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For the papers written in English, words from Sanskrit, Ardhamāgadhī and other Prakrits including the Apabhraṁśa, etc., will be diacriticised if rendered in Roman script. (Quotations can also be in the Nāgarī script). [Here we suggest those for the Sanskrit (classical), the Prakrit, the Apabhraṁśa, and the Dravidic languages. For other languages, namely, Arabic, Persian and the modern European languages, the current international conventions for transliteration for their rendering may be followed.]

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Western Analytic Metaphysics Reduces to a Philosophy of Brahman (Second Part)*

JEFFREY GRUPP
2010 Moore Hall, Department of Comparative Religion, Western Michigan University, Kalamazoo, MI 49008; e-mail: jeffgrupp@aol.com

6.5 The Impossibility of Noncomplex Relations in the Relationalist Account

The above arguments against relations between p_1 and p_2 are dependent upon the concept of spatial *location*: in addition to the item being considered, such as a non-platonistic or non-pure realist relation, there must *also* be a location in space that the relations are located at. What if the location did not, in fact, exist? The relationalist account does not involve space—it does not exist. Rather, what exists on the relationalist account are merely interrelated objects. When we look at a lion, a proton, or a flock of birds, all we experience are the objects. To add on the idea that, in addition to the objects, there is space that the objects are located in, may be considered uneconomical and speculative. For these reasons, some relationalist accounts do not make use of the concept of *location in space*, and thus relationalist accounts of the universe appear not to be susceptible to the problems just discussed. I just discussed apparently serious problems to do with non-platonistic and non-pure realist relations if the relations are *located* in space. On a relationalist account, no object, strictly speaking, is located since there are no points in space—there are only the objects, *period*.

I will next argue that the relationalist account does not avoid problems vis-à-vis the relations discussed to this point, and the relationalist account also apparently involves serious problems. On the relationalist account, consider that p_1 and p_2, two protons, for example, are interconnected by the relation *quantum entanglement*, where p_1, p_3, and the relation,

quantum entanglement, are each not considered to be located in space. On this account, the following statements would be true:

S1: *Quantum entanglement* coincides with p_1,
S2: *Quantum entanglement* coincides with p_3.

If the relation, *quantum entanglement*, is a noncomplex relation, the entire relation is describable by any statement about it, such as statements S1 and S2. Upon coincidence with p_3, however, the relation, *quantum entanglement*, would be describable, as by the following statement:

S3: *Quantum entanglement* does not coincide with p_1.

The relation is describable by this statement since at photon p_3, the relation does not coincide with p_1 and thus cannot be said to coincide with p_1. By coinciding with any item that is not p_1, S3 would be true with respect to that coincidence which the relation involves. For example, if the relation, *quantum entanglement*, coincides with both p_2 and p_3, and if the relation was an extended relation between p_1 and p_3 where p_2 was between p_1 and p_3, then at photons p_2 and p_3, the following statement would be true:

S4: *Quantum entanglement* does not coincide with p_1.

S4 is true because we can discuss the coincidence that p_1 has with the relation, and this coinciding is not a coincidence that the relation has with any other item other than p_1: at p_1, the relation, quantum entanglement, does not coincide with p_2 or p_3. It cannot be a coincidence with any other item other than p_1 since p_1, p_2 and p_3 all do not coincide in space. Thus, we can consider the coincidences that the relation has with each p_1, p_2, and p_3 as distinct, regardless of whether or not these photons are co-exemplifiers of the relation, *quantum entanglement*.

Each of S1–S4 are statements that can only be descriptions of the *entire* noncomplex relation, since the relation in question is a non-platonistic *noncomplex* relation. The conjunction of statements is also a description of the relation. The conjunction of statements S1 and S4 gives rise to a statement that describes the relation but which is a contradiction:

S5: *Quantum entanglement* coincides with p_1 and does not coincide with p_1.

If a relation on the relationalist account is a non-platonistic or non-pure realist relation that does and does not coincide with p_1 then it is impossible and the relation does not exist. S5 is a description of any noncomplex non-platonistic or non-pure realist relation of the relationalist account (unless it is a self-reflexive relation) regardless of whether or not the relation is spatially extended or unextended.

In the sections below, I will continue discussing the impossibility of relations between p_1 and p_2, where I will discuss the complex relations between p_1 and p_2. My arguments apply to both relationalist and non-relationalist accounts of complex relations between p_1 and p_2.

6.6 The Impossibility of a Complex Relation as an Extended Continuum of Noncomplex Relations

Since noncomplex relations make up complex relations, it may appear that non-platonistic *complex* relations between or among p_1 and p_2, are *also* impossible, given the above reasoning. But there may be varieties of spatially located complex relations between p_1 and p_2 not susceptible to the problems discussed up to this point in the paper. Above, I have discussed apparently serious problems with *noncomplex* non-platonistic and non-pure realist relations between or among p_1 and p_2, where those non-platonistic and non-pure realist noncomplex relations were considered as either spatially extended or spatially unextended. In the case of spatially *extended* noncomplex, non-platonistic or non-pure realist relations, the apparent problems were drawn from the combination of the *partlessness* and spatial *extendedness* (extended larger than one basic building block of space) of the noncomplex spatially located temporal relation. In the case of spatially *unextended* noncomplex, non-platonistic or non-pure realist relations, the apparent problems I discussed drew from the inability of the noncomplex spatial relation in connecting p_1 and p_2 if non-platonistic or non-pure realist noncomplex relations are in no way spatially *extended between* relata. Perhaps a *complex* non-platonistic or non-pure realist relation of a very specific sort avoids these problems.

The following two sorts of spatially located, spatially extended, *complex* relations between or among p_1 and p_2 may avoid the problems of noncomplex non-platonistic and non-pure realist relations discussed above.

1. A relation composed of an extended *continuum* of point-sized, noncomplex, non-platonistic subrelations between p_1 and p_2. [Any one of these non-platonistic point-sized subrelations are *spatial* since they are *in space* (they are *non-platonistic*), but they are *point-sized* since the location in space that any one of them occupies is spatially unextended].
2. A relation composed of *discrete* spatial subrelations in tandem between p_1 and p_2, where the subrelations have a basic (irreducible) spatial size (a basic spatial size, such as the size of a Planck atom of space).

Points 1 and 2 describe a relation between p_1 and p_2 that is a series, or a chain of spatially located subrelations in tandem, linked one after the other, by analogy as chain-links are linked to give rise to a chain. (Loux and others use 'link' to denote the *tying* of a relation to other relations.[63]) This is not the sort of relation that I have seen discussed often in the literature, other than for a few specific cases.[64] In this section, I will consider *continuous* non-platonistic complex relations (point 1 above), and also complex relations that are composed of *discrete* noncomplex Planck-scale-sized subrelations (point 2 above). If some of the current leading theories of quantum gravity are correct (such as some of the string theories, which might be described by non-commutative geometries), there are no point-sized entities involved in the makeup of space or time, since at the Planck scale, the smallest entity is a Planck atom of space or a Planck length (1.6×10^{-35} m) or a Planck unit of time (10^{-43} s). I will only consider the noncomplex subrelations to be Planck size or smaller, since if the noncomplex subrelations were larger than that, they would occupy more than one location of space, and the problems of previous sections would ensue. Physicists and philosophers take each position seriously: the position that (1) space can involve point-sized items, such as point-sized atoms of space or matter, or perhaps point-sized subrelations; and the position that (2) space can only involves discrete space atoms with a tiny

magnitude, for which reason the atomic building blocks of space or matter are discrete spaces, and any subrelations of a relation between p_1 and p_2 must be discrete subrelations of an irreducible non-zero spatial size (1.6×10^{-35} m). Since both positions are taken seriously, I will consider each of them: the position that the noncomplex subrelations that composed the complex relation between p_1 and p_2 are *point-size* (I do this in subsections 6.7 and 6.8), and the position that there are noncomplex subrelations that must be the size of a Planck atom of space or a Planck length (I do this in subsection 6.9). I find that in either case, such continuous or discrete non-platonistic or non-pure realist noncomplex subrelations cannot compose a complex non-platonistic or non-pure realist relation between p_1 and p_2.

6.7 The Impossibility of a Complex Relation as a Continuum of Point-Sized Noncomplex Subrelations, Part 1

I will next discuss the reasons as to why a non-platonistic or non-pure realist complex relation (allegedly) connecting p_1 and p_2 that is composed of $\aleph_1$-many spatially unextended noncomplex subrelations apparently cannot constitute a relation between p_1 and p_2.

It might seem that $\aleph_1$-many noncomplex subrelations constituting a spatially located complex relation between p_1 and p_2 would be a complex relation that consists of point-sized subrelations that *directly link to one another*, in order to give rise to a spatially extended relation between p_1 and p_2. But if this were the case, the spatially located complex relation would be denoted by a statement that describes an infinite regress of point-sized subrelations: 'p_1 is related to a subrelation that is related to another subrelation that is related to another subrelation ...' This may, however, imply that p_1 and p_2 are *not* related, since there is no last step in this regress of point-sized subrelations between p_1 and p_2 and, thus, p_1 and p_2 would be *unrelated*. This infinite regress attempts to complete a task by an infinite sequence of steps, where the 'completion' 'at infinity'—some might claim—in fact, never occurs, since an infinite set of items has no *last* item. Chisholm considers this sort of regress vicious; Moreland has lucidly written about Chisholm's position:

> There are at least three forms of infinite regress arguments ... [One form] involves claiming that a thesis generates a 'vicious' infinite regress. How should 'vicious' be characterized here? ... Roderick Chisholm says that 'One is confronted with a vicious infinite regress when one attempts a task of the following sort: Every step needed to begin the task requires a preliminary step' [Chisholm, 1996, p. 53]. For example, if *the only way to tie together any two things whatever is to connect them with a rope, then one would have to use two ropes to tie the two things to the initial connecting ropes, and use additional ropes to tie them to these subsequent ropes*, and so on. According to Chisholm, this is a vicious infinite regress because the task cannot be accomplished.[65] (Emphasis added.)

