

Mark Edward Steen: Dissertation Abstract: Stuff, Process, and Object: An Examination
of Substance and its Alternatives

This dissertation is an examination of the conceptual categories *object*, *process*, and *matter* (or ‘*stuff*’), and the metaphysical relations between entities in these categories. I begin by analyzing the ubiquitous and default ‘Thing Theory’. According to Thing Theory the world is, at bottom, a world of, and only of, things.

Two challengers to Thing Theory that I critique include stuff and process ontologies. Stuff ontologists hold that the category of matter or ‘stuff’ is either metaphysically privileged over, or at the very least, is irreducible to the category of things. Process ontologists have analogous beliefs with regards to processes and how they stand to things.

I argue that the stuff-ontological positions are unsound. They either entail unpalatable co-location of distinct entities, or have not given satisfactory accounts of the relation between constituting matter and constituted object. However, (some) stuff ontologists are correct in their core claim—that there are objects whose only essence is having the parts that they do.

I argue against certain excesses of the process ontologists. Processes are undergone by things, not constitutive of them. But, process ontologists are correct that there are some activities which are not reducible to things.

In the constructive portion of the dissertation I combine what's right about stuff and process ontologies and leave behind their negative features. I argue that commonsense objects are processes, and stand to their underlying matter as a wave does to the water it passes through. Genuine objects can not change their parts, since their only essence is having the parts they do, but we retain the intuition that commonsense objects can change their parts by replacing it with the notion of process migration through successions of genuine objects. The main advantage of this process view is that it solves a number of metaphysical puzzles, chief among them the paradoxes of coincidence. In this way, inference to the best explanation supports it.

STUFF, PROCESS, AND OBJECT:
AN EXAMINATION OF SUBSTANCE
AND ITS ALTERNATIVES

By

Mark Edward Steen
B.A., Philosophy, San Francisco State University 1997
B.A., History, San Francisco State University 1993

DISSERTATION

Submitted in partial fulfillment for the requirements of the degree
of Doctor of Philosophy in Philosophy in
the Graduate School of Syracuse University

November 2005

Approved _____
Professor André Gallois

Date _____

Copyright 2005 Mark Edward Steen

All rights reserved

Table of Contents

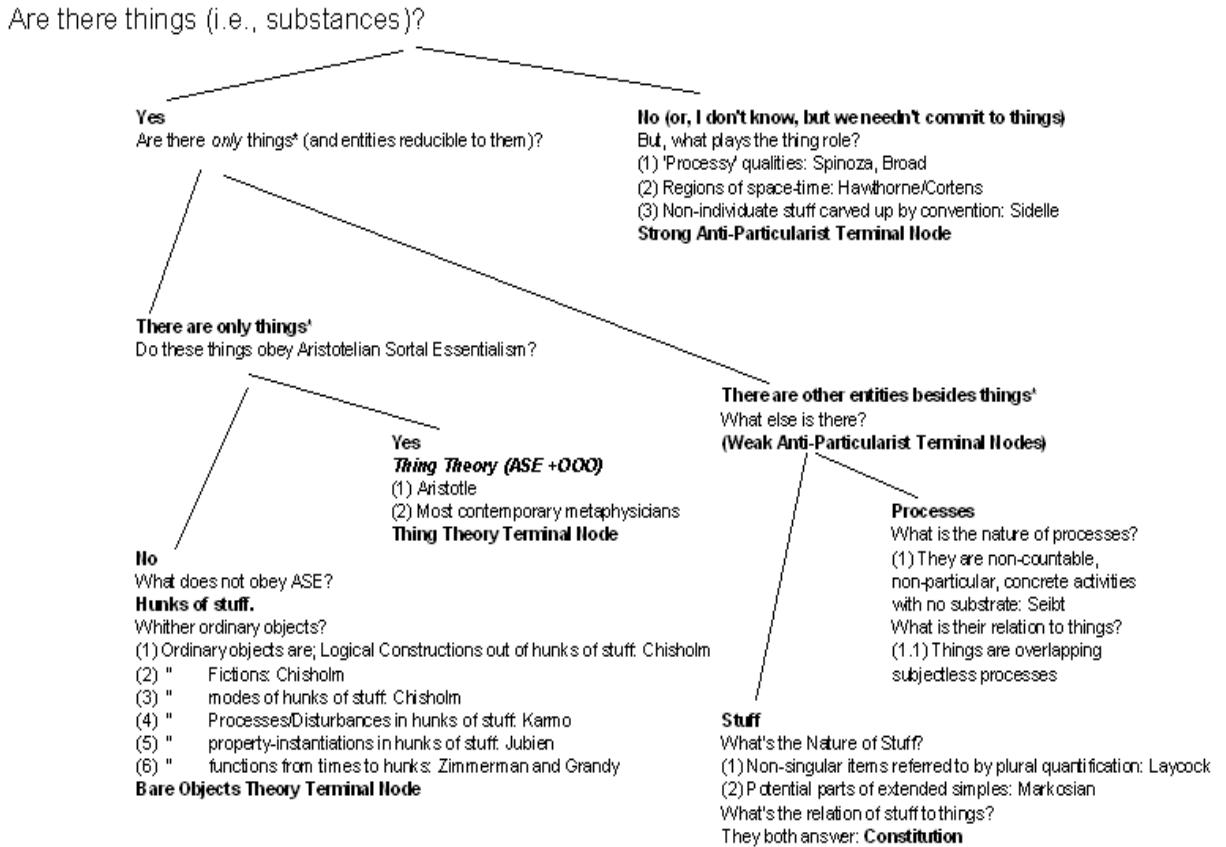
CHAPTER 1: THING THEORY AND ITS ALTERNATIVES	6
--	---

1.	THINGS AND ‘THING THEORY’	7
1.1	‘THE THING QUESTION’ - PRECISIFYING IT. THE ZOO OF TERMS	8
1.2	THING THEORY	16
1.2.1	THE ONTOLOGY OF OBJECTS	16
1.2.2	SORTAL ESSENTIALISM	17
1.3	WHAT IS WRONG WITH THING THEORY?	21
1.3.1	WE NEED A PLACE FOR OUR STUFF - CONCERNS OF THE ANTI-PARTICULARISTS	24
1.3.2	COINCIDENCE AND OTHER CONCERNS OF THE BARE OBJECTS THEORISTS ...	30
1.3.3	PROCESSES: WHAT’S HAPPENING?	39
1.4	OUTLINE OF THE DISSERTATION	49
 CHAPTER TWO: STUFF AND PROCESS ELIMINATIVISTS (STRONG ANTI-PARTICULARISTS)		 56
2.1	‘BENOZA’S’ FIELD THEORY	57
2.2	HAWTHORNE AND CORTENS’ ‘ONTOLOGICAL NIHILISM’	67
2.3	ALAN SIDELLE: ‘WORLD-STUFF’ AND CONVENTIONALISM	76
 CHAPTER 3: STUFF AND PROCESS REDUCTIONISTS (BARE OBJECTS THEORY AND PROCESS MONISM)		 84
3.1	CHISHOLM AND THE JOURNEY FROM PARTIALLY NUDE TO TOTALLY BARE OBJECTS.....	85
3.2	MICHAEL JUBIEN AND THE ‘FALLACY OF REFERENCE’	124
3.3	SEIBT AND THE REDUCTION OF OBJECTS TO SUBJECTLESS PROCESSES	136
 CHAPTER 4: STUFF AND OBJECT, AND STUFF AND PROCESS PLURALISMS.....		 166
4.1	MARKOSIAN’S STUFF-THING PLURALISM.....	167
4.1.1	UN SOUND ARGUMENTS AGAINST THE POINTY VIEW OF SIMPLES	173
4.1.2	UN SOUND ARGUMENTS AGAINST THE METAPHYSICAL INDIVISIBILITY VIEW	178
4.1.3	OBJECTIONS TO MAXCON	184

4.1.3.1 PLENUM WORLD.....	184
4.1.3.2 STOINCIDENCE.....	192
4.2 LAYCOCK'S STUFF-THING PLURALISM.....	206
4.3 KARMO'S THING-PROCESS PLURALISM, AND RECAP.....	220
CHAPTER 5: MERELOGICAL ESSENTIALISM AND PROCESS HYLEISM	225
5.1 ESTABLISHING THAT THE ONLY OBJECTS ARE SIMPLES AND 'BARE' FUSIONS ..	228
5.1.1 EXTENSIONAL MEREOLOGY AND THE IMPOSSIBILITY OF COINCIDENCE.....	228
5.2 TEMPORALLY RESTRICTED MEREOLOGY	229
5.2.1 FUSING IMPLIES SIMULTANEOUS EXISTENCE.....	231
5.2.1.1 PROBLEMS WITH UNRESTRICTED MEREOLOGY, DEFENDING WHOLLY PRESENT PERSISTENCE	232
5.2.2 SIMULTANEOUS EXISTENCE IMPLIES FUSING	240
5.3 MERELOGICAL ESSENTIALISM DEFENDED.....	241
5.4 'TOOSOFT,' AND, WHAT TO DO ABOUT IT	243
5.5 PROCESSES	245
5.5.1 PROCESSES IN ENGLISH	245
5.5.2 KINDS OF PROCESSES.....	248
5.5.3 PROCESSES VS. EVENTS.....	249
5.5.3.1 SOME DIFFERENCES BETWEEN PROCESSES AND EVENTS	249
5.5.3.2 AGAINST THE REDUCTION OF PROCESSES	251
5.5.3.2.1 AGAINST REDUCTION TO EVENTS: LESSONS FROM THE PERFECTIVE AND THE PROGRESSIVE	252
5.5.3.2.2 AGAINST REDUCTION TO STATES AND STATIC PROPERTIES; CONSIDERATIONS OF MOTION AND INSTANTANEOUS VELOCITY	260
5.5.4 THE RELATIONSHIP BETWEEN PROCESSES AND EVENTS	272
5.6 (COMMONSENSE) OBJECTS AS PROCESSES	273
5.6.1 PROCESSES AS PART-CHANGERS	273
5.6.2 PROCESSES, COMMONSENSE OBJECTS, GENUINE OBJECTS: THEIR RELATIONS	274

5.6.3 IDENTITY CONDITIONS OF PROCESSES	279
5.7 SOLUTIONS TO PUZZLES.....	282
5.7.1 COINCIDENCE.....	283
5.7.2 SHIP OF THESEUS	289
5.7.2 TIB AND TIBBLES.....	289
5.8. CONCLUSION	291
BIBLIOGRAPHY.....	293

Figure 1.



Chapter 1: Thing Theory and Its Alternatives

1. Things and ‘Thing Theory’

Anything whatever can be introduced into discussion by means of a singular, definitely identifying substantival expression...anything whatever can be identifyingly referred to...Anything whatever can appear as a logical subject, an individual.

-Peter Strawson¹

Analyze theory-building how we will, we all must start in the middle. Our conceptual firsts are middle-sized, middle-distanced objects...

-W.V.O. Quine²

In our common ways of dividing what we encounter, *things* compete with stuffs, developments, events, activities, relationships, arrangements, states, opportunities, possibilities, beliefs, feelings, or moods. Nevertheless, since Aristotle ontologists have indulged in such a categorial overstatement, claiming with Aristotle that substances or ‘object’ or ‘things’ are ‘what there is, in the primary sense.’

-Johanna Seibt³

When we shall have occasion for a name which shall be capable of denoting whatever exists ... there is hardly a word applicable to the purpose which is not also ... taken in

¹ Strawson, 1995, p.137, p. 227, parsing and quote from Laycock 2005, p. 63

² Quine 1960, p. 4

³ Seibt, 2000, p. 242, emphasis mine

a sense in which it denotes only substances. But substances are not all that exists; attributes, if such things are to be spoken of, must be said to exist . . . Yet when we speak of an object, or of a thing, we are almost always supposed to mean a substance . . . If, rejecting the word Thing, we endeavour to find another of more general import, a word denoting all that exists.... no word might be presumed fitter . . than being . . . But this word . . . is still more completely spoiled for the purpose . . . Being is, by custom, exactly synonymous with substance . . . Attributes are never called Beings . . . In consequence of this perversion of the word Being, philosophers . . . laid their hands upon the word Entity . . . Yet if you call virtue an entity, you are . . suspected of believing it to be a substance . . . Every word which was originally intended to connote mere existence, seems, after a time, to enlarge its connotation to separate existence . . .

-J.S. Mill⁴

1.1 ‘The Thing Question’ - Precisifying it. The Zoo of Terms

The main question I want to answer in my dissertation sounds a little strange at first. Call it ‘the Thing Question’:

(TQ1) Is everything in the physical world that we can speak of a *thing*?

In a formal sense, the answer seems to be plainly, perhaps even trivially, ‘yes’.

E.J. Lowe tells us that:

‘Thing’, in its most general sense, is interchangeable with ‘entity’ or ‘being’, and is applicable to any item whose existence is acknowledged by a system of ontology, whether that item be particular, universal, abstract, or concrete. In this sense, not only material bodies but also properties, relations, events, numbers, sets, and propositions are—if they are acknowledged as existing—to be accounted ‘things’.⁵

However, in a metaphysical sense, if we mean by *thing*, either *object*, or, even more narrowly—*physical object*, the answer seems to be an emphatic ‘no’. As well as physical objects, there are heatwaves, trade deficits, emotions, colors, burnings, friendships, fallings, accelerations, hurricanes, rugby matches, nervous breakdowns,

⁴ *Logic*, pp.30-31. Quote and paraphrase from Laycock 2002, fn 3.

and evasions of payments. There is also hydrogen, gold, water, blood, and taco sauce. It is controversial whether the latter group are *objects* in any plausible sense—rather, they are stuffs. And the former entities are not physical objects, they are rather events, processes, situations, states, actions, or properties.

We need to disambiguate the Thing Question if its content is to become clear. The question is obscure because of the under-determination of the sense of ‘thing’ in a philosophical context. The word ‘thing’ has been associated with all of the following terms, each of which have multiple variegated senses and interpretations associated with them:

Thing Terms: thing, object, individual, particular, entity, item, substance, being, unit, existent, a unity, whole, term.

The last term, ‘term’, has rather gone out of fashion, and was defined by Bertrand Russell in the following manner:

Whatever may be an object of thought, or may occur in any true or false proposition, or can be counted as *one*, I call a term. This, then, is the widest word in the philosophical vocabulary. I shall use as synonymous with it the words unit, individual, and entity. The first two emphasize the fact that every term is *one*, while the third is derived from the fact that every term has being, i.e. *is* in some sense. A man, a moment, a number, a class, a relation, a chimera, or anything else that can be mentioned, is sure to be a term.⁶

This absolutely general idea of an item, or entity, which Russell calls a ‘term’, is supposed to “comprehend the sum-total of existence, to include *whatever* there may be.”⁷ Henry Laycock calls the concept of ‘term’ and all its co-intensional associated concepts the *object concept*.⁸ The *object-thesis* is what he calls the thesis that the

⁵ From *Oxford Companion to Philosophy*, entry on “Things”. Source: Laycock 2002.

⁶ Russell 1937, p.43. Source, Laycock 2002.

⁷ Laycock 2002, p. 1.

⁸ Ibid., p. 2.

object concept has universal applicability. The object-thesis represents an affirmative answer to the following, more precise Thing Question,⁹:

(TQ2) Is everything physical that we can speak of a *term* (i.e., *one*)?

Yet there are two ways of understanding this question, one (merely) semantical, one ontological. The semantical way of understanding TQ2 is as follows:

(TQ2S) Is everything physical we can speak of *singular*?

The answer to this seems to be ‘no’. Obvious examples of plural quantification, especially in the context of non-distributive predication, quite clearly show that we often speak of physical things plurally.¹⁰ Relatively recently, the works of George Boolos, Henry Laycock, and Thomas McKay, among others, have shown there to be many cases where we talk about things plurally, in such a way that we are not talking about them as a collection, set, or unified entity, or as a mereological fusion.¹¹ Rather, we should take the sentences at face value.

McKay gives the following kind of example:¹²

(A) They* are three in number. [*where ‘they’ refers to, say, Arnie, Bob, and Carlos]

If anything we could speak of was *one*, then Arnie, Bob, and Carlos would not be three in number, they would be one. But this is false.

Also, look at the following argument:

(B) Some students surrounded the building.

(C) Therefore, some individual is such that it surrounded the building.

McKay notes:

Even if you think that [unrestricted] mereology is necessarily true and guarantees that whenever the premise is true the conclusion is true, you should still not regard that as a logical entailment.¹³

⁹ Restricted in our case, here and throughout the dissertation, to physical items.

¹⁰ And this does not commit us to there being *things* which *are* pluralities.

¹¹ Boolos 1984, Laycock 2005, McKay 2005.

¹² McKay 2005, chap 2 p. 9.

Even if unrestricted mereology is true, it would not mean that several parts of a fusion are necessarily referred to *as* a single fusion, nor would supposing so make for the right semantics of plural quantification. Not all plural quantification and predication can be analyzed in terms of sets either, where the set is considered as *one* that is committed to and predicated of. Laycock points out how George Boolos argues that some of our talk is essentially plural, such as “the rocks rained down”.¹⁴ About such sentences, Boolos says

it would appear hopeless to try to say anything more about the meaning of a sentence of the form ‘The *Ks M*’ other than that it means that there are some things such that they are the *Ks* and they *M*.¹⁵

As Laycock continues,

None of this involves denying the utility of the concept of a set or class; it insists only that the proper introduction of set-theoretical concepts calls for resources which go beyond the semantics of plural reference.¹⁶

But our negative answer to (TQ2S) seems neither here nor there with regards to ontology. It could be that the things we refer to plurally really do fuse to make a single entity, and yet we could speak of the parts in an irreducibly plural way. And, it could be that we refer to things as unities that are in fact pluralities. The more metaphysical interpretation of TQ2 is the following:

(TQ2O) Is everything physical we can speak of an *individual*?

‘Individual’ is a term of art in philosophy. According to Simon Blackburn in *The Oxford Dictionary of Philosophy* it means “the things counted as single for the purpose in hand. What is counted as an individual, therefore, depends on what kind of

¹³ Ibid. chap 2 p. 3.

¹⁴ Laycock 2002, p. 4.

¹⁵ Boolos 1984.

thing is being counted.”¹⁷ So, if we’re counting armies, we would count four in the U.S. But Peter Van Inwagen, in *Metaphysics* states that

A thing is not an individual thing if it is a mere collection of things....The intuitive reason for saying that the army is a *mere* collection of soldiers is that the army of 1935 and the army of today are supposed to be the same army, and yet not a single soldier is common to both.¹⁸

Yet, “...individuals [are] also called particulars,”¹⁹. Particulars are often equated with individuals, e.g. “...an individual [is] also called a particular.”²⁰ And, isn’t an army *particular*? Isn’t that why we counted *four* of them here?²¹ Also, individuals are that which are *individuated*, and we *individuate* armies, don’t we?

But, with the following quote, we seem to have a severance of particularity from individuality: “Dynamic masses are non-countable, non-particular individuals...”²²

When there’s such widely diverging usage the most respectable thing to do is to just stipulate your usage. I’ve looked at a lot of material on individuals, and there is no commonly decided upon meaning, nor is there a successful conceptual analysis available (since there is contradictory philosophical usage that cannot be settled by what the folk think). I hereby stipulate that by ‘individual’ I shall mean in the rest of the dissertation the following:

(I) Something is an individual just in case it is non-plural.

¹⁶ Laycock 2002, p. 4.

¹⁷ Blackburn 1994, entry on ‘Individual’, p. 191.

¹⁸ Van Inwagen 1993, p. 24.

¹⁹ *The Cambridge Dictionary of Philosophy* (ed. Audi, Robert), p. 489, entry on ‘metaphysics’ by Panayot Butchvarov.

²⁰ Ibid., p. 367, entry on ‘individuation’ by Jorge J.E. Gracia.

²¹ Army, Navy, Air Force, Marines.

²² Seibt, 2000, p. 241.

With this very wide-open use, I am trying to get at what Russell meant with ‘term’, but *not* imply that everything whatever we can speak of is singular, or *one*, since plural referents are not singular. But, by ‘individual’ I mean *whatever* can be referred to in non-plural definite substantival reference, whatever can be spoken of in this way at all. So, individuals would include (assuming the following exist) plants, artifacts, people, armies, constellations, nations, planets, properties, states-of-affairs, propositions, facts, relations, universals, activities, actions, processes, sets, mereological fusions, mereological atoms, quarks, events, emotions, all tokens, all types, token substances (*that* water), types of substances, dependent entities (e.g. smiles, tree-tops, carpet wrinkles), shadows, and so on and so on. And now we can see that the sharpened ontological reading of TQ2 is not very interesting:

(TQ2O’) Is whatever (non-plural) physical entity that we can speak of an individual?

The answer to this is clearly *yes*. This hasn’t been an exercise in triviality, however. My purpose was to sharpen (or, perhaps, loosen) the concept of *individual* so that we can ask the following revised version of the Thing Question:

(TQ3) Is every physical individual a *substance*?

‘Substance,’ which is short for *primary substance* here, refers to a somewhat technical notion developed by Aristotle, that was used especially in the Medieval and Early Modern periods, and has since fallen somewhat out of usage, both due to the increase of ‘substance’, in common parlance, to refer to chemical substances, and by a gradual replacement in the contemporary period by philosophers with either (physical) ‘particular,’ (physical) ‘thing,’ or just plain old (physical) ‘object.’

We will be spending some time in the next section getting clearer about what primary substances are, but let it suffice for the moment to get at the notion with paradigmatic examples. Substances, if they exist, would include ashtrays, newspapers, people, tables, rocks, glasses, dogs, and books. Some people illustrate the notion by saying that paradigm substances are medium-sized dry goods of our acquaintance. Substances are unified things, putatively the primary entities which properties are predicated of, and they are the things which underlie change, and persist as self-identical through accidental change. *Substance*, in philosophical parlance, most closely correlates with what the folk most often mean by the words *thing* or *object*. Substances, however, go beyond medium-sized goods of our acquaintance. Atoms are substances, as are stars and planets.

But the answer to TQ3 is also quite clearly ‘no’. There are physical properties and events, which, while individuals, are not substances, things, or objects. The final, most precise version of the Thing Question is as follows:

(TQ4) Is every physical individual a *substance*, or, reducible to substances and their properties (or, to properties and bundles/compresences of properties)?²³

Most contemporary philosophers give an emphatic ‘yes!’ answer to the Thing Question. While most are happy to admit that there are individuals which are not substances, the common opinion is that whatever is not a substance *reduces to*, or can be explained solely in reference to, substances and their properties. At bottom, the

²³ Note that I have no interest in dealing with the bundle/substratum debate here. Bundle theorists believe in ‘substances’ as I use the term as well (substances are not the same thing as substrata). Instead of substrata they have bundles or compresences, which can play the role of *things* that the stuff and process ontologists are still rebelling against. Throughout the dissertation, I’m attempting as much as possible to be theory-neutral in regards to properties and how properties relate to particulars.

world is composed of substances. Events reduce to objects and their properties. Stuff-talk is just talk about groups of atoms, or, simples like quarks, gluons and leptons. There really are no problematic, irreducible entities like processes or stuffs. Or, rather, there are such entities, but they are ‘nothing over and above’ a substance or substances and their properties. If we had a list of every substance, and every property it had throughout all of time, we would have a complete description of the (reductive base of the) world. This view, only roughly characterized above, forms the core of modern metaphysics, and shapes both current metaphysical methodology and the contours of most research programs. Current metaphysics is a search for the list of all the substances and their properties (and relations). Once we have this, we have everything. This research program and methodological stance and its presuppositions is so pervasive as to not even have a name.²⁴ I call it ‘Thing Theory.’²⁵ Thing Theory is characterized by two major theses, one, which I follow Henry Laycock in calling ‘The Ontology of Objects’,²⁶ and, two, Aristotelian Sortal Essentialism.

²⁴ Well, that is not really true. It is sometimes called ‘the substance metaphysic’. But, I am afraid that anyone who has used this phrase might deny that Thing Theory is the same. Plus, the phrase ‘substance metaphysic’ has been used in too many different ways, so I prefer to make up a name.

²⁵ Whitehead would say the Thing Theorists engage in the ‘fallacy of misplaced concreteness,’ while Johanna Seibt would say that they have fallen prey to the ‘myth of substance’ (see Seibt 1996 and 2000). Laycock says that Thing Theorists are in the grip of ‘the particularizing instinct’(see Laycock 1975). Metaphysical Thing Theorists have an analogue in the logico-semantical debates about plural quantification, where their philosophy of language counterparts are called ‘singularists’ (see McKay 2005). While debates about plural quantification cross over with debates about substantialism, I doubt that they are about the very same issues.

²⁶ Although some of my usage will differ from his. See Laycock 1975 and 1981.

1.2 Thing Theory

1.2.1 The Ontology of Objects

Evidently, it is a consequence of the Ontology of Objects that there can be nothing which substantially occupies space, nothing which is bulky or material, apart from material objects, and paradigmatically, such things as sheep and statues, moons and planets, rocks and trees and tables.²⁷

One of the major theses of Thing Theory, the ‘Ontology of Objects,’ should be understood as an affirmative answer to our final version of the Thing Question (TQ4). The thesis can be understood this way:

(OOO) Every physical individual is either a substance, a collection/fusion of substances, or reduces to a substance and its properties, or a collection/fusion of substances and their properties.

Using ‘thing’ or ‘object’ now as substitutable words for ‘substance’ (which I will do for the rest of the dissertation), the OOO thesis can be understood as saying that everything (physical) is an *object* or *thing*, or, if not a thing, is reducible to things and their properties.²⁸ Events and processes may be real, but they just reduce to things with properties, or property occurrences that are parasitic on things. Physical,

²⁷ Laycock 1975, p. 413.

²⁸ The assimilation goes from the direction of ‘thing’ and ‘object’ to ‘(primary) substance’, not the other way around. As I will be using it throughout the dissertation, ‘thing’ and ‘object’ now are quite metaphysically loaded notions, not the ‘thin’ formal notion of a thing, which is more akin to a Russelian ‘term’ or an unqualified use of ‘individual.’

instantiated properties are real, but they are parasitic on the things that have them.²⁹ Stuffs, such as water and gold, just reduce to molecules, which themselves reduce to atoms, which themselves reduce to quarks, gluons, leptons and bosons (which might themselves reduce to ‘super-strings’). But, what are these objects, or *substances*, such that they populate the whole world, and form the ontological base of everything ‘else’?

1.2.2 Sortal Essentialism

The second main thesis that characterizes Thing Theory is Aristotelian Sortal Essentialism. Not only is the world a world of things, but these things have essential properties, and persist through time and change in certain ways.

In *Categories* 4 A 10 ff Aristotle remarks that “the most distinctive mark of [primary] substance appears to be that while remaining numerically the same, it is capable of admitting contrary qualities.” By ‘primary substances’ Aristotle means, or—philosophers usually take Aristotle to mean—ordinary medium-sized continuants of our acquaintance, such as individual tables, people, cabbages and ashtrays.

For Aristotle, ‘secondary substances’ are kinds, or ‘forms/substantial forms,’ or what most of us today think of as natural or artifactual kind universals, such as *catness* or *treehood*. Aristotle also developed a hylomorphic doctrine, or the notion that primary substances (i.e., things) consist of form in matter. Things are not identified with clusters of matter. Things are rather enmattered forms. Substantial,

²⁹ I am trying to treat ‘Thing Theory’ in as neutral a sense as to allow Platonists, as well as Nominalists and Immanent Universalists, to be Thing Theorists, as well as both bundle and substrata theorists. Of

versus accidental, change, is understood as the changing relation of a substantial form to some matter. A cat comes to be by some matter taking on the form of *cathood*. A cat ceases to be when some matter ceases to instantiate *cathood*.

Aristotle believed that matter (*hyle*) and universals have no existence independent of primary substances. In *Categories* 2 b 4 ff he writes “everything except primary substance is either predicated of primary substances or is present in them, and if these last did not exist, it would be impossible for anything else to exist.” In regards to matter’s dependence on substances, Aristotle’s notion has been reiterated in modern parlance when it has been asserted that there’s no “free matter”.³⁰ This means that there is no matter which is not part of, or identical with, or a substrate of, some object, or that you’ll never find a portion of matter not bound by form. With this dogma, it is implicit that matter bound by (substantial) form is sufficient for objecthood. While Aristotle holds that ‘matter *qua* matter,’ or matter ‘in and of itself’ has no form, matter cannot exist apart from objects, which always have a form, and which all the matter is ‘in’.

