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Problems with Priority and the Benefits of Existence Monism

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Introduction

Imagine you are holding the whole cosmos in your hand. Now ask yourself: what qualities does this thing have? Are you holding a multitude of tiny, tiny fundamental building blocks making up this hugely complex whole, or are you holding one big fundamental ball of cosmological matter with smaller, derivative objects inside it? Or perhaps there are no smaller objects within it and your cosmological ball is the only legitimate object in your hand, albeit with a hugely varied internal structure? Maybe you are holding the totality of any given number of small, independent objects interacting on an imaginary (or otherwise) spacetime fabric? In this dissertation, I am going to defend the view that, if you were somehow able to place the cosmos on your palm, there would be one object in your hand; no more, no less, fundamental or otherwise. This is the view known as Existence Monism. Another question: are all possible worlds the same way? I contend that it need not be true that all possible worlds are worlds where Existence Monism obtains.

There are two broad threads of argument in this dissertation. After introducing key concepts as necessary in §1, I broach the first argument against priority views in §2—these are the views that some level of reality is fundamental. In his paper 'Problems of Parthood for Proponents of Priority' (2013a), Jonathan Tallant argues against priority relations using the possibility of gunk and junk as a springboard for argument. If he is right, then we have reason to discount priority views. We are left with two options—Existence Pluralism, and Existence Monism. In the second thread of argument and in §3, I discuss the benefits of accepting Existence Monism compared to its rivals, which I argue include exceptional

parsimony balanced with the ability to provide a complete, sufficient and empirically satisfactory description of the actual world. Finally in §4, I explain why I concede there is at present no satisfactory reason to justify the claim that Existence Monism necessarily obtains, despite strong reasons to think it is true of the actual world.

§1 Some Preliminaries

This section serves as an introduction to key concepts before embarking upon a discussion of the core arguments, and is divided into three. §1.1 explains views concerning which level of reality (if any) is fundamental—these are Priority Views. §1.2 explains views concerning the number of objects which exist—Existence Views. §1.3 introduces gunky and junky conceptions of reality. For clarification, wherever I refer to 'objects', I shall mean concrete objects. I use the term 'cosmos' interchangeably with 'universe', 'reality' and 'the world'; by these I mean everything that actually concretely exists. These definitions are used throughout unless indicated otherwise.

§1.1 Fundamentality and Priority Views

An object is fundamental iff there are no objects which are prior to it—in other words, everything else which exists [concretely] depends for its existence upon the fundamental object(s]. Those objects which depend for their existence upon other fundamental ones are derivative. Where 'F' denotes being–a–fundamental–object and 'P' denotes the irreflexive, transitive relation of being–prior–to:

$$Fx \leftrightarrow \neg \exists x Pyx$$

Whether there are priority relations in reality or not divides philosophers into two camps: those who accept a fundamental level of reality, and those who do not. There are three varieties of mereological fundamentalism: Priority Monism [PM], Priority Pluralism, [PP]

and a third range of options I shall call Mid–Level Views [MLVs][1]. Priority Views [henceforth PVs] in general posit one defined level which is fundamental.

Priority Monism is the view that there is one fundamental object, and for all other objects, they are dependent for their existence upon the fundamental object. Reality snakes down from a 'top' fundamental level; the whole is ontologically prior to its parts.
Where 'C' denotes being–a–concretum:

$$\textbf{PM} \triangleq \exists x(\mathrm{F}x \wedge \mathrm{C}x \wedge \forall y(\mathrm{F}y \rightarrow x{=}y) \wedge \forall z(\mathrm{C}z \rightarrow \mathrm{P}xz))$$

There is one and only one fundamental object, and for any other objects, the fundamental object is prior to it. if you believe that tables and chairs exist, then they exist in virtue of being parts of the one fundamental object, which is prior to them.

Priority Pluralism inverts the PM approach, letting the 'bottom level' be fundamental with larger objects depending for its existence upon their parts, so that reality snakes upwards rather than downwards.

$$\textbf{PP} \triangleq \exists x \exists y \exists z(\mathrm{F}x \wedge \mathrm{F}y \wedge \neg\mathrm{F}z \wedge \mathrm{C}x \wedge \mathrm{C}y \wedge \mathrm{C}z \wedge \neg x{=}y \wedge \mathrm{P}xz \wedge \mathrm{P}yz \wedge \forall t((\mathrm{C}t \wedge \neg\mathrm{F}t) \rightarrow \exists u \exists v(\mathrm{F}u \wedge \mathrm{F}v \wedge \mathrm{P}ut \wedge \mathrm{P}vt \wedge \mathrm{C}u \wedge \mathrm{C}v))$$

All that this means is that there are at least two fundamental concreta and at least one non-fundamental concretum to which they are prior, and any non–fundamental concreta have at least two fundamental concreta which are prior to them. The smallest

[1] I borrow these abbreviations from Tallant (2013a).

non–fundamental objects will be those composed of two fundamental parts, whilst everyday objects like chairs and pens are composed of a great number of mereological atoms, upon which they depend for their existence. As one might suspect, Mid–Level Views [MLVs] encompass a range of views which ascribe fundamentality to any level which is neither the top or bottom level. There are as many possible MLVs as there are levels of reality which one could define. For example, we might fix upon the atomic level and say that it is fundamental, so that objects like tables depend for their existence upon their constituent atoms, whilst objects smaller than atoms, like quarks, would exist in virtue of the atom of which it is part.