Phillips also uncomplicatedly discusses the problem involved in this sort of regress:

> The regress is set up by treating the relation [spatially located, unextended relation] as a term, as the same sort of thing, logically, as its relata [i.e. relata are also relations]. Without an argument that a relation is a different sort of critter, it seems that if a third thing is required to relate two things, then the third thing equally requires a fourth and fifth to tie it up with the first two, *ad infinitum*. The regress is vicious: unlike an infinite series of causes that does not undermine the notion that a preset x has y as its cause, the relation regress does undermine the work proposed for the relator. *The relator, the third thing, cannot relate the two items without help from the fourth and fifth things* (ad infinitum) *needed to tie it up with the first two.*[66] (Emphasis added.)

6.8 The Impossibility of a Complex Relation as a Continuum of Point-Sized Noncomplex Subrelations, Part 2

Some philosophers consider infinities to involve paradoxes, and for that reason, they make a point to avoid infinities when describing collections. But others may object to such a position and to the reasoning given in the last section, and may hold that infinite collections *can* exist in nature. Examples of such collections might be, for example, the collection of spatial locations, the collection of time-instants before this present moment,[67] or, perhaps, the collection of noncomplex, spatially unextended subrelations constituting a spatially extended complex relation between or among p_1 and p_2.

An extended continuum of point-sized subrelations resembles an extended continuum of topological spatial points. Such a complex non-platonistic relation consists of $\aleph_1$-many spatially unextended, spatially located, spatially non-collocated subrelations, that give rise to an extended continuum (the complex relation between p_1 and p_2). For these reasons, hereafter I will consider a complex relation that is composed of $\aleph_1$-many durationless, spatially non-collocated subrelations to be a complex relation that is a continuum of point-sized subrelations. Points in a continuum do not directly contact one another, since any point in a continuum is not immediately next to any other points. This reasoning would apply to an extended continuum of spatially located point-sized spatially non-collocated subrelations extending between p_1 and p_2: none of the $\aleph_1$-many point-sized spatially non-collocated subrelations are immediately next to one another. For this reason, a complex relation composed *only* of point-sized spatially non-collocated subrelations cannot give rise to a complex connection between p_1 and p_2.

Continuums of *points* are, however, typically considered to be composed of *interrelated* points.[68] Perhaps, as with the point-set topological account of space, the complex relation between p_1 and p_2 could consist of $\aleph_1$-many *interrelated* items (spatially non-collocated subrelations). If so, perhaps the reasoning of the previous paragraph, where $\aleph_1$-many spatially non-collocated subrelations were considered to be *the only* constituents of a continuum is misguided.[69] Instead of discussing the point-sized spatially non-collocated subrelations as *directly* attached to one another (which is impossible), the point-sized spatially non-collocated subrelations should be considered to as interconnected by a relation, topological *connectedness*, which is perhaps analogous to point-set topological accounts of *connectedness* of spatial points in the spatial manifold.

If a continuum is extended and interconnected, since the point-sized spatially non-collocated subrelations of the continuum cannot account for the interconnectivity of the continuum, there are *two* constituents of the complex relation between p_1 and p_2: (1) the $\aleph_1$-many point-sized

spatially non-collocated subrelations, and (2) the topological relation, *interconnectedness*, between or among the $\aleph_1$-many point-sized spatially non-collocated subrelations. I will next argue that a non-platonistic or non-pure realist *interconnectedness* relation between or among a continuum of point-sized spatially non-collocated subrelations that compose the non-platonistic or non-pure realist complex relation between p_1 and p_2 cannot connect the $\aleph_1$-many point-sized spatially non-collocated subrelations.

Since none of the non-platonistic or non-pure realist point-sized spatially non-collocated subrelations are immediately next to one another, the *interconnectedness* relation between or among the point-sized spatially non-collocated subrelations is a relation between or among *non-identical subrelations* (the subrelations are at a spatial distance from one another). If *connectedness* is a relation between or among the spatially *non-collocated* subrelations, and if the *connectedness* relation is *not also* a complex non-platonistic or non-pure realist spatially extended relation composed of a $\aleph_1$-many point-sized subrelations, in order to interconnect the point-sized subrelations, the *connectedness* relation would be a non-platonistic or non-pure realist *noncomplex* relation between the *non-collocated subrelations which is for that reason located at more than one spatial location.* But this is exactly the sort of relation found to be apparently contradictory in the sections above on noncomplex, non-platonistic or non-pure realist relations.

For these reasons, the relation, *connectedness*, connecting the $\aleph_1$-many point-sized spatially non-collocated subrelations must *also be a complex relation consisting of continuum—many durationless spatially non-collocated subrelations that are not directly linked to one another.* If the *connectedness* between or among the point-sized spatially non-collocated subrelations was also composed of *point-sized subrelations*, the relation, *connectedness*, would itself provide no continuous connection between the non-collocated point-sized spatially non-collocated subrelations that compose the complex relation between or among p_1 and p_2. Only if the point-sized spatially non-collocated subrelations that compose *connectedness* were *also* interconnected by a complex relation, $connectedness_2$ (where $connectedness_2$ is also

composed of continuum-many point-sized spatially non-collocated subrelations), would *connectedness* provide a continuous connection of the point-sized subrelations between or among the complex relation connecting p_1 and p_2. $Connectedness_2$ would require $connectedness_3$, and an infinite regress would ensure, where each instantiation of the *connectedness* relation would require another instantiation of *connectedness*.

Some may consider the mere fact that an infinite regress ensues enough to discard this sort of relation. I, however, want to point out another problem. At any stage of the regress, each instantiation of the *connectedness* relation is composed of $\aleph_1$-many point-sized spatially non-collocated subrelations that do not directly link to one another, and which require another instantiation of the *connectedness* relation. The problem, however, is that *any stage of the regress only consists of unconnected* $\aleph_1$-many point-sized spatially non-collocated subrelations. At any stage, the unconnected subrelations require another distinct relation at the next stage of the regress to hold it together, but where the relation at the next stage is *also* composed of $\aleph_1$-many *unconnected* point-sized sub-relations. *Every* stage of the regress is only composed of unconnected $\aleph_1$-many spatially unextended (point-sized) elements (subrelations), and for that reason, nowhere in the regress is there any contact or connection between any subrelations, and there is no interrelating at all between p_1 and p_2. In other words, since we never arrive at a stage in the regress where there are anything but $\aleph_1$-many spatially unextended subrelations *that are not linked to one another*, the *connectedness* relation among the $\aleph_1$-many subrelations that compose the complex relation connecting p_1 and p_2 is apparently impossible. I do not know of any other way to consider a continuous relation between p_1 and p_2 and for that reason, I will move to the other case: a complex relation between p_1 and p_2 composed of *discrete* subrelations in tandem.

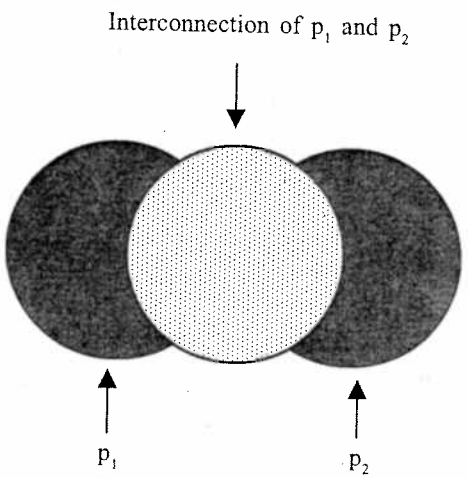
6.9 The Impossibility of a Complex Relation Composed to Planck-Sized Subrelations

In this subsection, I shall consider the complex non-platonistic or non-pure realist relation between p_1 and p_2 to be a series of *discrete* subrelations that are the size of the Planck-sized discrete basic building

blocks of space. I will further argue that there are no complex, non-platonistic relations between p_1 and p_2, if the complex relation is composed of a tandem of *discrete* noncomplex subrelations. To see why this is the case, I only need to consider the minimum case, where two directly adjacent Planck spaces—call them p_1 and p_2—are interconnected, which I will do next.

According to quantum gravity theories,[70] since there is no space smaller than a Planck space, there is no space between any two Planck spaces that are directly adjacent. The smallest subrelation that can be considered to connect two adjacent Planck spaces would not be smaller than a Planck space and thus would be a subrelation that is itself an irreducible (noncomplex) non-platonistic relation between the two directly adjacent Planck spaces, p_1 and p_2. This one Planck-sized subrelation would coincide with both of p_1 and p_2.