Most of these Aristotelian platitudes or dogmas are held today by most analytic philosophers, or at least analytic metaphysicians, with of course some revisions, qualifications, and changes in terminology.³¹ For example, it is believed that individuals or objects are just those things that can persist through change, where such change precludes the loss of essential properties which are given by the

course, many different qualifications would have to be put in here (especially for Nominalists), but, there are important senses in which each of the foregoing can be Thing Theorists.

³⁰ For discussions and debates about the possibility of free matter, see Denkel 1989 and 1995, Hacker 1979, Laycock 1981 and 1989, and Sidelle 1991.

³¹ Most philosophers nowadays are not, however, immanent universalists like Aristotle. But, this will not really play a role in what follows.

secondary substance, or what we now call “the substance sortal that covers the individual.”

‘Sortals’ are concepts, the correct possession and employment of which let us know what kind of thing a thing is.³² Sortals come in varieties. Two of the most salient are substance sortals and phase sortals. A contemporary influential treatment of substance sortals is found in David Wiggins’ *Sameness and Substance*.³³ A sortal F is a substance sortal just in case “x is no longer F” entails “x no longer exists.”³⁴ For instance, ‘cat’ is a paradigm substance sortal, since if we suppose there to be a cat named ‘Chairman Meow’, and if the sentence “Chairman Meow ceased to be a cat” (equivalent to: “There is no longer a cat which is Chairman Meow”) became true, this seems to entail that “Chairman Meow is no more” is true.

Substance sortals or concepts have criteria of individuation and identity (for the items they refer to) ‘packed into’ them. Possessing a substance sortal F gives us a means of counting Fs, individuating them, and knowledge of persistence conditions of the Fs. Inherent in grasping the concept *cat*, for instance, is understanding what makes for a cat, how to count cats, how to distinguish cats, and (limited) knowledge of what situations a cat can come about in, remain in existence, or cease to be.

Counter to these are ‘phase sortals’, such as ‘boy’, or, ‘caterpillar’, which fail Wiggins’ test for substance sortalhood. For example, “Timmy is no longer a boy” does not entail that Timmy no longer exists. Timmy might still be around, as an adult. Intuitively, phase sortals describe an individual as it goes through a phase which it need not remain in in order to exist, or picks out a thing via a contingently permanent

³² The term ‘sortals’ was first used, I believe, by Locke in his *Essay*.

³³ Wiggins 1980.

accidental feature. If we employed phase sortals along with substance sortals in an attempt to count every individual thing with no redundancies, we would fail. Where normally we would think that a man is just one thing, if we employed phase sortals in an attempt to count, we could, just to mention a few, end up with five ‘other’ things - father, Anglican, accountant, pedestrian, taxpayer. Substance sortals, then, give us a true basis for counting, for telling us what a thing really is, while phase sortals just tell us what a thing is accidentally like for a time.

Wiggins remarks that “x exists” is true just in case “($\exists x$):Fx” is true, where F gives us the substance sortal for the x in question.³⁵ The foregoing concerns and platitudes about objects lead to the natural view that every (physical) object is a substance which falls under some natural or artifactual kind F which gives us its persistence conditions. And this is the second thesis of Thing Theory, ‘Aristotelian Sortal Essentialism’ (ASE).

(ASE) Everything physical (except properties and relations) that exists is such that it falls under one (and only one) secondary substance sortal Φ , and the Φ in question gives us its persistence conditions.

Together, (ASE) and (OOO) gives us a very neat and putatively all-encompassing picture of the world. While we don’t know what all the things *are*, we know that whatever exists is a thing, a group of things, or properties or relations of things. Furthermore, every thing, regardless of whether we know which of its properties are essential or of which sort it falls under, definitely falls under a sort, and definitely is of a certain kind. Our task as metaphysicians in regards to the physical world is to

³⁴ Ibid. p. 64.

³⁵ Wiggins 1980, p. 61.

find out what *things* there are, and what their properties and relations are. If we could do this, our job of describing the physical world would be complete.

1.3 What is Wrong With Thing Theory?

A substantial minority have argued that, in one way or another, Thing Theory is false. I will examine two main groups who reject thing theory; process philosophers and stuff ontologists. My main focus is on stuff ontology, but this segues naturally into process philosophy, and, as I'll argue, any viable stuff ontology needs to be wedded to a process ontology if it is going to explain all of reality.

Stuff ontologists come in two broad groups.³⁶ The first group I call *anti-particularists*. What they share in common, besides asserting that there is *stuff* or *matter* that plays a primary role in philosophical explanation, is denying that all individuals are things (i.e., primary substances) or reducible to them and their properties. They hold that the Ontology of Objects is false. There are two subdivisions of anti-particularists. The *weak* anti-particularists deny that the only individuals that exist, or could exist are *things*. They do not deny that there are things.³⁷ The *strong* anti-particularists deny that there are any things at all.³⁸

³⁶ It must be noted here that I am not and will not be doing a conceptual analysis of ‘stuff ontology’. Nor, however, am I stipulating its usage. I am merely classifying different views that either go by the name ‘stuff ontology’, or, ‘stuff-not-things ontology’, and those that resemble them, and note what is common to them. As we’ll see, ‘stuff ontology’ is somewhat ambiguous, and connotes a miscellaneous number of views. Classifying these different views has value, however, in that it has not been made clear in the literature what *stuff ontology* means. I’ve noted that philosophers often talk past each other when discussing this topic. Hopefully getting clear on the different connotations of ‘stuff ontology’ can help clear up some problems.

³⁷ Weak anti-particularists include Markosian 1998, Laycock 1975 and Seibt 2000.

³⁸ Strong anti-particularists include Spinoza (according to Bennett 1984), Hawthorne and Cortens 1995, and Sidelle 1998 and 1989.

The other main group of stuff ontologists are the *bare objects theorists*. Bare objects theorists assert that there is *stuff* and deny Aristotelian Sortal Essentialism. A necessary condition for being a bare objects theorist is to countenance a class of entities variously referred to as; masses³⁹, aggregates⁴⁰, hunks⁴¹, parcels⁴², (mere) fusions-, collections-, consignments⁴³, quantities⁴⁴, or portions-, —of matter. The only persistence condition of these objects is to have all the material parts that they do. The people called ‘stuff ontologists’ who accept that there are bare objects also insist that, at the ground floor at least, these are the only kinds of objects or *things* that exist. Commonsense objects, such as tables and chairs and boulders, either don’t exist, or are logical constructions out of hunks of matter⁴⁵, or are functions from times and places to portions of matter⁴⁶, or are processes or *disturbances* which ‘pass through’ hunks of matter⁴⁷, or are complex ‘singulary’ properties momentarily instantiated in hunks of matter which are not themselves essentially tables, chairs, or boulders.⁴⁸

So, from a taxonomical standpoint, to be a bare objects stuff ontologist it is individually necessary and jointly sufficient to accept both that (1) there are masses of matter, and that (2) there are no further genuine objects.⁴⁹ Note that being a bare objects theorist and an anti-particularist are not mutually exclusive. One could hold

³⁹ Zimmerman 1995.

⁴⁰ Burge 1977.

⁴¹ Heller 1990.

⁴² Locke, *Essay Concerning Human Understanding*.

⁴³ Karmo 1977.

⁴⁴ Cartwright 1974 and 1979.

⁴⁵ Chisholm 1976.

⁴⁶ Zimmerman 1995 and Grandy 1975.

⁴⁷ Karmo 1977 and 1978.

⁴⁸ Jubien 1993 and 2001.

that there are masses of matter only, like the bare objects theorists, and that these masses are not genuine substances.⁵⁰ Indeed there are a variety of positions available that combine elements of both these views.

However, as a matter of sociological fact, most bare objects theorists are somewhat split from the anti-particularists in that most of the former believe that whatever exists is a *thing*. In particular, they believe that masses or quantities of matter are things.⁵¹ In a sense, *stuff per se* is not doing any work for the bare objects theorists—it is *things* ‘all the way down.’ Some think that perhaps such positions don’t deserve the name ‘stuff ontology’.⁵² But, I think they do, inasmuch as they share with the anti-particularist (1) an adherence to the primacy of matter in philosophical explanation, (2) in the positing of entities that are outside the Aristotelian framework. Also, perhaps more superficially, most of the positions that are actually *called* ‘stuff ontology’ are the positions of the bare objects theorists.⁵³ And, as we shall see, there is quite a lot of cross-over between the anti-particularists and the bare objectualists.

Now I’d like to, in a preliminary fashion, present some of the concerns and arguments of the opponents of Thing Theory. We’ll assess these arguments and concerns in detail later, but it’s a good idea to see what the flavor of these theories are, and see the trees from afar before we walk into the forest. My presentation of the

⁴⁹ There are many various qualifications that would be offered for (2) according to the bare objects theory in question. What the non-eliminativists share in common is, while claiming that we can account for commonsense objects, they somehow must reduce to masses of matter.

⁵⁰ Sidelle considers this idea in 1998, and Burke seems to hold this view in Burke 1997.

⁵¹ e.g., see Zimmerman 1995 and 1997. Michael Jubien also told me that his ‘stuff-talk’ is really just talk about things (personal communication).

⁵² Thomas Holden and Daniel Nolan communicated this to me (personal communication). Also, cf Sider 2001 pp. xvii - xviii.

following, which will sometimes appear sympathetic, should not imply my acceptance of any of these views.

1.3.1 We Need a Place for our Stuff - Concerns of the Anti-Particularists

Five Distinctions Between Stuff and Things

- (1) Stuff ontologies are motivated in part by the distinction between things and the stuff, or matter, that constitutes them. For instance, not only is there a desk in my room, there is the wood that constitutes it. Physical things consist of, or contain stuff, and stuff is what makes up things. Stuff often exists prior to constituting an object, and some stuff can persist past the loss of the substantial form of, and hence the annihilation of, the thing it constitutes. To summarize: stuff and things have distinct modal properties.
- (2) Another way to get at the distinction between stuff and things is with the help of the mass noun/count noun distinction. Things stand to stuff as the referents of count nouns stand to the referents of mass nouns. Common examples of count nouns are ‘cat’, ‘man’, ‘table’, and so on. Common mass nouns are ‘milk’, ‘gold’, ‘lighter fluid’, ‘furniture’, and ‘porridge’.⁵⁴ Also, more salient to the metaphysical project of understanding the relation of concrete mass nouns to the items they constitute, are

⁵³ For example, people most often associate ‘stuff ontology’ with the work of Jubien, who is a bare objects theorist.

⁵⁴ There are both concrete and abstract mass and count nouns. The former examples were of concrete count and mass nouns. Examples of abstract count nouns are ‘set’, ‘number’, while examples of abstract mass nouns are ‘wisdom’ and ‘information’. In the following, I will treat concrete count and mass terms and their referents only. I am not interested in giving a general treatment of mass/count nouns, but am merely interested in the distinction inasmuch as it will help clarify the relation between physical stuff and physical objects.

terms we can refer to as ‘natural stuff-kinds,’ such as ‘water’ and ‘lead’, unlike non-natural stuff-kind mass terms such as ‘furniture’ and ‘trash’.

Mass and count nouns have distinguishing syntactic and grammatical features. Count nouns admit pluralization, can be legitimately prefaced by numerals, and by both definite and indefinite articles. Mass nouns resist pluralization and preface by numerals, and can only be legitimately prefaced by the definite article (although there is an analogue of the indefinite article applicable to mass nouns, namely, ‘some’). One doesn’t talk of ‘milks’, or ‘a milk’, unless one is speaking of kinds of milk, and ‘seven milk’ is always ungrammatical, and implies something metaphysically dubious, if it implies anything at all. Many words play a dual role, and only context can let us know which type of noun is employed, as illustrated by the ambiguity of phrases such as ‘Mary had a little lamb,’ ‘There’s a little room there.’

For any count noun N, we can sensibly talk about the number of N’s. For no mass term C can we speak of the number of C’s (without a change in meaning). The referents of mass nouns can only be numbered when prefaced by nominal measure terms or prefixed partitive phrases. (Although, they can be quantified over by phrases such as ‘much’, ‘a lot’, ‘some’). For instance, ‘he had seven beers’ is usually short for, ‘he had seven bottles (or glasses) of beer.’ We can speak of gallons, ounces, and metric tons of beer, and these can be numbered, but beer itself can not be numbered *simpliciter*. The distinction between one and five gallons of beer is not the distinction between one and five things.⁵⁵ Similarly, if I pour two glasses of beer on the floor into a puddle, this does not entail that there are two things on the floor. Unlike count terms, mass terms themselves give us no conceptual basis for counting. There are no

‘trashes’, although there are bits and pieces of trash. As Tyler Burge neatly summarizes, “mass terms are typically used to measure the masses—count nouns, to number the multitudes.”⁵⁶

But does the distinction between mass and count nouns have any ontological import? That is, does the linguistic distinction between mass and count nouns reflect any kind of corresponding metaphysical distinction between stuff and things? And how could we test for this? One Quinean test seems to recommend itself—see if all talk of mass terms which ostensibly involves ontological commitment to stuffs could be reduced to, or paraphrased away into, talk about things, without a change in truth conditions from *analysandum* to *analysans*. If this cannot be done, then the Ontology of Objects is mistaken. Now, there is some evidence that stuff-talk cannot be reduced to thing-talk, and so the Ontology of Objects is at least threatened. Henry Laycock in particular, whose views I will examine below, has challenged the Ontology of Objects and any kind of semantic or ontological reduction of stuff to things. Furthermore, the glut of work which was done throughout the seventies on the logic and semantics of mass terms failed to result in any comprehensive satisfactory treatment of the referents of mass terms in terms of things/particulars. The tension in such accounts is, on the one hand, formally validating ordinary language inferences which feature mass terms, and, on the other hand, treating the referents of mass terms as things/particulars. In the literature we can see that when one attempts to do one, one fails in doing the other.⁵⁷

⁵⁵ Laycock 1981, p. 27

⁵⁶ 1975, p. 459.

⁵⁷ For an excellent review of attempted solutions to the problems of mass terms, see Pelletier and Schubert 1989.

Given these problems, what are we to make of the mass/count noun distinction, and the distinction between the stuff of the world and the things of the world, between a pile of sand and the sand in the pile, or the statue and the clay that composes it? Does the latter constitute the former, or is the hunk of clay which composes the statue identical to it? If stuff is in turn constituted by things, such as fundamental particles, are these fundamental particles themselves constituted of stuff ‘all the way down’? Can *a priori* theorizing even tell us anything about this? Before we can answer such questions, we must first look at the varieties of stuff ontology in the ensuing Chapters.

(3) Another putative distinction between stuff and things that is sometimes pointed to is that stuffs are *cumulative* and *dissective* in ways that things are not. Some stuff of kind K is cumulative just in case any two portions of K together also make up a portion that is K. For instance, any two portions of milk together make up a further portion of milk. The thing-analogue to cumulativity is not true, however. Not all *n*-tuples of chairs will make up a further chair, nor do two people make up a person. Also, stuffs are dissective in ways that things are not. That is, for (most) portions of stuff kind K, any sub-portion of K is also some K. For instance, most (gross) parts of a portion of water are water, while most (gross) parts of a chair are not themselves chairs. Of course, there are limits to this for most kinds of stuff. Anything smaller than an H₂O molecule is not water, nor is it obvious that a raisin in some fruitcake is some fruitcake. With some complex stuffs, such as beer, it is not clear what makes for a smallest portion of it.

(4) This is closely related to the distinction between *heteromerity* and *homeomerity*.⁵⁸ Loosely, some stuff of kind S or a thing of kind T is homeomerous just in case every part of it is of kind S (in the case of stuff) or kind T (in the case of things), otherwise it is heteromerous. Some stuff S or thing T is heteromerous if *any* part of it is not S or T.⁵⁹ The only truly homeomerous materials would be either infinitely divisible gunky stuff of kind S where each sub-portion of it is S, or collections of point-particles of kind S. Even rather macroscopically homogenous stuffs like milk, water, or copper are not truly homeomerous. If there is no truly homeomerous stuff here, there could be homeomerous stuff in other possible worlds, which could distinguish itself from the heteromerous things which it constitutes. Some also point out how, even though most stuffs in our world are heteromerous, they are at least largely homeomerous *relative to*, for instance, cars, ants, and laptops.⁶⁰

(5) Lastly, stuff has been distinguished from things due to stuff's putatively odd ontological status. Stuff, some hold, is neither *universal* nor *particular*. It is neither an abstract kind nor a particular instance of a general kind.⁶¹ For instance, George Bealer, in "Predication and Matter," points out how stuff fails tests to count as either

⁵⁸ Some discussion of hetero- vs. homeomerity is in Gibbons 1969.

⁵⁹ More, formally, Dean Zimmerman offers the following in 1995, p. 62, for stuffs:

(D5) *S* is a complete decomposition of *x* =_{df} Every member of *S* is a part of *x*, no members of *S* have any parts in common, and every part of *x* not in *S* has a part in common with some member of *S*.

(D6) *K* is a heteromerous stuff =_{df} Every mass *x* of *K* is such that it has a proper part having no complete decomposition into a set of masses of *K*.

(D7) *K* is a homeomerous stuff =_{df} Every mass *x* of *K* is such that every part of *x* has a complete decomposition into a set of masses of *K*.

For a discussion of hetero- and homeomerity which applies to things as well, see Gibbons 1969

⁶⁰ See Seibt 1997 and 2000.

universal or particular. Particulars are said (truly) of themselves only, e.g., “Only Nixon is Nixon,” “He is Nixon,” “Hesperus is Phosphorous,” etc.. But, as well as some gold being gold, some ring is gold too. ‘For example, if gold exists, then something besides gold must be gold.’⁶² But, if Nixon exists, nothing besides Nixon must be Nixon. Stuffs also seem not to be particulars because they seem “to correlate with general terms in the same way that universals do.”⁶³ For instance, “it seems that the stuff gold bears the same relation to the sentence ‘this is gold’ as the universal red bears to the sentence ‘this is red.’”⁶⁴

But, stuffs do not seem to be universals either. If universals are platonic, stuffs certainly are not like them (e.g., eternal, uncaused, and abstract).⁶⁵ Also, “some stuffs don’t even exist: e.g., phlogiston and kryptonite,”⁶⁶ whereas all universals do exist (if there are universals and they are not immanent). Moreover, water and lead are as concrete as anything gets. It seems ridiculous to claim that they are either abstract or universal. Perhaps *being gold* or *being made of gold* are universals, but the gold itself in a hunk of gold is not.

All of the foregoing definitely presents a *prima facie* case for a distinction between stuff(s) and things. Ultimately, however, I will argue that these sorts of arguments do not warrant holding that there is stuff that is irreducible to things.

⁶¹ See Hacker 1979 and Bealer 1975.

⁶² Bealer, p. 493.

⁶³ Bealer 1975, p. 494.

⁶⁴ Ibid.

⁶⁵ Ibid.

⁶⁶ Ibid.

1.3.2 Coincidence and Other Concerns of The Bare Objects Theorists

The only true principles of synchronic unity are ones that yield masses of matter. Garden variety objects that ostensibly gain and lose parts over time must be logical constructions out of masses, or processes passing through various parcels of stuff—in something like the way a hurricane is a process that passes through many different tracts of air and water.⁶⁷

Other stuff ontologists reject Thing Theory, not so much due to the concerns of the anti-particularists, but because the Ontology of Objects and Aristotelian Sortal Essentialism (ASE) lead to paradoxical consequences. When one attempts to block these consequences, one often ends up accepting bare objects and denying ASE. The ultimate real entities, says the bare objects theorist, are hunks of stuff that do *not* genuinely have the persistence conditions of commonsense, ordinary objects. If such Aristotelian substances can be said to exist at all, it is only because they can ride piggyback on bare objects with help from the right theoretical equipment.

Bare objects theorists treat commonsense objects in various ways. For some, commonsense objects have their persistence conditions only ‘by convention’.⁶⁸ For others, commonsense objects are logical constructions out of bare hunks of matter, or functions from times to hunks of matter.⁶⁹ Michael Jubien argues that a particular table, for instance, does not have the essence of a table, rather it is a bare hunk of stuff that only contingently has the property of *being-a-table*.⁷⁰ Also, there are combined stuff and process views, the proponents of which hold that commonsense

⁶⁷ Zimmerman 1998, p. 299

⁶⁸ e.g., Sidelle 1989, and Heller 1990.

⁶⁹ e.g. Chisholm 1976, Zimmerman 1995, Grandy 1975.

⁷⁰ See Jubien 1993.

objects are processes that are ‘in’ some distinct matter,⁷¹ or processes which ‘pass through’ successions of distinct hunks of matter.⁷²

One concern that has motivated some stuff ontologists is the paradox of coincidence. This paradox, which we will meet with again and again in the dissertation, is commonly set up as follows. Suppose there is a statue of Saddam Hussein made out of a piece of copper. Call it ‘Saddam’. Saddam can not survive a crushing, but the piece of copper can. Also, the piece of copper existed before the statue. Since they have different properties, the piece of copper and Saddam are distinct. This argument follows smoothly from thing-theoretical presuppositions, and leads to further awkward consequences. It has proven quite intractable to solve this problem in a way that preserves common sense and satisfies our philosophical instincts.

But what is wrong with coincidence?⁷³ The main problem with coincidence, if it occurs, is that it is plainly queer and counterintuitive for two *things* to be in the same place, at the same time, and made up of all the same matter. Distinguishing between the statue-shaped piece of copper and the copper statue “reeks of double-counting.”⁷⁴ Beside this intuitive oddness, we can flag one problem by noting that, while they coincide, coincident objects (such as the hunk of copper and the statue it constitutes) have exactly the same intrinsic properties. Coincidence, if possible, entails that things with the same intrinsic properties do not necessarily have the same persistence conditions, and are not of the same kind, which seems wrong. How can

⁷¹ Chisholm in 1986 says something like this, although he calls what I call ‘processes’ *modes*.

⁷² Karmo 1977.

⁷³ For a good survey of the problems of coincidence, see Zimmerman 1995, especially pp. 85-94. Many of the concerns that follow originate from Zimmerman’s article.

two things with exactly the same intrinsic properties be of different sorts? We can ask of the copper, is it two hundred pounds, like the statue? Yes. Is it shaped like Saddam? Yes. Is it made up of copper, the very same copper that makes up the statue? Yes. The hunk of copper is starting to sound a lot like a *statue*.⁷⁵

Coincidental explanations inevitably run in a very tight circle - objects get the persistence conditions they do by falling under a certain sortal, but the explanation of why an object falls under a certain sortal is that it has the persistence conditions it does. Coincidentalists note that I am distinct from the mass of matter making me up, because I cannot survive a squashing but the mass of matter making me up can, so I do not fall under the sortal ‘mass of matter’, but the mass of matter does. However, the explanation for why I cannot survive a squashing seems to supervene on facts about the mass of matter which make me up, and certainly facts about the mass of matter supervene on the matter contained in it, so it seems hard to see how there could be ‘two’ objects here unless sortal differences between coincident objects are brute facts. As Dean Zimmerman notes,

[S]hould not two physical objects constructed in precisely the same way out of qualitatively identical parts have the same capacities for survival under similar conditions? Of course one may say that the big difference between the two is found in the *sort* each belongs to—one is a mere mass, the other a living animal. But can sortal properties be *basic*, not possessed in virtue of any other features of a thing?⁷⁶

It seems plausible to assume that what makes a thing the sort of thing it is supervenes on the intrinsic properties of the thing, and since me-now has the same intrinsic

⁷⁴ Lewis 1986, p. 252.

⁷⁵ Arguments like this can be found in Burke 1994.

⁷⁶ Zimmerman 1995, p. 87.

properties as the hunk-that-composes-me-now, we must be of the same sort. To insist otherwise is to insist on *brute* sortal (and modal) difference.

There are other problems, such as the ‘too many thinkers objection.’⁷⁷ Since my thoughts are realized by the workings of my brain, and I coincide with a mass of matter which has the same intrinsic properties as the ones in virtue of which my thoughts are realized, it follows that the mass of matter I coincide with has thoughts distinct from but exactly similar to mine. Surely this is absurd. Lastly, coincidence entails that it is impossible for one and the same thing to instantiate the properties of *being-some-wood-arranged-chairwise* and *being a chair*.

Many, like me, hold that the problems of coincidence are *so bad* that accepting coincidence as a phenomenon ought to be a last resort, and we ought to do so only if no other account can be found that preserves as much, if not more, of our intuitions.

Bare objects theorists, and others, for that matter, note how the problem of coincidence follows from various Thing-Theoretical presuppositions. Michael Burke notes how it arises due to the following account “of the relations among objects, sortals, and persistence conditions.”⁷⁸ Burke calls this ‘the Standard Account,’ which overlaps significantly with the ASE element of Thing Theory, and is embodied by three major propositions:

- (1) Associated with every sortal is a set of persistence conditions.
- (2) Objects that satisfy a given sortal invariably have the persistence conditions associated with that sortal.

⁷⁷ See Olson 2001

⁷⁸ Burke 1994, p.598.

(3) Two sortals are cosatisfiable (as are ‘kitten’ and ‘cat’) only if the persistence conditions associated with one are the same as the persistence conditions associated with the other.⁷⁹

Burke⁸⁰ challenges (2), and argues that, although an object can satisfy several sortals, its persistence conditions are given by only one of them. This sortal is its ‘dominant sortal’, which best answers the question ‘what is it?’(made when pointing to the object). While the statue also satisfies the sortal *piece of copper*, the sortal *statue* best tells us what the thing is. There is a piece of copper, but it is not a *mere* piece of copper. It is also a statue, and cannot survive a crushing, just like the statue cannot. This is because the statue and the piece of copper are identical. In challenging (2) and (3), he’s challenging ASE:

(ASE) Everything physical (except properties and relations) that exists is such that it falls under one (and only one) secondary substance sortal Φ , and the Φ in question gives us its persistence conditions.

Burke denies that every physical object falls under only one substance sortal. Things fall under several, but only *one* of them gives us its persistence conditions. This solution ameliorates the coincidence between the statue and the piece of copper.

E.J. Lowe, however, points out that though this helps with the coincidence between the piece and the statue, it does not help with the coincidence between the piece and the *copper*. For the copper can survive the shattering of the piece, but the piece cannot. Burke even admits that it is the continuity of the copper through the flattening of the statue that explains our intuition that the piece survives the flattening, even though, strictly speaking, the piece does not survive. Rather a new piece that is *not* essentially a statue comes into existence. But then, isn’t Burke admitting that

⁷⁹ Ibid.

⁸⁰ in 1994.

there is *something* which shares its place with the statue/piece after all, namely, the copper itself?

“No, I am not, since I deny that the copper is a single object. Following Laycock (1972), I claim that the copper is a plurality. It is *many* objects.”⁸¹ To this Lowe objects that we then have a case where many copper atoms coincide with a piece: “If so...then it may be questioned whether, after all, the one may not be *identified* with the many.”⁸²

Burke denies this identification:

Well, I hold that each of the many is a part of the one, but I deny that the many parts collectively are identical with the one....Trivially, the many are many. But it is not individually that they are many. (They are one each) So the many *collectively* are many. But ‘many’ and ‘one’ are contrary. So the many collectively are not one. But, again trivially, the one *is* one. So it is false that the many collectively are identical with the one...I deny the objecthood...of the copper composing the first statue...The fact that we refer to it [i.e., the copper] by means of a singular expression doesn’t show that it is [a single object].⁸³

I will not assess this argument here, but I want to draw attention to the strategy. One way to deny that, for example, some copper and a piece of copper coincide, is to accept that, in some sense, there is some copper, but to deny it objecthood. The copper itself is in some sense a ‘bare object’, a plurality,⁸⁴ and has none of the persistence conditions associated with any substance-sortal count noun.⁸⁵ Burke

⁸¹ Burke 1997, p.12.

⁸² Lowe 1995, p. 177.

⁸³ Burke 1997, pp. 13-14.

⁸⁴ You have to be careful how you think of this. You should not, for instance, think that there is this *thing*, a plurality, or that there exists an x such that some plurality is identical with x. The whole point about pluralities is not to ‘entify’ them this way.