As aforementioned, we need not think that there even is a fundamental level. We might think that nothing is fundamental, or that (trivially) everything is fundamental. However they are formally equivalent, because in a world where nothing is fundamental, there is nothing that anything is prior to which fulfils the definition of being fundamental.

§1.2 Existence Monism & Existence Pluralism

Moving on to views where the central claim is not concerned with fundamentality or lack thereof, 'Existence views' make claims about the number of objects which exist. Existence Monism [EM] is the view that there is exactly one object, which has highly varied subregions but no genuine proper parts, since they would constitute a further object (Schaffer 2007: 178). This object *is* the cosmos. Where "C' denotes being a concretum:

EM $\triangleq \exists x(Cx \wedge \forall y(Cy \rightarrow x{=}y))$

Existence Monists hold that the one–and–only object (which, following in the tradition of Horgan and Potrč, I shall call the 'blobject') is a mereologically simple structured whole with a highly varied internal structure. Conversely, Existence Pluralism [EP] is the view that there is more than one object, so that:

EP $\triangleq \exists x \exists y(Cx \wedge Cx \wedge \neg x{=}y)$

The base case for EP is simply that there is more than one object. Anyone who says tables and chairs are objects, or that mereological atoms are objects, is an Existence Pluralist.

§1.3 Gunk & Junk

Let us move on to an exposition of gunk and junk worlds. Gunk and junk are models of the world's mereological structure. In a gunk world, every object *has* proper parts. The relation is transitive and asymmetric, so each subsequent proper part has further proper parts *ad infinitum*. For our purposes, *x* is a proper part of *O* iff it is part of *O* but not identical with *O*. Where 'R' is a relation denoting being–a–proper–part–of:

Proper Parthood $\triangleq \exists x \exists y(Rxy \rightarrow \neg x{=}y)$

Gunk world $\triangleq \forall x \exists y(Ryx)$

It will be useful to note that gunk [being infinitely descending) precludes there being a 'bottom level' of reality. We have seen that PP requires a bottom level, so the existence of gunk would pose an insurmountable problem for PP.

In a junk world, every object is a proper part of another object which is in turn part of another object, *ad infinitum*. As Sanson has it, a world is junky if it is "not part of any cap" (2014: 1).

Junk world $\triangleq \forall x \exists y(\mathrm{R}xy)$

A junky universe causes problems for PM as a top level is required to account for the fact that everything relies for its existence upon the one fundamental object. A junky universe requires infinite ascent, precluding the top level required for PM.

With our definitions in hand, we are in a position to continue to the first of the two core arguments in §2, where I introduce and discuss Tallant's strategy for denying PVs.

§2 – No Priority Views

The task of rejecting PVs is a challenge taken up by Tallant in his paper 'Problems of Parthood for Proponents of Priority' (2013a). In this section, I explain the argument and why, *prima facie*, it makes sense to accept the conclusion against PM, PP and MLVs. Only two options remain consistent with this conclusion: EM and EP.

From our definitions in §1, we know that Priority Monism is impossible if the world is junky, whilst Priority Pluralism is impossible if the world is gunky. Tallant uses the possibility of gunk and junk to argue against PVs. Let us first familiarise ourselves with the argument contra PVs via a semi–formal reconstruction. Let us call it *No Non–Trivial Fundamentality* [henceforth NNTF].

P1 If Gunk and Junk are possible, then there are possible worlds where PM is false and possible worlds where PP is false

P2 *Gunk and junk are possible*

P3 There are possible worlds where both PM and PP are false (1,2)

P4 *Facts about fundamentality are necessary*

P5 PM and PP describe facts about fundamentality

P6 If PM and PP are false at any world, then they are necessarily false (4,5)

P7 PM and PP are necessarily false (3,6)

P8 If PM, PP and MLV are necessarily false, everything is necessarily trivially fundamental

P9 *MLVs are necessarily false*[2]

P10 PM, PP and MLVs are necessarily false (7,9)

P11 Everything is necessarily trivially fundamental (8,10)

The italicisation of three of the premises serves to make clear where I consider the key contentions to be. The remaining premises are, I think, self–evident or derivable from other premises. P2 merits discussion as the claim gunk and junk are possible is controversial. P4 may not be immediately obviously true. so i tackle this premise in §2.1. P9 could be denied, but I will offer an explanation as to why the truth of any MLV seems implausible in §2.2. As it is my intention to treat issues surrounding the modal status of mereological and ontological facts in the last section, I take all discussion for this section and the subsequent to be of what is true of the actual world. Therefore, I discuss the possibility of gunk and junk in §4. For now, let us keep it in our minds as an assumption. In what remains of this section, I explain why we have good reason to accept P4, and offer an argument against MLVs to secure P9.

§2.1 – The Necessity of Facts About Fundamentality

P4 of NNTF says that facts about what is fundamental are necessary. If P4 can be defended, then if PM, PP or an MLV fails to obtain, it fails necessarily, since they concern facts about fundamentality. Tallant endorses this premise based on Schaffer's intuition (2010: 56) that the truth or falsity of modal facts is determined according to compatibility with the laws of

[2] The modal element of P9 was not explicit in the original argument, but it seems obvious that Tallant denies that any MLV describes the actual world. Since, as we will see, facts about fundamentality seem necessary if true at all, this premise can be modified to include the necessity clause.

metaphysics. Whilst he offers no explicit argument, it seems reasonable to extrapolate that he consents to the view that our understanding about what is fundamental offers a basis for all possible worlds, not just our own. For example, for the Priority Monist, it makes sense to say that I might have been a lawyer *because* there is a possible world where the fundamental whole has different derivative parts specifically, me–as–a–lawyer–ish parts. However, facts about fundamentality are part of what worlds are: the intuition is that the *features* of the fundamental whole could have been otherwise, but that since a fundamental whole is what a world is, it could not be otherwise. This seems plausible. if the laws of metaphysics do indeed emulate this intuition, then facts about fundamentality will be necessary. Consequently, if we provisionally assume that gunk and junk are possible, there will be worlds where both PM and PP will be false. As such views are necessary, the falsity of PM and PP will logically follow.