It cannot be the case that one irreducible (noncomplex) subrelation coincides with more than one Planck space, since in connecting p_1 and p_2, the subrelation is: (i) noncomplex, and (ii) must coincide with p_1 and p_2 in order to connect them. If the relation is located at or partially located at *both* p_1 and p_2—which it appears it must be if it is to connect to them in the way just described—then this relation is a noncomplex relation connecting two non-identical Planck spaces, which is exactly



Planck-scale-sized subrelation connecting Planck spaces p_1 and p_2.

the sort of relation I found to be contradictory in the previous sections of this chapter (see figure above).

The only way this problem could be avoided is if the Planck-sized subrelations coincided exactly with Planck-sized basic building blocks of space, linking up to one another while the subrelations each exactly occupy only one discrete basic building block of space (one Planck atom of space or matter). But on this account, it is unclear as to how these discrete subrelations could link to one another. They cannot link, in this case, by partial collocation, since they coincide exactly with non-identical Planck times. Without coinciding, the Planck-sized subrelations are entirely non-collocated, and for that reason it is unclear how the Planck-sized subrelations can be relata of one another by *linking* (to use Loux's word) in any way to one another. If we imagine that the subrelations link by *abutting* to one another without overlapping, there must be an item distinct from the subrelations that is responsible for holding (or 'gluing') the subrelations together if the subrelations perfectly coincide with Planck spaces p_1 and p_2 and abut without overlapping. However, this item responsible for holding the subrelations together would be smaller than a Planck space, and in fact would be sizeless if the subrelations abut—and for that reason this gluey item would be susceptible to the problems to do with durationless subrelations given about in this subsection. For example, if the gluey item is point-sized, it is unclear how it could contact, or attach to, the two Planck-sized subrelations that coincide exactly with Planck spaces p_1 and p_2, since point-sized items cannot contact any other entities unless the entities that contact the point-sized gluey item *collocate* with the gluey item. But if the subrelations collocated—either while being exactly collocated with Planck atoms or not—the subrelations, in partially collocating (spatially overlapping) with the gluey item, would also partially collocate which each other, which we just discussed they cannot do, since that would mean they would be noncomplex relations at more than one spatial location.

If we go against quantum gravity theorists and imagine that the discrete subrelations of the complex relation between p_1 and p_2 are somehow larger than a point, but *smaller* than the basic discrete spaces of the Planck scale, the same problems as those just described involving

blocks of space. I will further argue that there are no complex, non-platonistic relations between p_1 and p_2, if the complex relation is composed of a tandem of *discrete* noncomplex subrelations. To see why this is the case, I only need to consider the minimum case, where two directly adjacent Planck spaces—call them p_1 and p_2—are interconnected, which I will do next.

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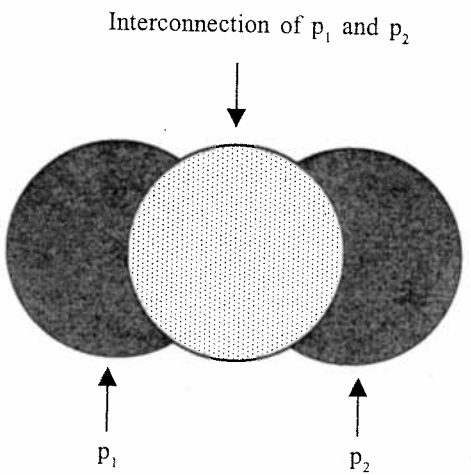


Planck-scale-sized subrelation connecting Planck spaces p_1 and p_2.

the sort of relation I found to be contradictory in the previous sections of this chapter (see figure above).

The only way this problem could be avoided is if the Planck-sized subrelations coincided exactly with Planck-sized basic building blocks of space, linking up to one another while the subrelations each exactly occupy only one discrete basic building block of space (one Planck atom of space or matter). But on this account, it is unclear as to how these discrete subrelations could link to one another. They cannot link, in this case, by partial collocation, since they coincide exactly with non-identical Planck times. Without coinciding, the Planck-sized subrelations are entirely non-collocated, and for that reason it is unclear how the Planck-sized subrelations can be relata of one another by *linking* (to use Loux's word) in any way to one another. If we imagine that the subrelations link by *abutting* to one another without overlapping, there must be an item distinct from the subrelations that is responsible for holding (or 'gluing') the subrelations together if the subrelations perfectly coincide with Planck spaces p_1 and p_2 and abut without overlapping. However, this item responsible for holding the subrelations together would be smaller than a Planck space, and in fact would be sizeless if the subrelations abut—and for that reason this gluey item would be susceptible to the problems to do with durationless subrelations given about in this subsection. For example, if the gluey item is point-sized, it is unclear how it could contact, or attach to, the two Planck-sized subrelations that coincide exactly with Planck spaces p_1 and p_2, since point-sized items cannot contact any other entities unless the entities that contact the point-sized gluey item *collocate* with the gluey item. But if the subrelations collocated—either while being exactly collocated with Planck atoms or not—the subrelations, in partially collocating (spatially overlapping) with the gluey item, would also partially collocate which each other, which we just discussed they cannot do, since that would mean they would be noncomplex relations at more than one spatial location.

If we go against quantum gravity theorists and imagine that the discrete subrelations of the complex relation between p_1 and p_2 are somehow larger than a point, but *smaller* than the basic discrete spaces of the Planck scale, the same problems as those just described involving

Planck-scale-sized subrelations would ensue. In other words, regardless of the size of the discrete basic building blocks of space or the subrelations connecting the discrete basic building blocks of space, *discrete* basic building blocks of space interconnected by *discrete* subrelations would involve the problems to do with Planck-sized subrelations and Planck spaces just discussed.

If my reasoning in this section is correct, there apparently cannot be any temporal relations between t_1 and t_2 if the relations are non-platonistic or non-pure realist relations.

6.10 The Impossibility of Non-platonistic Monadic Relatedness

Some philosophers may argue that according to an account of non-platonistic or non-pure realist *monadic relatedness*, non-platonistic or non-pure realist monadic properties located at p_1 *or* p_2—rather than at both p_1 *and* p_2—account for a *relatedness* of objects in nature, and for that reason, a non-platonistic or non-pure realist may be assumed to avoid the problems discussed so far in this section to do with relations between times. I will next argue that an account of non-platonistic or non-pure realist monadic relatedness apparently involves serious problems.

An example of a non-platonistic or non-pure realist monadic property might be, *at a spatial distance from* p_2, possessed by, for example, p_1. If the monadic property is instantiated by a space or matter atom, such as time p_1, then according to an account of non-platonistic or non-pure realist monadic relatedness, the non-platonistic or non-pure realist monadic property, *at a spatial distance from* p_2, does not coincide in space with p_2, but does coincide in space with p_1 (and at any other spatial location or physical object that is at a distance from p_2). The problem that I will discuss to do with non-platonistic or non-pure realist monadic relatedness has to do with the issue that a monadic property, such as the property, *at a spatial distance from* p_2, does not coincide in space with p_2, but is involved with *both* p_1 *and* p_2: the non-platonistic or non-pure realist monadic property has involvement with p_1 because it is *instantiated by* p_1 and, therefore, coincides in space with p_1. And the monadic property has involvement with p_2 because p_2's existence (allegedly) *makes* p_1 *a certain way*,[71] and that way that

p_1 is, is *at a spatial distance from* p_2. Here, p_2's making p_1's a certain way can be considered a sort of *involvement* that p_2 has with the non-platonistic or non-pure realist monadic property, even though the non-platonistic monadic property does not coincide in space with p_2, for the following reasons. As such, p_2 must exist if it is to be the referent of 'p_2' in the statement that describes the monadic property: 'at a spatial distance from p_2'. For that reason, some sort of *connection* between p_2 and the monadic property must exist in order for p_2 to be referred to in the statement that describes the monadic property, 'at a spatial distance from p_2'. If the monadic property is at p_1, if p_2 is what the monadic property *is about*, there must be a *connection*—call it 'aboutness'—between p_1 and p_2 in order for there for the monadic property to be about p_2. If there were no such a connection, *aboutness*, between p_2 and the monadic property, *at a spatial distance from* p_2, which is possessed by p_1, then the property could not be about p_2, and p_1 then could not be at a spatial distance from p_2. The connection, *aboutness*, is a relation that is between or among non-identical spaces or non-collocated material objects, which is the sort of relation I have argued so far in this paper does not exist.

7. THE IMPOSSIBILITY OF PLATONISTIC RELATIONS BETWEEN p_1 AND p_2

To avoid the ensuing problems with non-platonistic or non-pure realist relations, relations among p_1 and p_2 could be considered relations that are not in space. Rather, *relations* among p_1 and p_2 are *spatially unlocated*: they are spatially unlocated universals (platonistic or pure realist universals) *exemplified* by p_1 and p_2, and not coinciding in space where p_1 and p_2 are at. On this account, p_1 and p_2 are interrelated since they *co-exemplify* a spatially unlocated relation. This sort of relation between or among p_1 and p_2 is, in the platonic or pure realist sense, *nowhere* (it is in the spatially unlocated platonic realm). Considering platonistic or pure realist relations as spatially unlocated is the standard position on platonia. In using the word 'non-spatial' to mean 'not in space', Grossmann, a major platonist philosopher, writes:

> According to Plato, as we have seen, there are two realms: the realm of temporal things, of things which exist in time, and the realm of

atemporal things, of things which do not exist in time. To the first realm belong the individual things around us; to the second, their properties [including their polyadic, or *relational*, properties].