⁸⁵ Although certainly the plurality has associated with it the persistence conditions of the mass noun *copper*.

denies that the stuff is a substance. In doing so, he goes against most bare objects theorists, and puts himself more in the anti-particularist camp.⁸⁶

Most bare objects theorists that I will examine *do* hold that talk about stuffs reduces to talk about parcels or bits of stuff, namely, *things*. But these things do not obey ASE—they can persist through any change except the loss of a fundamental or simple part, and those properties we think of as essential (say, to a cow) are only *accidental* properties of the genuine objects—parcels of stuff. For instance, Alan Sidelle in “A Sweater Unraveled...” notes:

It seems to me that by far, the most natural and common reaction to the puzzle [of coincidence], other than perhaps Wiggins’, is to deny that when a tree is cut down, or a sweater unraveled, anything goes out of existence...It seems clear that in such changes, *something* continues to exist, and it is fairly easy to see such changes as accidental changes in that which persists—here, the wood or the yarn...the intuitive [claim] we are here considering amounts to the claim that while there *are* trees, sweaters, and other ordinary objects, our ordinary substance terms are not, in fact, substance terms, but pick out these objects according to *accidental* properties, much as we ordinarily think that ‘red-head’ is an accidental way of picking out a person who happens to have red hair. Being a tree, or a sweater, is an accidental property of something more basic.⁸⁷

And that more basic thing is just an aggregate or fusion of *stuff*, which is itself a particular. *Stuff*, for the bare objects theorist, is just a shorthand way of picking out particulars without regards to their putative essential properties.⁸⁸

⁸⁶ This is not quite right, however. Burke is free to reduce pluralities to their particular members. I’m a little hesitant to take plural quantification seriously as a means to talk about special ‘entities’, such as *water* in Laycock 1981, which he takes to refer plurally to *water molecules*, or *w-elements*. The reason is, if we take this seriously, and think that there *are* ‘entitified’ pluralities, we also have to be committed to special entities like ‘the rocks’ in ‘the rocks rained down’ or ‘the soldiers’ in ‘the soldiers pushed over the transport.’. Since with the latter two, this talk reduces metaphysically to the individual rocks and soldiers, then talk about water would reduce metaphysically to truths about the individual molecules.

⁸⁷ Sidelle 1998, p. 426.

⁸⁸ Just to reiterate, the bare objects theorists often are, or can be, essentialists still. It is just that the only essential properties that they admit for objects is having all the parts they do, and each part’s essence is given by fundamental particle sortal kinds, e.g., ‘electron’ or ‘red up-quark.’

Dean Zimmerman, in “Theories of Masses and Problems of Constitution,”⁸⁹ develops a line of argumentation that has some similar results to Sidelle’s.

Zimmerman begins by asking what our theory of ‘masses’ should be, where ‘masses’ names concrete collections or portions of some physical stuff(s). Zimmerman draws on the work of Helen Morris Cartwright, who argues that in examples such as “the water that Heraclitus bathed in yesterday is the same as the water that Heraclitus bathed in today,” that ‘the water’ refers to a special kind of particular that she calls a *quantity* (what Zimmerman calls *masses*).⁹⁰ Our mass-talk will eventually latch onto mereological fusions (versus set-theoretic collections) of either atomistic simples or portions of ‘atomless gunk’.⁹¹ Zimmerman argues that such bare objects, which persist just as long as their parts do, ought to get our full ontic commitment. In addition, Zimmerman argues that the only plausible candidates to be physical objects are masses. Partly, this is because otherwise we would have to accept that there are commonsense objects which coincide with masses, and coincidence is unacceptable. So are contingent, relative, or ‘temporary’ identity theories, and so is four-dimensionalism. If this is so, then the masses and their persistence conditions will ‘crowd out’ commonsense objects from coinciding with them. But then, whither commonsense objects? Zimmerman argues that a somewhat radical theory is needed to complete a theory of commonsense objects as well as how they relate to masses. For examples, he brings up the possibilities that part-changing commonsense objects are either logical ‘fictions’ or constructions, which are constructed out of successions

⁸⁹ Zimmerman, 1995.

⁹⁰ Cartwright 1974.

⁹¹ Lewis 1991, p. 20.

of distinct masses, or are *processes*, which ‘pass through’ various masses of matter, like how a hurricane passes through successions of parcels of air and water.

Zimmerman’s sources for the idea of construing objects as processes are C.D. Broad, Roderick Chisholm, and a short but intriguing article by Toomas Karmo called “Disturbances.”⁹²

In “Disturbances” Karmo presents the issue of coincidence and the question of the constitution relation in the following manner:

A stream of water, e.g. the stream running down a rain-soaked windscreen, must be distinct from the water which it at any given moment happens to contain, for one and the same stream may at two distinct moments contain two distinct consignments of water. But if water and stream are distinct, then in what does that relation consist which we describe by saying that the one constitutes the other?⁹³

Perhaps the right answer, Karmo opines, is

that a stream is a species of *disturbance*, where a disturbance is definable as an object or entity found in some other object—not in the sense in which a letter may be found in an envelope, or a biscuit in a tin, but in the sense in which a knot may be in a rope, a wrinkle in a carpet, a hole in a perennial border, or a bulge in a cylinder. One way of telling whether an object *X* is ‘in’ an object *Y* in the sense peculiar to disturbances is to enquire whether *X* can migrate through *Y*...That which a disturbance is in is its medium; a stream is a disturbance in that total consignment of water which is now, has at any time in the past been, or will at any time in the future be found in it. The process which is the flowing of a stream may equally well be described as a stream’s migrating through a quantity of water.⁹⁴

While the notion of disturbances is not well developed in “Disturbances,” it is easy to get the basic picture.⁹⁵ Ordinary objects are actually part-changing (or, more accurately—‘substrate-changing’) processes which ‘pass through’ bare objects which

⁹² Broad 1960 (pp. 34–38), Chisholm 1986, Karmo 1977.

⁹³ Karmo, 1977, p. 147.

⁹⁴ Ibid.

⁹⁵ It is, however, more developed in Karmo’s dissertation, *Occurrences, Pseudo-Occurrences, Propositions and Individuals*, St. John’s College, Oxford University, 1978. There Karmo analyzes disturbances as either abstract entities, such as Fregean *begriffe*, or as what we could call reified processes. Unfortunately, due to time constraints, I have not been able to give his dissertation the full attention it deserves.

do not change their parts. A stream is a disturbance or process which passes through successions of water portions, and a person is a disturbance which passes through portions of flesh. This account points the way towards a multiple-category⁹⁶ ontological view which reduces ordinary commonsense objects. The only genuine *things* or objects are parcels of matter or *stuff*, and commonsense ordinary objects are actually processes which are distinct from them. Commonsense objects are not *substances*, they are rather modes or activities of the genuine substances, which are bare parcels of matter.⁹⁷ Karmo's account was the one that most inspired my own, as you will see. In the disturbances account we can see how stuff and process ontology can come together. I'll argue that a stuff ontology augmented by process ontology is the only viable stuff-ontological account. But, if this is so, I will also have to argue that full-blooded process accounts which eliminate all objects, even bare ones, are unsatisfactory.

1.3.3 Processes: What's Happening?

The idea has fascinating implications. Indeed, we have in barest outline a truly heraclitean ontology...There are no *objects*. The world is an ongoing tissue of goings on. Needless to say, the concept of an ontology without *objects* is; as the term ontology is currently used, an incoherent one. But perhaps it is our concept of ontology that needs to be revised...Of course, if one so uses the term 'object' so that every basic item is an object, absolute processes would be objects.⁹⁸

⁹⁶ In Zimmerman 1995, he labels 'single category' views as those who view constituted object and some constituting entity (e.g., a piece of copper) as in the same ontological category (e.g., *object*), whereas 'multiple category' views construe the constituted object and the constituting entity as in different categories (e.g. *process* and *bare object*, respectively).

⁹⁷ This is Chisholm's position in 1986.

⁹⁸ Sellars 1981, p. 57.

Statements which grammatically predicate motion, or rest, or qualitative change, or qualitative quiescence, of Things, seem to be replaceable, without loss of meaning, by more complicated statements about Processes, their phases, and the quality-ranges of processes and their phases. On the other hand, there are Processes which cannot plausibly be regarded as states of Things. Thus there seems reason to think that the notion of Thing could be dispensed with in favour of the notion of Absolute Processes. This does not mean that the notion of Thing is invalid; but only that it is less ultimate than the notion of Processes.⁹⁹

Some process ontologists are anti-particularist; they hold that the Ontology of Objects is mistaken. There are some entities or individuals which do not reduce to *things* and their properties. In particular, there are irreducible *processes*. Process philosophers, like the stuff ontologists, can also be categorized as weak or strong anti-particularists. The weak anti-particularist process philosophers assert that there are processes in addition to things, and processes are not reducible to things and their properties. The strong anti-particularist process philosopher asserts that there are no *things* at all—only processes.¹⁰⁰ But, what is process philosophy, and, what are processes?

Nicholas Rescher characterizes any philosophy committed to some weighted measure of the following propositions as a process philosophy:

- (1) That time and change are among the principal categories of metaphysical understanding.
- (2) That process is a principal category of ontological description.
- (3) That processes are more fundamental, or at any rate not less fundamental than things for the purposes of ontological theory.
- (4) That several if not all of the major elements of the ontological repertoire...are best understood in process linked terms.

⁹⁹ Broad 1933, p. 166.

¹⁰⁰ Nicholas Rescher, 1996, p. 3, calls these two types ‘Empedoclean’ and ‘Heraclitean’, respectively.

- (5) That contingency, emergence, novelty, and creativity are among the fundamental categories of metaphysical understanding.¹⁰¹

Just as stuff ontologists can be categorized by their stress on matter over things in philosophical explanation, what distinguishes process philosophers is their stress on process and dynamism over things in explanation. Classic process philosophers include such luminaries as: Heraclitus, Leibniz, Bergson, James, Peirce, Charles Hartshorne, Paul Weiss, Samuel Alexander, C. Loyd Morgan, Andrew Paul Ushenko, Empedocles, Hegel, Dewey,¹⁰² and C.D. Broad. Of course, the paradigmatic process philosopher is Alfred North Whitehead.¹⁰³ But, as Rescher rightly warns us:

In recent years, ‘process philosophy’ has virtually become a code word for the doctrines of Alfred North Whitehead and his followers. But, of course, this cannot really be what process philosophy actually is. If there indeed is a ‘philosophy’ of process, it must pivot not on a thinker but on a theory.¹⁰⁴

I myself find the process philosophy of Whitehead very difficult and inaccessible, and the process philosophy of the Whiteheadians even more difficult. This could just be a shortcoming on my part. In any case, I find that Whitehead’s process philosophy is so difficult that treating it fairly would require too much exegeses on one thinker at the expense of treating a more broad range of more ‘analytic’ thinkers, who make much more modest claims than Whitehead or the Whiteheadians, and who I feel more able to discuss and analyze.¹⁰⁵ The process metaphysicians I will be examining merely exploit the category of *process* for its use in philosophical explanation and analysis.

These philosophers claim that (some or all) processes are irreducible to things and

¹⁰¹ Kim & Sosa (eds.) 1995, entry on ‘Process Philosophy’ by Nicholas Rescher, p. 417.

¹⁰² Ibid., and Rescher 1996 pp. 7-25.

¹⁰³ See especially Whitehead 1978.

¹⁰⁴ Rescher 1996, p. 8.

¹⁰⁵ Not that the early Whitehead was not ‘analytic’. You can’t get much more analytic in style than that of the *Principia Mathematica*. I am particularly uninterested in ‘Process Theology’, which claims to understand God as the sum-total of the world’s unfolding.

their properties, and are either more fundamental than, or at least as fundamental as things.

What are processes? Processes are not easily categorizable, and sometimes bleed into the also ill-defined category of *event*.¹⁰⁶ Processes are variously described as “a sequence of events,”¹⁰⁷ “modes of change”,¹⁰⁸ ‘goings-on’,¹⁰⁹ ‘happenings’,¹¹⁰ ‘occurrences’,¹¹¹ ‘occurrents’(versus things/substances—which are called *continuants*),¹¹² and ‘activities’.¹¹³ “Processes are like events in being ‘happenings,’ but they are like states in apparently having no natural finishing points.”¹¹⁴ There is such a multiplicity of usage, of both *events* and *processes*, that we can despair of finding out how they are related in a way that is not just stipulative.¹¹⁵

Let us put aside for the moment the issue of distinguishing processes from events, and process ontologies from event ontologies, and note that processes and events are already distinguished from things. Events and processes are *occurrents*, whereas things are *continuants*.¹¹⁶ This distinction has long been used to mark the difference between two significantly different kinds of *individuals* (although most philosophers believe that occurrents are not *substances*). Continuants are things like apples, a human heart, and an army. Occurrents are things like the rotting of an apple,

¹⁰⁶ It is up for debate whether processes reduce to events, events to processes, or both of these to successions of instantaneous states which are neither events nor processes. I will address these issues in Chapter Six.

¹⁰⁷ Blackburn 1994, p. 305.

¹⁰⁸ Rescher 1996, p. 8.

¹⁰⁹ Stout (Rowland) 1997 and 2003

¹¹⁰ Broad 1933, p. 142.

¹¹¹ Karmo 1978 and 1982.

¹¹² Broad 1933 pp. 142-156, Simons 1974.

¹¹³ Parsons 1990, p. 21.

¹¹⁴ Ibid. Examples—‘walking’, ‘talking’, and ‘flying’.

¹¹⁵ Steward makes some points like this in 1997, especially chaps. 1 & 2.

¹¹⁶ I believe the distinction in these terms is made first in Broad 1933. You can find more on the distinction in Mellor 1998 and Simons 1974.

the beating of the heart, or the marching of the army. Continuants endure through time, while occurrents take time. Occurrents start, go on for a while, and stop, whereas continuants come into existence, exist for a while, and cease to exist. Anatomy is concerned with continuants such as the heart, lungs, and liver, while physiology is concerned with the occurrents those continuants participate in, the activities and processes the continuants undergo, such as cardiovascular activity and toxin-processing.¹¹⁷ Most philosophers also hold that continuants are three-dimensional and persist through time by enduring, or by being ‘wholly present’ throughout each time they exist, whereas occurrents are four-dimensional entities, spread out in time, and persist by ‘perdurating’, or, by having distinct temporal parts at those distinct times at which they exist. Some elaborate on the distinction by distinguishing between, for instance, a continuant like a table, and the occurrent which is that table’s history.¹¹⁸

In one way or another, process ontologists argue either that some process-occurrents are irreducible to continuants, or, that continuants can be eliminated in favor of, or reduced to, occurrents.¹¹⁹ Furthermore, while admitting (trivially) that processes are individuals, they deny that they are things or Aristotelian primary substances. Whitehead, who often used ‘events’ and ‘processes’ interchangeably, stated “Objects are...the recognita amid events.”¹²⁰ Whitehead believes that out of the chaotic ‘buzzing’ that’s going on, certain qualities stand out and demand our

¹¹⁷ See Smith *et al* at the Institute for Formal Ontology and Medical Information Science (IFOMIS) and the Buffalo Center for Ontological Research (BCOR) for some exciting work on medical ontology that distinguishes between substances and processes, or, continuants and occurrents. IFOMIS: <http://www.ifomis.uni-saarland.de/>; BCOR: <http://ontology.buffalo.edu/bcor/>. Also, see Grenon *et al* 2003.

¹¹⁸ Markosian 2004, pp. 669-670.

¹¹⁹ See esp. Simons 1974, 2000a and 2000b.

attention. When these goings-on are salient for some time, such as an ongoing ‘appling’, we suppose that they comprise an object, (e.g., an apple) and we, perhaps erroneously, reify it. The endurance of the apple is nothing more than the ongoingness of a certain event—“Endurance is the property of finding its pattern reproduced in the temporal parts of the total event.”¹²¹

Peter Simons has also sought to reduce continuants to occurrents, or rather, ‘construct’ continuants out of occurrents. “Continuants are, like abstract objects, invariants under equivalences over occurrents.”¹²² And, again, “of the two major categories of concrete individuals, continuants and occurrents, the latter are ontologically more basic than the former and that continuants are to be viewed as invariants among occurrents under equivalence relations.”¹²³

But why should we reduce continuants/things to occurrents/processes? C.D. Broad tentatively motivates such a reduction by first arguing that there are ‘absolute processes’, or, processes that are not processes ‘in’ or ‘of’ anything.¹²⁴ Such processes, he says, cannot be reduced to things. However, all things can be reduced to processes—indeed, perhaps to absolute processes—so, at the base level, there would be *no* substances at all.¹²⁵

One candidate Broad brings up for an absolute process is that of a buzzing sound, which we suppose is made by a bee. What is the substrate of the buzzing process? *What* is buzzing? Presumably, the bee. Broad argues that while the bee is

¹²⁰ *An Enquiry Concerning the Principles of Natural Knowledge*, p. 81. Source—Simons 2000a p. 419.

¹²¹ Whitehead 1926, p. 189.

¹²² Simons 1974, p. 59.

¹²³ Simons 2000b, p. 147.

¹²⁴ “Is it really obvious that every process must be a state of, or a process in, some thing?” Broad 1933, p. 152.

¹²⁵ Ibid., pp. 144-168.

causally responsible for the buzzing, the buzzing, or rather, *this* buzzing refers to “an auditory process which is ‘buzzy’ and not to a physical process of rhythmic movement.”¹²⁶ Broad asks us to compare ‘there is a movement going on’ versus ‘there is a buzzing going on.’ While the former quite clearly implies that there is something which is in motion, it is not so clear that the latter implies that there is something which is buzzing. What other candidates for the substrate of the ‘buzzy’ process are there?

Broad rejects the ‘mentalist’ answer, that “noises are, in some sense, ‘mental,’” since even the mentalist “would hardly be prepared to say ‘Some mind is buzzing; or, to speak more accurately, some mind is *noising* buzzily.’”¹²⁷ Broad goes on to eliminate, less convincingly, other candidates for being the substrate of the buzzing, such as air molecules or sound-waves.

The upshot of the discussion is that it is very far from clear that *every* process must have a subject which is a thing. There are *some* processes, e.g., movements, with regard to which this principle is highly plausible; but there are others, e.g. noises, with regard to which it is not plausible at all. We must therefore be prepared to admit the possibility of what I will call ‘Absolute Processes’.¹²⁸

Having allegedly established that not all processes reduce to objects, he considers the question—“Can Things be dispensed with in favour of Processes?”¹²⁹ Broad’s answer? Maybe.

Broad discusses this possibility in the following way. We talk about some ‘things’ moving which are not really *things* at all, such as shadows and waves. How can we do this? First, Broad distinguishes between ‘transmission of state’ and

¹²⁶ Ibid., p. 152.

¹²⁷ Ibid., p. 153.

¹²⁸ Ibid., pp. 155-156.

¹²⁹ Ibid., p. 156.

‘translation of stuff’ and asks that we substitute one or both of these terms to describe motion.¹³⁰

If some stuff S is ‘translated’ from location L₁ at t₁ to L₂ at t₂, this just means that the stuff S is at L₁ at t₁, at L₂ at t₂, and gets to L₂ from L₁. If a state S is ‘transmitted’ from location L₁ to L₂, this just means that some physical quantity Q is at L₁ at t₁, and then at L₂ at t₂, and Q being at L₁ caused Q to be at L₂, or, there is a common cause for Q being at L₁ and L₂—where we do *not* presuppose that the same individual must underlie Q from t₁ to t₂. ‘Translation of stuff’ is just a fancy way of saying that some stuff moved. ‘Transmission of state,’ however, refers to some kind of transfer of conserved quantities, like how an increase in mean molecular kinetic energy in one portion of a pan increases the mean molecular kinetic energy in an adjacent portion, or to how an electric pulse can move down a section of wire.

When a golf ball gets struck and flies through the air, there is both a transmission of state and a translation of stuff. In this case some stuff and a state (of kinetic energy) ‘move together’, so to speak. When a wave moves through some water, the transmission of the state also presupposes some translation of stuff, namely the translation of force and hence some motion through the water molecules. But, when a shadow moves across the ground, or a spotlight from a searchlight along a stage floor, there is no translation of stuff, only a transmission of state, or perhaps we should say the persistence of some qualitative regularity, such as ‘a darkening’ or ‘a shining.’¹³¹ Perhaps we can eliminate all translation of stuff, and hence, motion of

¹³⁰ Ibid., p. 157.

¹³¹ See Wisdom 1969, p. 81 where he speaks a bit about construing red patches as ‘reddings’, or sounds as ‘tonings’.

things, by treating all things as merely transmissions of state throughout substantival space-time regions.

Broad takes this possibility seriously:

In the first place, suppose one were to take the Newtonian theory of Substantival Absolute Space seriously...Then, it seems to me, one could dispense with the Ether, and with the translation of stuff, altogether. For the periodic translation of an ether-particle about a mean position one could substitute the periodic pervasion of a set of regions in Absolute Space by a certain determinate quality. And one could then deal with the apparent non-periodic translation of material particles on the same lines as before. There would be no ‘things’, as distinct from regions of Absolute Space; and the latter would not of course ‘move’ in any sense of that ambiguous word. Ultimately nothing could be said to ‘move’ except qualities; and a quality would ‘move,’ in the sense that it pervaded now one and now another region of Absolute Space. It might be suggested then that one must admit *either* translation of stuff *or* Substantival Absolute Space, but that, if you are prepared to accept the latter, you can dispense with the former.¹³²

Note that the ‘substantival’ in ‘Substantival Absolute Space’ is doing a lot more work than the ‘absolute’ part. Its not at all clear that the truth of Relativity theory cuts against this proposal. The proposal seems to be that, if we are prepared to ontologically commit to substantial spatial or space-time regions, then we can dispense with substances altogether. Just as there are buzzings whose only subjects are space-time regions, so can we dispense with cars and speak of ‘carrings’, dispense with horses and speak of ‘horsings’.

Broad’s proposal is not original. Indeed, if Jonathan Bennet is right, in the *Ethics*, Spinoza proposed that reality is like Broad describes. More contemporarily, after Broad, John Hawthorne and Andrew Cortens have defended a similar theory.¹³³ So has Alan Sidelle, who argued that non-individuate ‘World-Stuff’ can play the

¹³² Broad 1933, p. 158.

¹³³ Cortens and Hawthorne 1995.

same host-role for qualities as Broad's substantival spatial regions.¹³⁴ Toomas Karmo has also examined some methods of translating talk which quantifies over things into talk of processes or occurrences.¹³⁵ I will examine some of these proposals in detail.

Broad's view of processes is interesting to examine, because it exemplifies a strategy common to all process philosophers, which is to show that a process account can respect Occam's razor and parsimony, while also solving philosophical problems that beset the substance framework.

Another process metaphysics I will be examining is developed by Johanna Seibt, who has methodically and thoroughly criticized the substance framework. In addition to reducing objects to processes, as Broad does, Seibt defends a thoroughgoing ontology of absolute processes. Seibt's processes are like Henry Laycock' stuff, namely, *concrete*, but *non-particular*. Processes are not countable.

Seibt's defense of processes contains arguments analogous to those the stuff ontologists employ to differentiate stuff from things. Seibt argues that our discourse about processes or activities is akin to our discourse about stuff whereas our event talk is similar to our thing talk, in the following way. Events, like things, are denoted by count nouns or 'count-quantified' phrases, whereas we use mass nouns or 'non-count-quantified' phrases to refer to processes and stuffs.¹³⁶ Process talk fits into different inferential patterns than event and thing talk (the differences are marked by verb aspect), and processes cannot be reduced to events or things. But, things and events can be reduced to processes, so, the latter are more basic. More specifically,

¹³⁴ See Sidelle 1989, 1991, and 1998.

¹³⁵ Karmo 1978.

¹³⁶ A lot of this comes from Mourelatos 1978, especially the argument and phrasing that while events are 'count-quantified,' processes are not.

according to Seibt, things are limited cases or “minimal amounts of co-occurring homoeomerous subjectless processes.”¹³⁷ Seibt also argues that the category of ‘substance’ is questionable, and leads to incoherence.

I will examine whether the process philosophers have successfully reduced things to processes, whether they can get rid of *things* altogether, and whether the notion of absolute or subjectless processes is coherent.

1. 4 Outline of the Dissertation

I find that most of the stuff- and process-ontological positions that I have examined are very interesting and exciting, but often have serious problems or are inadequately argued for. Those that do not have serious problems are incomplete.

The anti-particularist views are unacceptable since they all entail unpalatable coincidence—i.e., that distinct individuals share all of their material parts. Furthermore, the problems of mass terms, while compelling, do not warrant the acceptance of dubious ‘concrete non-particulars.’ The bare objects theorists have not given a satisfactory account of the relation between constituting matter and constituted object, and they make the nature of commonsense objects absurd—either abstract or fictional. However, bare objects theorists are correct in their core claim—that there are bare objects. But, until we clearly delineate what ordinary objects are, and how they stand to bare fusions, the threat of coincidence remains.

¹³⁷ A paraphrase of Seibt 1997, p. 173.

I argue against certain excesses of the Process Ontologists. Subjectless activity is incoherent. Processes can in fact be counted. Objects can not be eliminated completely or explained away by the Process Ontologists' methods and arguments.

In the constructive portion of the dissertation (Chapter Five) I combine what is right about stuff and process ontologies and rid us of their negative features. The bare objectualist stuff ontologist is correct that there are objects whose only essential features are that all their parts persist. The process ontologist is correct that some processes, such as an electron's spinning, are irreducible to objects and (non-'processual'¹³⁸) properties. I combine these insights in order to yield an appealing and coherent account that explains the relations between, and natures of, bare hunks of matter, commonsense objects, processes, and states.

I argue that commonsense objects are processes, and stand to their underlying matter as a wave does to the water it passes through. Commonsense objects are, *a la* Karmo, *disturbances* which can move through various hunks of matter, and those hunks are the genuine objects. Genuine objects cannot change their parts, since their only essence is having the parts they do, but we retain the intuition that commonsense objects can change their parts by replacing it with the notion of process migration through successions of genuine objects.

This view is also thoroughly *three-dimensionalistic*. That is, according to it, objects (both commonsense and genuine) have no temporal parts, and move through time by being wholly present at each time they exist, rather than by having distinct temporal parts present at each time they exist (which the *four-dimensionalist* asserts). Three-dimensionalism is more intuitive, and my process view supports it. But, the

principle advantage of my process view is that it solves a large number of metaphysical puzzles, chief among them the paradox of coincidence.

In Chapter Two, we will be examining strong anti-particularistic stuff and process views, according to which there are no *things* at all—only stuff or processes. In particular, we will examine the views of Spinoza, Cortens and Hawthorne, and Alan Sidelle. I will show that such views must ultimately make ineliminable reference to some particulars which will play the ‘thing role.’ Since the particulars they must make reference to are much more spooky, ethereal, and mysterious than ordinary substances, there could be no objection to letting more full-fledged chunky substances back into the world. Besides, such views do not eliminate the problems of substance, they merely surreptitiously re-introduce them.

In Chapter Three I will examine views which admit that there are things or substances in some sense, but maintain that these things reduce either to stuff (in the form of bare objects) or to processes. First, I will present Roderick Chisholm, who has held at least two views that are salient to both stuff and process ontology. His earlier view, expressed in *Person and Object*,¹³⁸ is that commonsense, part-changing objects are logical ‘fictions’ or constructions out of successions of objects which cannot themselves change parts. Although Chisholm’s view can withstand certain objections traditionally raised against it, I will show that Chisholm should have embraced a less restricted mereology, and the dubious forms of Aristotelian Sortal Essentialism (‘ASE’) and mereological principles he accepts deprives him of the benefits that bare objects are particularly placed to bestow. Furthermore, Chisholm’s

¹³⁸ This neologistic adjectival use of ‘process’ comes from Rescher 1996.

¹³⁹ Chisholm 1976

role-fillers for commonsense objects are not ontologically robust enough to do the work he wants them to do.

Chisholm's later view, found in his *Self-Profile*,¹⁴⁰ contrasts bare hunks of matter with *modes* of them, and a car, for example, becomes a mode that the hunk of stuff is engaged in. I believe that this view was on the right track, although incomplete. Also, if these modes are to become satisfactorily concrete entities you would expect cars to be, they must be robust *processes* and less abstract than Chisholm construes them to be. As you might expect, Chisholm, along with Karmo, are two of the main sources of inspiration behind the account I will develop. Another inspirational source is Michael Jubien.

Chapter Three is also where I will examine Jubien's account, especially as developed in *Ontology, Modality, and the Fallacy of Reference*.¹⁴¹ In this book, Jubien quite clearly embraces a bare objects view, and follows Quine, according to whom a physical object "comprises simply the content, however heterogeneous, of some portion of space-time, however disconnected and gerrymandered."¹⁴² As for objects, there are only bunches of stuff—some of which we call things, most of which we don't.

Let us pretend that we actually share a single concept of *being a thing*, and let us call this concept 'ordinary thinghood'...ordinary thinghood is not an 'intrinsic' property of the stuff of various regions. It is rather a *relational* property: the 'projection' obtained by fixing one of the *relata* of a more fundamental *relation* that holds between the stuff of various regions and, for example, ourselves.¹⁴³

¹⁴⁰ Chisholm 1986.

¹⁴¹ Jubien 1993.

¹⁴² Quine 1960, p171. Quoted in Jubien 1993, p. 4.