§2.2 – Mid–Level Views

To secure that NNTF is sound, we need to show that no MLV describes the actual world. Tallant invites us to consider a *prima facie* plausible MLV: the molecular level. Here, anything composed of molecules depends for its existence upon the molecules which compose it, whilst anything which is a smaller than a molecule must be dependent on one (2013a). However, he observes that there is no convincing objective reasoning for considering any particular mid–level to be ontologically privileged. Why take the molecular level to be fundamental, rather than the atomic or quark levels? However, this seems only

to show that if any MLV obtains, it may just be unverifiable because the matter is epistemically open; not automatically false.

Continuing with the stipulation of a molecular–fundamental world, a second argument gives us metaphysical reasons to reject MLVs. We are invited to consider a photon midway through its journey to earth. At its current location, it makes no sense to say that it depends for its existence upon molecules. It cannot hop from molecule to molecule as though piggybacked at the speed of light for the photon to travel this way, it would have to travel through a gapless sea of molecules, and this is not the way the world is; besides, we know there are negligible quantities of molecules in the Space between the Sun and the Earth. Moreover, there is no evidence that photons and molecules even share any common parts. Photons are localised held pulses composed of electric and magnetic fields and have no mass, whilst molecules, at their smallest known level, consist of quarks and gluons (Austem 2008). It is implausible for photons to supervene on molecules. The only likely common constituent is spacetime itself but if this is the level to which we assign fundamentality, we are a Priority Monist. So, since no MLV can satisfy our empirical evidence, we must reject them.

We have granted the possibility of gunk and junk for the time being and will return to discuss modal notions in §4. With regard to the remainder of NNTF, l have argued for the contentious premises and therefore provisionally accepted the conclusion. Given the falsity

of all PVs, we have two broad options—to accept either Existence Monism or Existence Pluralism.

§3 – Existence Pluralism and Existence Monism

This section is comprised of three shorter units dealing with some preliminary points before one longer discussion of the core issues, totalling four units. Within them I aim to show why EM is a preferable model of the actual world compared to EP by virtue of its quantitative parsimony and ability to accommodate commonly held scientific theories. EP can be interpreted in many ways, and as the Existence Pluralist is my opponent, in §3.1 I characterise mereological nihilism as the most charitable interpretation. in §3.2, I acknowledge the trivial equivalence of EM with a specific interpretation of PM as well as some other equivalences to avoid confusion. In §3.3, I outline the merits of parsimony in relation to other theoretical virtues as groundwork for the bulk of the argument in §3.4, where I argue in detail that the Existence Monist gains over the Pluralist in at least three main ways, whilst overcoming a number of key objections.

§3.1 – Interpreting Existence Pluralism

There are a great number of ways a non–Priority View EP world could look, since the base case for EP is simply that there are two or more objects. For example, there could be random mid– or mixed–level fundamental entities with derivative objects, overlapping entities or unrestricted composition. Yet non–PV interpretations of EP which use dependence chains fall foul of the same arguments which make MLVs implausible, as assignment of fundamentality will be at a mid–level. Alternatively, an EP world could be a world with one trivially fundamental level of mereological atoms.

These worlds are worlds where Mereological Nihilism [MN] obtains. MN is one answer to what Van lnwagen calls the Special Composition Question (1990), which asks *when objects compose*. Nihilists reject all mereological complexes whatsoever. No object is part of another object apart from itself. In other words, an object is a part of another object iff it is identical with it. For any objects x and y where P is the parthood relation:

MN $\triangleq$ P$xy \leftrightarrow x=y$

MN is the most parsimonious, consistent way to characterise an EP worId whilst being generally considered to have the required potential to be a fully–explanatory account. Therefore, MN is the most charitable way, and the way I will choose, to characterise EP for subsequent argument.

§3.2 – A Note on Fundamentality in EM and EP worlds

If an EM universe is fundamental at all, it depends for its existence upon itself, as by definition there are no concrete derivative parts in an EM universe. It trivially fulfils the definitions for fundamentality. A consequence of this is that EM universe is trivially a PM universe. However, EP need not be compared to PP, since EP can be interpreted in a broad range of ways so that facts about fundamentality differ radically. A MN universe under the EP interpretation entails Nihilistic Ontological Fundamentalism—the view that mereological atoms are fundamental but never compose (Markosian 2005: 15). A Mereological Nihilist world therefore has a plurality of trivially fundamental objects and

therefore satisfies the criteria for PP. Furthermore, EM fulfils the definition of MN since all that is required is that everything in the world is mereologically simple. To avoid confusion, wherever I refer to MN, I mean a pluralist interpretation rather than a monist interpretation; wherever I refer to PM or PP, I mean any version which does not coincide with the corresponding Existence view.