The question arises naturally of whether it is also the case that all individual things are in *space* are spatial, while all properties do not exist in space, are not spatial. In other words, does the distinction between temporal and atemporal things coincide with the distinction between spatial and non-spatial things?[72]

... [S]ome philosophers, and especially Plato, have held that all properties are non-spatial ... ... [T]he color of the apple is not located anywhere in space ... ... [A]ll properties are both atemporal and non-spatial ...

Plato ... speaks of 'abstract quality'. 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.[73]

...[P]roperties ... are abstract things; they are not spatio-temporal. It follows that they do not belong to the universe. They are not part of the universe. The shade of red we talked about, for example, surprising as this appears, is not a (spatio-temporal) part of the universe. And what holds for this particular property holds for every other: none of these things is a part of the universe. But this means that there are things which are not parts of the universe.[74]

Other who hold this position are Michael Jubien, J.P. Moreland, Quentin Smith, just to name a few.[75]

In this section, I will give novel arguments for the position that a platonistic or pure realist account of relations between or among p_1 and p_2 is an impossible account of relations. The specific problem has to do with the *tie* between relations and the items they interrelate. As I will discuss, platonistic and pure realist relations cannot directly attach to the physical particulars they are properties of. Rather, there is a special tie that is responsible for holding platonistic and pure realist properties to the particulars that have the properties. The special tie is typically called the exemplification tie, instantiation relation, or

inherence relation. For reasons I will discuss in detail, I will only refer to it as the 'exemplification tie' in this section. I will not argue against the existence of spatially unlocated objects, nor will I argue for physicalism. I will not discuss any of the commonly discussed issues that are brought up when platonistic or pure realist property possession is discussed (such as, such as whether or not spatially unlocated platonic universals exist or the specific nature of spatially located physical particulars). Rather, my aim in this section is to only argue that the (alleged) *connection* between spatially unlocated platonistic or pure realist universals (such as the relations, *parthood*, *connectivity*, *quantum entanglement, at a spatial distance from*, and so on) on the one hand, and space or objects in space (p_1 and p_2) on the other hand, is a connection that is impossible. More specifically, I concentrate on the *platonist exemplification tie* between a spatially unlocated platonic *universal* and the spatially *located* physical particulars, and the platonist exemplifications tie's alleged capacity to connect, in some sense, spatially *located* objects and a spatially *unlocated* objects.[76]

The *co-exemplification* of aspatial relations by p_1 and p_2, on the platonistic or pure realist account, involves the *platonistic exemplification tie*, which connects universals in the spatially unlocated platonistic realm or the pure realist realm—where relations, such as *connectivity* or *parthood*, and where any other platonistic or pure realist relation, are—to entities in the spatial realm (such as p_1 and p_2). In the case where p_1 and p_2 co-exemplify a platonistic or pure realist relation, platonistic or pure realist exemplification is a tie between or among *spatially unlocated* objects (platonic universals) and platonistic or pure realist thin particulars. Platonists and pure realists often neglect to reveal *what* exactly a first-order property ties to, and platonists and pure realists often merely claim that it is 'the particular that exemplifies properties'. But this is not precise, for the following reasons. First-order platonistic or pure realist properties cannot be tied to other properties, lest a platonistic or pure realist substance be a wholly spatially unlocated bundle of the properties, since platonist properties are aspatial. Thus, first-order properties must tie to the only remaining element of the substance: the *particularity*. Since this particularity cannot be a

property (lest a substance be a bundle), this particularity can only be the *thin particularity* of the substance.

A thin particular is typically discussed in the context of non-platonistic or non-pure realist metaphysics of objects such as the Aristotelian tradition[77] and Armstrongian physicalism, but I will discuss it as the item in platonistic metaphysics that is the literal possessor or exemplifier properties, which itself does not have properties. I see no objection in using it here in the context of platonism and pure realism with one minor modification: the properties exemplified are platonistic or pure realist properties. Other philosophers use Armstrongian concepts in a platonistic context. For example, Vallicella (2000), a platonist, discusses Armstongian ontology extensively, accordingly intermixing the two due to Vallicella's platonism, including using the concept of a thin particular. Moreland discusses thin particulars:

> [Armstrong] distinguish[es] a thick from a thin particular. A thick particular is a state of affairs (e.g. A's being F), and as such it is a particular along with its properties. The particular 'enfolds' its properties in the sense that they are spatially located where the thick particular is. In the statement 'this is hot', the word 'this' refers to a thick particular and says that hotness is among its properties. The thin particular is the particular considered in abstraction from all its properties. It is not a thing *per se*, but amounts to bare numerical difference or thisness, the individuating factor that makes the thick particular more than just a bundle of universals.[78]

A 'platonistic or pure realist thin particular' would be different from an Armstrongian thin particular in the sense that, unlike the Armstrongian thin particular, platonistic universals, if they exist, are not *required* to be part of a thick particular since platonic universals can (allegedly) be unexemplified. On Armstrong's account of a thin and thick particular, '[u]niversality and particularity are, he says, inseparable aspects of all existence, they are neither reducible nor related to each other and, although distinct, their union is closer than a relation'.[79] I do not use 'thin particular' in a platonistic metaphysics to confuse Aristotelian and platonistic or pure realist states of affairs, but rather to be clear in what I mean: the platonistic scenario is: a spatially located

entity (a *platonistic* thin particular) is tied (exemplification) to spatially unlocated entities (platonic universals). Also, I use 'thin particular' here in the context of platonism and pure realism because I find that platonists and pure realists very rarely discuss the analogue of the thin particular in platonistic and pure realist metaphysics.

In this section, I will argue that there is a specific problem to do with the platonistic or pure realist account of polyadic property possession since there may be a fatal problem involved with the exemplification tie that binds *spatial entities* and *spatially located* platonistic or pure realist properties. If I am correct, and if the problem is serious enough, a spatially unlocated platonistic relation cannot relate p_1 and p_2 since it cannot be exemplified by p_1 and p_2 due to serious problems with this platonistic or pure realist exemplification tie.

7.1 Platonistic and Pure Realist Exemplification Ties and Unmediated Attachments

In this subsection, I shall discuss how I use the terms 'exemplification tie' and 'unmediated attachment', which are terms relevant to the discussion of any (alleged) platonistic or pure realist interrelation of p_1 and p_2: a platonistic or pure realist interrelation of any parts and wholes of space or matter, and between or among any non-identical atomic building blocks of space or matter.

There are two entities (in the broadest sense of 'entity') that I will be concerned with in discussing the exemplification tie that ties spatially unlocated platonistic or pure realist universals on the one hand, and p_1 and p_2 on the other.

(i) I will be concerned with the *exemplification tie*, which is an *intermediary* tie that ties the spatially unlocated platonistic or pure realist n-adic properties (monadic properties such as, *relatedness*, or relations, such as, *connectivity*, or *parthood*), to physical thin particulars, such as p_1 and p_2.

(ii) I will also be concerned with the *unmediated attachments*, which spatially located platonistic or pure realist thin particulars and the exemplification tie are involved in, and which a spatially unlocated platonistic or pure realist universal and the exemplification tie are involved in (or which, as I will explain below,

parts of the platonistic or pure realist exemplification tie, if it has parts, might be involved in). *Unmediated attachment* describes the attachment between the exemplification tie and the platonistic or pure realist thin particular, and the exemplification tie and the platonistic or pure realist universal.

Let 'exemplification tie' denote what is denoted by p_1 and p_2 'exemplify' R, or p_1 and p_2 'share' the polyadic property, R (R is the platonistic or pure realist universal). The exemplification tie is the intermediary *between* p_1 and p_2 (platonistic or pure realist thin particulars) on the one hand, and the spatially unlocated platonistic or pure realist universals on the other hand.

Let 'unmediated attachment' express the concept of an attachment that *does not involve an intermediary*, and which the thin particulars and the exemplification tie are involved in, and which platonistic or pure realist universals and the exemplification tie are involved in. The concept of unmediated attachment comes from responses to F.H. Bradley's work on the paradox of the relations regress. Loux lucidly explains:

> According to the [platonist], for a particular, *a*, to be *F*, it is required that both the particular, *a*, and the universal, *F-ness*, exist. But more is required; it is required, in addition, that *a exemplify F-ness*. As we have formulated the [platonist's] theory, however, *a*'s exemplifying *F-ness* is a relational fact. It is a matter of *a* and *F-ness* entering into the relation of exemplification. But the realist insists that relations are themselves universals and that a pair of objects can bear a relation to each other only if they exemplify it by entering into it. The consequence, then, is that if we are to have the result that *a* is *F*, we need a new, higher-level form of exemplification (call it exemplification$_2$) whose function it is to insure that *a* and *F-ness* enter into the exemplification relation. Unfortunately, exemplification$_2$ is itself a further relation, so that we need a still higher-level form of exemplification (exemplification$_3$) whose role is to insure that *a*, *F-ness*, and exemplification are related by exemplification$_2$; and obviously there will be no end to the ascending levels of exemplification that are required here. So it appears ... that the only way we will ever secure the desired result that *a* is *F* is by denying that exemplification is a notion to which the realist's theory applies.
>
> The argument just set out is a version of the famous argument developed by F.H. Bradley. Bradley's argument sought to show that there can be no such things as relations ... [Platonists] claim that while relations can bind objects together only by the mediating link of exemplification, exemplification links objects into relational facts without the mediation of any further links. [This is the unmediated attaching of the exemplification tie to the universals on the one hand, and to p_1 and p_2 on the other.] It is, we are told, an unmediated linker; and this fact is taken to be a primitive categorical feature of the concept of exemplification. So, whereas we have so far spoken of exemplification as a relation tying particulars to universals and universals to each other, we more accurately reflect the realist thinking about the notion if we follow realists and speak of exemplification as a 'tie' or 'nexus' where the use of these terms has the force of binging out the *nonrelational* nature of the linkage this notion provides.[80]

The unmediated attachment I am concerned with here is not a *relation* between the exemplification tie and the spatial items (p_1 and p_2) that possess platonistic and pure realist properties, or between the exemplification tie and a platonistic or pure realist universal. These unmediated attachments do not involve non-relational ties *between* the exemplification tie and the spatial entities (p_1 and p_2), or between the exemplification tie and the universal. And the unmediated attachment does not involve *any* sort of item that *stands between* the exemplification and the spatial entities, or that *stands between* the exemplification tie and the universal. Unmediated attachment is normally how exemplification is conceived to attach to a property or to platonistic or pure realist thin particulars.