¹⁴³ Jubien 1993, p. 3.

This allows us to understand a bit better Jubien's opening characterization of his view: "This view may be crudely characterized by the mysterious-sounding claim that, in a certain sense, *there are no things*, but, partly as a consequence, there are as many things as we like."¹⁴⁴ Jubien means that, perhaps with the exception of simple particles, there are no *things* which have essences as delineated by ASE. At the same time, there are *only* things (and properties), but these things are merely bare objects or hunks of stuff, and their only persistence condition is to have all the ultimate parts that they have. In personal communication, Jubien agreed with my assessment of his work that 'stuff' *per se* is not doing much work in his account. He could have equally spoken of mereological fusions of simple particles or gunk-parcels, and had only *things* in his ontology. The function of the 'stuff' terminology is merely to draw attention away from the sortal talk associated with most count nouns.

In any case, Jubien's proposal is still radical in that it denies ontological commitment to the things of common sense. According to him, President Bush does not change parts, rather, distinct hunks of stuff have the property of *being Bush*. There is no *thing* which persists and is identical to Bush across time. There is merely a 'singulary' property (a property that can be had by at most one thing at a time), *being Bush*, such that distinct things have it across time.

I will not reject Jubien's account entirely; indeed, my own account builds on his. However, there is a problem with properties like *being Bush*. If a hunk of matter can have that property without actually being identical to Bush, what sense can we give to "Bush exists"? I will argue by elimination, that the best sense that we can make of this is that Bush is not identical with a hunk of matter instantiating the

¹⁴⁴ Ibid., p. 1.

property of *being Bush*, or with the complex property, or with hunk/property clusters, rather, Bush is an activity—call it ‘Bushing’—that different bare objects undergo at different times. Furthermore, calling such property-profiles ‘singulary’ is an *ad hoc* ‘haecetical’ device, since obviously more than one individual can have intrinsically indistinguishable properties of ‘Bushing’ at the same time.

In Chapter Three I will lastly examine the work of Johanna Seibt, who reduces things to processes, and holds that the world consists only of processes. I will argue that her notion that there can be subjectless processes is incoherent, and *substances* are surreptitiously re-introduced (just like the strong anti-particularist stuff ontologists do). Furthermore, Seibt makes invalid inferences from the relative heteromery of things as opposed to the relative homoeomery of processes to the (false) claim that all objects can be reduced to, or treated as, processes. What’s more, her notion that processes are *concrete*, but *non-particular* is incoherent.

In Chapter Four I examine views according to which either stuff and things or processes and things both exist and are inter-irreducible.

First, I analyze Ned Markosian’s recent stuff-ontological work. Markosian argues that there are, or could be, *extended simples*. That is, there are or could be objects which are extended in space but have no proper parts. The halves of an extended simple are non-individuate and non-particular *stuff*. I will show that Markosian’s account suffers from stuff-thing coincidence; which is even more problematic than the more usually discussed thing-thing coincidence.

Second, I examine the early work of Henry Laycock, wherein he argues that there is non-particular stuff which is distinct from, and irreducible to, things. I

disagree with his claim that there can be matter without objects, and I will challenge his judgment that an analysis of folk talk about stuff supports the existence of non-particular stuff, or, *concrete non-particulars*.

Before I defend my own view, I will present the work of Toomas Karmo. I accept the basics of his account, according to which there are ‘disturbances’. I agree with Karmo’s implicit position, that the correct physical ontology requires both processes (although he does not call them this) and objects. I will argue that processes, or the activities that things are undergoing or participating in, do not reduce to those things and (non-processual) properties. Certain things, namely, bare objects, are neither identical nor reducible to processes. Commonsense things are not bare objects, but plausibly can be identified with processes. It will take a dissertation to show this. In Chapter Five I argue for bare objects and mereological essentialism, and that commonsense objects are processes.

Chapter Two: Stuff and Process Eliminativists (Strong Anti-Particularists)

Historical candidates for being strong anti-particularists include Heraclitus, Spinoza, Parmenides, C.D. Broad, Bradley, and Whitehead. As far as contemporaries, only Alan Sidelle, and John Hawthorne and Andrew Cortens have expressed views which deny that there are any things at all. Strong anti-particularists stuff ontologists believe in and countenance stuff, but not things, while strong anti-particularist process ontologists countenance processes, but not things. The strong-anti-particularists are eliminativists, not reductivists, about things.

Spinoza, whose view I will examine first, is arguably a strong anti-particularist process or ‘field’ ontologist. Secondly, I will discuss the theory offered by Hawthorne and Cortens.¹⁴⁵ Both views state that we can say whatever we want to about the world without quantifying over things at all, by recourse to ‘processy’ feature-placing verbs and adverbs. Thirdly, I will focus on Sidelle, who defends a strong anti-particularist stuff ontology. Sidelle argues that we can replace our ontic commitment to substances with commitment only to non-individuate ‘World-Stuff’

that is ‘carved up’ by linguistic convention. Against each of these three views, I will argue that they either sneak back in substances, or else they leave us with an infelicitous and unperspicuous description of the world.

2.1 ‘Benoza’s’ Field Theory

Jonathan Bennett has an excellent treatment of Spinoza’s putative field theory in his *Study of Spinoza’s Ethics*.¹⁴⁵ I should like to side-step worries about the correctness of Bennett’s interpretation of Spinoza. If you have suspicions in this regard, then please substitute the phrase ‘Benoza’ for ‘Spinoza’ in this chapter, for I intend to examine only the viability of the view that Bennett attributes to Spinoza, along with the augmentations Bennett introduces.

Spinoza believed that God is infinite, and took this to entail that God contains everything. And, everything, in Spinoza’s case, is all of space. Furthermore, God is identical to this space; there is nothing which exists outside of God. God is both the sole primary (count-noun interpretation) substance, and the sole ‘stuff’. Further, Spinoza held that God (and hence space) is indivisible into parts. The foregoing gloss is a bit unfair:

Spinoza is committed to agreeing that space is the one extended substance, though he does not put it quite like that and for all I know would decline to do so. He would certainly refuse to say that space is God, or that space is a thinking substance, but we can allow that refusal. He can say that there is a single substance

¹⁴⁵ Cortens and Hawthorne 1995.

¹⁴⁶ Bennett 1984.

which is both extended and thinking, and that ‘space’ is a name for it when it is thought of as extended, while ‘God’ and ‘Nature’ are the names to call it by when it is not being thought of under one attribute in particular.¹⁴⁷

To sidestep theological issues, let us use only ‘Nature,’ ‘Space,’ or ‘the World’ or ‘the Universe’ to speak of Spinoza’s single unified substance.¹⁴⁸ (Although ‘God’ may come in with Spinoza quotations).

According to Spinoza, putative non-world sized substances, such as tables and bodies, are modes or attributes of space, or non-individuate ‘ripples’ which run through it. He treats such things the same way we might treat something like a frost, which we say ‘moves’ through a field, without really believing that it is a *thing*.¹⁴⁹ Spinoza sees tables and ping-pong balls more as *ways*¹⁵⁰ regions are than as persisting things. As Spinoza states in *The Ethics* p25c. “particulars are nothing but God’s attributes, or modes through which God’s attributes are expressed in a certain and determinate way.”¹⁵¹

Bennett calls Spinoza’s metaphysic of ordinary objects a ‘field metaphysic.’ This is a term of convenience for Bennett, and is based (in a rather peremptory way) on some similarities with the physics of fields, although he admits that he is not “in a

¹⁴⁷ Ibid., p. 91.

¹⁴⁸ I am sidestepping many issues about Spinoza, and merely employing Bennett’s treatment, because Bennett’s treatment of Spinoza’s putative ‘field metaphysic’ stands on its own merits as a proposal to be examined, independently of Spinoza’s invalid argumentation behind the conclusion which necessitated the ‘objects-as-modes’ view. Indeed, “Spinoza’s official argument for substance monism...is not cogent.” (Bennett 1984, p. 81.) It is also very unclear whether Spinoza would accept Bennett’s recommendations. The imagined proponent of Benoza’s field theory need not accept Spinoza’s definition of ‘God’, ‘substance’, or ‘individual’. I imagine that one who advocates the following theory would be motivated by Ockham’s razor, and would believe that fields play an important role in scientific explanation, that fields are not substances, and that we can say everything we want to say about the world without quantifying over individuals (except, perhaps, the universe).

¹⁴⁹ I believe Thomas Holden used this example in a class lecture I sat in on.

¹⁵⁰ In many texts, *modus* (but not *affectio*). See Bennett 1984 p. 93.

¹⁵¹ Curley translation, 1994.

position to gauge...the strength of this similarity.”¹⁵² I am confident that under Bennett’s reading, Spinoza is defending a process philosophy, because, as I will show, it can only work if its base entities are persisting activities or dynamic qualities to which verbs refer, and which adverbs modify, irreducibly. This ineliminable dynamism puts Spinoza squarely in the process-philosophical tradition, at least by Rescher’s criteria as I laid out in Chapter One, page 40. Whether we call the reductive base ‘processes,’ ‘fields’, or ‘dynamic qualities’ concerns me little—just so long as we realize that the base entities, whatever exactly they are like, are dynamic non-substances.

Bennett begins to illustrate Spinoza’s field metaphysic by advertng to a paraphrased thought experiment of Isaac Newton’s:

God decides to add a mountain to the world, which he does by modifying a certain mountain-shaped and -sized region of space so that it affects everything else just as mountains do: other bodies cannot enter; if they reach the region quickly, sound is emitted and they are bent or shattered; light is reflected, and so on. If the job were done right, Newton says, we would have every reason to suppose that a mountain had been added to the furniture of the world; and he takes this to support his suggestion that actual physical things are just regions of space which have been suitably *thickened*, so to speak.¹⁵³

A problem immediately emerges. If each body is associated with a region of space, then it seems that bodies could not move. This can be easily remedied, however;

We must associate each object rather with a spatio-temporally continuous set of place-times, which I call a *string* of them. If there is a string R1-T1, R2-T2...such that each Ri is qualitatively unlike its spatial neighbors at Ti, and is qualitatively like the other regions on the string, then that string defines the trajectory of what we call an object in space; and the object is a logical construction out of the string which satisfies those conditions...This does not add physical objects to our basic ontology; all that that contains is the one substance, space.¹⁵⁴

¹⁵² Bennett 1984, p. 92.

¹⁵³ Ibid., p. 89, emphasis mine.

¹⁵⁴ Ibid., emphasis his.

One can object, however, that objects *are* introduced in such a system. For instance, in the thought experiment above, the mountain, construed as a spatial bundle of qualities, is defined as giving resistance, reflecting light, etc. But, giving resistance to *what*?¹⁵⁵ Are we not defining such ghostly ‘objects’ as figure, against a ground of objects in the ordinary sense?

This can be avoided in the following manner. Take impenetrability, for instance. This can be defined as a property of an ‘object’, construed as a succession of qualities across space, as follows. Suppose we have two marbles, one silver, and one gold. These marbles are really just strings of two qualitative profiles Q1 and Q2, and what it is for them “to be impenetrable to one another [is], namely, its being impossible for any place-time to belong to [the] two strings.”¹⁵⁶

Bennett goes on to show how many of the properties we attribute to what we suppose to be substantial, chunky, enduring physical objects can all be defined without quantifying over any objects whatsoever. For Spinoza, what we ordinarily think of as substantial, independently existing objects are just *modes* of the one substance, where ‘modes’ are “a *way* that something can be, or be done, or be the case.”¹⁵⁷ Modes, as Bennett or Spinoza uses the term, name dependent entities, in that they are modifications upon entities distinct from themselves. Common examples of modes are the blush of a girl or the quickness of Bob’s running. For Spinoza, however, the *girl* or *Bob* would be modes themselves, namely, ‘ways’ Nature can be.

Spinoza does classify as ‘modes’ all sorts of items which *are* ordinarily handled substantively. But that does not divorce ‘mode’ from ‘predicate’. Spinoza’s position is that most items that are usually treated in a thing-like manner *can*, and

¹⁵⁵ Ibid., p. 90.

¹⁵⁶ Ibid., p. 90.

¹⁵⁷ Ibid., p. 92.

in a fundamental metaphysic *must*, be conceptualized differently: anachronistically expressed, some things need not be quantified over in a basic metaphysics.¹⁵⁸

But *what* need not be quantified over in a basic metaphysics? If the proposal is right, excepting the universe, *nothing at all*—“...all particulars—minds as well as bodies—are modes.”¹⁵⁹

How, though, would we treat talk about putative things? As a first pass, Bennett suggests that sentences such as (1)-(3) should get paraphrased as (A)-(C), respectively:¹⁶⁰

- (1) There exists a cat.
- (2) The pebble is green.
- (3) There are dogs.
- (A) Some region is catting.
- (B) Some region is pebbling and greening.
- (C) Some regions are dogging.

However, a difficulty emerges, which will beget two more. Bennett thinks that each can be overcome. The first difficulty is that the candidate replacement sentences quantify over regions. So, mention of individuals or quantification over entities has not been removed. Bennett thinks that “this is not a real difficulty.”¹⁶¹ The metaphysical story Spinoza needs to tell can be told with adverbs. The suggestion comes to replacing sentences like (A)-(C) with the following:

- (A') Space is catting somewhere.
- (B') Space is pebbling and greening somewhere.
- (C') Space is dogging intermittently.

There is a second difficulty, however. (B') as a paraphrase of (2) will not work, for (B') seems equally to be a paraphrase of ‘there is a pebble somewhere and a green

¹⁵⁸ Ibid., p. 93, emphasizes his.

¹⁵⁹ Ibid., p. 94.

¹⁶⁰ Although these examples are not his.

¹⁶¹ Ibid., p. 95.

patch elsewhere.' In addition, (B') could truly be spoken of a region that we would say contains a green plate with a pebble on it. We need the pebbling and the greening to be going on in the same place.

The way out of this difficulty, supposedly, is to both be able to speak about regions yet "provide replacements not only for quantifications over regions but also for mentions of individual regions."¹⁶² We can do this, says Bennett, with indexicals and indexical adverbs. In this way, (A') - (C') now become the following (where we are assuming that there is demonstrative pointing or some other demonstrative device):

- (A'') It is cutting there.
- (B'') It is pebbling greenly there.
- (C'') It is dogging here, there, and also over there.

Bennett then concludes "that the field metaphysic can be made to work, with no need to name or quantify over regions. What will it quantify over? Nothing."¹⁶³

I do not believe that Bennett's amendments to Spinoza's view can get around these difficulties at all. Do sentences such as (A'') - (C'') really not (implicitly, at least) quantify over anything? And, could they be understood, in the way Bennett means them to, without any kind of reification over *some* kind of individuals or substances (e.g., substantival space-time or spatial regions)? Not really, as I will show.

One problem with (B'') is that it also seems to be consistent with a description, according to the field metaphysic, of a white rock with a green light

¹⁶² Ibid.

¹⁶³ Ibid., p. 96.

shining on it,¹⁶⁴ where we can easily imagine them coming apart. But, we need the pebble's rockiness and the greenness tied together, in what we ordinarily think of as the same *thing*—the pebble. If this sort of ‘wink-wink’ understanding is going on, or needs to go on behind the scenes for us to not commit to substances at all, then the account fails. And I think it would need to go on.

This should remind us of Quine’s discussion of a “reification...to the rescue” strategy of pulling together observation sentences whose constituent phenomena are not logically or metaphysically tied.¹⁶⁵ For instance, for all Bennett has said so far, it seems like the following:

(D) A white cat is facing a dog and bristling.¹⁶⁶

Should be construed as:

(D') It is catting and whiting and dog-facing and bristling there.

But, (D)

cannot be rendered as a mere conjunction of these four, because the conjunction is too loose. It tells us only that the four things are going on in the same scene. We want them all in the same part of the scene, superimposed. It is this tightening that is achieved by subjecting the four-fold conjunction to existential quantification, thus: Something is catting and is white and is dog-facing and bristling, which is to say (D). An object has been posited, a cat.¹⁶⁷

If Bennett needs a parity of structure here to make sense of (D), then, if a cat is not posited, at least a *region* or a *string* which has some features essentially tied together must be posited. Indexicals, adjectives, and adverbs cannot do everything we want.

¹⁶⁴ This is similar to a classic example of the comparison between red wine versus white wine suffused with red light, but I cannot remember where the example is from.

¹⁶⁵ Quine 1990, p. 30.

¹⁶⁶ Quine’s example, *Ibid.*, p. 29.

¹⁶⁷ *Ibid.*, p. 29, emphasis mine.

They especially cannot help us paraphrase away talk about identity and difference in ways that make sense.

To clarify my objection, let me present what Bennett notes is the third difficulty for the field metaphysic proposal.

Since there are wet things and unwet things, if all predication are fundamentally on God then contradictory things must be said about God. This is *prima facie* graver than the other [difficulty], but even easier to solve. If at this moment my pencil is yellow and my desk top is not yellow, the Spinozist does not have to say the space is yellow and is not yellow. On the contrary, he will use locational adverbs to block the contradictions. Just as temporal adverbs can turn a contradiction into a report of an alteration (yellow then, not yellow now), so spatial adverbs can turn a contradiction into a report of synchronic variety (yellow there, not yellow here).¹⁶⁸

I will use the following example. Suppose that my Pacer is (all) blue, and my Gremlin is (all) yellow. I can point at the two cars next to each other, and while indicating appropriately, say:

(E) It is yellow there₁ and not-yellow there₂.

Since there is only one individual, Nature, and it is yellow and not yellow, how is a contradiction avoided? Obviously, by reporting synchronic variation. But, variation over *what*? Benoza cannot say *regions*, because then he would be quantifying over them. Neither can he say variation across the colors of distinct objects (at the same time), because then he would certainly be quantifying over substances. But, then, how can we speak of variation if it is not variation across any *thing*, not even regions or parts of The One?

In addition, working just from the form of (E), how can we tell that *there*₁ is not identical to *there*₂? If we cannot, then indeed one location might be both yellow and not-yellow, in which case a contradiction hasn't been ruled out. If, however, we

can tell *there*₁ from *there*₂, then isn't that because we understand there to be either distinct quality instances, distinct regions, or, perhaps more realistically, distinct *cars* in distinct places with distinct colors? I do not see any way out for Benoza here.

In fact, the temporal analogue for synchronic variation works against the project. If something such as my lizard turns from brown to green, then a contradiction is avoided only by saying one of the following:¹⁶⁹

- (1) my lizard has a brown temporal part that exists at t1 and a green temporal part that exists at t2 (&, the two temporal parts are distinct).
- (2) my lizard is brown-at-t1, and green-at-t2 (&, 't1' ≠ 't2').
- (3) My lizard is-at-t1 brown and is-at-t2 green (&, 'is-at-t1' ≠ 'is-at-t2').

If

(E) It is yellow there₁ and not-yellow there₂.

is to be treated like this, then the analogues would seem to be:

- (1') Space has a region1 which is yellow, a region2 which is not-yellow (&, region1 ≠ region2).
- (2') Space is yellow-at-R1 and not-yellow-at-R2. (& R1≠R2).
- (3') Space is-at-R1 yellow and is-at-R2 not yellow (& R1≠R2).

All of the foregoing quantify over regions, either explicitly or implicitly, and so the spatial analogue of the temporal treatment will not help. Perhaps Bennett would recommend something like the following bizarre treatment, which turns regions into the referents of adjectival modifiers and seemingly does not quantify over them:

- (4') Space is locationally-1-yellow and locationally-2-not-yellow. (and these are distinct properties).

¹⁶⁸ Bennett 1984, p. 96.

¹⁶⁹ There are some other varieties of the kinds of answers given in (2) and (3), but I'd rather not get into all the permutations. Note that these are all varieties of answers to the 'problem' of temporary intrinsics. See Lewis 1986, p. 204. For a survey of attempted solutions, see Hawley 2001, esp. chaps 1 & 2.

(4') seems to be his best option. But, how do we really distinguish the ‘property’ *locationally-2-not-yellow* from the not mentioned *locationally-1-not-yellow*? How do we know that Space is not locationally-1-yellow and locationally-1-not-yellow? Only by knowing (hush-hush) that being *locationally-1-yellow* excludes being *locationally-1-not-yellow* in the same location. I submit that there is no way of understanding accounts like Benoza’s, or thinking like Benoza would have us do, which do not surreptitiously quantify over regions, modes or property instances. Bennett’s proposal gets whatever plausibility it does by the surface grammar of utterances like ‘it is catting’ which supposedly do not quantify over substances, by the unconscious direction of inferential patterns which presuppose that there are in fact distinct entities for things like ‘cattings’ to latch onto.

Ironically, if Benoza’s account *were* to work, then it wouldn’t be able to distinguish between qualitative differences in different regions of space—since there aren’t any regions. This is ironic, because, the very method that Bennett arrives at to eliminate regions is one which depends essentially on supposing that there *are* regions, namely, ‘strings’ of them, which he identifies ordinary objects with. ‘Strings’ are supposed to be successions of spatio-temporally contiguous regions filled with persisting qualities or activities (e.g., ‘catting’). Perhaps Bennett might respond by employing a Buddhist metaphor, where supposing that there are regions is a cognitive raft used to get us across the treacherous waters of the substance metaphysic to the shores of the glorious non-individuate. After we cross, we throw the raft away, since we have no need of it. The problem here, though, is that if we are supposedly on the

far shore, we could never have employed the raft felicitously to get here to begin with (since ‘regions’ has no referents).

2.2 Hawthorne and Cortens’ ‘Ontological Nihilism’

John Hawthorne and Andrew Cortens have presented a similar proposal, but one that is thankfully not saddled with the Spinozan baggage. In their paper, “Towards Ontological Nihilism” they seek

to motivate a radical cluster of metaphysical pictures that have tempted [some] philosophers...These pictures share one important theme—they refuse to accord countable entities any place in the fundamental scheme of things. Put another way, they all suggest that the concept of an object has no place in a perspicuous characterization of reality.¹⁷⁰

One of the proposals they examine is one where there is only a single type of ‘world-stuff’ and no things. Another proposal is similar except there is a plurality of stuffs. These two views are inspired by the work of Alan Sidelle. Since I will devote a section to his view, let me focus here on another proposal by Hawthorne and Cortens.

“The third sort of metaphysical picture repudiates ontology altogether.”¹⁷¹ The picture they develop has a lot in common with Bennett’s treatment of Spinoza, but is different enough to merit individual treatment. It is developed by first drawing attention to what P.F. Strawson called ‘feature-placing’ language.¹⁷² Feature-placing language arguably does not quantify over individuals at all. Some examples are:

- (1) It is raining.
- (2) It is cold.

¹⁷⁰ Hawthorne and Cortens 1995, p. 143. Henceforth, in footnotes, ‘H&C’.

¹⁷¹ Ibid., p. 145.

¹⁷² Strawson 1959, pp. 217-225.

Such sentences are, as Quine says, ‘ontologically innocent’.¹⁷³ Strawson vaguely entertains the notion of a language equivalent in power to English which only employs feature-placing language, a language “without particulars” as Hawthorne and Cortens point out.¹⁷⁴ Strawson dismisses it, somewhat peremptorily, as unmotivated, and characterizes feature-placing language as somehow ‘immature’, in part *because* ‘pre-individuative’.¹⁷⁵

Hawthorne and Cortens do believe, unlike Strawson, that the project can be justified, particularly “as a way of justifying the claim that object talk is an unperspicuous way of describing reality.”¹⁷⁶ How could someone motivate the claim that ontology without objects is a perspicuous description of reality? Skipping over some details for the moment, Hawthorne and Cortens’ master argument runs as follows:

Argument 1.

- (i) We can say anything we want to say about the world without quantifying over substances.
- (ii) If (i), we should eliminate substances from our ontology. (Because of Ockham’s razor, i.e., do not multiply entities beyond necessity).
- (iii) So, we ought to eliminate substances (i.e., things or objects) from our ontology.

Argument 2.

As an additional supporting argument, they argue that a feature-saturated, object-free ontology rids us of the problems of substance (since there are none), such as problems of identity over time and composition, and to that extent is to be preferred to a substance ontology.

¹⁷³ Quine 1990, p. 29.

¹⁷⁴ H&C, p. 146.

Both of these arguments fail. Let me first explain how they defend premise (i) of Argument 1 and why it is false.

Hawthorne and Cortens, taking some inspiration from Bennett's treatment of Spinoza, and feature-placing possibilities, recommend translating the sentences (1)-(3) as (A)-(C).

- (1) There are two cats nearby.
- (2) The lamp over here is shining more brightly than the lamp over there.
- (3) The pebble is green.
- (A) It is catting twice nearby.
- (B) It is lamping here more brightly than it is lamping there.
- (C) It is pebbling and it is greening as well.¹⁷⁷

Hawthorne and Cortens believe they get around the problem that Bennett faced with (3) above by admitting anaphoric proadverbs (e.g., the second 'it' in (C)).

Just as an anaphoric pronoun occupies a noun position and inherits its content from a noun that occurs elsewhere in the discourse, so a proadverb will occupy an adverbial position and inherit its content from an adverb that occurs elsewhere in the discourse...once adverbs are admitted as ontologically innocent, then the problem of giving a rich account of concrete reality in ontologically neutral terms is considerably alleviated.¹⁷⁸

Just like with Bennett, though, we can object that these adverbs of space and time are "merely devices for referring to times and places...And are not times and places

¹⁷⁵ Laycock 1981 p. 13, and Seibt 1997, pp. 171-172, both point out the brash and insouciant manner in which both Strawson (1959 *op. cit.*) and Quine (1960, pp. 90-99) dismiss mass-term and feature-placing talk as somehow immature.

¹⁷⁶ H&C, p. 146.

¹⁷⁷ Toomas Karmo, in his dissertation *Occurrences, Pseudo-Occurrences, Propositions, and Individuals*, Oxford, St. John's College, 1978, also examines (without whole-heartedly advocating) how we can translate sentences which quantify over substances into ones which putatively do not. For example (ignoring some of his formalism and presenting the more logically lax translations):

"Only hungry dogs are barking" becomes:

"Nothing is going on in a both-barking-and-not-hungry manner, and nothing is going on in a barking manner which does not amount to dogging." (119), versus,

"Only hungry dogs are barking," becomes,

"Only in a hungry manner is it dogging in a barking manner." (120)

"There are many dogs." Becomes,

"It is a good deal that: it is dogging." (120)

¹⁷⁸ H&C, p. 149.

objects in the broad sense which interests us here?”¹⁷⁹ Curiously, Hawthorne and Cortens leave this objection dangling, and move right on to responding to Davidsonian worries about event quantification.¹⁸⁰ It is left unanswered, and this is a significant and damning lacuna. If my arguments against Benoza above are sound, maybe it is because the objection cannot be answered. Certainly, if Hawthorne and Cortens had an answer, they would let it be known.

Another deep objection to their view relates to Gareth Evans’ work in “Identity and Predication.”¹⁸¹ Evans rejected

‘it catteth’ as a fit vehicle for representing reality...primarily [because] he thought of ‘it catteth’ as insensitive to the number of cats present. Perhaps he thought that if one were to allow such adverbs as ‘once’, ‘twice’ to modify ‘it catteth’, then one would be allowing cats into one’s ontology after all.¹⁸²

Hawthorne and Cortens’ reply to the objection is weak:

This sort of objection is not really open to the orthodox ontologist, we contend. For, after all, the contemporary ontologist will quite often want to deny that, strictly speaking, there are holes, shadows, or miles, even though we can (loosely speaking) count holes and shadows and miles. The appearance of number words next to some sortal in some true sentence hardly counts for her as decisive evidence that we should admit objects into our ontology over which that sortal ranges...we see no special problem raised for the ontological nihilist by adverbs of number.¹⁸³

The problem here is with the analogies given. In each of these cases, ontologists who have ceased to take seriously putative ontologically committing talk about holes, shadows, or miles, have preserved talk about such entities only by switching commitment to *things* which they hold *do* exist—such as, with holes; the surface of a

¹⁷⁹ Ibid.

¹⁸⁰ Which I will not discuss. There are bigger fish to fry.

¹⁸¹ Which can be found in Evans 1985.

¹⁸² H&C p. 152.

¹⁸³ Ibid.

hole in a ground, a donut which is the host of its donut-hole; and, with shadows, we paraphrase talk about them into talk about those objects which cast shadows along with a light source and photons; and, with miles, stretches of land that the miles are miles *of*. So, if this method of paraphrase is successful, it is only because we get to quantify over some objects or other. But, this move is not available to the Ontological Nihilist (ON), and we are given no other model of a paraphrase strategy for the ON. Adverbs of number seems to imply a number of things in each of these cases, and Hawthorne and Cortens give us no reason to give up this intuition.