§3.3 – Parsimony

There are good reasons to think that we should prefer a parsimonious theory. Horgan and Potrč take it to be obvious that all other things being equal (or negligibly differing), the more parsimonious theory should be preferred (2000). This complements Occamite thinking whereby we should not multiply entities beyond necessity. In a forthcoming paper, Schaffer defends the more precise *Laser* over the Razor, so that *fundamental* entities are not multiplied without necessity. This is a *prima facie* reason to prefer monist interpretations of reality over pluralist interpretations. All other things being equal though, I do not see any motivation to take derivative entities as an "ontological free lunch" (Forthcoming: 3) given that there is no objective advantage in doing so (this is counterintuitive, but bear with me for the time being), contrary to his claim that we must 'blunt the razor' (2007: 189). Naturally, parsimony should not be taken as the only theoretical virtue—a parsimonious theory which lacks explanatory power or that is not empirically adequate (for example) is not one that we ought to accept if there is a rival which better satisfies our requirements.

Nolan (1997) defends quantitative parsimony as a theoretical virtue using empirical examples. He reinforces these claims with discussions of historical scientific cases where accepting a more quantitatively parsimonious theory has helped scientists make advances—for example, the postulation of one neutrino as opposed to 17 million in the beta–decay case. Tallant expands on this case, observing that a lack of quantitative parsimony has a secondary effect of entailing the loss of syntactical simplicity (2013b) which might in itself be considered a virtue. Minimising the number of *kinds* (increasing qualitative parsimony) of entities is "*relatively* uncontested" (2013b: 689). Nolan affirms both *qualitative* and *quantitative* parsimony as virtues. Both ontological and ideological simplicity have been defended as virtues (by Schaffer 2007 and Sider 2013 respectively). Schaffer points out that a key motivation for MN is its simplicity (187–188). If this counts as a motivation for MN, then EM (which is a form of nihilism) should fare better still: "What could be simpler... than a one–object ontology?"

§3.4 – The Benefits of Existence Monism

It is rarely the case that anybody's first reaction to EM is that it is *prima facie* intuitive or particularly plausible. EM is often met with something of an 'incredulous stare', since it entails that all of the objects with which we are familiar do not exist. As a result, one of my aims in this section is to overcome the counterintuitive consequences of EM and show why

it is in fact better suited to explaining the way the world is. Concurrently, I defend Schaffer's view that *"nihilism culminates in monism"*[3].

First, I would like to forestall with an obvious criticism of my approach of EM. "'My approach', you say? But you just said that you don't exist! If what you say is true, you cannot have an approach. You cannot have written this paper which in turn cannot exist. I cannot be responding to it. Yet clearly you have written this paper, which exists, and I can respond!" The objector points out that I think I don't exist. They are quite right. I believe that when I assert that I exist, I am *correct* but my assertion was *false*. The illusion of my existence can be attributed to spacetime subregions arranged such as to produce the *emergent property* of consciousness resulting in a self–aware substructure—properties which only exist insofar as it is perceptually useful (or unavoidable, in the case of our consciousness) for us to identify them. These are both points I will clarify in subsequent passages. Since it is convenient to do so, you will forgive me if I continue to call myself "I" and the reader "you", (and tables, "tables", etc.) on the understanding that what I strictly mean is a subregion of spacetime 'arranged' (or so 'conscious' subregions perceive) *x*–wise—in order to avoid this section being a somewhat bewildering experience! It might seem as if I am biting a considerable bullet here. In fact though, this is a bullet I think it is a mistake *not* to bite—it is no genuine bullet, but a fact that contributes to the main substance of the argument. People tend to be largely misled about the nature of reality by virtue of their powerful perceptual experience. Let us hold onto these thoughts for the time

[3] Schaffer is a Priority Monist. but *From Nihilism to Monism* outlines the gains that a mereological nihilist can make by accepting EM, whilst indicating briefly that the same arguments work just as well for PM.

being, and explore in more detail what it means to be an Existence Monist. Then, we will consider in more detail the consequences of accepting EM.

EM offers an alternative explanation to our everyday understanding of reality through *supersubstantivalism*. This is the view that material objects are strictly identified with subregions of spacetime (Skow 2005). it opposes substantival dualism, which takes objects to be separate from spacetime, coupled by occupation relations. Schaffer (2009b) defends the former (which he calls monistic substantivalism). The consequences of his argument provide an explanation for this intuition that we do not constitute objects, and demonstrate the superior explanatory power of Monism. Schaffer argues in the context of EM as the arguments suffice for both EM and Priority Monism, which he defends. Consider the following cases originating from Schaffer (2009b: 137–144) which demonstrate the redundancy of objects separate from spacetime, as per substantival dualism:

> **A.** Something must play the role of substrata. Spacetime regions are capable of bearing properties, so they suffice: dualism is redundant.
> **B.** The fact that both material objects and spacetime have geometrical and mereological properties need not be a coincidence if they are identical.
> **C.** Every spacetime region can contain at most one object, and material objects must occupy one and only one Spacetime region. This is the *tiling constraint*—Schaffer's

slogan is “no gaps, no overlaps“[4] (2010: 38–40). This need not be a coincidence: they could be identical.

D. Models for General Relativity do not include any reference to material objects as models for the distribution of matter, only reference to a *field*. As Einstein has it: "physical space and the ether are only different terms for the same thing; fields are physical states of space" (1934: 274). On this basis, DiSalle (2011) argues the most reliable way of interpreting the models is to take them as representative of spacetime itself.