Exemplification is a non-relational tie or nexus[81] between or among properties and platonistic or pure realist thin particulars, or between or among properties and other properties. The exemplification tie is not *related* to the platonistic or pure realist relation (*connectivity, parthood*) or to the non-identical spaces or spatial objects (p_1 and p_2). And the

exemplification tie is not a *relation* between or among the platonistic or pure realist relation (*connectivity, parthood*) and the non-identical spaces or spatial objects (p_1 and p_2). Given the exemplification tie's apparent non-relational nature, in this paper, I will discuss exemplification as a *tie*, rather than as a *relation*.

To avoid a Bradley-esque regress in the scenario where p_1 and p_2 are related by platonistic or pure realist relations, at least four entities are involved: (a) p_1, (b) p_2, (c) the relation (such as the relations *quantum entanglement, connectivity, parthood*, and so on), and (d) the exemplification tie which involves an unmediated attachment to both p_1 and p_2, and which involves an unmediated attachment to the platonistic or pure realist relation. In the case where p_1 and p_2 co-exemplify a platonistic or pure realist relation, the exemplification tie is a tie, and apparently is not a relation, because the exemplification tie allegedly holds the platonistic or pure realist relation and non-collocated spatial entities (p_1 and p_2) together without the ensuing Bradley-esque regress. It is not the case that platonistic or pure realist thin particulars such as p_1 and p_2 exemplify the relation *exemplifies quantum entanglement*, since *exemplification* involves unmediated attachments with *quantum entanglement* and also involves unmediated attachments with the spatial objects (such as p_1 and p_2, if, for example, p_1 and p_2 are two quantum entangled photons). The italicized 'exemplifies'—which indicates that it is being referred to as an aspect of the property that is exemplified—denotes an exemplification tie between the relation (*quantum entanglement*) and the exemplification tie, and an infinite regress would ensue. But since platonists and pure realists tell us that the exemplification tie involves unmediated attachments with particulars, and with properties, they assert that this infinite regress is avoided, and reference to the second (and third, fourth, ...) exemplification tie is not needed. (I will explain below that reference to the unmediated attachment between property and the exemplification tie, and between the particulars and the exemplification tie, is not a reference to an entity distinct from the particulars, the universal, and the exemplification tie, but rather to the *way* the property and the exemplification tie attach, and the *way* that the universal and the exemplification tie attach.) The phrase 'p_1 and p_2 exemplify *exemplifies quantum entanglement*' is either a category

mistake or a redundant way of saying 'p_1 and p_2 exemplify *quantum entanglement*'.

The relation (*connectivity*, *quantum entanglement*, *parthood*, etc.) does not involve an unmediated attachment to p_1 and p_2. Rather, the relation (*connectivity* or *parthood*) involves unmediated attachments to the exemplification tie. Likewise, the interrelated entities (p_1 and p_2) are not involved in unmediated attachments to the platonistic or pure realist relation (*connectivity*, *parthood*). Rather, the interrelated spatial entities (p_1 and p_2), and the relation (*connectivity*, *parthood*), involve an unmediated attachment to the exemplification tie, which itself involves an unmediated attachment to the platonistic or pure realist relation, and to the spatial entities. The relation (*connectivity, parthood*), and interrelated entities (p_1 and p_2), do not involve unmediated attachments to each other; rather, these together form an unordered set [relation (*connectivity* or *parthood*), object p_1, object p_2]. The members of this set involve unmediated attachments to the exemplification tie in such a way as to constitute the interrelated entities (p_1 and p_2) *being* interrelated *with* each other. Here *being* and *with*, in '... *being* interrelated *with* ...', denote the exemplification tie.

It is worth emphasizing these distinctions for the sake of further clarifying what is meant by 'exemplification'. We refer to the exemplification tie when we say that the interrelated entities (p_1 and p_2) *are* interrelated (... are ...). The exemplification tie is also expressed when we say that the interrelated entities *stand in* a relation *to* each other; we use 'stands in ... to' to denote the exemplification tie that involves unmediated attachments with the spatially unlocated relation, and with the platonistic or pure realist thin particulars. On the platonistic or pure realist account, that statements 'two things p_1 and p_2 stand in the relation R', or 'two things exemplify the relation R', means that 'two spatial things tie to an aspatial object'.

To ontological role of the exemplification tie is to act as the non-relational intermediary between: (i) the interrelated entities (t_1 and t_2), and (ii) the relation (*connectivity*, *quantum entanglement*, *parthood*, etc.) without a Bradley-esque regress ensuing. To my knowledge, platonists and pure realists have not told us *how* the exemplification ties without being related to property and particular, but have merely

asserted that in order for platonism or pure realism to be coherent, the exemplification tie must somehow tie *non-relationally*.

Some readers may be concerned that any *description* of the exemplification tie is not possible since the tie is alleged to be *primitive*. I suggest that if this is the case, then an inquiry of the nature of the exemplification tie will *reveal* its primitivism. However, as an aside, I maintain that the primitivism of the exemplification tie has not been established, perhaps due to the near absence of discussion of the tie. Rather, it appears that it has been *merely asserted* that the exemplification tie is primitive, following Bradley's work. But Bradley's regress only shows a *need* for a special *non-relational* tie, not that the special tie is *primitive*.

Some may object that the reasoning I have given to this point—and that was given in the passage above by Loux—is fatally flawed, since 'unmediated attachment' must have a truthmaker, but if there is a verbal referent to 'unmediated attachment', then an unmediated attachment, as described by Loux and myself above, is impossible, since unmediated attachment would refer to yet *another* entity (in the broadest sense of ('entity'), *distinct from* the universal, the exemplification tie, and the particulars. This objection fails, however, for the following reasons. The referent of 'unmediated attachment', if I understand Loux's terminology correctly, is not *another* entity distinct from the exemplification tie, property, and particular, but is a *manner* or *way* in which the property and the exemplification tie, or particular and the exemplification tie, are attached. For example, in his passage above, Loux describes the exemplification tie as a 'linker', and the word 'link' might imply a chain-like connection, to use a rough analogy, where only the pieces of a chain are involved, and a third *mediating* entity, between chain links, such as some sort of bonder, adhesive or glue, or string-like connection, *holding* chain links together, and which is an entity distinct from the chain links, is not required for the linking of the chain links to ensue.

Lastly, the exemplification tie is not *merely* a non-relational unmediated attachment of an aspatial property with platonistic or pure realist thin particulars. When we say, 'p_1 and p_2 *share* R', there must be a truthmaker denoted by 'share'. For this reason, the exemplification tie is an *additional* entity (in the broadest sense of the word 'entity') in addition to the platonistic and pure realist property and the platonistic or pure realist thin particulars, which connects the platonistic or pure realist factor of thin particularity to the platonistic or pure realist spatially unlocated universal. Some may object here, and maintain that it is correct to discuss platonistic and pure realist account as if relations *directly attach* to particulars, rather than as if relations and their relata are *mediated* by an exemplification tie. This would be to consider 'the unmediated attachment of a relation to its relata' as *synonymous with* 'exemplification tie', where an unmediated attachment between a relation and its relata is a special 'unmediated linkage' that a relation and its relata are involved in. However, to my knowledge, this cannot be how the exemplification tie is to be considered, for the following reason. If the platonistic or pure realist relation were involved in an unmediated attachment with p_1 and p_2, and with the platonistic or pure realist relation. In order to directly attach to the spatial objects (p_1 and p_2), the platonistic or pure realist relation would have to be where spatial objects are located, if it is to have an unmediated attachment with the spatial objects. By this, I mean that p_1 and p_2 are only found in the spatial realm, and if something is to have an unmediated attachment with them, that something can only do so if it is where p_1 and p_2 are. If it is not where p_1 and p_2 are, it cannot have an *unmediated* attachment with p_1 and p_2. Rather, only items which are right where p_1 and p_2 are can have unmediated attachments to p_1 and p_2. But if this is the case, the platonistic or pure realist relation—in going to where p_1 and p_2 are—would be located in space, and would be an aspatial item that is located in space, which is impossible. For this reason, it appears that there cannot be an unmediated attachment between platonistic properties and platonistic or pure realist thin particulars, and instead there must be a bridge, or nexus, between spatial particulars and aspatial universals.