They further support (i)¹⁸⁴ by clarifying what the ON will say about the status of ordinary talk. “Is she to say that it is all false? If not, how can she coherently exclude the concept of an object from her metaphysical thinking?”¹⁸⁵ The best answer to the first question, Hawthorne and Cortens contend, appeals to and clarifies the notion of a ‘perspicuous representation of reality.’¹⁸⁶ They give stock examples about how sentences like “The average American adult male has 2.3 children” can get more perspicuously expressed through paraphrase. What is it for one sentence to be more perspicuous than another? “The unperspicuous representation obscures the form or structure of the fact it conveys, while the perspicuous representation shows, pictures or reveals its form or structure.”¹⁸⁷

The ON, then,

may well concede that much of ordinary discourse expresses truths, but...does so in an unperspicuous way. A perspicuous representation of reality, she will insist, ought to take the form of her favorite feature-placing language...It is not important that the ontological nihilist insist that object talk and the concept of an object have

¹⁸⁴ (i) We can say anything we want to say about the world without quantifying over substances.

¹⁸⁵ H&C, p. 154.

¹⁸⁶ Ibid.

¹⁸⁷ Ibid., p. 155.

no place in a perspicuous account of reality. What is distinctive about her view is that her canonical notation has no room for constructions like ‘There are K’s’. She will prefer, say, a feature placing language when invited to describe reality in a perspicuous way. Yet she is still free to claim that the only sense she can give to the claim ‘There are objects’ is one according to which it is true.¹⁸⁸

The main problem with this reply is that we are given no idea whatsoever about how the ON’s replacement sentences show their structure more clearly than the regular English sentences or the standard canonical logical translations of the predicate calculus.

Hawthorne and Cortens want to claim that the ON can allow ‘There are objects’ to express a truth, such as one of the following:

- (F) It is objecting intermittently.
- (G) It is objecting at least twice.

I cannot see how this form could be more perspicuous, unless the ON’s position is already assumed to be true. But, here, this is offered as a defense of ON in the context of its being questioned.

We can see some problems with some other simple sentences.

- (H) All people are scared of tigers.
- (I) $\forall x \forall y [Px \supset (Ty \supset Sxy)]$

I am not sure how the ON would translate this, and Hawthorne and Cortens never advance very far on the project of paraphrase on behalf of the Ontological Nihilist. Perhaps one of the following is what they have in mind:

- (J) If it is personing, then if it is tigering nearby, then it is personing-scaredly.
- (K) It is never personing in a tiger-close-by-manner without being personing-scaredly.

Until we have reason to believe that (J) and (K) are more perspicuous than (I), then Hawthorne and Cortens’ defense fails. They just assert that the ON will be able to

¹⁸⁸ Ibid., pp. 156-157.

assert or insist that she can give a more perspicuous description of reality. A sentence such as ‘it is tabling’ does not give us a perspicuous description of reality, because it seems consistent with ‘there are simples arranged tablewise,’ ‘there is a compresence of table-features,’ ‘there is a table occurrent,’ ‘there is a tablisch region’, ‘there is a cluster of table sense-data’ or, ‘there is a table.’ A “notation” such as ‘it is tabling’ cannot be perspicuous if it doesn’t rule out a bevy of readings that apparently contradict with each other or express different ontologies.

We can conclude that Andrew and Cortens have not given adequate reasons for this very controversial premise (i) of Argument 1. But, even if (i) *were* true, that is, even if we could say everything we want to say without quantifying over substances, I still doubt that we would be forced to eliminate substances from our ontology. Premise (ii) states:

(ii) If (i), we should eliminate substances from our ontology. (Because of Ockham’s razor, i.e., do not multiply entities beyond necessity).

The “elimination” of substances Ockham’s razor can justify is an agnosticism about, but not a denial of, their existence. So, even if (i) was true, it yields no disproof of the existence of *things*. At most, we are motivated to ignore *things*; we can talk without talking about objects. (Of course, I am not granting even this much.) So what?

Argument 2 is meant to provide extra support exactly at this juncture, and help buttress the stronger thesis that there are no objects. “A deeper sort of motivation for ontological nihilism...is the widespread impatience with those disputes” that arise by positing substances—e.g., identity over time and composition. The negative consequences of supposing that there are substances “will inevitably be seen as a

selling point of a nihilistic approach to ontology.”¹⁸⁹ Trivially, if there are no *things*, there cannot be any problems with them.

Hawthorne and Cortens “solve” problems of identity over time and composition, on behalf of the ON, by pointing out, in one way or another, that the orthodox ontologist cannot dissolve such problems, since they come about from his view “that there are univocal notions of existence, objecthood and identity which are foundational to metaphysical thinking.”¹⁹⁰ The ON can somehow (we are never provided with a good story) be happy to say that ‘it was tabling’, and it is now ‘tabling likewise’, and leave it at that.

In this, they are really trying to have their cake and eat it too. They say that the ON can have a language that is equally powerful and expressive as English and the predicate calculus translations of it. Yet, somehow, this language is to avoid all the problems that come about due to features of the orthodox language, such as the univocity of ‘entity’, ‘exists’, or ‘identity’. It strains belief to suppose that the ON theorist will have a translation of every English sentence, equal in power to the standard translations of the predicate calculus, without inheriting any of the problems that arise from the substance paradigm they embody.

I believe Alan Sidelle is right, when he argues against Hawthorne and Cortens that at the very least, “stuff” needs to be posited. He shows quite clearly that problems for the substantialist can arise again for the Ontological Nihilist:

Also, while they say—I think correctly—that ‘It is catting twice’ need not presuppose *cats*, it still imports *some* sort of individuation: how much of the world counts as comprising one ‘catting’ and how much another? Can a catting become a dogging? And while they suggest that ‘here’ and ‘there’ need not involve

¹⁸⁹ H&C, p. 158.

¹⁹⁰ Ibid., p. 160.

quantification over places, it is less clear that this will be avoidable when we try to account for *change*—“Where it was catting, now it is dogging” seems to require the identity through time of some place. Perhaps admitting places isn’t so bad in our attempt to avoid *material* objects, but it does give the notion of ‘world-given’ individuation some sort of foothold...any description invites and legitimates modal questions... ‘it is catting’ invites ‘Would it still be catting if on the inside, it were computer-chipping?’—and these questions always make sense—there is no really [ontologically] innocent language.¹⁹¹

This all sounds correct, and if so, Hawthorne and Cortens are wrong in their supporting argument that ON has an advantage in that it will dissolve metaphysical problems. It merely gives us a new way to state the same problems.

To the extent that either Benoza’s or Hawthorne and Cortens’ views are plausible, it is because *some* item or other has taken on the substance or *thing* role. Since the items which do take the thing role are spookier than ordinary objects, I see no reason to believe that objects have been or can be reduced to them.

The strong anti-particularistic process or, more weakly, ‘processy’ views have failed. So far, we have been given no reason to think that we can get away without quantifying over something. Perhaps all we need do is quantify over stuff, which is not a thing, nor does it (the ‘World-Stuff’) contain things. Alan Sidelle examines this possibility, and it is to his work that we turn.

¹⁹¹ Sidelle 1998, p. 443.

2.3 Alan Sidelle: ‘World-Stuff’ and Conventionalism

Conventionalist motivations for strong anti-particularism stuff ontology can be found in the work of Alan Sidelle, such as “A Sweater Unraveled: Following One Thread of Thought for Avoiding Coincident Entities,” and “Formed Matter Without Objects: A Reply to Denkel,” and *Necessity, Essence, and Individuation*.¹⁹²

In “A Sweater...” Sidelle examines various methods for avoiding coincidence which share in common the idea that no substantial change occurs, or that no object goes out of existence, so long as we have the same stuff around before and after the change. These views hold, for instance, that when a statue composed of clay is squashed flat, or when a sweater knitted out of one long piece of yarn is unraveled, nothing has gone out of existence. Take a cow, then flatten it. Did anything get destroyed? No, say proponents of these types of positions.

What makes us properly suspicious of counting the ‘death’ of a cow as a substantial change is the clear fact that there is plainly something around both before and after the change, something which was a cow, but now is not, in much the manner in which something is clearly around both before and after someone goes into the hairdressers for a hair dye.¹⁹³

Whenever we have all the same stuff after a change, nothing has gone out of existence, the stuff has merely changed some accidental properties, or gone through a phase.

Sidelle diagnoses that the phenomenon of coincidence is a species of the problem of individuation. As he notes;

¹⁹² Sidelle 1998, 1991, 1989, respectively. Unfortunately, I have not yet read the whole of his book *Necessity, Essence, and Individuation* (1989), which could answer some of the concerns I’ll raise. But, (1989) was written nine years before (1998) and two years before (1991), so these latter seem to represent the pinnacle of his development of non-individuate ‘stuff’.

¹⁹³ 1998, p. 439.

Whether there is coincidence is fundamentally the question of whether there can be more than one criterion of identity instantiated at a given location, that is, whether, for any location taken to contain an object, the various seemingly possible criteria of identity can all be ruled out as false, save one.¹⁹⁴

He claims that the problem of coincident entities arises not due to the diversity of individuals in a region, but rather due to the fact that the world as it is (and we as we are) underdetermine which principles of individuation are the correct ones to employ. It seems that I can treat any property as accidental or as essential by employing different sortals, or nominal essences, to describe a thing. When a cow dies, we can describe this either as the accidental change in some flesh-and-bones, or the substantial change in a cow which is no more. But, as Sidelle notes, the latter leads us quickly to coincidence (between the cow and a hunk of flesh), and, “if we can say that there was an accidental change in some flesh and bones, what is gained by tacking on that it was a substantial change as well?”¹⁹⁵ Sidelle concludes, in a Lockean vein, that which changes we conceive of as substantial and which as accidental is more a function of us and our interests than of the way things really are.

Sidelle goes on to note that problems of coincidence are just problems with the arbitrariness of deciding which properties are accidental and which essential, and these problems arise because of our concept of an *object*. “It is *objects* which have made the problem, and the solution isn’t to switch *which* objects we allow, but to disallow objects altogether.”¹⁹⁶ Sidelle recommends, tentatively, that we describe the world without quantification, and deny that “there is genuine, world-given

¹⁹⁴ 1998, p. 441.

¹⁹⁵ Ibid., p. 439.

¹⁹⁶ 1998, p. 441.

individuation.”¹⁹⁷ Furthermore, as it is supposedly obvious that there is at least stuff, we should suppose so, and theoretically regard the role of the ‘world-stuff’ as “the mind-independent matter of the world which, among other things, determines our perceptions.”¹⁹⁸ Sidelle admits that “the view that all there is is stuff, that there is matter, but no material objects, certainly doesn’t recommend itself on its face.”¹⁹⁹ Sidelle’s main purpose in the paper is not to definitively establish this view so much as show how it could naturally flow from one initially appealing way of avoiding coincidence.

While the treatment in “A Sweater...” is rather brief, Sidelle does say some more in “Formed Matter Without Objects.” In the latter work, he advances his agenda by responding to Arda Denkel’s criticism of Laycock’s view.²⁰⁰ Sidelle criticizes a principle invoked by Denkel, that being a portion of stuff bound by form is sufficient for objecthood.²⁰¹ Sidelle notes that if by ‘form’ Denkel means ‘Aristotelian substantial form,’ then the principle is trivially true, and won’t get Denkel what he wishes. So, the principle must mean that a portion of matter, in any shape or state whatever, composes an object. Sidelle denies this.

The advocate of PM [The ‘Primacy of Matter’ advocate, or, one who, like Laycock, believes that matter is independent of any objects it contingently constitutes] does not deny that there are objects. What he claims—or at least, what our PM man claims—is that objects are conventionally articulated portions of stuff....It is thus to be expected, even on this view, that there will be some sufficiency conditions for the existence of objects of certain sorts, and even perhaps of objects in general. But these conditions, he will claim, are given by *us*, by our conceptual scheme.”²⁰²

¹⁹⁷ Ibid., p. 443.

¹⁹⁸ Ibid., p. 443.

¹⁹⁹ Ibid., p. 444.

²⁰⁰ Denkel 1989, Laycock 1981. Laycock replies to Denkel in Laycock 1989. Denkel replies to Sidelle 1991 in Denkel 1995. These exchanges are very interesting and instructive.

²⁰¹ Sidelle 1991, pp. 163–164, Denkel 1989, p. 15.

²⁰² Sidelle 1991, p. 168.

It seems that when he wrote *Necessity, Essence, and Individuation*, Sidelle held a view similar to this. In it, he attempts to delineate a form of nominal essentialism and modal necessity through articulating a conventionalism, in part by adverting to the aforementioned ‘world-stuff.’ This method cashes out the truth conditions of a claim like “Ralph originated essentially from wood W,” where ‘Ralph’ putatively names what we think of as a chair, in the following manner:

The reason, then, that we can say that Ralph originated in wood W, and did originate essentially, is because we are using ‘Ralph’ as a chair term. In doing so, we are not merely intending ‘Ralph’ to pick out something with mind-independent modally packed identity conditions—a chair—but rather we intend to constrain our (actual and) counterfactual use of ‘Ralph’ in certain ways; we determine analytically, at some level of generality, what the identity conditions are for ‘Ralph’, and this includes what sort of beginnings Ralph could have. There is then, no chair, appropriately understood, to which we are pointing when we introduce ‘Ralph’—there is, as I like to say, ‘stuff’. And approaching this stuff with a chair term, we can then determine an origin for Ralph by seeing, roughly, when this stuff started to be ‘chairish’. But because there is no chair, strictly speaking, independently of our identity conditions, there is also no chair origin that is so independent; there is only a time when some stuff became organized in a certain way.²⁰³

So, it appears that the truth of modal claims about putative individuals is cashed out in terms of *de dicto* property entailment, not via an apparatus that employs *de re* claims, because, on Sidelle’s account, there are no mind-independent objects.²⁰⁴ Ralph is essentially a chair since by ‘Ralph’ we mean something like, ‘some stuff affected R-wise,’ where ‘R-wise’ is shorthand for just those properties of what it takes to be what we called ‘Ralph.’ And, since to be Ralph is in part to be affected chairwise, then of course Ralph is necessarily a chair (although the stuff is not). Similarly, Ralph essentially had its origin from that wood just because by ‘Ralph’ we

²⁰³ Sidelle 1989, p. 55.

meant to pick out a portion of stuff which co-instantiated woodness and Ralphness.²⁰⁵

Note, however, how coincidence is *not* avoided here. The stuff is not necessarily a chair, whereas the chair is. Or, if we take Sidelle here at his word, and there really is no chair, then coincidence is avoided, but at the expense of denying that there are chairs.

While I have some sympathy for elements of this view, I do not think we should accept the putative conventionalism. My main concern is that, on the most charitable readings of Sidelle's conventionalism and the nature of *stuff*,²⁰⁶ it seems that he must accept either a non-conventionalist, unrestricted mereology, or an extreme form of Nihilism. So, either his conventionalism fails by its own lights, in that it requires that any filled portions of space-time contain genuine mind-independent objects, or, it must deny that our 'carvings' actually result in any *things* (whether mind-independent or not) so carved. Sidelle faces this dilemma because of how he construes the world-stuff's role. On his account, the world-stuff serves to give a pre-objectual grounding to our discourse which features objects. Our intentions and concepts carve the pre-objectual stuff into conventionalist objects. The problems arise when we try to understand what "carving" is a metaphor for.

Although he holds that "objects are conventionally articulated portions of stuff,"²⁰⁷ and that the stuff is pre-objectual, Sidelle himself admits that "the world is

²⁰⁴ This approach is somewhat similar to that in Jubien 2001.

²⁰⁵ Thomas Holden (UCSB) has pointed out to me (personal communication) that Hobbes might have had a very similar view.

²⁰⁶ In 1991 and 1998.

²⁰⁷ Sidelle 1991, p. 168.

certainly not an undifferentiated blob.”²⁰⁸ So if things are already differentiated, what does our conceptual “carving” amount to?

Sidelle must hold that when we conceptually carve the world, we either (1) literally create objects with persistence conditions, or (2) we merely pick out of the pre-existing numerous objects the ones we are speaking of, or (3) we don’t pick out anything at all, since, strictly speaking, there are no objects.²⁰⁹ If Sidelle holds (1) or (2), then he is not in fact a strong anti-particularist, and fits into the bare objects camp which we will speak of soon. Only if he accepts and defends (3) is he a strong anti-particularist.

Sidelle seems to vacillate between (1), (2), and (3). I hold that (2) is the most charitable reading of his view.²¹⁰ The problem is, on this reading, the view is no longer a conventionalism about *objects*, but rather the doctrine that the truth of the propositions we express and the objects we refer to are determined by the linguistic conventions we employ and the way the world is. A true doctrine, but without any conventionalist teeth.

Now, I don’t think anyone can really believe that (1) is literally the case. (1) would entail, for instance, that rocks didn’t exist until we created the concept *rock*. This position is a non-starter. Conceptual carving as creation has too many awkward entailments. Call the fusion or sum of my nose and the Dome of the Rock a nose-rock. Something is a nose-rock iff it is a sum of a human’s nose and the Dome of the

²⁰⁸ Sidelle 1998, p. 442.

²⁰⁹ In a recent paper by Matti Eklund, “The Picture of the World as an Amorphous Lump”, which I only recently perused, he argues, similarly to me, that views like Sidelle’s are forced into accepting (2), which is no conventionalism at all. This paper can be found in draft form at <http://spot.colorado.edu/~eklundm/pral.pdf>, and is forthcoming in Zimmerman, Sider, Hawthorne (eds.) *Contemporary Debates in Metaphysics*.

²¹⁰ In 1991 and 1998.

Rock. So, there should be around six billion nose-rocks. According to this (albeit, somewhat uncharitable) interpretation of Sidelle, I just created six billion objects (unless someone else created them earlier). He must mean instead that, since carving does not seem to be creation, that it either merely picks out of the already pre-existent F-structured but non F-distinguished items, or, that we do not really pick out anything at all. In addition, if objects or things did not exist until we created them or picked them out with our conventions, then *we* wouldn't exist until we picked ourselves out by convention. But, how could we do this, if we did not yet exist?

At times he seems to favor the notion that we do not pick out anything at all, since, in one place, he clearly suggests that there are no objects whatsoever.²¹¹ However, Sidelle often asserts that our carvings result in picked out objects.²¹² So, the best interpretation compatible with both these extremes seems to be a middling view, that when we carve the world, what we're actually doing is choosing amongst infinitely numerous permissible substance sortals in order to express propositions about different entities. This just results in this conventionalism as being a conventionalism about which concepts figure into the propositions we express, not a conventionalism about objects themselves. A car is not conventionally a car, although we express truths (and falsities) about cars via the linguistic conventions we employ.

However, if this is the case, then Sidelle is saddled with coincidence again, which he was trying to avoid. If ‘hunk of cow flesh-and-bones’ and ‘cow’ are both permissible sortal conventions, then there would in fact be two objects in the same place at the same time (since the former persists past the latter). The only way to

²¹¹ 1998, p. 441.

²¹² 1991, pp. 165-166.

avoid coincidence here and also maintain that we're picking out genuine pre-existent objects is to embrace a framework of (extensional) unrestricted mereology, in order to even have a coherent framework to talk about the carving.

Mereology, developed initially by Lesniewski, and later treated by Leonard and Goodman, is the logic of parts and wholes.²¹³ The extensional theories hold that for any individuals x and y , $x = y$ if x and y have all the same proper parts. Accepting this would allow us to construct several theories about the relation between the cow and the successions of hunks of matter which compose it. We will look at these theories in Chapter 3.

The doctrine of collectivism (sometimes called ‘unrestricted mereology’ or ‘Universalism’) is that, for any non-identical individuals x and y , there exists a third object, z , which is the fusion of x and y . Sidelle ought to embrace unrestricted mereology, since, if we are able to carve out, or, rather, choose to speak about any portion of stuff in any configuration or spatio-temporal scatter, then, if these objects pre-exist the carving, *something* like collectivism must be true.²¹⁴

So, on the most workable and charitable interpretation of Sidelle’s program, he must deny that we create objects by convention, and accept that the objects we pick out by convention were there all along. If he would insist that no object but only non-individuate stuff exists (a theory he has not explained adequately), then the problems I raised for space-time regions in the theory of Bennett’s Spinoza would have exact analogues for portions of stuff in Sidelle’s account. Sidelle would either

²¹³ See Lesniewski 1927-31, and Leonard & Goodman 1940. Also, for a great treatment of mereology, see the contemporary locus classicus *Parts*, Simons 1987.

²¹⁴ Once again, Eklund says something similar in Eklund forthcoming.

have to attribute substantiality to individuate and re-identifiable portions of stuff, or admit that we cannot talk coherently about the world at all.

Chapter 3: Stuff and Process Reductionists (Bare Objects Theory and Process Monism)

In this Chapter I consider views which countenance things but hold that they are ‘nothing over and above’ certain items they reduce to, the latter of which are not (Aristotelian) substances. In particular, we will look at two bare objects theorists;

Roderick Chisholm,²¹⁵ and Michael Jubien; and one anti-particularist process ontologist: Johanna Seibt. While I will reject Seibt's account, I agree with her that there are some processes that are irreducible to things and their properties, and I agree that processes are best characterized in part by a careful analysis of verb aspect. While I will criticize both bare objects theorists in one way or another, I support their central shared contention; there are masses or aggregates of matter that persist just so long as all their parts do. I will show (partly here, and more fully in Chapter Five) that the bare objects theorists cannot do without something like processes in order to delineate a satisfactory metaphysical picture.

3.1 Chisholm and the Journey from Partially Nude to Totally Bare Objects

Roderick Chisholm has left us with a fascinating picture of his progressively changing views on the status of ordinary objects. His views in this regard can be divided into two major stages. In the first stage, from around 1973 to 1976, he held a very restricted mereology, and that most problems of material constitution and persistence are brought about by not realizing the following two things. First, in addition to the strict and philosophical sense of 'identity', there is a loose and popular sense of 'identity', and the two often get conflated. Second, real objects have all of their parts essentially. According to this view, ordinary part-changing objects are

²¹⁵ The earlier view of Chisholm's that we will examine is not exactly a bare objects theory (although his later view is). He countenances instead what I will call 'partially nude objects', in a sense to become clearer later.

logical constructions or ‘fictions’, constructed out of (or reduced to) a succession of objects which do not change their parts.²¹⁶

In the second stage, from 1986-1987, Chisholm maintained mereological essentialism as well as the dichotomy of loose versus strict identity. However, he believed in a far less restricted mereology, and instead of constructions or fictions, he identified ordinary objects with reified *modes* of a succession of mereologically stable bare objects. These modes are not fictions constructed out of mereologically stable objects; they are rather genuine entities which ‘pass through’ a succession of mereologically stable masses of matter which are the substrates of the modes. The second view is superior, but underdeveloped. But first I will examine the original view in detail.

Chisholm’s earlier view is encapsulated in “Parts as Essential to Their Wholes,” “Mereological Essentialism: Some Further Considerations,” and *Person and Object*.²¹⁷ I will mostly focus on *Person and Object*.

Chisholm begins discussing identity over time in Chapter III of *Person and Object* by pointing out the puzzle of the Ship of Theseus.²¹⁸ Suppose that a man named Theseus had a ship made entirely out of wood, with planks labeled 1-1,000. Let us call this ship, before any part changes, S1. Theseus’ ship comes into port twice a year, and each time has twenty planks replaced with aluminum ones. After twenty-five years, we have a ship S2, which we most likely would say is the *same* ship, made

²¹⁶ It is questionable whether a ‘logical constructions’ view is compatible with a ‘fictionalist’ view, as well as which kind of view Chisholm preferred. I believe he was not really interested in deciding this question at the time of *Person and Object*.

²¹⁷ Chisholm 1973, 1975, and 1976 (especially Chapter III and Appendix B), respectively. There is considerable overlap in the three. The content of 1976 contains most of that in 1973 and 1975. When I refer to 1973 I will use the page numbers from Chisholm 1989, where 1973 is re-printed.

of completely different parts. But, the Hobbesian twist is that,²¹⁹ let us suppose, the shipwright who replaced the boards took the original planks and arranged them so that they are identically placed as they were with S1, so that after twenty five years the shipwright has made a ship S3 which is qualitatively identical to S1 and has all the same parts. Both S2 and S3 are good candidates for being identical with S1, but if they both are, then we have the absurd consequence that each of *two* ships is identical to one ship. This much is obvious: were it not for S3, we would say that S2 is identical with S1. Similarly, if S2 didn't exist, we would find no fault with the claim that S3 is identical with S1. But why should what occurs with *another* ship determine whether this ship is identical with S1?

Chisholm attempts to solve this puzzle and others by pointing out the distinction between strict identity and loose identity, and defending mereological essentialism. For Chisholm, these notions go hand in hand towards constructing a theory of ordinary objects and their persistence conditions.

We can clarify the notion of loose versus strict identity by looking at several ways Chisholm says that we play ‘fast and loose’ with identity talk. Sometimes we play fast and loose with identity when we say things like “Route 6 is Point Street in Providence and is Fall River Avenue in Seekonk.”²²⁰ Since Fall River Avenue is not Point Street, they cannot both be identical to Route 6. In these kinds of cases we use an apparent ‘is’ of identity as short for more clear but unwieldy locutions that mention parts. Similarly, we play fast and loose with identity talk when we employ

²¹⁸ The original appearance of this puzzle is in Plato’s *Phaedo*, 58a. My description of the puzzle is not exactly the same as either Plato’s or Chisholm’s.

²¹⁹ *Concerning Body* Chap IX Sxn 7.

²²⁰ 1976, p. 93.

façon de parler fusion and fission talk, such as when we say “This train will be two trains after Encinitas”, or, “Those two trains will be one train after Leucadia.” Sometimes we also fudge things a bit when we conflate a description, whose referent can change, with a rigid designator. For instance, one who hears “The President of the United States was Eisenhower in 1955, and Ford in 1975,”²²¹ who is not aware of certain conventions can be forgiven for thinking that there is this *entity*, the President, who was identical with Eisenhower in 1955 and Ford in 1975. Lastly, a common error is confusing numerical with qualitative identity, or types with tokens, such as when I find someone with a mandolin and I say “you play the same instrument I play.” If my hearer insists that, no, it is *his* instrument, and I have never played it, he’s made an obvious error.

So much is easily agreed upon. The folk sometimes use ‘as-if’ identity talk that is not strictly speaking talk of *identity* (and the same for the ‘is not’ of *difference*). Chisholm courts controversy, however, when he compares these ‘fast and loose’ uses of identity with a very common usage, when we attribute identity to things across time that have changed their parts. Bishop Butler once “suggested that it is only in ‘a loose and popular sense’ that we may speak of the persistence of such familiar things as ships, plants and houses. And he contrasted this ‘loose and popular sense’ with ‘the strict and philosophical sense’ in which we may speak of the persistence of *persons*. ”²²²

²²¹ Ibid.

²²² Ibid., p. 92.

Thomas Reid, like Bishop Butler, also held that the persistence of persons is a paradigm instance of the persistence of a substance or *thing*, whereas that of tables or chairs, which change their parts, is not genuine persistence:

The identity of a person is a perfect identity; wherever it is real, it admits of no degrees...for this cause, I have first considered personal identity, as that which is perfect in its kind, and the natural measure of that which is imperfect.²²³

All bodies, as they consist of innumerable parts that may be disjoined from them by a great variety of causes, are subject to continual changes of their substance, increasing, diminishing, changing insensibly. When such alterations are gradual, because language could not afford a different name for every different state of such a changeable being, it retains the same name, and is considered as the same thing. Thus we say of an old regiment that it did such a thing a century ago, though there now is not a man alive who then belonged to it. We say a tree is the same in the seed-bed and in the forest. A ship of war, which has successively changed her anchors, her tackle, her sails, her masts, her planks, and her timbers, while keeps the same name is the same.²²⁴

Bodies are to be identified with *all* of their parts (for what else is a *body* but all its parts?), and it is only in a loose and popular way that we say that a person has the *same* body when they have changed their parts. Many have agreed. David Hume, for instance, said “all objects, to which we ascribe identity, without observing their invariableness and uninterruptedness, are such as consist of a succession of related objects.”²²⁵ Bodies have all of their parts *essentially*. When we talk about a thing that has changed its parts yet remained the same, we are actually talking about a succession of objects. As Hume says:

...suppose any mass of matter, of which the parts are contiguous and connected, to be plac'd before us; 'tis plain we must attribute a perfect identity to this mass, provided all the parts continue uninterruptedly and invariably the same, whatever motion or change of place we may observe either in the whole or in any of the parts. But supposing some very *small* or *inconsiderable* part be added to the mass, or substracted [sic] from it; tho' this absolutely destroys the identity of the whole,

²²³ Reid 1854, p. 345. Quoted in Chisholm 1976, p. 89.