E. Quantum Field Theory does not refer to material objects, only *fields*. Dualism is redundant.

Substantival dualism is redundant in all cases. Additional objects other than the *one whole* posited by EM are unnecessary to explain the nature of reality. If we accept this, then we can explain the intuition that my pen is an "object" (in the everyday sense) by equating it with a subregion S of the blobject. I take a step further from Schaffer’s general philosophy by departing from his identification of spacetime subregions with *parts* of spacetime. Proper parthood is redundant. This notion of subregions makes sense of the fact that my pen is separate from me, as we are identified with different subregions of the blobject. it is merely useful, since the subregion I identify myself with perceives itself to be sentient being who uses complex language to talk about the spacetime fabric, to identify

[4]He defends the tiling constraint through two arguments. Since fundamental entities must be *complete*, if the entities do not cover the cosmos then the cosmos would be incomplete, so there can be *no gaps*. Objects should be freely recombinable (like building blocks). Overlapping entities are “modally constrained" because you cannot let the common part have differing properties, so there can be *no overlaps*.

the separate objects. This is a point I return to in a later passage. A–E all provide evidence that the blobject is the only object required in explaining the way the world evolves. In the case where an apple is dropped on to the earth, we need only refer to the blobject and laws of causality to explain why events occurred in the way they did, not the earth or apple. We should do away with proper parthood for reasons of conceptual, qualitative and quantitative parsimony.

As aforementioned, I anticipate an 'incredulous stare' from many camps. Given constraints, I will focus on the two most counterintuitive consequences of EM. First: you have no special ontological privilege and, strictly, do not exist. Second, EM is inconsistent with our perceptual evidence that objects exist independently from each other. Our human condition predisposes us to want our best theories to respect our most obvious intuitions and perceptions. Surely we want it to be true that tables and chairs exist without need for further qualification. Most poignantly, we think that we exist, *distinctly* from other objects. Our privileged access to our perceptual experience tells us that EP ought to be true:

P1 (EM) The universe is the one–and–only object

P2 It is perceptually obvious that I am a distinct object from the universe

P3 The universe is an object, and I am an object

P4 There are two or more objects

C (EM) is false

This, I think, is misguided. The error occurs in the excessive trust in perception which motivates P2. Here is a reason why we should doubt perception: there are phenomena

which appear to *emerge* from more 'fundamental' phenomena. I borrow Tegmark's example of wetness (2014b: 4–5): liquid water is 'wet', but ice crystals and gas clouds are not. Yet they are all formed of H20, the very same particles, so it is not the particles themselves that account for the property but their *arrangement*. The wetness is an *emergent property* of the physical world. This is true of many arrangements (e.g. viscosity or electrical conductivity) they all have perceivable properties over and above that of their substrate, defined not by their content but their arrangement. Tononi offers empirical evidence through experiments using electroencephalogram (EEG) after electromagnetic stimulation on the human brain that this is also true of consciousness (2008). He argues consciousness is *integrated information*—a system where its subregions are aware of each other. Human consciousness has a very high level of integrated information. Yet we do not have terms for all subregional arrangements—only those which are particularly distinctive or have qualities which it is convenient for us to recognise. More common, regular features are more likely to have unique names. For example, three–sided shapes are called 'triangles', eight–sided shapes are called 'octagons', but hundred–sided shapes have no name in English and infinitely many irregular shapes might by referred to just as 'irregular polygons'. This should indicate that emergent properties need not have genuine ontological commitments; they are simply perceptual variations *de dicto*. It would be easy to counter that the sensations of consciousness are too powerful to be explained merely in terms of emergent properties, but since human brains are by far the most complex organic spacetime structure we have observed, we can rightly expect the perceptual experience to be exceptional. Indeed, it would be uncharacteristic and implausible if it were *not*. I have

offered some argument to diminish the special status accorded to our conscious experience which we think gives us reason to conclude that I, and the objects around me, are a distinct objects in our own right. We can also see why, unavoidably, entities as complex as humans will perceive objects around them from their location–within–spacetime perspective, and want to assign names and properties to them. The Existence Monist can answer for the unintuitive consequences if only we are open minded enough to look beyond our biased perceptual experience.

Earlier in our discussion, I indicated that it is merely useful to talk about myself existing independently from my pen, and that it does not correspond to reality. The following passages have two key aims. Firstly, I show how we can increase our motivation for EM by showing that we can do away with the ontological commitments attached to both object–talk and any corresponding properties, qualitatively and quantitatively increasing the parsimony of our model. Secondly, I show how talk of tables can still be meaningful to the Existence Monist. Simultaneously, although this is not my focus, argument emerges against common assumptions made by Priority Monists and Pluralists.