7.2 The Impossibility of Platonistic and Pure Realist Property Possession

In this subsection, I will further discuss the following unmediated attachments:

(i) The unmediated attachment between the exemplification tie and platonistic or pure realist thin particulars,
(ii) The unmediated attachment between the exemplification tie and the platonistic or pure realist relational property, and
(iii) The unmediated attachment between the parts of the platonistic or pure realist exemplification tie (if the platonistic or pure realist exemplification tie has parts).

In this subsection, I will discuss that one of these unmediated attachments involved in platonistic or pure realist property possession apparently involves an unmediated attachment between a wholly aspatial item and a wholly spatial item. I will also argue that such unmediated attachments between wholly spatial items and wholly aspatial items are apparently impossible, and for that reason, p_1 and p_2 cannot be interrelated according to the platonistic or pure reality accounts of polyadic property possession. One of the unmediated attachments involved in platonistic or pure realist property possession is an unmediated attachment between a wholly spatial entity and a wholly spatially unlocated entity for the following reasons:

1. If the platonistic or pure realist exemplification tie is partless (simple), and is either wholly spatially located or wholly spatially unlocated,[82] then the exemplification tie is an intermediary tie that connects wholly spatial entities (p_1 and p_2) and the wholly spatialy unlocated relations, and the exemplification tie involves an unmediated attachment to *both* p_1 and p_2 (which are wholly spatial entities) *and* to the wholly spatially unlocated relation (*connectivity*, *parthood*).[83] On this account, where the exemplification tie is simple, for there to be any tying of a platonistic or pure realist thin particular and a spatial property, there is an unmediated attachment between a wholly spatial entity and an entirely aspatial one.
2. If the platonistic or pure realist exemplification tie is both spatially located as well as unlocated, it is composed of two or more parts, where at least one part is wholly spatially located (and involves unmediated attachments with p_1 and p_2), and where at least one part is wholly spatially unlocated (and involves an unmediated attachment with a platonistic or pure realist universal, such as *connectivity* or *parthood*). In order that the exemplification tie give rise to a tie between wholly spatial items (p_1 and p_2) and wholly spatially unlocated platonistic universals, wholly spatial and wholly spatially unlocated parts of the exemplification tie must involve an unmediated attachment.[84]

In order for there to be a tie between a property and particular, the exemplification tie between property and particular must be unbroken. For that reason, points 1 and 2 above both suggest that platonistic or pure realist property possession must involve an unmediated attachment of a wholly spatial entity and a wholly spatially unlocated entity. It is this unmediated attachment that I will be concerned with in this subsection, and which I will show is an impossible unmediated attachment.

I will not discuss *which* entities might be those that are specifically involved in the unmediated attachment of an entity that is wholly spatial and an entity that is wholly aspatial. I will only focus on the issue that there is at least one such unmediated attachment required in platonistic or pure realist property possession, as described in points 1 or 2. I will call the entity that is wholly outside of space this is involved in this unmediated attachment, O, and the wholly spatial entity that is involved in the unmediated attachment, L. L could be the two particulars (p_1 and p_2), or it could also be the entire exemplification tie if the exemplification tie is simple and is wholly spatial, as discussed in point 1. Or L could even be a part of the exemplification tie that is in space, as discussed in point 2. O could be the platonic universal; or O could be the entire exemplification tie, if the exemplification tie is simple and not in space, as discussed in point 1. Further, O could be a part of the platonistic or pure realist exemplification tie that is not in space, as discussed in point 2 above. What L and O symbolize depends on whether point 1 or point 2 is correct, and, beyond that, it also depends on specific details to do with points 1 and 2. In this paper, I am only concerned with the issue that on the platonistic or pure realist account of property possession, there is at least one unmediated attachment between a wholly abstract entity, O (an entity wholly outside of space), and a wholly spatial entity, L. According to my argument in

the next paragraph, such an unmediated attachment, between an entity wholly in space (L) and an entity entirely outside of space (O) is impossible, which would mean that p_1 and p_2 cannot be interrelated according to the platonistic or pure realist accounts.

Since L is a wholly spatial item, L cannot fail to either be a spatial location, or to be a spatially located object (in either case, L cannot fail to be wholly spatial). Any unmediated attachment having to do with L must, thereby, be an unmediated attachment that is wholly spatial, lest it not be a unmediated attachment to do with L. Since L can only be wholly *spatial*, and cannot be located outside of space, if L is involved in an unmediated attachment with any other entity, the other entity involved in an unmediated attachment with L *cannot fail to also be wholly spatial*. Since O is wholly outside of space, if O is involved in an unmediated attachment with L, O must come into space and become *located* in space, in order to be involved in an unmediated attachment with L. If this is the case, then O would be *inside and not inside* of space, apparently taking on characteristics that are self-contradictory. A similar line of reasoning could be given when considering the unmediated attachment O is involved in. Unmediated attachments to do with O only occur by way of entities that are entirely outside of space. An entity in space, L, having any sort of dealing (such as unmediated attachment) with O can only do so if it is also outside of space. If this is the case, if L is to have an unmediated attachment with O, L must go outside of space and become aspatial, in order to be involved in an unmediated attachment with O. If this is the case, then L would be *outside and not outside* of space, apparently taking on characteristics that are self-contradictory.

7.3 Objection

Two objections to the argumentation in the previous subsections of this section are offered. Firstly, the platonistic or pure realist property only exists in the spatially unlocated platonistic or pure realist realm, and the platonistic thin particular only exists in the spatial realm, and the notion of a tie or nexus 'across' the realms, bridging the realms, is an erroneous concept. The exemplifying (and relating) *only* exists where the spatial objects (p_1 and p_2) are, and *only* aspatially in the platonistic

or pure realist realm (where there relations *connectivity* or *parthood* are); and there need not be any sort of concept of bridging or literal tying *from* one realm *to* the other. For this reason, the notion of an exemplification *tie* is misguided: the *exemplification tie* need not do any 'tying', 'linking', or 'bridging'. For the rest of this subsection, I will use 'exemplification' in place of 'exemplification tie' in order to discuss platonistic or pure realist property possession without discussing the tie *from* one realm *to* the other.

In the second objection, all argumentation in previous subsections about the exemplification tie can be ignored since platonistic and pure realist exemplification need not be discussed at all, since platonistic and pure realist exemplification is *ontologically primitive*, and nothing can be said about it at all other than that it is holds a property and particular together, *period*.

I shall further argue that these objections fail. The platonistic or pure realist thin particular, p_1, for example, only involves an unmediated attachment to exemplification at p_1 and nowhere else, since p_1 is not identical to any other space or spatial object. This unmediated attachment must be spatially *located* since p_1 is wholly spatial; the unmediated attachment, if not at p_1, is not an attachment that can involve p_1. An unmediated attachment to the exemplification tie *not* coinciding in space with p_1 is an unmediated attachment that does not have anything to do with p_1 (whereby, exemplification would not involve an unmediated attachment with p_1). Since a platonistic or pure realist relation, R (*parthood*, *connectivity*), cannot *fail* to be spatially *unlocated*—call the aspatial location of the platonistic or pure realist universal, z—this implies that R only involves an unmmediated attachment to exemplification at z, since R is nowhere else *but* at z (in the platonistic or pure realist realm). An unmediated attachment to exemplification *not* at z is an unmediated attachment that does not have anything to do with R (whereby, exemplification would not involve an unmediated attachment with R).

This implies that p_1 cannot exemplify R, for the following reasons. If R only involves an unmediated attachment to exemplification at z, and if p_1 only involves an unmediated attachment to exemplification where it is, if the unmediated attachment of exemplification with p_1 is

an unmediated attachment that coincides space with p_1, and if the exemplifying is not considered as 'bridge', 'nexus', or 'tie' p_1 *to* z (or *from* p_2 *to* z) since $p_1 \neq z$, then p_1 and R apparently cannot have any sort of dealings with one another (such as p_1 taking part in the co-exemplification of R). It appears that in order for R to be exemplified by p_1 (and p_2), R, which is wholly at z (in the platonistic or pure realist realm), must also be at p_1 (and p_2), which is to say that aspatial R must be located at *spatial* locations, and thus must apparently take on characteristics that are self-contradictory: R is located in the spatial realm and is wholly aspatial. (The absurdism discussed in this paragraph ensues *regardless* of whether or not exemplification is considered primitive and unanalyzable.)