²²⁴ Reid 1854, p. 346. Quoted in Chisholm 1976, p. 96.

²²⁵ Hume's *Treatise*, I.iv.6, Selby-Bigge edition, p.255. Quoted in Chisholm 1976, p. 211.

strictly speaking; yet as we seldom think so accurately, we scruple not to pronounce a mass of matter the same, where we find so trivial an alteration. The passage of the thought from the object before the change to the object after it, is so smooth and easy, that we scarce perceive the transition, and are apt to imagine, that ‘tis nothing but a continu’d survey of the same object.²²⁶

As Chisholm points out, “Abelard held that ‘no thing has more or less parts at one time than at another.’²²⁷ Leibniz said ‘we cannot say, speaking according to the great truth of things, that the same whole is preserved when a part is lost.’²²⁸ A great many philosophers have embraced this doctrine which is called *mereological essentialism*.

The doctrine has some intuitive appeal, but has an immediate counterintuitive consequence. Particular bodies, or masses of matter, cannot change parts; commonsense objects, such as tables and chairs, can change parts; so, commonsense objects are not particular bodies or masses of matter. But what *are* commonsense objects then? Chisholm answers, along with Hume, that commonsense objects are successions of distinct objects that it is convenient for us to ‘feign identity’ about. A chair at t_1 which has lost a part by t_2 , is only identical to the later chair in a ‘loose and popular sense’, but is, strictly speaking, distinct.

Why would anyone accept mereological essentialism (‘ME’), and why in particular does Chisholm? What exactly does the doctrine amount to, and what is the precise relation between the commonsense objects and the ‘mereologically inflexible’²²⁹ ones? Unfortunately, Chisholm is much clearer about *how* we can hold ME and make it workable, rather than *why* we should regard it as true in the first

²²⁶ Hume’s *Treatise*, I.iv.6, Norton and Norton edition, p. 167.

²²⁷ Quoted from Henry 1972, p. 120.

²²⁸ See Chisholm 1976, p. 145.

²²⁹ Chisholm introduces this phrase in 1976 for objects which cannot change parts.

place.²³⁰ Chisholm, in general, never spends much time defending why we should identify an object with its parts, except to point out the problems with mereological inessentialism (which we will get to) and one short passage.²³¹ I will try to get clear on why Chisholm thinks it is true, which we can only glean by perusing a wide variety of Chisholm's material. But first, let us, like Chisholm, examine how we can develop ME to clarify the relation between commonsense part-changing objects and the more philosophical, mereologically inflexible ones.

Chisholm says that the principle of mereological essentialism is the following:

...for any whole x , if x has y as one of its parts then y is part of x in every possible world in which x exists. The principle may also be put by saying that every whole has the parts that it has necessarily, or by saying that if y is part of x then the property of having y as one of its parts is essential to x . If the principle is true, then if y is ever a part of x , y will be part of x as long as x exists.²³²

The principle does not, of course, entail that a part y is necessarily a part of x , or needs to be a part of x in order to exist.

In order to explicate the difference between the parts of mereologically inflexible and commonsense or ‘mereologically incontinent’²³³ objects, we need the distinction between a ‘strict part’ versus a ‘loose part’.²³⁴ Chisholm uses the term ‘S-part’ for strict part. With the phrase ‘S-part’, we mean by ‘part’ what is often meant by ‘proper part’, or, a part of something that is distinct from that (entire) thing. Chisholm presents three initial axioms that give us transitivity and asymmetry for S-part, and ME.

²³⁰ Although by answering the *how* he lessens the negative pull of the *why* question.

²³¹ Here is the passage: “There is in its favour: a certain intuitive plausibility; the support of an impressive philosophical tradition; and the fact that it enables us to deal with what otherwise seems to be insoluble philosophical puzzles.” 1976, p. 151.

²³² 1976, p. 145.

²³³ Zimmerman coins this phrase in 1995.

- (A1) If x is an S-part of y and y is an S-part of z , then x is an S-part of z .
- (A2) If x is an S-part of y , then y is not an S-part of x .
- (A3) If x is an S-part of y , then y is such that in every possible world in which y exists x is an S-part of y .

The fourth axiom Chisholm presents is controversial even to many people who identify themselves as mereological essentialists:

- (A4) For every x and y , if x is other than y , then it is possible that x exists and y exists and that there is no z such that x is an S-part of z and y is an S-part of z .²³⁵

This principle, which we could call ‘The Contingency of Wholes’ is an explicit rejection of unrestricted mereology. The principle of unrestricted mereology (‘UM’) or collectivism is that, for any distinct x and y , there exists a z such that x and y compose, or ‘make up’ z . UM is itself controversial, since it states that, for any two individuals, regardless of their temporal or spatial spread, they ‘fuse’ together to compose a ‘third’²³⁶ individual. If UM is correct, then there is an individual made up of the electron in my nose furthermost from my center of gravity and the last dinosaur.

UM is one answer to the question posed by Peter Van Inwagen called the ‘Special Composition Question’ (‘SCQ’), namely, when is it true that there exists something such that some distinct things compose it?²³⁷ Some rivals of UM answer: ‘never’²³⁸ (nihilism), ‘when the things compose an organism’²³⁹ (organicism),

²³⁴ Note that Chisholm does not say anything about what a loose-part is except that they are not strict parts, i.e., they are parts the folk think an object can lose or gain yet retain its identity.

²³⁵ All four principles are in 1976, p. 151. By ‘other’ in ‘ x is other than y ’ Chisholm seems to mean either completely disjoint or partially overlapping.

²³⁶ I put the scare quotes because it is an open question whether composition is identity. If it is, the ‘third’ thing is not really anything in addition that we are ontically committed to beyond the two composing items. See Lewis 1991, pp. 72-87 and Wallace ms for details on this debate.

²³⁷ Van Inwagen 1990 pp. 21-33

²³⁸ Dorr 2002.

²³⁹ Van Inwagen 1990.

‘whenever we intuitively think some things do’²⁴⁰, ‘it is a brute, unexplained fact when some things compose something’²⁴¹ (brutalism). Chisholm, while not explicitly addressing this question (he wrote *Person and Object* eighteen years before Van Inwagen’s *Material Beings*), has an answer as well. Two things compose a thing when they are *strictly joined*:

(D.B.3) x is strictly joined with $y =_{\text{Df}}$ There is a w such that w is strictly made up of x and y .

But, when are two things strictly joined?

We might say that two things are *strictly joined* if no third individual falls between them; then we could say that two things are *joined* if part of the one is strictly joined with part of the other. This would allow us to say that scattered subatomic particles may be parts of an individual thing. But we would not need to say that a suite of furniture separated by various objects is itself an individual thing. Axiom (A4) and these criteria allow us to say that *some* things that are not in direct or indirect physical contact may be parts of the same individual thing, but they do not require us to say that *any* two separated things are parts of one individual thing.²⁴²

It is a bit difficult to tease out exactly what Chisholm had in mind, and it wasn’t his intention to answer the SCQ at this juncture, but from this and other passages it seems that Chisholm held (at this period) that two or more things compose something just in case they are relatively compact and fall under some commonsense sortal, where we allow *piece* or *piece of* _____ to count as commonsense sortals as well (where *piece* here implies contiguity of its constituent parts. This sense of ‘piece’ is not the same as the ‘parcel’ or ‘aggregate’ of the philosophers). As we’ll see, Chisholm held that if some bits of matter compose a hunk of matter that constitutes an object, that that hunk of matter goes out of existence when a tiny bit gets unattached and scattered from the (distinct) hunk of matter it used to be attached to. He does *not* believe that the former

²⁴⁰ Tacitly assumed by many such as Wiggins 1980

²⁴¹ Markosian 1998

hunk of matter is still around, just with a piece no longer as contiguous with the rest as before.²⁴³ To use our (not Chisholm's) terminology, Chisholm does not believe in *bare objects*. That is, he does not believe that there are aggregates which persist just so long as their parts do. He does, however, believe in what I call *partially nude objects*, that is, aggregates that 'fuse' or *aggregate* (verb) just so long as all of their parts are either joined or contiguous with each other in such a way that they fall under an Aristotelian substance sortal, including *piece* or *hunk of stuff*. Partially nude objects won't survive the macroscopic discontiguity of their parts, unlike bare objects. As we'll see, partially nude objects are an inferior and somewhat arbitrary postulate as compared to bare objects, and Chisholm's acceptance of the partially nude, but not completely naked objects, gets him into trouble. Chisholm did, however, in the second stage that we will discuss, embrace bare objects.

Switching to Chisholm's more tasteful usage, what we have called partially nude objects are what Chisholm calls *primary objects*.²⁴⁴ Primary objects are either simple particles, gunk, or fusions of them which fuse according to the criteria laid out above. Primary objects are also mereologically inflexible; they have all of their parts essentially. For Chisholm, primary objects are the genuine objects, and commonsense or 'vulgar' putatively part-changing objects are logical constructions out of the former. Given ME, is there no mereological change? There is:

If what I have said is correct, at least *four* types of mereological change are possible. The first two are coming into being and passing away; for wholes do come into being and pass away...And the second two types of mereological change are joining and disjoining. Objects may be joined together to form a whole that

²⁴² Chisholm 1976, p. 153.

²⁴³ See Chisholm 1975, p. 481 and fn 4.

²⁴⁴ Chisholm 1989, p. 78.

hadn't previously existed. And objects may be disjoined from each other and, unlike the whole that they had formed, survive the change.²⁴⁵

When we except creation *ex nihilo* and annihilation into nothing of simples or any composite whole's part(s), there are actually only *two* kinds of mereological change, since joining is equivalent to coming into being, and passing away is equivalent to disjoining. Lucretius held that no new whole comes into being by some particles becoming contiguous with each other; the supposedly new object existed as long as its parts did, but now it is differently arranged than before. Chishom, however, rejects bare objects.

How do primary objects relate to vulgar ones? Let's use Chisholm's example of a very simple table, with only two (salient) parts—a stump and a board, one of which changes every day. Suppose on Monday that the table is made up of parts A and B, Tuesday, of B and C, and Wednesday, of C and D. Let us suppose that the changes the table goes through lead the folk to say that it is the same table throughout the time period, and let us further suppose that at no time through the part-changes would we suppose that there is not a table occupying the region occupied by at least two of the aforementioned parts. Is the table on Monday the same table as the table on Wednesday? 'Yes', say the folk (and most philosophers). Is the table on Monday the same *primary object* as the table on Wednesday? 'No', says Chisholm (and other ME adherents). If, as Chisholm contends, there really are only primary objects, what is it that the folk are talking about? Chisholm calls the folk table an *ens successivum*—“the ‘successive table’ that is made up of different things at different times.”²⁴⁶ The

²⁴⁵ 1976, p. 153.

²⁴⁶ 1976, p. 98.

successive table and all other *entia successiva*, the chairs, cats, staplers and trees of common sense, are all logical ‘fictions’ or ‘constructions’ out of primary objects.

But what is the relation, between, say, the table made up out of AB on Monday and BC on Tuesday? Table BC is a *direct table successor* of AB. y is a direct table successor of x just in case x is a table at t_1 , y is a table at t_2 , and, there is a z such that part of z is part of x at t_1 , and part of z is part of y at t_2 , and at every moment between t_1 and t_2 inclusive, z is itself a table.²⁴⁷

What about the relation between AB and CD? CD is not a *direct* table successor of AB, but it is a table successor. Roughly, y is a (non-direct) table successor of x just in case x is a direct table successor of some z which is either a direct table successor of y, or is a direct table successor of a direct table successor of y, or is a direct table successor of a direct table successor of y or ... [repeated a finite number of times] ... of y.²⁴⁸ With some tinkering, we could generalize what it is to be a _____-successor for any count sortal, and define any part-changing object as a series or succession of mereologically inflexible ones.

Entia successiva, which are logical constructions, have their properties by proxy. For example, a successive table is blue (at t), iff some non-successive entity that stands in for it or ‘does duty for it’ is blue (at t). A successive table can prop up a plate and a glass only if a series of mereologically changeless, almost instantaneous

²⁴⁷ Chisholm’s official definition is as follows:

D.III.1 x is at a t a direct table successor of y at $t' \Rightarrow$ (i) t does not begin before t' : (ii) x is a table at t and y is a table at t' ; and (iii) there is a z, such that z is a part of x at t and a part of y at t' , and every moment between t' and t, inclusive, z is itself a table. (1976, p. 99)

-I changed condition (iii), because it won’t work as it stands. If A is a stump, and B is a board, if we turn the successive table into BC by placing stump C on top of B, turn it over and remove stump A, the ‘table’ z (ABC) that links x and y is not a part of x or y. Rather, part of z (AB) is part of x (AB) (an improper part), and part of z (BC) is an (improper) part of y (BC). Z itself is a table in this case, though a rather odd one.

tables, hold up a plate and a glass (or, rather, hold up a series of instantaneous plates and glasses).²⁴⁹

With our situation of the table from Monday to Wednesday, the question arises—how many tables are there? Three? One? *Four?* Chisholm replies:

In saying that there are exactly *three* tables in the situation described one is speaking in the strict and philosophical sense and not in the loose and popular sense. In saying that there is exactly *one* table one is speaking in the loose and popular sense and not in the strict and philosophical sense. But the statement that there are *four* tables—AB, BC, CD and the successive table—is simply the result of confusion. One is trying to speak both ways at once.²⁵⁰

How does Chisholm's ME account deal with the puzzle cases? Some it deals with quite readily, while with others it does not fare so well. We'll also see that ME can deal reasonably well with the standard types of objections to it.

With the Ship of Theseus, the question ‘*which* ship is identical to S1; S2 or S3?’ loses its bite. S2 is loosely identical to S1, and related by ship-succession. S3 is strictly identical to S1, and neither loosely identical to S1 nor strictly or loosely identical with S2. The confusion comes about when we believe that our commonsense loose concept of sameness over time is in contention with our strict ME intuitions. They are not. We are using distinct standards, and assume that there is only one standard. As long as we keep the standards clear in our minds we can avoid confusion. Chisholm can allow for conflicting intuitions and accept that both S2 and S3 are loosely identical to S1, but deny that a contradiction is entailed since loose identity is not transitive.

²⁴⁸ Chisholm 1976, p. 99.

²⁴⁹ “(D.III.8) The successive table that is at place P at time t is F at t =_{Df} There is exactly one thing at place P at t that constitutes a successive table at t and that thing is F at t.” 1976, p. 101.

²⁵⁰ 1976, p. 103.

Chisholm's account also deals well with problems of 'fusion'.²⁵¹ Here is how Theodore Sider presents the puzzle:

We begin with a cat, Tibbles, and a certain proper part of Tibbles, Tib, which consists of all of Tibbles except for the tail. Tibbles and Tib are obviously numerically distinct. But suppose now that Tibbles loses her tail; it seems that both Tibbles and Tib survive: Tib because nothing has happened to it beyond having something external to it detached, and Tibbles because cats, like trees, can survive the loss of certain parts... Tibbles and Tib are distinct; but they coincide after detachment.²⁵²

Chisholm's account lets us resolve the difficulty and avoid saying either that two things became one, or that Tibbles (at least loosely speaking) went out of existence. Tibbles before the tail-severance is loosely identical to Tib after the severance, but is strictly speaking distinct. Tibbles' tail is only an L-part of a successive cat, but an S-part of the hunk of matter that composes Tibbles. So, when Tibbles loses its tail, the strict and philosophical object goes out of existence. But now, by 'Tibbles' we refer to Tib, who is still in existence. Since Chisholm's account can solve these and other puzzles (e.g., the paradox of increase²⁵³), this gives us strong inductive support for Chisholm's ME account by inference to the best explanation.

What problems are there with Chisholm's earlier account? We will see which objections are *not* damaging to Chisholm's view, namely, the claims that ME is false since objects can gain or lose parts, or could have had different parts than they in fact did. The main problem is that Chisholm's (earlier) account, unmodified, cannot solve the paradox of coincidence. The pre-statue clay (assuming there is no part-changes), is loosely identical to the statue (since the folk would say it is the same *piece*), and

²⁵¹ See Wiggins 1980, p. 209, and Rea 1997, p. xviii.

²⁵² Sider 2001 p. 142

loosely identical to the post-squashing piece. But, the statue is loosely distinct from the post-squashing piece. So, the statue both is and is not loosely identical to the (strictly) identical piece (a primary object). We can see that the loose/strict distinction has not helped us here, nor has ME. Chisholm might likely reply that ‘loose identity’ is not transitive, and so we cannot derive a contradiction, or that x being loosely identical with y is compatible with x being loosely distinct from y . But, this just shows that the problems of what to say about commonsense objects have been put off, not answered. The loose/strict dichotomy ought to free us not just from putative contradictions between claims of strict identity, but claims of loose identity as well. And, his account doesn’t do this. Chisholm seems to claim that talk of loose identity is, while ‘loose’, still factive, and, if he hasn’t told us how to settle the facts, we still have the aforementioned unsolved problem of coincidence.

Chisholm’s partially nude objects have to both be and not be loosely identical to one and the same *ens successivum*. The problem is rooted in two features of his ontology: (1) He allows partially nude but not bare objects, and (2) he allows commonsense object sortals to give us criteria for identity of objects of any ontological kind, whether they be ‘loose objects’, ‘pieces,’ ‘fictions’ or ‘constructions’. We will see that something along the lines of his account fares better when we reject (1) (which is to assert that there are bare objects) and deny (2) (which is to deny Aristotelian Sortal Essentialism). Chisholm’s assertion that there are masses of matter is good, but when he combines this notion with the persistence conditions of ASE, he ‘takes back’ the problem-solving features that (bare) masses of matter are particularly placed to bestow. In addition, as it stands, Chisholm’s account

²⁵³ Chisholm 1976, p. 157.

is too much like a stage-theoretic four-dimensionalism, and falls prey to the same kind of triviality objections he sallies forth against the four-dimensionalist.

But, first, let's see what is *not* wrong with Chisholm's account. As Chisholm notes, most objections to ME come in one of the following forms:

- (A) My car had parts last week that it does not have this week. But this can't be true if ME is, so ME is false.
- (B) My car could have had different tires than it in fact has. But, this cannot be true if ME is, so ME is false.²⁵⁴

Chisholm notes how we can dissolve these objections by careful disambiguation.

With regards to (A), the ME'er can admit that a person can own a strict object which can get disjoined from one strict object, and joined to another. But, the ME'er will deny that when the car changes parts that we have one and the same (strict) object before us. Rather, the car now is a mereologically inflexible object, as was the previous car, and the later car is a car successor of the earlier car. The parts that changed were L-parts of the *ens successivum* car, but S-parts of each mereological whole which they constitute. Similarly, with (B), the ME'er can admit that the mereological whole car one now possesses can have a part, namely, all of the car except the tire, which could have been joined to a different tire. (In other words, ME does not apply to *entia successiva*). But that is not to admit that the very same (strict) object, a mereological whole, could have had different parts than it in fact does. These objections arise by an equivocation over 'part'.

So, these objections ought not to move the mereological essentialist. But, the fact that I am rejecting Chisholm's account should not lead us to see that the previous passage is useless, as I will be defending a form of ME myself later.

²⁵⁴ Chisholm 1976, pp. 154-155. These are responses to objections brought up by Plantinga 1975.

But, on to the main objections. What is the problem with objects which persist just so long as their parts are contiguous (namely, ‘partially nude objects’), as opposed to bare objects which persist just so long as all their parts do, regardless of contiguity? For starters, supposing so can lead to the contradictions noted above (in combination with ASE), but, mainly, denying that there are bare objects undermines the main, implicit motivation for ME to begin with.

It is curious that Chisholm spends quite a bit of time laying out a mereological essentialist system, defending it from objections, but little time motivating ME intuitions in the first place. His main, explicit motivations for ME are that it has “a certain intuitive plausibility; the support of an impressive philosophical tradition; and the fact that it enables us to deal with what otherwise seems to be insoluble philosophical puzzles.”²⁵⁵ This is kind of odd since most people think that ME is wildly counterintuitive, and the fact that many philosophers have thought something is not usually given as grounds for believing something, and, ME, at least in Chisholm’s form, seems to bring up as many problems as it solves.

I think we can get a hint of what is really motivating ME when we look at Chisholm’s only direct argument for it, and a few arguments by Michael Jubien. It appears that the motivation for ME, although Chisholm never explicitly states this, is that ME gives us a ‘third way’ between the bundle and substratum views of about objects. For the ME’ist, objects are not ‘bare particulars’ or *substrata*, nor are objects mere ‘bundles’ or *com-presences* of properties, objects are just bits or hunks of matter—full stop. An electron, for instance, is not some bare particular in which electronhood or negative charge inheres. Nor is the electron a compresence of ‘spin’

and ‘negative charge’, inhering in *nothing*. The electron is just a brute piece of matter, a primary bearer of properties (but not a bare particular). And the electron is nothing distinct from its (intrinsic) properties. The ME’ist will claim that our powers of abstraction and analysis of objects and their properties can, in some cases, impute an ontic structure to objects that is not really there (such as, the object x and a property distinct from x of filling space or having y and z as parts). Objects just *are* their parts, and their space-filling or energetic natures are not mere properties that they have. They are not abstract forms in (in-and-of-itself) featureless matter. They are not bare particulars, because what could a *thing* be that doesn’t have any properties except for having properties? Objects are just brute space-filling or space-energizing-and-distorting matter. The bundle/substrata dilemma is a false dilemma. Or so I say the ME’ist says.

Indirect evidence for this interpretation can be found by examining Chisholm’s only direct argument for ME. It is an argument by elimination that I call ‘the argument from modal vertigo.’²⁵⁶ In its bare outlines it goes like this.²⁵⁷

- (1) One alternative to ME is what we could call ‘Extreme Mereological Inessentialism.’ [‘EMI’] On this view, *any* whole could have been made up of any two or more things whatsoever.
- (2) EMI is obviously false. [Chisholm’s comments on this is that EMI implies haecceitism, which is false.]
- (3) All the other (viable) alternatives between EMI and ME, or modest mereological inessentialisms, would allow that, if a table x in W1 is made up of simple parts 1-10,000, and a table y in W1 is made up of simple parts 10,001-20,000, then there is a W2 where x is made up of parts 2-10,001 and y is made up of 1 & 10,002-20,000.
- (4) But, if this is allowed, then it would be allowed that there is a world W3 where x is made up of parts 3-10,002, and y is made up of 1-2 & 10,003-20,000.

²⁵⁵ Chisholm 1976, p. 151.

²⁵⁶ Chisholm 1976, pp. 147-49.

²⁵⁷ I have not mentioned some of the other alternatives to EMI and ME he discusses.

- (5) But, if this is allowed.....then we have a world W10,000, where x is made up of parts 10,001-20,000, and y is made up of parts 1-10,000.
- (6) But then modest mereological inessentialisms imply EMI.²⁵⁸
- (7) So, ME is true.

One of the lessons here seems to be that we track composite macroscopic individuals across worlds, *not, pace* Lewis,²⁵⁹ by tracking qualitative similarity (which gets us only loose and popular transworld identity, which is probably what Chisholm would regard counterpart relations as), but by tracking the possible arrangements of the non-composite simples or base-level primary objects. Chisholm says as much in his earlier “Parts as Essential to Their Wholes”:

The theory of possibility does not require us to say, of any of these commonsense objects—the automobile, the table, the station...and the fish—that they exist in any other possible worlds. But it does require us to say, of the strict and philosophical wholes that constitute these common sense objects, that *they* exist in other possible worlds.

The theory of possibility does not require us to say of any *nonprimary* object that it exists in any possible world other than this one. But it does require us to say that *primary* objects exist in possible worlds other than this one. What we can truly say about the unrealized possibilities of nonprimary things may be reformulated more precisely in terms of the unrealized possibilities of primary things. We do not need to suppose, therefore, that there are possible worlds which are indiscernible except for the fact that some nonprimary things are constituted by one set of primary things in one of them and by another set in another.²⁶⁰

What parts a thing has in not *merely* one more property we can use to track a thing—it is the very basis of (composite) thinghood itself, the minimal necessary conditions for a thing to have any properties whatsoever, be called a thing, or be reidentified. A thing just *is* its stuff. It is not some thing other than its parts, which can have the property of having some-parts-or-other, nor is a thing a cluster of properties, one of

²⁵⁸ Note that the move to (6) is invalid. [The argument does not, for instance, show that my foot could have been composed of the Empire State Building and Julius Caesar, which EMI, unqualified, seems to suggest]. I present Chisholm’s argument to point out certain features of it, not, however, to condone it.

²⁵⁹ See Lewis 1986.

²⁶⁰ 1989, p. 79

which happens to be ‘having some stuff x as a part’. This is not to say that things cannot be predicated of as having certain material parts. But, the ME’ist contends, having some material parts is not just one feature among many that a thing contingently has.

Chisholm himself renders modes and attributes as explicitly distinct from bodies or substances in the later *Self-Profile*. Modes, or the ways things are, are dependent upon their substrates. Substrates, or things themselves which have modes, are not modes of anything (e.g., regions). And a substrate for Chisholm is a substance—not a substratum, a bare particular, or prime matter. And his definition there of a thing or *substance* is, “x is a substance iff: for all y, if y is a part of x, then x is necessarily such that y is a part of it.”²⁶¹ The defining feature of things is having all the parts they do. Things are not modes of anything else, and so having all the parts they do are not modes or attributes of anything else.

The notion of ME as motivated by a ‘third way’ between the bundle and substrata views has also been at work in the work of Michael Jubien, but seemingly goes unnoticed by one interlocutor, Theodore Sider. Jubien argues in the following way for ME in *Ontology, Modality, and the Fallacy of Reference*:

....think about things in the abstract, in isolation from everyday descriptions and associations. So first recall that an arbitrary thing is just the occupier of some arbitrary, full region of space-time. Let x be any such arbitrary thing, and let y be an arbitrary proper part of x...there also exists a third thing—the thing that is all of x except for the part y. Let’s call it z. If we agree to use ‘+’ and ‘-‘ in the natural way for mereological sum and difference, we have $z = x - y$. Now imagine another situation, as much like this situation as possible, but in which the entire thing y simply does not exist. This certainly *seems* like a situation in which x doesn’t exist either, but z does. I think it very difficult to deny this intuition without somehow

²⁶¹ 1986, p. 67.

relying on prior convictions involving everyday descriptions and associations, like the belief that a certain *house* could have had (somewhat) different parts.²⁶²

Sider replies:

The crucial claim in this argument is that in a possible situation in which y does not exist but z does, x does not exist either. What is the support for this claim? Jubien asks us to forget about nearly all features of the objects in question, but he does draw our attention to the fact that x fills a certain region of spacetime. In particular, Jubien draws our attention to the composition of x: it is the sum of y and z. But why is this particular feature of x the only feature one may consider in thinking about x's modal properties? Let us suppose that x is, in fact, a house. *Being a house* is then just as much a feature of x as is *being composed of y and z*; in thinking about x's modal properties, why should we abstract away from the former, but not the latter?....*think about x in abstraction from its material composition*; just think about the fact that x is a house. Couldn't that object have existed even though one of its small parts failed to exist? The answer now seems to be yes...the problem for Jubien here is that he is committed to an unjustified asymmetry between predicates like 'is a house' on one hand, and 'is composed of y and z' on the other...the latter expresses a property that is essential to its bearers, whereas the former does not. Why this difference? Here is an object with many properties. It is a house. It is made up of certain parts. *The former is just as good a candidate to give the essential nature of the object as the latter*....Jubien's choice of the latter candidate appears arbitrary.²⁶³

But Jubien's choice of the latter is anything but arbitrary. Sider seems to ignore crucial passages of Jubien (pp. 41-45) where the latter argues that "the property *being made of this stuff*...is a perfect candidate for being the haecceity of the thing in question."²⁶⁴

Haecceities, or primitive 'thisnesses,' are often introduced to deal with problems like the following. Max Black is famous for introducing the example of a world wherein there are two qualitatively indiscernible globes.²⁶⁵ It seems obvious that a world just like this world could have existed where the two globes have reversed positions. But, this does not describe a world that is qualitatively distinct,

²⁶² 1993, pp. 18-19.

²⁶³ Sider 1999, p. 288. Two longer emphases mine.

²⁶⁴ Jubien 1993, p. 43.

and so, either this is not a distinct world, there is only one object in this world, the identity of indiscernibles is false, or, there exist brute and primitive individuating (non-qualitative) features, or merely formal properties, such as *being this globe*. Some have settled for the latter, the classical name for these brute individuators being ‘haecceities’ or *thisnesses*. But, this often comes across as a desperate and *ad hoc* move.