As we have said, objects do not strictly exist. The following argument from Schaffer (2009a: 358), originally proposed contra Mereological Nihilism as a motivation for existential permissivism—treating non–fundamental objects as an 'ontological free lunch'—will serve to elucidate:

P1 My body has proper parts (e.g. my hands)

P2 There are things with proper parts

In what follows, I show how an Existence Monist can claim exceptional parsimony for her model at no cost, using Schaffer's argument as an illustrative resource. I show that his premises are true *in some sense*, but notice that he begs the question in simply assuming his body has proper parts. Let us see why. Now, there are a number of ways philosophers have explained how we can do away with the ontological commitments of object–talk. For Horgan and Potrč (2000), object–talk suffices to track "lumps" of the blobject in *indirect correspondence* with the world, whilst commonly the Existence Monist describes the world as 'table–ish here'. I propose we accept a variation of Cameron's metaontological position (2009b) which he advocates for 'radically minimal' ontologies, which complements the other approaches. According to Cameron's position, the ontological commitments of a sentence are the entities required to *ground* truth, not the (non–existent) hands and tables themselves. To preserve the meaningfulness of talk about Schaffer's hands, Chalmers recommends we distinguish between *ordinary* and *ontological* assertions[5] (2009b). These assertions differ with respect to the way we evaluate the sentences. I recommend an interpretation whereby we say that *ordinary* claims about ontological matters (for example, casually noticing I have hands) can be *correct* but not *true*. The statement "Schaffer's hands are parts of his body" can be evaluated as *ordinarily correct,* but both ontologically and ordinarily *false*. This is the evaluation because the blobject, the only ontological commitment of the sentence, has a subregion S (self–perceived to be arranged Jonathan Schaffer–wise, which in turn has a subregion perceived by S to be arranged hand–wise. The

[5] Similar distinctions have been recommended by Van lnwagen (1990), Horgan (2001) and Carnap (1950)

statement is not true because nobody exists, nor can their hands. The *correctness* of saying Jonathan Schaffer's hands are part of him makes sense his intuition in P1, since the blobject is the 'truthmaker' for the correctness of the intuition[6].

Similarly, properties can be reduced to 'useful' linguistic items used to demarcate qualitative differences between different subregions that conscious spacetime subregions perceive. Schaffer also offers an argument for the existence of properties:

P1 There are properties that you and I share

P2 There are properties

As before, assertions about properties can be ordinarily correct or incorrect, but they will always be ontologically false. Our interpretation of '*x*–is–red' would then be something like: there is a spacetime subregion R, and a [conscious] spacetime subregion P arranged person–wise, and P perceives R to be both arranged *x*–wise and be what the [conscious] spacetime subregion calls "red". So the premises of Schaffer's argument are only ordinarily correct, they are not ordinarily true, because (ontologically) both premises are unsound. Accepting these approaches vastly reduces our ontological commitments and demonstrates potential for outstanding quantitative and qualitative parsimony whilst still offering a fully explanatory account. So far, I have argued that EM is motivated by exceptional parsimony, and is, so far as we can see in the scope of this dissertation, a sufficient ontology which complements scientifically plausible theses in comparison to other approaches.

[6] Schaffer argues that the use of his Laser, which I mentioned in §3.3, should be balanced with "maximization of defined concepts" (Forthcoming: 7). Given the approach I have recommended, we can simply construe the defined concepts ordinarily. We need not maximise concepts such as objecthood ontologically.

Finally, I will consider a major objection to EM. Sider (2008) offers an argument that, if conclusive, would refute EM and therefore commit us to MN. He asks us to imagine a two–dimensional, 4x4 pixel–world where each pixel has two possible fundamental states (on/off), so that 216 combinations are possible its statespace, the set of all possibilities for that world, is therefore also 216. Monistic worldviews are charged with being unable to explain the size of statespace. The pluralist need only point to the fact that there are 16 pixels with 2 possible states, but Sider says the monist must call it brute fact. Further, we could imagine other pixel–worlds with a different number of pixels, where the statespaces of these worlds is a suspiciously regular 2^n. Sider charges the monist of being unable to account for this regularity (2007: 3).

However, Sider fails to notice that when we ask the pluralist what makes it true that there are 16 pixels with 2 possible states; we are also reduced to brute fact. Likewise, when we ask why the statespace of any world must be 2^n, Sider's claim that pluralism avoids using brute fact is false for the same reason. Another claim is that the monist cannot explain the 'natural groupings' which occur in statespace—for example, the natural subset of all the pixel–worlds with only one pixel 'on' (2007: 4). Truths about how many pixels are lit will be true by virtue of the 'natural groupings' which can only be achieved with a pluralistic picture whereby one counts the instances of fundamental facts which make pixels 'on' rather than 'off'. Cornell responds to this worry by appealing to the maximal properties of the world (some consider this to be the only way anything in a monist world can have

properties) and "noting *what those properties are like*" (2013: 234). However, I think Sider misses the mark for further reasons. As I have argued, we can explain emergent properties by referring to the arrangement of spacetime. To claim that there should be anything fundamental about (say) Pixel #6 which makes it 'on' or 'off' begs the question against the kind of monism I am proposing. Rather, subregion #6 of the pixel–world is arranged such that a perceivable emergent property of 'on–ness' arises (we could have called it 'wop–ness', it serves just to distinguish perceptually different areas). This property can be explained by the causal facts and laws which govern the world.

A key motivation for MN is that it offers a parsimonious and simple ontology compared to its rivals. I have shown that EM is an even more parsimonious, sufficient extension of MN with more explanatory power and fewer redundant features. Schaffer claims that "There is the world, you and I, and all of our various parts. Who could deny it?" (2007: 189). I would put myself forward as someone who would deny this. In my discussion of emergent properties and consciousness, I argued that we should set aside our common–sense perspective in recognition of the characteristics of consciousness which predispose us to recognise subregions of spacetime as objects, thus removing their unwarranted mereological privilege.