8. THE IMPOSSIBILITY OF MEREOTOPOLOGY

I will next discuss mereotopology. Some may hold that mereotopology may avoid the problems I discussed in sections 6 and 7 to do with relations between non-collocated pieces of matter or between non-identical regions of space. Mereotopology is a relatively recent theory developed to solve problems in mereological and topological relations. Mereotopology is about the *contact* of spatial objects, where contact is discussed in terms of *collocation*. Consider this introductory passage about mereotopology from Pratt-Hartmann and Schoop:

> The most basic part of Whitehead's mereotopology employs a single primitive binary relation $C(x, y)$, which may be read 'x is in contact and y'; and this primitive has formed the basis for many subsequent approaches ...
>
> Whitehead refers to the relation denoted by C as *connection*, risking confusion with the mathematically well-established, and quite different, property of *connectedness*. We have resolved this terminology clash by substituting the word contact and its cognates for Whitehead's relation, and using the term *connected* in its usual topological sense. Nothing substantive should be read into this decision.[85]

Mereotopology is a theory of boundaries. Barry Smith writes:

> We wish ... to capture the commonsensical intuition to the effect that boundaries exist only as boundaries, i.e. that boundaries are dependent particulars: entities which are such that, as a matter of necessity, they do not exist independently of the entities they bound ... This thesis—which stands opposed to the set-theoretic conception of boundaries as, effectively, sets of points, each one of which can exist though all around it be annihilated—has a number of possible interpretations. One general statement of the thesis would assert that the existence of any boundary is such as to imply the existence of some entity of higher dimension which it bounds. Here, though, we may content ourselves with a simpler thesis, one whose formulation does not rest on the tricky notion of dimension, to the effect that every boundary is such that we can find an entity which it bounds of which it is a part and which is such as to have interior parts.[86]

Mereotopologists might believe that mereotopological theories might not be affected by my argumentation I will present against the existence of mereological and topological relations since mereotopology is about the relation, *contact*, between entities, where *contact* only involves *collocation*.[87] Smith describes material objects as consisting of coinciding boundaries: 'Coincidence, as we shall here understand the notion, is exclusively the sort of thing that pertains to boundaries'.[88]

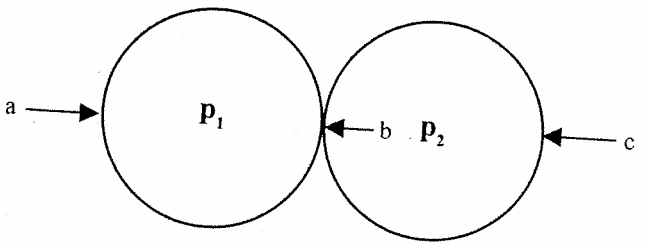
> Each point within the interior of a two- or three-dimensional continuum is, in fact, an infinite (and as it were maximally compressed) collection of *distinct but coincident points* ...[89] (Italics added.)

> A pair of spatial entities are in contact with each other directly when their respective boundaries, in whole or in part, *coincide*.[90] (Italics added.)

Smith is here describing a theory where contact of bodies is ultimately described as consisting of collocation of point-sized items (collocation); and bodies themselves are composed of collocation of point-sized items (boundaries). So mereotopology is, in general, not affected by my arguments in this paper against relations between p_1 and p_2, since '[b]odies are in contact in the broader sense when they and all their parts are connected to one another, possibly via others, in such a way

as to establish *a seamless chain of direct contact* [i.e. *coincidence*]."[91] (Emphasis added.)

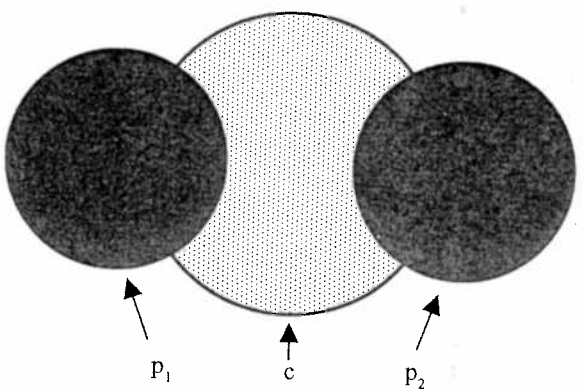
According to mereotopology, if p_1 and p_2 are two billiard balls that *touch* at boundary interface b, as the diagram below illustrates, then the areas on the boundary that are opposite b, call them a and c, do not touch:



But by this touching at b, the mereotopologist can coherently maintain that since the billiard balls are complexes of coinciding boundaries, the billiard balls *are in contact*, since they form a 'seamless chain' of contact[92] (a and c do not *touch*, but they *contact*). If my reasoning in the above sections is correct, then with respect to the diagram of billiard balls p_1 and p_2 above, the statement, 'a *is related to* c' is false, since a and c are non-collocated parts of the entities in contact. But if mereotopologists are correct, the statement, 'p_1 *is in contact with* to p_2' is true because of b, and also because of the 'seamless chain' of collocated boundaries that p_1 and p_2 involve.

I will next discuss that mereotopology may be a fatally flawed. The mereotopologist must describe bodies as being composed of *collocated boundaries*, where the collocation of boundaries involves the collocation of point-sized items. Contact of boundaries across a magnitude consists of contact of point-sized items. Smith writes: '[b]odies are in contact in the broader sense when they and all their parts are connected to one another, possibly via others, in such a way as to establish a seamless chain of direct contact.'[93] Smith is describing a continuum (the word 'seamless' is typically used in discussion of a continuum of objects): a continuum of point-sized items, where in that continuum, point-sized items collocate with one another. But since the point-sized items in a continuum are not immediately next to any other of the point-sized items in the continuum, it is difficult to see how there can exist an

extended magnitude in a mereotopological continuum of coinciding boundaries. All boundaries that coincide do so only in a point-sized region, where that particular region is not in contact with any other regions. So, how do point-sized regions with coinciding boundaries give rise to an extended magnitude, according to mereotopology? The answer is that they cannot: there is no seamless chain of coincidence. The only way to have a seamless (continuous) chain of coincidence is to violate mereotopological theory, and to consider the mereotopological relation, *contact*, between coinciding point-sized domains of coinciding boundaries, to be a relation is of *non-zero magnitude* (lest all the collocating boundaries be the size of a point, and no contact exist between non-identical collocated point-sized regions). The scenario is given by the following diagram:



Point-sized region, p_1, partially collocates an extended contact relation, c, and point-sized region, p_2, partially collocates with c, and p_1 and p_2 do not partially collocate.

But this theory appears problematic, since if the extended relation, *contact*—call it c—acting as an intermediary of two others, were partially collocated with two others—call them p_1 and p_2—where p_1 and p_2 do not collocate, then c would be describable as 'partially collocated with p_1' and 'partially collocated with p_2'. However, since c has differing regions of it, where in one region it is collocated with p_1, but not collocated with p_2, and in another region it is collocated with p_2, but not with p_1, c is describable also by the statements, 'not partially

collocated with p_1', or 'not partially collocated with p_2', since where p_2 is, for example, p_1 is 'not partially collocated with c'. The problem is that the entirety of the relation, c, is describable by any of these statements, since c is non-complex (partless), and any reference to it is only a reference to one item; so any statement can only be about all of the item. But this means that if we combine some of the statements above describing the noncomplex relation, *contact*, it is describable by contradictory statements, for example: 'partially collocated with p_1 and not partially collocated with p_1', or 'partially collocated with p_2 and not partially collocated with p_2'. An extended relation, contract, is impossible, so we have to again take up the relation as being only among collocated point-sized boundaries in a point-sized region, but for reasons discussed above, since such a relation does not extended outside of its region, and since that region is not immediately next to any other point-sized regions of coinciding boundaries, then there is no seamless chain of coincidence. Mereotopology's relation, contact, cannot be extended (E) nor unextended (~E), which is describable as ~(E & ~E), and thus appears impossible since ~(E & ~E), translates to ~E & E.

9. MEREOLOGICAL NIHILISM AND THE PHILOSOPHY OF BRAHMAN

If the argumentation of the above sections is correct, Western analytic metaphysical theories describe a structured reality, or a reality with parts and wholes, and the only description of reality they provide is a mereological nihilist reality. I will discuss is that Western analytic metaphysicians, by (inadvertently) supporting mereological nihilism, are supporting the coherence of a philosophy of Brahman. The unstructured blob is Brahman, and Brahman, the Absolute, is beyond all categories of space, time, and causality that the concept forming phenomenal mind creates. I will discuss that descriptions of both Brahman and the mereological nihilist blob can be described as monistic, devoid of internal differentiation, self-conscious, and transcendent of names and forms, and for the reason, in this section I will argue that the mereological nihilist blob is not different from Brahman.

9.1 Monism and No Diversity

If mereological nihilism is the description of reality that modern physics and Western analytic metaphysics (inadvertently) provide, then modern physics and Western analytic metaphysics predict the existence of a monistic reality. There are no parts and wholes; therefore, there is only one thing: the blob. Parts and wholes are what give rise to diversity and structure in modern physics and Western analytic metaphysics, and without parts and wholes, there is no differentiation and structure in nature. The blob cannot have different parts since there are no inner distinctions involved within the unstructured blob. Similarly, according to the philosophy of Brahman, there is also only one thing, Brahman, which is without inner diversity or distinctions. Phillips writes:

> Śrīharsha is motivated by religious considerations—and perhaps by personal experience as well—to uphold the reality of Brahman, the Absolute and Unity beyond all appearance and differentiation. Brahman is the sole reality and the single self. Only Brahman may authentically be said to be ... The reality of Brahman entails the impossibility of coherently conceiving a diverse world.[94]

> There is no Upaniṣadic passage where such illusionism (*māya-vāda*) is more pronounced than in a portion of the Yājñavalkya-Janaka discourse that constitutes the third and fourth *Brāhmanas* of the fourth chapter of the *Brhadāranyaka Upaniṣad*. At the core of this extremely important passage is an elaborate discussion of dream ... The text includes several monistic proclamations boldly applied to world appearance, for example, *na iha nānā asti kimcana*, 'There is no diversity whatsoever'.[95]

9.2 Self-Consciousness

One of the key descriptions of Brahman is that Brahman is *self-consciousness*. Phillips writes:

> ... [A] state of self-illumination is exalted over the waking and dream states ... [S]tates involving awareness of objects other than the self are said to be less valuable than the state of self-illumination ... The idea that Brahman is one is given special psychological and

axiological meaning: the state where the self knows only itself is the state that is most valuable.[96]

Now consider the following argument, which derives from my reasoning in the sections above.