Jubien asks, what counts as a qualitative difference? In particular, does *being made of such and such stuff* count as a *quality*?²⁶⁶ Since the globes are made of different stuff, and if the foregoing type of properties are qualities, then the positing of qualitatively indistinguishable globes does not make sense. But, *being made of this stuff* does not seem like a *general quality*, since, if Jubien’s right that things are nothing more than precise parcels of stuff, the property is not repeatable or multi-instantiable.²⁶⁷

This, however, would play into his hands:

We already saw that the property *being made of such and such stuff*, considered as a property of official *things*, could not be general. If this is enough to show it isn’t a quality, and if haecceities *must* be nonqualitative, then it is a very plausible candidate for being the haecceity of the thing that has it.²⁶⁸

But, whether or not we want to count properties like *being made of such and such stuff* as qualities that a thing has, Jubien notes that

What is important is that the property is a perfect candidate to serve as a thing’s haecceity *whether we say it is nonqualitative or not...* This candidate does everything we could reasonably ask of a haecceity: It is an essential property of the thing that has it. It is necessary that if anything has the property, then that thing is the thing that actually has the property. To the extent that it makes sense to speak

²⁶⁵ Black 1952.

²⁶⁶ Jubien 1993, p. 42.

²⁶⁷ Ibid., pp. 42-3.

²⁶⁸ Ibid., p. 43.

of other possible worlds, and to the extent that there is any need to ‘ground’ talk of ‘identity across possible worlds,’ this candidate fills the bill. So I nominate it for the office.²⁶⁹

I second the nomination. Jubien is quite right that the property of being made of some stuff is a perfect candidate to play the role of the haecceity or individuator for an object. We get all the benefits of brute individuation, with none of the cost of weird particularizing but non-qualitative properties:

Appeal to haecceities has often been regarded as a desperate measure, one primarily designed to save an uncertain intuition. Desperate, it is said, because it is an *ad hoc* appeal to what are fundamentally mysterious entities...I think some conceptions of haecceities have invited this criticism, but the present one does not. There is nothing mysterious about the idea that things are made up of stuff. And there is nothing mysterious about the idea that the stuff over here is different from the stuff over there. So there is nothing mysterious about the property *being made of this stuff*.²⁷⁰

While this solution does merely switch the problem of individuating from the individual to the stuff, it does, it seems rightly to me, as well as Jubien, put the primitiveness where it belongs.²⁷¹

While Jubien does not explicitly lay out the idea of the stuff of a thing playing the haecceity-role as a method to maneuver between the horns of the bundle and substratum options, we can see how it would help. The stuff of a thing plays the role of the bare particular, but there is nothing bare or odd about it. The stuff is a bare object, and bare objects are like clothed bare particulars.

Looking at things in this way has several advantages. Not only do we get a model of predication that steers between the goofy (bare substrata) and the goofier (bundle theory), and solve the problem of Black’s globes, and get answers to many

²⁶⁹ Ibid., p. 45.

²⁷⁰ Ibid.

²⁷¹ Ibid., p. 46.

troubling questions about persistence and possibility, but we also have the tools to break a certain impasse.

We can note here, and in other defenses and attacks of ME²⁷², a certain pattern and impasse. The ME'ist says, think of certain hunk of stuff—don't think about anything else about 'it'. How can *it* survive a loss of parts? Those non-sympathetic to ME reply—well, tell me more about it. What is the hunk of stuff? Is it a house? Then of course it can. Those who are against ME think that the features that we think of as giving an essence depend on the description of the item: "When viewed *as a house*, that object might have lacked *y*; when viewed *as a sum*, *having y as a part* is essential to it."²⁷³ Whereas those in favor of ME believe that there is nothing to giving an essence of an item other than listing its ultimate parts (or, referring to a collection of gunk).

We can break this impasse in favor of ME when we try to see ME as motivated by being a third way between the substata and bundle theorists. If the primary bearers of properties are hunks of stuff, then Sider's demand that we 'think about *x* in abstraction from its material composition' is absurd, as is his claim that properties like 'being a house' are just as much a candidate for being essential to an object as being composed of *y* and *z*. The ME'ist can defensibly claim that 'bare hunks of stuff' are all that we pick out when we pick out objects. For instance, look again at the Sider quote: "When viewed *as a house*, that **object** might have lacked *y*; when viewed *as a sum*, *having y as a part* is essential to **it**".²⁷⁴ What is '*it*', or the *object* such that it can be viewed as a house, or as a mere hunk of stuff, and can be

²⁷² E.g., in Jubien 2001.

²⁷³ Sider 1999, p. 289, emphasizes mine.

thought of multiple ways so that different features are apparently essential to it under different descriptions? Sider's views of physical objects is utterly mysterious, whereas Jubien's is utterly clear. For Sider, there is some odd thing such that it can have different persistence conditions when thought of differently. For Jubien, there's just some stuff, and all of it is essential to it.

If the mysterious 'it' is nothing but the hunk of stuff, and such hunks are the primary bearers of properties, then, not only are Sider's claims about 'it' (e.g., that it could have lacked a part when thought of one way) false, but, Jubien's choice of 'being composed of x and y' versus 'being a house' as giving the essential features of an object is not 'arbitrary', *pace* Sider.

Furthermore, this view naturally combines with explaining our modal intuitions about genuine substances as a kind of mereological combinatorialism from certain bits of stuff, and *not* as built up out of a Humean mosaic of property distributions. If the ME'ist views things this way, then it seems she has a leg up. The ME'ist can claim that most of our modal intuitions about putative substances are actually about properties and property entailment, whereas our modal intuitions about genuine substances is about bare hunks of stuff. For instance, Jubien, in "Thinking About Things,"²⁷⁴ claims that certain intuitions, such as that a certain dog, *Fido*, is necessarily canine, is not at all about a substance—Fido. Rather, our intuition is that if some-stuff-or-other has the property of *being Fido*, then that same stuff would have the property of *being canine*. Our intuitions about the hunk of stuff, however, that composes Fido now, such that it can not lose any parts, *is* an intuition about a genuine

²⁷⁴ Ibid., emphasizes mine.

²⁷⁵ 2001

substance. I won't decide on this issue, however, but merely want to point out what *seems* to be motivating the mereological essentialist. Genuine objects are nothing more than precise collections of stuff. *Having x as a part* is not merely one of many properties an item has (although of course it can be expressed by a predicate), rather, this predicate picks out part of x such that it could not have any properties (without that part) whatsoever. With this digression, I was merely hoping to show some further motivations for ME than that offered by Chisholm, which amounts mostly to just sketching out an account that can solve certain problems, with no arguments for his basic principles. Also, though, I want to use the foregoing to point out that, *if* these are some of the thoughts behind Chisholm's ME, then he would do best to favor bare objects over the partially nude. If they are not his thoughts, though, we would still do well to favor the bare objects over the partially nude.

Why, though, does Chisholm believe in partially nude objects, but not bare ones? What are the advantages of his position? One advantage is that he gets to severely delimit the number of objects. There is no object composed of me and the Eiffel Tower, although there is the primary object (right now) that constitutes me and the one that constitutes it. I would also agree that we would want to rule out objects such as the fusion of me and the last dinosaur. But, why, if I have a hunk of clay in my hands, will the primary object that constitutes the hunk go out of existence merely by my tearing off a piece? Why isn't the same primary object still around, just scattered? If I continually tear off pieces, combine them with bits and pieces from other bits of clay, I can casually be creating and destroying objects all afternoon while I play with my nephew. Also, since macroscopic objects, in the actual world, are

actually (within their interior regions) mostly empty space, why does apparent macroscopic contiguity and ‘stuck-togetherness’ matter so much for a hunk of stuff to be an object? Another way of asking the question is, why is Chisholm’s mereology so restricted?

Chisholm never quite explains why *joining* is so important to a hunk of matter’s existence, and staying joined so essential to its persistence. If I divide up a glass of water into two glasses, and then pour the water from one glass back into the original glass, I have destroyed and then re-created the same object.²⁷⁶ Why not just believe that the object existed throughout, and had its parts scattered, and its parts were then made more contiguous again? Certainly nothing about accepting ME *per se* requires us to accept *joining* as a condition for composition. Also, we can ask the following Euthyphro-like question—‘Are partially nude objects countenanced by the folk as objects because they *are*, or, are partially nude objects objects because the folk countenance them?’ Obviously, the former seems more true than the latter.²⁷⁷ If so, what is to prevent *bare objects* from being objects as well? I will argue though, that Chisholm should accept bare objects over partially nude objects in part because of Theodore Sider’s argument from vagueness, but also because only by accepting this can Chisholm get around certain objections given by André Gallois.

We can object to partially nude objects by looking at a paraphrased version of a thought experiment of Sider’s.²⁷⁸ Imagine that a precise bunch of stuff, either ‘simples’ or ‘gunk’ composes a fusion; in this case an iron cube. (In the rest of this chapter, for simplicity, I will write as if there are simples only, and not gunk, but

²⁷⁶ Chisholm at this time accepted gappy existence. See 1989, p. 79.

²⁷⁷ I have already argued against conventionalism in Chapter Two.

nothing should hinge on this assumption.) Now, imagine something like the following operation taking place. At t_1 we turn on a strong magnetic field which permeates the sealed room the cube is in, and gradually moves all the constituent parts of the cube away from its center of gravity at the rate of one $\frac{1}{4}$ Planck length [$10^{-33}/4$ cm] per one millionth of a nano-second. Suppose that at some time t_3 , when the simples are, say, spread around the room evenly in an invisible cloud, they no longer compose an object. The problem with this is that if composition is definite, then there must be some exact time t_2 where the simples compose a fusion, where the next instant they do not, and this change is something like the $\frac{1}{4}$ Planck length distancing of its bits apart from the initial center of gravity, over the course of one millionth of a nano-second from t_2 .²⁷⁹ This is absurd. Any of (these) kind of changes which could supposedly destroy the fusing of the simples and hence the fusion, and hence the object, are arbitrary. And arbitrariness won't do. Furthermore, since composition is definite, and whether composition holds should not be arbitrary, if you hold that the simples do not compose a fusion when they are spread around the room in a cloud, then see what occurs when you reverse the magnetic field and watch them coalesce. By the same kind of reasoning, if we reject arbitrariness, then the simples cannot ever come to compose a fusion—that is, the cube can never come into existence as an object! It will rather be a bunch of simples ‘arranged cube-wise’,²⁸⁰ but not a cube. So, Chisholm should not accept that *joining* is a precondition of being a fusion. But, if he wants a system of mereological essentialism similar to his own, he ought to accept

²⁷⁸ 2001, p. 122.

²⁷⁹ Please allow me the convenience of distinct, yet contiguous ‘instants’.

²⁸⁰ This the view Peter Van Inwagen espouses, at least for non-organic material objects, in 1990.

that bare objects (fusions which persist just so long as all their parts do), not partially nude ones, are the primary objects.

Furthermore, Gallois in *Occasions of Identity* gives the following objection to Chisholm's program.²⁸¹ Most properties that objects can gain and lose are what he calls 'mereologically destabilizing properties' ['MDP']. That is, most salient properties or changes that an object goes through, in the actual world, result in a change of parts. For instance, painting Theseus' ship, or his ship being such that Theseus walked across it. The latter would obviously scuff off a few molecules.

Gallois defines MDP as follows:

Let us say that property ϕ is mereologically destabilizing just in case it is physically necessary that if x has ϕ then x changes at least one of its component parts.

If Chisholm's account was correct, then there could be no genuine or primary object which has been made to, say, glow; heating an iron cube to the point of glowing brings about the release of photons. Theseus could not walk across his (mereologically stable) ship. Supposing for simplicity that Theseus does not lose any parts, Chisholm can however reply that Theseus can indeed walk across an *ens successivum* that changed parts—a ship series. This, however, is not quite a successful reply. Chisholm must admit that not only can objects not change their parts, but, strictly speaking, objects can hardly change at all.

This problem just disappears if Chisholm accepts bare objects and loosens up his restricted mereology. If he does, all the changes we would like to predicate of objects *can* occur to mereologically stable objects. All such mereologically destabilizing properties Gallois discusses can be cashed out in terms of internal

changes in larger fusions which have the before- and after-change fusions as proper parts. A cube can come to glow, since that is a change in re-arrangement in all the particles or mass-energy that compose the cube before it is heated and the photons which are emitted afterward. Theseus *can* walk across his ship, since what he walks across contains the fusion of all the particles that constitute the ship when he starts walking, and the same fusion after he finishes walking.

However, if Chisholm did pursue this line, he would be giving up considerably on the spirit of his program. There would be no need to posit *entia successiva* in the way he proposed. Talk about the whole life of Theseus' ship can be cashed out in terms of a very large fusion which always exists, which has different proper parts that have something like the property of *being Theseus' ship* at different times. If, as Chisholm is wont to do, we would like to ignore this large fusion and instead focus on just those bits that have the ship property, it seems we would have to identify Theseus' ship with a succession of *time-slices* of the succession of proper parts of the large fusion which successively constitute the ship. But Chisholm is rabidly anti-four-dimensionalistic. A way out of this would be instead to accept bare objects, but deny four-dimensionalism, and rather identify the 'ship' with a property, mode, or process of a succession of distinct bare-objects. And this is exactly what he does later. Although I cannot find explicit mention of this anywhere in Chisholm's material, it seems that he changed his position in part to avoid having a four-dimensionalist type position.

We can see that Chisholm's proposal, which countenances partially nude objects, actually is too close to four-dimensionalism for (his) comfort. Indeed, the

²⁸¹ 1998, Part III, Chapter 8.

very objections Chisholm gives to four-dimensionalism apply to his own account. In many ways, Chisholm's account is no different than a stage-theoretic four-dimensionalism.

Chisholm's main objection to four-dimensionalism, as contained in Appendix A to *Person and Object*, is as follows. The main arguments for four-dimensionalism are that it can help us solve a variety of puzzles about identity through time. For instance, Heraclitus famously asks, how can we bathe in the same river twice, since rivers are water, and the waters keep flowing on and on? Quine answers that things have temporal as well as spatial parts, and “that the temporal parts of individual things are like the temporal parts of the careers, histories, or biographies of those things.”²⁸² Quine writes:

a physical thing...is at any moment a sum of simultaneous momentary states of spatially scattered atoms...Now just as the thing at a moment is a sum of these spatially small parts, so we may think of the thing over a period as a sum of the temporally small parts which are its successive states.²⁸³

So, the ‘solution’ is that “you *can* bathe in the same *river* twice, but not in the same river stage.”²⁸⁴

But, as Chisholm notes, if this solution is to genuinely solve Heraclitus’ puzzle, it must “*presuppose* the concept of the persistence of an individual thing through time—the concept of one and the same individual existing at different times. Even if all rivers are sums of river stages, not all sums of river stages are rivers.”²⁸⁵ How do we know that the different stages that Heraclitus bathed in are stages of the *same* river? Quine’s ‘solution’ to this is in part to define a relationship called ‘river-

²⁸² Chisholm's gloss on Quine. Chisholm 1976, p. 143.

²⁸³ Quine 1959, p. 210. Cited in Chisholm 1976, p. 143.

²⁸⁴ Quine, 1963, p. 65. See Chisholm 1976, p. 143.

kinship,²⁸⁶ what Chisholm calls ‘cofluvial’. We can say that “*a*, *b* and *c* are stages of the same river iff they are *cofluvial* with each other.”

Chisholm’s complaint then is that there is bootstrapping circularity going on here:²⁸⁷

Q1: How do I step into the same river twice?

A1: By stepping at different times into things that are cofluvial.

Q2: What is it for things to be cofluvial?

A2: Things are cofluvial provided they are temporal parts of the same river.

Indeed, we can make the same charge against Sider’s stage-theoretic four-dimensionalism, which holds that objects that we think persist are actually just successions of instantaneous stages related by a temporal counterpart relation:

Q3: How do I meet Ted twice?

A3: By meeting two stages that are Ted-temporal-counterpart-related.

Q4: What is it for things to be Ted-temporal-counterpart-related?

A4: Things are Ted-temporal-counterpart-related provided they are stages of the same person.²⁸⁸

The four-dimensionalist can respond that they can give a more informative answer than A2, by appealing to causation. Something like: Things *x* and *y* are cofluvial (short for, ‘river-temporal-counterpart related’) just in case *x* is a river, *y* is a river, and *x*’s being the way it is causes *y* to be the way it is, or *x* causes some *z*₁,... which causes some *z*_n, where *z*_n causes *y* to be the way it is, and each of *z*₁...*z*_n is a river.

Indeed this is just what Sider does.²⁸⁹ Note, however, that this is *very* similar to the

²⁸⁵ Chisholm 1976, p. 143.

²⁸⁶ Quine 1963, p.66

²⁸⁷ The following parrots an imagined exchange in Chisholm 1976, p. 144.

²⁸⁸ Sider 2001, pp. 193-208.

²⁸⁹ Well, not exactly. But, Sider connotes things along this lines, and it seems likely that something along these lines would be his reply to the triviality objection of Chisholm. Cf. Sider 2001 p.103 “...I accept that causation is a prerequisite of personal identity,” and ibid. p. 94 “The temporal counterpart relation is the same relation used by the worm theorist to unite the stages of spacetime worms...it may be analyzed in some way (in the case of persons perhaps in terms of memory or bodily continuity)...”. Also, see ibid., pp. 227-236

way that Chisholm himself defines a ‘direct table-successor’ and the non-direct ‘table-successor’:

D.III.1 x is at t a direct table successor of y at $t' =_{\text{Df}}$ (i) t does not begin before t' ; (ii) x is a table at t and y is a table at t' ; and (iii) there is a z , such that z is a part of x at t and a part of y at t' , and at every moment between t' and t , inclusive, z is itself a table.

D.III.2 x is at t a table successor of y at $t' =_{\text{Df}}$ (i) t does not begin before t'' (ii) x is a table at t and y is a table at t' ; and (iii) x has at t every property P such that (a) y has P at t' and (b) all direct table successors of anything having P have P .²⁹⁰

There is even a Chisholmian analogue for a spacetime ‘worm’, namely, an object-series:

(D12) C is an object series $=_{\text{Df}}$ C is a class having as its members an object-pair x , all the object successors of x , everything of which x is an object successor, and nothing which is unrelated to x by object succession.²⁹¹

And, of course Chisholm would have to say something like this, since, as we can see, the template he used above can be used against him:

Q5: How can I touch the same table twice?

A5: By touching at different times distinct items that are related by table-succession.

Q6: What is it for things to be related by table-succession?

A6: Things are related by table-succession provided they are both tables and are parts of the same table-series.

His definition of table-succession and table-series gets him out of the charge of complete circularity, just like my Sider-imputed definition which employs causation.

So, the four-dimensionalist is really no worse off than Chisholm here, since he can avail himself of some criteria for *cofluviality* or ‘river-kinship’ which is just as informative as Chisholm’s definition of ‘river-succession’. One thing that is interesting to note here is that Chisholm’s notion of ‘loose identity’ and Sider’s notion of ‘temporal-counterpart-related’ play the exact same role, namely, what I call a *fudge factor for the folk*. In both Chisholm and Sider’s case, *there is no genuine*

²⁹⁰ Chisholm 1976, p. 99.

persistence (for ordinary objects). There is, rather, a succession of instantaneous objects, each distinct from the next, and they are sometimes tied together by relations like ‘river-kinship’ or ‘river-succession’. Sider says that the stages are instantaneous objects which are part of a four-dimensional worm F when the stages are temporal-counterpart-related and each are F. Chisholm says that an *ens successivum* which is F is a succession of instantaneous objects each of which are F and each of which are F-direct-successors of one of the others in the series.

These both give us a “fudge factor for the folk” in that each system allows us to have an “as-if” talk of persistence of commonsense items, while not really holding there to be any that persist across time. Granted, Chisholm’s system is far different, in that objects (can) endure, and if objects never changed parts, they would not be like stages at all. But, given how the world in fact is, and given that Chisholm accepts partially nude objects which exist only when joined, (composite macroscopic) objects would exist only for an instant, and Chisholm’s system would amount to the same thing as Sider’s.

The problem with both systems is that neither really gives us a theory of *persistence* at all—only a way to save appearances after admitting that there really is no persistence. Or, more charitably, *if* the world is as they say it is, given that there is no genuine persistence, their accounts make the best of a bad situation, and tell us what the best candidate for ‘persistence’ is; either temporal counterpart relations or object-succession. But both these accounts have too much of a ‘fictionalist’ flavor—

²⁹¹ Chisholm 1989, p. 77.

indeed, Chisholm admits as much himself,²⁹² as does Sider,²⁹³ and if we can account for commonsense objects as persisting in a way that does not treat them as strictly speaking *not* persisting, then we ought to do so. Chisholm's account ought to be accepted only if we cannot find some other entities to play the persisting object role—entities that genuinely exist and persist over time.

And Chisholm *did* find some other entities to play the commonsense object role: pairs of bare objects and *modes*. Chisholm changed his mind. I am not sure of the reasons for it, or if they have anything to do with the concerns I raised, but later, in his *Self-Profile* volume (1986), and “Scattered Objects” (1987), he allows both bare objects and modes, and the latter are somewhat like processes.²⁹⁴

Chisholm quite clearly accepts bare objects at this period. No longer is being joined a necessary condition for the persistence of a fusion:

If Harry is that object that has parts *A*, *B*, and *C* and that occupies the place that Charlie occupies on Monday, doesn't Harry exist with precisely the *same* parts on the next three days? He becomes somewhat scattered on Tuesday, more widely scattered on Wednesday, and still more widely scattered on Thursday when he becomes a mass of jetsam.²⁹⁵

²⁹² Chisholm 1976, p. 96 “The point could also be put by saying that such things as the Ship of Theseus and indeed most familiar physical things are really ‘fictions’...” Chisholm excepts *persons* from this treatment, however (see 1976 chapter III, section 5).

²⁹³ Sider 2001, p. 96: “I must concede, however, that tenseless statements of ‘cross-time’ identity are false...,” and, *ibid.*: “But, assuming four-dimensionalism is true, counterpart-theoretic persistence is as good as it gets, and is thereby the best candidate, and is thereby true persistence.” The last phrase does not follow. The ‘best candidate theory’ of content does not really entail that the *best* candidate for the use of a term *F* is always the true candidate for the term *F*. If this was so, then ‘the ether’ would mean ‘the vacuum,’ which was obviously the best candidate. The best candidate theory states that the candidate which best meets certain minimal conditions is the true candidate for reference, and I can’t see how stage-theoretic persistence meets the minimum standards. We will speak of the ‘best candidate theory of reference/content’ more in Chapter Five.

²⁹⁴ Chisholm does, however, officially naysay process ontology (see Chisholm 1989, pp. 94-95). But, what he was arguing against was both four-dimensionalisms and radical process ontologies such as Whitehead’s. Chisholm would most likely approve of the kind of process ontology I develop, in part because it is based on his.

²⁹⁵ Chisholm 1989, p. 93.

However, he never gives up ME, but merely expands its scope to cover scattered objects. In “Scattered Objects” he defines a substance in this way:

(D4) x is an individual substance =_{Df} If x has parts, then for every y , if y is part of x , x is necessarily such that y is part of it.²⁹⁶

He also calls the objects that ME is true of *aggregates* or *heaps*,²⁹⁷ and, in allowing them to persist just so long as all of their parts do, has squarely entered the bare objects tradition, and given up on the partially nude.

Part of the explanation for this could be that Chisholm realized that his *entia successiva* account did not solve the paradox of coincidence. There is some circumstantial evidence to think this. In the *Self-Profile* volume, to deal specifically with coincidence, he develops what I call his “mode account”. Chisholm notes that one way to solve the paradox of the statue and the clay is to hold that, while ‘the statue’ and ‘the clay’ both refer, that ‘the statue’ picks out, not a *substance*, but rather a *mode* of a substance. And the substance of which the statue is a mode is, of course, the piece of clay. In this instance, the piece is a *substrate* of the statue.

But what is a *mode*, as Chisholm understands it? We know that modes are *not* (i) essential properties of the substrates that have them, or (ii) universal properties of things (i.e., properties that everything has).²⁹⁸ Roughly, modes are reified ‘ways’ that objects can be, and can change their substrate. Chisholm lays out the following desiderata for a definition of mode:

Our definition...should allow us to say that the statue is a mode of the piece of metal—and that the piece of metal is not a mode of the statue...[and] should also allow us to say that a house is a mode of a heap or aggregate of building

²⁹⁶ Ibid.

²⁹⁷ Chisholm 1986, p. 68.

²⁹⁸ Ibid., p. 66.

materials—and that the heap or aggregate of building materials is not a mode of the house.²⁹⁹

Chisholm wants to divide the (physical) world clearly into modes and substrates/substances. Substances or substrates are bare objects, and modes are commonsense objects which are modes of the substances. His definition of mode is:

(BD1) x is a mode of y =df (1) neither x nor y is an abstract object; (2) there is a z which is such that y , but not x , is necessarily such that it has z as a part; and (3) there is a P which is such that (a) x exemplifies P and (b) x is the only thing other than y which is necessarily such that it has P iff y has P .³⁰⁰

It is best to turn to examples to clarify. *Shipping* is a mode of an aggregate just so long as neither *shipping* nor the aggregate are abstract, the aggregate has a part such that the aggregate, but not the *shipping* mode, necessarily has that part as a part, and, there is a property SHIPPING such that *shipping* exemplifies it, and *shipping* is the only thing other than the aggregate which is necessarily such that it has the property of SHIPPING iff the aggregate has the property of SHIPPING.

It is very difficult to understand this clearly. It is especially hard to know if, in describing this view, that one may be imputing to Chisholm views or motives he did not have, since Chisholm is very brief here. It seems that *shipping* is not a universal or a property, but rather a reified *activity*. *Shipping* is not a property, SHIPPING is, and both the aggregate and the *shipping* have that property. The *shipping* activity, however, has the property indirectly and derivatively, while the aggregate has the property directly. The activity somehow ‘borrows’ the property from the aggregate. But, the aggregate is not necessarily SHIPPING, whereas the *shipping* is.

Modes can *move* from substrate to substrate:

²⁹⁹ Ibid.

³⁰⁰ Ibid.

If a substrate is a ship, then, it has a mode which is also a ship. If the substrate ceases to be a ship, and if the mode does not transfer to another substrate, then *that* mode ceases to be. And if, in such a case, the substrate continues to be, then it would have other modes.³⁰¹

Chisholm says more about what it means for *shipping*, for instance, to cease to be.

Chisholm offers an answer as follows:

(BD2) *P* is a *modal essence* of *x* =_{df} There is a *y* such that: (i) *x* is a mode of *y*; (ii) *x* has *P* and *y* has *P*; (iii) *y* is possibly such that it does not have *P*; and (iv) *x* is necessarily such that, if *y* ceases to have *P*, and if *x* does not become a mode of anything else, then *x* ceases to be.³⁰²

Using our previous example, SHIPPING would be a modal essence of *shipping* if there is an aggregate *y* such that *shipping* is a mode of *y*, *shipping* has the property of SHIPPING and *y* has the property of SHIPPING, but, *y* might not be SHIPPING, but, *shipping* is necessarily such that, if *y* ceases to be SHIPPING, and if *shipping* does not become a mode of another aggregate *z*, then *shipping* would cease to be.

It still is quite mysterious what these modes are. Perhaps Chisholm can clarify things by saying some more about substrates or substances that modes are modes of. He gives the following definition:

(BD3) *x* is a *substance* =_{df} *x* is a contingent thing; and there is no *y* such that *x* is a mode of *y*.³⁰³

He also asserts that ME is true of substances.³⁰⁴ So, in contrast to modes, substances are not modes of anything, but modes are modes of substances. Furthermore, if substances have parts, they have them necessarily. Modes, by contrast, can change their parts:

³⁰¹ Ibid., pp. 66-67.

³⁰² Ibid., p. 67.

³⁰³ SP p. 67. Chisholm notes that this definition of *substance* won't square well with those who think that God is a substance and a necessary being.

³⁰⁴ Ibid., p. 67, principle (BA1).

If the ship W is a mode and not a substance, we need not hesitate to say that it changes its parts from one day to the next. But the various aggregates that the situation involves *never* change their parts. For they are substances.³⁰⁵

We have the outlines of a research program. I call, perhaps controversially, Chisholm's modes *activities* partly because of a process of elimination. Modes are not essential properties of anything.³⁰⁶ Modes are not substances, or things. But, particulars like a ship or a table *are* modes. Modes have properties and modal essences,³⁰⁷ and are reified particulars. Aggregates *have* ships and tables as modes, but aggregates which have a table or a ship as a mode do not *count* as a ship or a table,³⁰⁸ only the modes do. I cannot interpret what these modes could be except concrete activities, e.g. '*a* shipping', such that different substances *undergo* it.