§4 – The Necessity of Existence Monism

In §2, I left P2 of NNTF—the premise that gunk and junk are possible—undefended. We have not yet touched upon the modal status of EM should, like Priority Views, EM be considered if true, necessary? In this section I consider these modal claims and assess the consequences. I concede in §4.1 that there is no obvious reason to reject the possibility of gunk or junk. In §4.2 I discuss the Cameron's argument against the necessity of facts about composition, concluding that since EM is a view about the lack of composition, if EM is true, there is not yet any clear argument for it being necessary.

§4.1 – Gunk & Junk

The remaining contention from NNTF is the possibility of gunk and junk. If they are possible, there are two relevant implications. First, I will have argued that NNTF is valid and all of its premises sound; and so Priority Views will be denied. Second, if gunk and junk are possible, EM cannot be necessary because gunk or junk worlds are not EM worlds.

There seem to be three ways to resist the claim that gunk or junk are possible. The first would be to show there was a compelling reason to believe that the use of conceivability as a guide to possibility somehow fails—but even if this is so, there must be some sufficient cognitive function. The second is to show that gunk and junk are internally inconsistent, but this does not seem like a good route. The third would be to appeal to the impossibility

of concrete actual infinities of objects. However I find this inconclusive since it is an epistemically open facet of philosophy.

Schaffer describes the base argument for the conceivability of gunk entailing its possibility (2010: 61):

P1 Gunk is conceivable

P2 if gunk is conceivable, then gunk is possible

C Gunk is possible

This argument works just as well also for the existence of junk[7]. The appearance of conceivability in the premises exposes opportunity for denying the inference from the P1 and P2 to C. Why think that if gunk is conceivable, then it is possible? With respect to this version of the argument, Williams has a satisfactory reply if something is conceivable, it need not be because it is genuinely possible. Rather, some genuinely possible world could be generating the illusion that that thing is conceivable. The obvious move is to restructure the argument to avoid conceivability as the cognitive guide to possibility by introducing an alternative epistemological guide to modality. Tallant points out that when we make the claim that *x* depends upon *y* for its existence, we commit ourselves to other truths for example, "If *y* depends for its existence upon *x* (or the *x*s), and *y* exists at some merely possible world, then so does *x*" (2013: 432). This is unproblematic, so there is presumably some cognitive function which makes it clear to me that this is a genuinely possible world it

[7] Bohn gives us convincing reasons to think that the material conditional "if gunk worlds are conceivable, junk worlds are also conceivable" is true—see Bohn 2009

need not be conceivability. Arguing about the cognitive functions pertaining to modal intuition seems an implausible route.

Disputing the internal consistency of gunk and junk is another fruitless approach to denying their possibility. There is at least one interpretation of gunk widely considered to be internally consistent[8]. Given certain conditions, there looks to be nothing contradictory about it. Junk also seems internally consistent. Our most obvious worries about a junky universe can be overcome: say we have a junk world, where a world is a spatiotemporally isolated concrete cosmos. Remember, a junk world is one where every object is a proper part of another. A junk world is a concrete object, so there is an object at that world which is not a proper part of an object, so that world cannot be junky. However, these definitions end up begging the question against junk. We have picked a definition for possible worlds which precludes junk. One method is to make the possible world range over the junky concreta so that the world itself does not count as a concretum but the collection of all concreta. We can say a possible world is what we call the totality of any spatiotemporally grouped objects. Another similar approach advocated and defended by Sanson is to restrict the domain so that everything in the cosmos is junky except for the cosmos itself (2014). By any means, the objection is not insurmountable.

[8] See Amtzenius (2005, 2008), Tallant (2013a) and especially Russell (2009), who demands a far more deliberate exposition of how we define gunk to render it consistent with standard mereology, topology and measure theory.

A third strategy for denying the possibility of gunk and junk might be to show they are inconsistent with the impossibility of a concrete inlinity. Claims that the actual infinite are impossible are far from uncommon[9]. If the universe is gunky or junky, there would be an actual infinity of objects—using Modus Tollens, we would have to conclude a gunk or junk world is impossible.

Should we accept this argument? There existing an actual infinity is intuitively problematic. Schaffer expects infinite division to be met with "a blank stare, as neither impossible nor methodologically suspect, but as intuitively bizarre and *a priori* implausible" (2003: 502). Imagine that you have two grains of rice, one in each hand. Let's say the grains are gunky. The left–hand grain has an infinite number of objects within its finite size. Since you have another grain of rice, you have twice the volume of rice. We want to be able to say that we have twice the number of objects, but this is not the case. More poignantly, the number of objects in the whole universe is the same as the number of objects inside my grain of rice infinite. This gives rise to a suspicion that there is something wrong with our application of 'infinite'. This suspicion is backed up by the fact that in mathematics generally, $[\aleph_0 - \aleph_0]$ is left undefined (Morriston 2002: 152). Arguing against infinity, Sewell (2008: 2–8) takes care to distinguish infinitude (limitlessness) from finite indefinitude ('endless' series or sets under construction), observing that the two are fallaciously confounded. Whether we are confounded in thinking the actual infinite is really a finite indefinitude in disguise is

[9] See for example Leibniz 1989, Sewell 2010, Nolan 2001.

open to discussion, and not something I have the space to pursue here but the point is that we have reason to be suspicious.

