental theory, like string theory, but I think string theory has been oversold (Hawking 1996, 4). (Emphasis added)

25. Lewis 1991, 20.
26. Schafer 2003, 500.
27. For a clearly written argument for why this is the case, see Pyle 1995, 2–4.
28. Entanglement is a measurable phenomenon that all particles in nature exhibit, and which is an *instantaneous* connection between particles—particles are observed to interact with one another instantaneously, as if to exhibit action-at-a-distance (see Maudlin 2001 for an account of quantum entanglement). Quantum entanglement is widely discussed by physicists in virtually every area of quantum mechanics, relativity, and superconductivity, but it is a subject that has yet to make it into the philosophic literature. Quantum entanglement is very widely considered to be a relation, which is why I use it as an example in this paper. But if my reasoning in sections 6 and 7 is correct, quantum entanglement cannot be a relation.
29. Campbell 1990, 102.
30. An example of a complex relation would be: *attracted at a distance*, as in the case of gravitation, since this relation is the conjunction of two noncomplex relations, *distance* and *attraction*.
31. Roeper, 1997. Also see the passage above by Cohn and Varzi.
32. Mellor 1991 and 1992.
33. 2003, 10.
34. 2002, 16.
35. 2001, 13.
36. Grossmann 1990, 7.
37. Smith 1998, 147.
38. Loux 1998, 46.
39. This position is widely held. Ehring writes: 'A non-Platonic theory of universals brings universals into the spatiotemporal world. Instantiated physical universals exist in space and stand in spatial relations to each other on this view' (Ehring, 2002, 17).
40. In this paper, I will use 'abstract' to denote entities outside of space, and 'concrete' or 'physical' to denote entities not outside of space. See Lowe (2002, chapter 20) of Jubien (1997, p. 39), where Jubien writes: 'Platonists see reality (or "the world") as divided into two realms, the spatiotemporal and the nonspatiotemporal or, as we will usually say, the concrete and the abstract.'

41. Moreland here is considering a red ball that is named 'Socrates'.
42. Moreland 2001, 18–9.
43. Grossman 1992, 7–8.
44. Many hold that instantiation or exemplification relations should not be considered as *relations*, but rather as a non-relational 'tie' (apparently to avoid Bradley's regress, among other reasons). See Lowe 2002, 384, and Loux 1998, 38–41. I discuss this, including giving this Loux passage, in the section on problems with platonistic relation later in this paper.
45. Jubien 1997, 14–5.
46. 'Linkage' is another term used by Loux (1998, 38–41) for the tie between relation and particulars that share the relation.
47. I use Armstrong's metaphor of 'realm crossing' when discussing pure realism in this section only, and the metaphor does not play into my arguments against platonistic and pure realist property possession in sections below.
48. Armstrong 1989, 76. Moreland (2001, 100) may also refer to a *realm-crossing* exemplification: 'For traditional realists, neither the universal nor the exemplification *nexus* are spatiotemporal ... [T]he exemplification *nexus* connects an abstract entity with a spatiotemporal one.' (Emphasis added)

    Moreland's passage in confusing since, on the one hand, he uses a word, 'nexus' (Loux uses the same word), which appears to refer to a bridge-like intermediary tie between entities; but on the other hand, Moreland tells us (as do many philosophers who discuss a platonistic property possession in detail) that exemplification is not spatially located, and this implies it is not bridge-like, not a nexus, 'reaching' (to use Armstrong's word) from one realm to the other. This leaves open the question of *how*, exactly, a non-spatial entity can attach to a spatial entity: if a spatial entity is, by definition, spatially *located*, and if a spatially unlocated entity is, by definition, spatially *unlocated*, one wonders how the two can be involved in a direct attachment without the spatial entity becoming spatially unlocated upon such an attachment, or without the spatially unlocated entity becoming spatially located upon such an attachment. I discuss this much more in the section below on problems with platonistic relations.
49. Lowe 1998, 78–9.
50. Malcolm 1997, 4–5, 92.
51. Moreland 2001, 7.
52. Moreland 2001, 77.
53. A note (n. 3) in Loux (1998, 48) that refers to page 22, finds Loux writing that Wolterstorff follows the 'Platonic schema'. Also, Moreland discusses Wolterstorff's platonistic position: 'Wolterstorff says that his kinds do, in fact, <u>transcend</u> their cases ...' (Moreland 2001, 102) (Underlining added).

54. Moreland 2001, 76–7.
55. As an aside, it is worth mentioning that there are perhaps other problems with the varieties of platonism that involve copies of properties that are in space other than the problems that I will discuss in this section. For example, it is unclear how the instances (which Jubien calls 'physical') are copies of, or in any way resemble, the platonistic universals, which are *abstract*. In other words, it is unclear how a wholly abstract platonistic universal can be described as having a copy that is in space, since that would leave one having to describe the platonic entity (its copy) in spatial terms. And there are more problems with this position, which Moreland discusses (2001, 7–9).
56. Hereafter, I will refer to all positions on relations that are not pure realist positions as 'non-platonistic and non-pure realist' positions.
57. Cohn and Varzi 2003, 358–59. Roeper writes: '... a point is a location in space'. (Roeper 1997, 251)
58. See Loux 1998, 38–41. I will be discussing exemplification ties in greater detail when I discuss platonistic property possession below.
59. 'I' is this 'betweenness', where relations are not merely at the locations of their relata, that monadists often reject about relations.
60. See Kane 2000, 25.
61. In this parenthetical note, my using symbols '$\subset$' and '$\neq$' perhaps provides reason for me to bring up, as an aside, a complaint some readers might have at this point. On the ontological accounts of mathematics that are standard, the symbols '$\subset$' and '$\neq$' denote relations, and therefore, it is unclear how I can freely use them in this paper, if I am arguing against the existence of all relations, except those in a collocated region. Further, some readers might suggest that language in general involves relations, and if relations do not exist, then language cannot exist. As I see it, this issue is completely avoided if we merely consider that relations are mere ideas in our empirical minds (which reveal only illusion), rather than real constituents of nature.
62. The arguments in the previous paragraph would apply to a gunky topology, showing that particular sort of topology to be unrelated by non-platonistic noncomplex relations.

Other Notes

1. Phillips 1995, 2.
2. Phillips 1995, 10.
3. Phillips 1995, 11
4. Gupta 1998, 41
5. If consciousness is not conscious of something, it is intentionality without intentional objects, which is an apparent absurdism.

6. Phillips 1995, 10.
7. Phillips 1995, 9.
8. Phillips 1995, 9.

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