There is only one thing (blob).
That consciousness exists self-evidently true.
Therefore, the one thing (blob) is consciousness.

With respect to the second premise, philosophers often maintain that it is self-evidently true that experience exists. Experience must exist since to question, in the first place, that experience exists, there must be an experiencer to question. Philosophers often maintain that it is self-evidently true that experience exists. It does not matter if the representations of experience are successful or not, but that there is experience at all. Experience must exist since to question, in the first place, that experience exists, there must be an experiencer to question them. That experience exists appears to be something that cannot be disproven. Consider what Gupta writes:

> The self is known as 'I' to empirical individuals; nobody doubts this fact. We know the self directly, immediately. The self is not an object of thought; it is not the conclusion of a rational argument. However, to direct the empirical mind to its experience, Śaṁkara gives us a kind of *cogito ergo sum*, which may be expressed as follows: 'It is not possible to refute the self, for he who is doing the refutation is the self' ... No one can doubt the existence of *ātman* because it is involved even in doubting ... As fire cannot deny its own heat, similarly, the self, being self-established, can never doubt itself ... The 'I' that is the referent of the self-consciousness of the empirical individual is bound by the limitations of the body, the mind, and the senses. The referent of *pratyagātman*, the inmost or the innermost self, is neither the doer (*kartā*) nor the enjoyer (*bhoktā*).[97]

The argument apparently shows that the blob can only be consciousness. Now consider another argument, which uses the conclusion

of the argument just given, to show that the blob is *self*-conscious. That argument is as follows:

The one thing (blob) is consciousness. (Conclusion of argument above.)
Consciousness must have an object that it is conscious of.[98]
If there is only *one thing*, then consciousness must be conscious of *it*.
Therefore, the one thing (blob) can only be conscious of itself.

If consciousness, or experience, exists, and there is only one thing—according to the mereological nihilist blob theory and the metaphysics of Brahman—whatever exists *must be the one thing*. So, consciousness must be identical to the mereological nihilist blob. Further, since there is only the blob, and there can only be experience of *it*, the consciousness that is the blob can only be consciousness of the blob, which is self-experience. If the blob that modern physics and Western analytic metaphysics (inadvertently) puts forward is monistic, unstructured, self-consciousness, and if it is the only thing there is, the blob is apparently a description of Brahman. Phillips:

> Brahman is unitary, the coincidence of opposites, and omnipresent ... Brahman has 'non-dual' (*advaita*) self-awareness ... [These] themes [emphasize] ... the unity and self-awareness of Brahman. These Upanishadic ideas are developed into Advaita monism. Brahman's unity comes to be taken to mean that appearances of individualities ('names and forms') are illusory, unreal.[99]

For the Upaniṣad idealists, 'Brahman is self ... and consciousness.'[100] 'Brahman has "non-dual" ... self-awareness.'[101]

10. CONCLUSION

If my preceding arguments are correct, the entirety of Western analytic metaphysics reduces to a metaphysics of partless, unstructured, self-conscious Brahman. The problems I have discussed involving parts and wholes in contemporary Western analytic metaphysics are problems to which I see no solution.

NOTES

* First part published in the *JICPR*, Vol. XXI, No. 2, April–June 2004.

63. Loux 1998, pp. 38–41.
64. Some accounts of causation are described as this sort of a relation.
65. Moreland 2001, p. 24.
66. Phillips 1995, p. 23.
67. This is a position discussed extensively by Quentin Smith (1995, 1993).
68. Grünbaum (1952, 1955, 1967) is one of the philosophers who has argued for this commonly held position.
69. This is widely held to be the error that Zeno made in his *Measure Paradox* (*unextended* points somehow compose an *extended* line, plane, or volume). See Pyle, 1995, pp. 1–7.
70. Quantum gravity is a unification of quantum theory and relativity, and is for that reason, believed to be the theory that will end the divergence that exists in physics between relativity and quantum mechanics. See Lesniewski, 1997, Kane, 2000, Madore, 2000, and Jones and Moscovici, 1999.
71. This is, in fact, the definition of a property: a property *makes a particular a certain way*. Armstrong discusses how properties are *ways* objects (substances) are:

> Properties are ways things are. The mass or charge of an electron is a *way* the electron is ... Relations are *ways* things stand to each other.
>
> If a property is way that a thing is, then this brings the property into very intimate connection with the thing, *but without destroying the distinction between them*. (Armstrong 1989, pp. 96–97.) (Emphasis added.)

72. Grossmann, 1990, p. 5.
73. Ibid., p. 7.
74. Ibid., p. 8. Moreland (2001), also a Platonist, discusses Grossmann's platonism in depth, especially on pages 4, 9, 12–13, 102–103, and many other places.
75. Some have argued that many quantum physicists (if not nearly all quantum physicists), who in making use of the abstract mathematical concepts of Hilbert space, or imaginary space, are quite literally postulating the existence of a *platonistic* realm. (See Stenger 2000, p. 143, and chapter 10.)
76. Although I only discuss platonistic and pure realist relations in this section, my arguments attach all accounts of n-adic platonistic and pure realist property possession.
77. Armstrong 1989, p. 60.

78. Moreland 2001, p. 87.
79. Moreland 2001, p. 86.
80. Loux, 1998, pp. 38–41. I have altered Loux's passage to read as if he only discusses platonic realism, rather than metaphysical realism in general. For further lucid discussion on these issues, see Vallicella (2000). Some argue that it is not so certain that Bradley *did not*, in fact, conclusively argue that relations do not exist, and doubt that exemplification does away with the problems Bradley disclosed. See Grupp, 2003 and 2004.
81. Moreland 2001, pp. 99–100, also refers to exemplification as a 'nexus', but unlike Loux, he typically refers to it as a relation.
82. A simple (partless) platonistic or pure realist exemplification is *wholly* spatially located, or *wholly* spatially unlocated, for the very reason that it is the platonistic or pure realist *exemplification tie*, and not, for example, a space or physical particulars object that *exemplifies* spatially unlocated properties, or a spatial property that is *exemplified by* a spatial object. A spatial object, according to some platonists and pure realists, might be considered *not* to be *wholly* spatial, but rather to be an entity that is spatially located *and* spatially unlocated, since it has spatial and aspatial aspects or constituents: *wholly spatially unlocated* platonic universals, that are tied to (exemplified by) a platonistic or pure realist thin particular (which is *wholly spatially*). Exemplification is not an ordinary spatial item (or aspatial) item of any sort, since it is the special tie *that gives rise to* ordinary spatial (or aspatial) items, such as spatial objects, because they are platonistic or pure realist thin particulars are *exemplify* certain spatial properties. Unlike a spatial object that might be considered by platonists to have spatially unlocated constituents, the exemplification tie, in being a constituent of, or aspect of, those spaces or physical particulars, is *wholly* spatially located *or wholly* spatially unlocated. These same points would apply to a non-simple exemplification tie, where parts of the tie would be wholly spatially located or wholly spatially unlocated.
83. Moreland, a pure realist, appears to hold this position: 'For traditional realists, neither the universal nor the exemplification nexus are spatio-temporal ... [T]he exemplification nexus connects an abstract entity with a spatiotemporal one' (Moreland 2001, 100). On this account, a wholly spatially located entity (the platonistic thin particular) and a wholly spatially unlocated entity (the exemplification tie) would involve an unmediated attachment.
84. Wolterstorff (1970, Chapter 4) is a platonist who appears to hold the view that exemplification is composed of parts.
85. Pratt-Hartmann and Schoop 2002, pp. 469–71.
86. Smith, Barry, 1996, p. 295.

87. See Cohn and Varzi (2000, pp. 362–65). Also, consider what Pratt and Schoop have to say about this:

> Mereotopological calculi vary as to which primitives they employ, and the axioms they propose. Clarke's calculus as a single binary relation of 'connection' with the gloss that two regions are connected if they share a common point. Randall, Cui and Cohn also use a binary connection relation, but take two regions be connected if their closures share a common point (Pratt and Schoop 1998, p. 622).

88. Smith, Barry, 1997, p. 524.
89. Ibid., p. 540.
90. Ibid., p. 549.
91. Ibid., p. 551.
92. If mereotopologists could explain gunky space solely in terms of collocated contacting and collocating of boundaries, my arguments below would not be against such a model of space.
93. Smith, Barry, 1997, p. 551.
94. Phillips 1995, p. 2.
95. Ibid., p. 10.
96. Ibid., p. 11.
97. Gupta, 1998, p. 41.
98. If consciousness is not conscious of something, it is intentionality without intentional objects, which is an apparent absurdism.
99. Phillips, 1995, p. 10.
100. Ibid., p. 9.
101. Ibid., p. 9.

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