Nolan charges the actual infinite, if it exists, with 'ontological extravagance' (2001) since there being an infinite number of objects within my apple seems counterintuitive, so much so that we ought to disregard it as being possible. So, models of reality which allow the actual infinite are disadvantaged by lack of parsimony. We are asked to consider the so–called 'turtle regress' in which the Earth, unable to support itself, is therefore supported by a turtle. But the turtle in turn ought to be supported, so the turtle stands upon another turtle, which stands upon another, *ad infinitum*. This, he says, should strike us as highly counterintuitive, for with every further turtle, the theory gets weirder and weirder culminating in the ultimate infinite weirdness—a symptom of its "extreme quantitative extravagance" (2001: 534). Here, though, the appeal to parsimony is weaker because we make no obvious philosophical gains by denying the infinite—in fact our position is compromised as we have empirical reasons to accept the possibility of the actual infinite—and Nolan writes that an infinite regress is vicious only when the cost is not worth paying, conceding as he does so that the turtle regress example is inconclusive not least because our intuitions mislead us. As Bliss has it, "it is a mistake to think that an infinite regress can be deemed vicious for reasons of theoretical virtue alone" (2012: 409). infinite descent and ascent are scientifically serious notions—Georgi suggests that quantum field theory requires "a kind of infinite regression" (1989: 456), whilst Dehmelt says that subelectron structures regress infinitely (1989). Tegmark is amongst a number of

physicists who advocate an infinite ascent universe (2014a: 126). So since we have other reasons to want to endorse the possibility of the actual infinite, and since the issue is widely considered to be epistemically open, issues of quantitative parsimony can be avoided. I therefore concede that there is no convincing argument as of yet to deny the possibility of gunk or junk. As a result, there is further work for the Priority Monist and Priority Pluralist to do if they are to avoid submitting to the conclusion of NNTF. On the other side of the coin, there is more work for the Existence Monist to do before they can claim EM holds necessarily.

§4.2 The Contingency of Composition

Here is another reason to concede that EM should be treated as a contingent matter. To do so, we need to shift our attention to facts about composition. Many philosophers are happy to assume that when asked whether things compose, or when things constitute proper parts of other things, their answer will be a necessary truth[10]. Ross P. Cameron is unhappy to leave this unchallenged (2007). Claims about composition are just those claims being made about the actual world, generalised to all possible worlds. Say that we thought universal composition to be a necessary feature of reality what justification should we have for shifting our claim from the actual world across all possible worlds? Cameron gives us good reasons, under some assumptions, to deny necessity for mereological facts. He concedes that some mereological facts, if true, are necessary—for example, if composition

[10] Van lnwagen (1990), Sider (2001), Lewis (1986; 1991) and Merricks (2001) are all examples of high profile philosophers who take mereological facts to be necessary.

as identity entails mereological universalism, then that should be a necessary truth: if *A* is composed of *a*, *b* and *c*, then *A* is identical to *a*, *b* and *c* it is not that *A* is identical to *a* and *b*, nor *c* alone; rather *A* requires *a*, *b* and *c* to exist (Cameron 2007a). This is analytically true. But the analytic or synthetic truth of other mereological facts is not forthcoming and of course, like Cameron, we might not accept the necessity of identity, but this is beside the point. Likewise, he argues that *a priori* justifications fail, as justification is not truth–entailing. My knowledge that a proposition is true only counts as knowledge by virtue of my justified belief *being* true at that world, so a proposition which is justified in all possible worlds does not have to be knowable at every possible world. Now, Cameron's argument dealt solely with issues surrounding composition. EM is a view about lack of both *composition* and *decomposition*. To resist the move to the conclusion that lack of composition and decomposition should be treated in much the same way, we would have to have some reason to think there is something epistemically or metaphysically different when talking about lack of composition or decomposition. None is forthcoming. Cameron overturns the common assumption in philosophy that such facts should be assumed to be necessary rather, the burden of proof should lie with those who assert a modal truth.

I have conceded that there is no convincing argument against the possibility of gunk and junk. As a result of this alongside extensions of Cameron's argument, we should not assert EM as a necessary truth. However, the possibility of gunk and junk motivates NNTF—so if we accept my defences of the premises, we must deny that any Priority View is true at any world.

Concluding Remarks

I have defended Existence Monism as best–suited to describing the actual world. Tallant's argument against non–trivial fundamentalism purports to show that Priority Views must be false. I have argued that there is no obvious reason to doubt that the premises are sound, and therefore accept the conclusion against them.

Between the two remaining candidates, Existence Monism and Existence Pluralism (charitably construed as Mereological Nihilism), the former gives the most parsimonious theory which complements both philosophy and modern physics without introducing explanatorily redundant phenomena or compromising other theoretical virtues. I addressed some counterintuitive consequences as well as a prominent philosophical worry from Sider. I am deeply reluctant to cling on to the powerful perceptions about reality which our very nature unavoidably instils in us, and have therefore offered an alternative model for understanding reality which allows us to remove proper parthood from our model and diminish the special status we give to our conscious experience. Further work here, for example in developing a more detailed 'truthmaker' theory for correctness, could strengthen our motivations for EM. I conceded in the final section that there is as of yet no convincing reason to think that Existence Monism, if true, is necessary. Cameron has given us good reason to think we should not automatically assign the status 'necessary' to a fact without reason; furthermore, gunk and junk seem possible. A gunky or junky world couldn't be an EM world. There is more work to be done, perhaps in honing our philosophical understanding of modality and bringing it up to date with the increasing

empirical support for a multiverse, if we are to accept Existence Monism as an acceptable account of all possible worlds.

Given these arguments, I conclude that Existence Monism describes the actual world, and propose future work to develop a fuller characterisation and defence of EM to do justice to its being a compelling yet underrepresented approach to the nature of reality.

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