If this is the proposal, then it has interesting implications. It certainly seems to dissolve some of the puzzle cases. In the case of Ship of Theseus, the set of aluminum planks which constitute the replacement ship (S2) is the substrate of the same *mode*, or ship, as the aggregate that originally made up Theseus' ship (S1). The shipwright's ship (S3), has a mode qualitatively similar to but distinct from the original ship.³⁰⁹

There is no puzzle of coincidence with the statue and the clay. There is just an aggregate of stuff which is *statueing*. The substance—the aggregate of stuff, persists throughout being shaped into a statue and being flattened, and happens for a while to

³⁰⁵ Ibid., p. 68.

³⁰⁶ Ibid., p. 66.

³⁰⁷ Ibid., pp. 66-67.

³⁰⁸ Ibid., p. 70.

³⁰⁹ Ibid., p. 67. (S2) is not (S3) by transitivity, since Chisholm contends that (S2) is the substrate of the same mode as (S1) after plank replacement, whereas (S3) is not. "Consider a ship that transfers from a substrate *y* to a substrate *z*. If *z* became a ship as a direct result of altering *y*, and if nothing else *also* then became a ship as a direct result of altering *y*, then we may say that there was a mode *x* which transferred from *y* to *z*. What if more than one ship was thus a direct result of altering *y*? Then we may say that the substrate having the most parts in common with *y* is the one that received the mode of *y*." Ibid.

be statueing—in which case we often say that there is a *statue* there. We are right that there is a mode or an activity of statueing there, but we are wrong that there is a substance or thing in addition to the hunk of matter to coincide with it.

I will not criticize this view here, partly because I think it is roughly correct.³¹⁰ I will offer an account very similar to Chisholm's, but more developed, in Chapter Five. I developed the rough contours of my account before I knew about Chisholm's account in the *Self-Profile* volume.³¹¹ But, I think it is important to point out Chisholm's contribution here, for whom I owe a debt of gratitude. We can look on Chapter Five in part as a continuation of Chisholm's scant seven pages on this topic. Whether he would have approved of my own treatment, however, is beyond my knowledge.

3.2 Michael Jubien and the ‘Fallacy of Reference’

These are perfectly everyday sorts of things, but they are not people, houses, or globes...these very gestures, directed at things that are not people or houses, enable us to *refer* to people and houses.³¹²

³¹⁰ I should note that there are elements of the account that I did not cover, but with which I disagree. But these are quibbles. Overall, though, I agree with the spirit of Chisholm's enterprise.

³¹¹ Indeed, it seems that very few people know about this work of Chisholm's. Thanks go to Dean Zimmerman for pointing it out to me.

³¹² Jubien 1993, p.

I have already presented Michael Jubien's work to some extent in the last section, where I focused on his arguments for mereological essentialism. I haven't described what, given his mereological essentialism, becomes of ordinary part-changing objects such as tables and chairs. What is distinctive about Jubien's view is that (many) definite descriptions that seem to involve reference to objects, such as 'that table', and ordinary proper names "do not designate at all. Instead they are disguised predicates..."³¹³ Many, if not most problems of material constitution, Jubien claims, come about by unknowingly committing what he calls the 'Fallacy of Reference.' The Fallacy of Reference is the belief that "ordinary proper names and at least some definite descriptions actually *refer to* (or *denotes*, or *designate*) specific entities."³¹⁴

Jubien, somewhat like Chisholm, has a bifurcated treatment of the putative objects of the world. The only genuine objects of his theory are what I have been calling bare objects. "Any physical stuff in spacetime is a *thing*. *The thing* is nothing more nor less than *the stuff*."³¹⁵ Jubien agrees with Quine that a physical object "comprises simply the content, however heterogenous, of some portion of space-time, however disconnected and gerrymandered."³¹⁶ The only essential property these objects have is having all the parts that they do.³¹⁷ Jubien is a four-dimensionalist, and believes in a four dimensional manifold of space-time, where any space-time point can be (ideally) specified by four coordinates. Regions of any size can be specified by

³¹³ Jubien 1993, p. 65.

³¹⁴ Ibid., p. 22.

³¹⁵ Jubien 2003, p. 9.

³¹⁶ Quine 1960, p. 171. Cf. Jubien 1993, p. 4.

³¹⁷ And, having the temporal (but not spatial) bounds that they do. (1993, chapter 2, sections 5-7) But this element is not seemingly essential to the general spirit of his view, and will be ignored in what follows.

sets of space-time points, and every region that is actually referred to by the coordinates and is occupied by matter corresponds to an object, regardless of its temporal disjointness or spatial scatter.

Commonsense objects, such as rocks, people, cats and desks do not, strictly speaking, exist at all. Jubien, like Chisholm, reduces these objects to bare objects and certain properties. Take a certain table, and call it ‘Chucky’ for instance. For Chisholm the successive table Chucky is a fiction constructed out of a series of almost instantaneous tables related by table-succession. For Jubien, there is no table. Rather, there is a series of stages of distinct three dimensional slices of four-dimensional parcels of stuff, each stage of which has the property of *being-this-table* or *being-Chucky*. Take Descartes, for instance.

For this [the claim that things have their temporal boundaries essentially] to apply to Descartes, there must first be some *thing* that is referred to by the name ‘Descartes’. But to think that there is such a thing is precisely to commit the Fallacy of Reference. But I think this means some thing *d* has the property *being Descartes*...On the present view there is no entity denoted by ‘Descartes’ in the first place. There is of course an entity [a hunk of stuff], say *x*, with the property *being Descartes*.³¹⁸

Since there are no objects which can change their parts, something else must fulfill the part-changing object role. Rather than *entia successiva*, Jubien chooses to reduce commonsense object talk to talk in terms of bare objects and the supposedly ‘non-entifying’ properties such as *being this boat*.

There are some salutary features of this view. It appreciates what I noted about ME and Jubien’s view in the last section; the property of being made of some precise stuff is a perfect candidate to play the objectual haecceity role. It also dissolves the paradox of coincidence:

It is hard to deny the intuition that there is only one thing in the region. But there is no need to go to extravagant lengths to maintain it. On my view there is but one thing in the region. It has the property of being a lump of clay. It has the property of being a statue. It could have had the property of being cubical, in which case it would still have had the property of being a lump of clay, but would not have had the property of being a statue...There are no mysteries or extravagances here...There are just things and their properties.³¹⁹

There are other theoretically pleasing features that I will not discuss here.

Despite its attractiveness, Jubien's account falters for three important reasons.

First, his analysis of properties such as *being Descartes* as what he calls 'rigid singulary categorial' properties ['RSC'] fails. He contends that properties like *being Descartes* are *sui generis* in that they can be had by at most one thing at a time. This stipulation is both *ad hoc* and mysterious. It is *ad hoc* because Jubien offers us no reason to distinguish between having a RSC property like *being Descartes* and a non-RSC, multiply instantiable property cluster whose bearers are, we could say, *Descartesing*. Since there is no qualitative difference between a thing that is *Descartesing* and a thing that has the property of *being Descartes*, to distinguish *Descartesing* from *being Descartes*, Jubien would have to embrace mysterious *quiddities*, or brute property 'suchness' individuators. However, those are just as mysterious as the (non-stuff involving) haecceities he sought to reject. In doing so, Jubien would be trying to sneak back in all the benefits of individuation and quantification over commonsense objects with none of the costs. But, as I will show, he cannot have it both ways.

³¹⁸ Ibid., pp. 34-36.

³¹⁹ Ibid., p. 38.

Second, I don't believe that Jubien's system is as 'ontologically innocent' as he often reports it to be. In his paper "Thinking About Things," when discussing the statue and the clay, and coincidence, he notes that

many smart metaphysicians have gone berserk over this...But notice what happens if we refuse to be object-fixated in the first place. Then claims about a statue or a piece of clay aren't just claims about a physical object, but claims about a *property* as well...I think this solves the puzzle of the statue and the clay and does so with no exotic metaphysics at all. It just requires taking *properties* as seriously as *things*.³²⁰

If I am reading this fairly, Jubien is saying that if only we could only stop believing that in talking about tables, chairs, boats, cows, ashtrays, and people, we are talking about *things*, a lot of our problems would just disappear. Just so long as we refuse to quantify over ships, there can be no problem with Theseus'. However, refusing to quantify over ordinary objects *is* exotic, and it should be a last resort, not a happily accepted position. I have nothing further to say on this, because it is obvious that denying that there are ships or tables is a high ontological cost.

Lastly, if there *is* a way to understand predicates such as *being Descartes* or *being that (particular) boat* such that we can quantify over Descartes and boats, then we should take it. And, I think we can. I think we can take certain appealing aspects of Jubien's account (such as that there are bare objects, and that the property of being made of some precise stuff can serve as a thing's haecceity), and leave the other unappealing elements behind (such as, RSC's, four-dimensionalism). If we construe properties such as *being Descartes* as processes such as *Descartesing* which we can quantify over, we can keep other good features of Jubien's account. In Chapter Five,

³²⁰ 2001, pp. 6-7.

where I develop my own account, I will explain this fully. However, I should note already that, despite my criticisms of it, my account owes much to Jubien's.

According to Jubien, when we talk about President Bush over time, we are actually talking about distinct mereological fusions at distinct times, each of which has the property of *being Bush*. Furthermore, our modal talk about Bush, such as, 'Bush could have fought in Vietnam', is really talk about the possibility of a mereological sum (or sums) co-instantiating *being Bush* and *fighting in Vietnam*. There is no *thing* which is Bush at all. This immediately brings up the question, 'what is it to have the property of *being Bush*?' And, more generally and schematically, what is it to have the property of *being- ϕ* , where ' ϕ ' is replaceable by phrases which are a combination of a count-sortal and a demonstrative, such as 'this table', 'this particular globe', or a proper name of something which is of a certain kind (such as 'Chucky', which intuitively names a table). This is especially puzzling since a hunk of stuff can have the property of *being Bush*, and yet there is no thing which is identical to Bush.

Jubien calls such properties that are substitutable for ϕ 'rigid singulary categorial' [RSC] properties. To understand RSC's is to understand the heart of his account. The "rigid" part of RSC can be a bit misleading, since 'rigidity' is often associated with Kripkean *rigid designation*, according to which a proper name picks out the same *thing* in all possible worlds.³²¹ Jubien pointedly doesn't believe that 'Bush' is a rigid designator in that sense. He doesn't even believe that it picks out the same thing, across time, in our world. Properties like *being Bush* are rigid in the following sense: whenever we intuitively believe that an x and a y are identical with

Bush, x and y , although they are not identical to each other, nonetheless both have the property *being Bush*. In a circumstance of ostension, where we dub something ‘this table’, we are picking out a property, that anything must have, in any possible time or world, for us to intuitively identify it as “the same table.” “*Being that globe*, or [property] P , is very important... P is whatever property any thing must have in order to count *intuitively* as ‘the same globe’ in different possible circumstances.”³²² So, properties like *being Bush* are rigid in that, while ‘the property of *being Bush*’ applies to different individuals in different worlds, all those individuals have the very same property. Properties like *being red* are not rigid in this way.

RSC’s are *singulary* in the sense that at most one thing can have it at a time. “A property is called *singulary* iff it can be instantiated by at most one thing, that is, iff it is impossible for more than one thing to have it.”³²³ Jubien gives an example:

Consider the *general* property *understanding Kant*. It may be that only one person has this property. But, maybe no one does, and maybe many do. It doesn’t matter, because there is still the related *singulary* property *uniquely understanding Kant*. This property is instantiated iff exactly one person understands Kant. This phenomenon is of course perfectly general. For any general property there is a closely associated singulary property which may or may not actually be instantiated.³²⁴

Just as there are more general properties such as *being a human being*, *being an American*, that many things can have, there are unique properties such as *being the tallest American*, that we intuitively believe at most one thing can have at a time.

Jubien asserts that properties like *being Bush* are also singulary.

³²¹ See Kripke 1972.

³²² Jubien 1993, p. 49. Note, apropos of p.119 of the last section, that this is where Jubien puts his fudge inre to the ‘fudge factor for the folk.’ Everybody has some fudge. You will see where I put mine in Chapter Five.

³²³ 1993, p. 48.

³²⁴ Ibid.

RSC's are *categorial* in that having them implies falling under a kind count-noun. “A property is ... *categorial* iff it entails a property that may be expressed by a predicate of the form ‘*is a(n)...*’, where the ellipses are to be replaced by a common noun or noun phrase.”³²⁵ *Being Bush* is categorial in that having that property entails that the thing picked out by it also has the property *being human*. Our good old table Chucky and its associated property, *being Chucky*, is such that whatever has that property also has the property of *being a table*. Properties like *being a house* are categorial, whereas properties like *being a red house* are not.³²⁶

The whole notion of RSC's is a somewhat *ad hoc* device. The only reason that I can find for positing that properties such as *being Bush* are singulary is that it would be needed to make Jubien's account work, or gel with folk intuitions. *Some* sense of ‘same house’ needs to be retained, so Jubien packs in the ‘same individual’ notion into the property of *being the house*, while asserting that there is, strictly speaking, no house at all. Jubien does offer a theoretical apparatus for singulary properties, naming and reference that I have not explained here (as it is a book-length treatment), but I have *not* ignored any defense of the singularity of the RSC's.³²⁷

Quite roughly, naming is supposed to go like this according to Jubien. We see what we believe to be an object, a house. We are wrong. We see a time-slice of a hunk of matter H that has the property of *being a house*. We ostend over the hunk of matter, and form the concept of *that* house. We have then picked out a complex property *P* that a specific time-slice of a hunk of matter *H* has, and other objects can have in other worlds, and distinct hunks of matter can have in this world. When a

³²⁵ Ibid., p. 49.

³²⁶ See 1993, p. 51 for definitions of what a ‘categorial core’ of a property is.

shingle falls off, we say we still have the same house. In fact, we are not referring to the same object as before, because we are not referring to a *house* at all. There is just a different hunk of matter which has the *same* property, *being that house*, that the earlier hunk of matter had. Proper names and descriptions do not pick out objects at all (except when they refer to mereological sums), instead they directly pick out a property that indirectly picks out some-object-or-other. They are non-rigid designators. Furthermore, to assert that a certain sum is Nixon or a table is not to assert identity. The ‘is’ in these phrases is the ‘is’ of predication, not the ‘is’ of identity.

Jubien seems to think that the property *being that house* must be singulary because that is just how our conventional naming practices go, or because we intuitively think that one thing cannot be in two different places at the same time. He does not want to break *that* radically with commonsense.

The problem with these supposedly singulary properties such as *being that house* is that they are qualitatively indistinguishable (in the hunks of stuff that have them) from properties such as *being exactly like that house*.³²⁸ If there are no *things* which are identical to houses or Bush, how can we differentiate properties like *being that house* from properties like *being exactly like that house*?³²⁹

³²⁷ All of which is in ibid. pp. 46-50.

³²⁸ Jubien would allow this, as he allows “abundant” properties. 1993, pp. 7-10.

³²⁹ Andre Gallois pointed out the following problem with the above (personal communication)—“Suppose M is a hunk of matter in world W1 constituting a red house. Suppose M1 is a hunk in W2 constituting intuitively the same house, but painted green. The house in W1 shares with the one in W2 the property of being the same house, but not the property of being exactly like the W1 house.” Call the house in question H. We could then contrast the property *being H* from the property *being such a way as to be exactly like H actually is with the exception of whatever it takes to actually be H*, which would fulfill the role of *being exactly like H*. The latter, of course, is less of a mouthful.

Perhaps Jubien could point out some qualitative (but not stuff-related) difference that would be had by things that have *being that house* versus *being exactly like that house*. This method would not work because of the very way the properties are introduced. We point at a house. We say the house is associated with a very detailed property profile that some stuff S happens to have, P . We call that the property of *being that house*. There is also a property exactly like it, P^* , *being exactly like that house*, where the only difference is that things other than that house can have it. There can be no qualitative difference we can point to (if we are ignoring *being made up of this very stuff* as a qualitative difference here). The house itself has both P and P^* since of course it is exactly like itself, and having P is no different (qualitatively) than having P^* . (Some houses could, though, have P^* without having P , although I don't believe Jubien has the resources to point out the difference.)

Maybe Jubien could differentiate P from P^* by supposing that part of having the property *being that house*, as opposed to *being exactly like that house*, is that the former, but not the latter, entails *being made up of particular stuff S* that the house is in fact made up of. As I mentioned earlier, Jubien holds that the stuff of an object is uniquely suited to play the haecceity role, so perhaps *being made up of particular stuff S* can be sneaked into the property *being that house*, but not be a part of *being exactly like that house*. But this won't work. Part of Jubien's motivation is to provide an account that will allow different hunks of stuff to have the *same* property of *being that house*. If *being that house* precluded being made up of any other stuff than it in fact is, then of course no other hunks of matter could have the property.³³⁰

³³⁰ Also, imagine that time travel is possible and a tract-home community designer wants to make all the houses in his tract home community *really* similar, and save some money on materials. Why

Relatedly, perhaps Jubien would try to defuse the problem by claiming that P and P^* are the same property. That is, nothing could be *exactly like this house* without *being this house*. This might block the objection, but it seems *ad hoc*. Certainly qualitative duplicates are possible.

The only option that Jubien could settle for is the dubious notion of an “extreme” quiddity. Perhaps he could accept that there are brute property individuating “suchnesses”. He would then distinguish P and P^* by pointing out some primitive difference that the properties P and P^* themselves have, but which makes for no qualitative difference in the objects which have these properties. Furthermore, the quidditcal difference does not entail that the objects be made up of the same stuff. However, accepting such extreme quiddities goes against much of the spirit of Jubien’s proposals—he rejects mystery as much as possible. Subtract everything you can from the property *being that house* that is contained in the property *being exactly like that house*. What do you have left? Either nothing, or mystery.³³¹

So it seems that nothing could differentiate between RSC properties and multiply instantiable ones. Since properties are paradigmatically multi-locatable, I see no reason, given the previous arguments, to believe in RSC properties. Indeed there is a radical disanalogy between the classic examples of singulary properties and the

couldn’t he just build one house, and then, twenty years later, break the house down, travel back in time with the hunk of matter which had the property of *being the house*, and then put the hunk of matter in the very same arrangement so that it has the very *same* property of *being the house* at the same time? He could do this one hundred times over. He wouldn’t even have to wait to make this happen, as he would keep meeting himself coming back and building another house, perhaps one hundred of themselves at once. He would, however, have a lot of work to do in twenty years if he did this. [Ideas along the same lines have been suggested by thought experiments of both David Horacek and Kris McDaniel].

³³¹ Thanks go to Irem Kurtsal Steen for some helpful discussions and suggestions with this section.

RSC's Jubien posits. *Being the tallest man* and *uniquely understanding Kant* are properties that a thing loses while undergoing no intrinsic change. If *being the house* was like this, I would only need to make a house just like it to make the 'house' lose this property.

Despite the various technical machinery that Jubien lays out in his book for understanding what properties like *being Descartes* mean, we are still, at the end of the day, left in the dark. What does 'Descartes' refer to? It is not an *object*. There is no *thing* which is Descartes, according to Jubien. The only things are bare hunks of matter, some of which have the property of *being Descartes*, some which do not. The property *being Descartes* is not Descartes either, for

I assume that properties...are 'abstract' entities that exist independently of minds and languages. In saying that they are abstract I mean they do not occupy any regions of space-time (and of course they are not identical with any regions of space-time).³³²

Is Descartes the four-dimensional sum of time-slices of hunks of matter all of which have the property of *being Descartes*? It doesn't seem so, since Jubien wants to deny that 'Descartes' names a *thing* at all—not even a four-dimensional one. Jubien never gets around the basic difficulty of saying how it is that various things can have the property of *being Descartes* and yet deny that there is a thing Descartes which exists.

This brings me to my last criticism. If there is a way to keep some of the basics of Jubien's program, and yet quantify over tables and chairs and boats and Descartes, then we ought to do so. If we can keep some elements of commonsense yet also respect our philosophical intuitions we ought to do so. I think we can. Later, in Chapter Five, I will explain how we can keep mereological essentialism, why we

³³² Jubien 1993, p. 7.

should do so, yet still quantify over commonsense objects. We do this partly by construing what Jubien calls RSC's as *processes* rather than properties. Instead of a property *being Socrates* instantiable by distinct hunks of matter, there is a repeatable process, *Socratizing*, such that distinct hunks of matter can undergo it.³³³ This will cohere together with commonsense *more* naturally (but, I wouldn't say 'naturally' *simpliciter*) than Jubien's view.

3.3 Seibt and the Reduction of Objects to Subjectless Processes

...Thus within Dynamic Mass Theory the difference between particular and general entities, traditionally a fundamental ontological division, is simply a matter of degree. All dynamic masses are concrete general entities—some of them, however, are so specific that they occur only once in space at the same time and thus can satisfy the categorial role of expressions for what is traditionally called a 'particular' entity.³³⁴

The contemporary analytic metaphysician who has been most persistently criticizing the substance framework and promoting a substitute process framework is Johanna Seibt. Since 1990 Seibt has been embarked on a research program that seeks, in part, to reduce the objects or *things* of commonsense to processes, as well as to

³³³ Cf. Rescher 1996 in general, and the appendix in particular.

³³⁴ Seibt 1997, p. 177.

solve various problems in metaphysics that arise, putatively, due to the substance framework.

Seibt's most salient views can be summed up by the following three claims. First, the substance framework is erroneous and problematic. The division of reality into particular and concrete things on one side, and abstract and general attributes on the other, is not an exhaustive classificatory scheme, and these categories are not mutually exclusive. The scheme is deficient, and *substance* as a category can not adequately explain the structure of the world's entities. Second, while objects or things are not to be identified with substantial *explanans* to fill the role of metaphysical explanation, they are important *explananda* which can be explained by, or reduced to, processes. Lastly, these processes which objects are reduced to are intersecting *subjectless*, non-countable, recurring general processes. For instance, a red ball is an intersection of a 'redding' process and a 'balling' process, and these processes are not undergone by any *thing*.

Below, after presenting Seibt's views, I will charge that they are mostly faulty and inadequately defended. With regard to the three main claims, I will argue that, although the substance framework has its problems, her view is more problematic. Secondly, the nature of objects or things is not explained at all by her process framework. The reductive base with which she identifies objects is far more mysterious and problematic than *substance* as usually understood. The extent to which she succeeds is the extent to which she unwittingly reintroduces substances. Lastly, her notion that things can be understood as the intersection of *subjectless* processes is incoherent. Processes must be undergone by some things, space-time

regions at least. In characterizing processes, Seibt attends very carefully to the commonsense talk about processes, as well as their ontic features, but she ignores an essential feature of them: that they are undergone by something. Thus, she misses the mark and loses the right to say that she is talking about processes. I intend this section, in combination with Chapter Two, to show that *no* account which attempts to get rid of *things* altogether at the base ontic level will succeed. I do agree with Seibt that there are some irreducible processes, and I agree that verb aspect is useful in characterizing processes, but I do not agree with her radical conclusions that in reality there are no things, or, perhaps more carefully, that all things reduce to non-things.

Seibt begins many of her articles by criticizing what she calls the ‘myth of substance’, the supposed dupes of which adhere to what I call ‘Thing Theory’: “since Aristotle ontologists have indulged in such categorial overstatement, claiming with Aristotle that substances or ‘objects’ or ‘things’ are ‘what there is, in the primary sense.’”³³⁵ The derisive ‘myth of substance’ phrase serves two functions for Seibt. First, to “castigate an ideological ‘fixation’”, and, secondly, “the notion stands for a complex metaphor that anticipates explicit theory construction.”³³⁶

The problem with substance theorists, according to Seibt, is that they do not realize that what they take to be necessary prerequisites for ontological theory construction are actually controversial presuppositions. Hence substantialists severely delimit ontological inquiry and close off perhaps fruitful avenues for research:

The myth of substance...is first an ideological fixation, mainly characterized by the assumption that the notion of a thing, central in our dealings with the world, is also particularly straightforward from an ontological point of view. In this sense the myth of substance is the theoretical delusion, nourished by a network of deep-

³³⁵ Seibt 2000, p. 242.

³³⁶ Ibid.

seated presuppositions, that things or concrete particulars like things provide a particularly natural or promising ontological basis.³³⁷

What Seibt decries is somewhat similar to the research paradigm I outlined in Chapter One. The Thing Theorist, or substantialist supposes that once we have in hand all the substances and their properties, we can explain the whole of the world's phenomena. Seibt believes that this is a myth.

The myth of substance has percolated down from the Academy to the present day, and still has such a grip on us that it has formed the very contours of ontological research and methodology. For Seibt,

an ontology is a theory of truth-makers for the sentences of a certain natural or scientific language L . An ontology describes what there is in the world, as speakers of L conceive it, that makes the true sentences of L true. The structural descriptions of truth-makers provide explanations for why L -speakers may draw certain inferences.³³⁸

The data of an ontology are groups of sentences: inferential patterns licensed by L .³³⁹

Seibt thinks that, while nothing is wrong with this method *per se*, the mistake the substantialists or Thing Theorists make is supposing that the truth makers for L or a regional analysis of a certain class of utterances in L will *always* be substances and their properties.

Seibt rightly points out that substantialists often advert to a severely delimited class of utterances and then generalize from this class to make statements about the whole of reality. In particular, while ontologists have focused on things which change, they have focused little on talk which indicates that we countenance changes as entities in their own right. “There are inferences which indicate that we conceive of

³³⁷ Ibid.

³³⁸ Seibt 1997, p. 144.

different types of changes—developments, destructions, generations, motions, alterations, actions, activities etc.”³⁴⁰ While things vie for our attention, they “compete with stuffs, developments, activities, relationships, arrangements, states, opportunities, possibilities, beliefs, feelings, or moods.”³⁴¹ Note that ontologists have attempted to reduce *each* of these entities to objects and their properties. Seibt thinks that this is a sign not of the success of the substance framework, but rather of a persistent and deeply embedded conceptual disease.

Seibt has two extended arguments for the bankruptcy of the substance paradigm. The first is a series of considerations based on linguistic observations, and the second is that her own process-based view, ‘Dynamic Mass Theory’ [henceforth, ‘DMT’],³⁴² is explanatorily more satisfactory than the substance model. I will briefly summarize the five observations and her view before coming back to criticize the observations and her view in more detail.

Seibt says that “the process-ontological framework … derives its prime inspiration from five observations about the relationship between countable and non-countable entities.”³⁴³

The first observation is the relatively innocuous one that “the ontological categorization of an expression *E* of language *L* is guided by the inferential role of *E* in *L*. ”³⁴⁴ For instance, if we want to understand ‘green’ and the ontological

³³⁹ Seibt 2000, p. 243.

³⁴⁰ Seibt 1997, p. 146.

³⁴¹ Seibt 2000, p. 242.

³⁴² At first, Seibt’s view was called ‘DMT’ in 1997 and 2000, ‘Axiomatic Process Theory’ in Seibt 2002, then, ‘Free Process Theory’ in Seibt 2003. While there are technical differences, the heart of each view is similar, as are their motivations and characterizations.

³⁴³ Seibt 1997, p. 164. The same five observations are discussed and employed in 2000 pp. 245-251 as well, and elements of them are discussed in 2002 and 2003 as well.

³⁴⁴ 1997, p. 165.

categorization of its denotation, we need to observe the inferences licensed by one use of ‘green’ to another, from, for instance, “Bob is green” to “Bob is extended” or “Bob is colored.” Not all the uses and inferential roles of ‘green’ are relevant for the categorizing the denotation of ‘green’, only some are. Seibt calls “that part the ‘category implications’ of *E*, and...an ontological category ‘satisfies’ certain category implications if the definition of the category complies with the category implications.”³⁴⁵

Seibt cautions, however, that

ontologists assume that the lexical meaning of an expression *E* determines the category implications of *E*...Studies in linguistic semantics suggest, however, that lexical meaning and category implications are much more flexibly linked; depending on the sentential context the categorial classification of lexical meanings may vary.”³⁴⁶

This much seems right. While certain verbs are usually associated with a certain category of items, their ontological (or some weaker) implications can switch radically with context. ‘Win’, for instance, can denote an event or events (‘He had three wins’), an accomplishment or resultative (‘He will win’), or an activity or process (‘He is winning’). “The same verb may be used to express occurrences of different types—by using certain morpho-syntactic markers speakers determine the category implications of the verb which in turn can point to a certain ontological categorization of the verb’s denotation.”³⁴⁷ Of course, without further argument, switches in category implications of nouns and verbs in certain contexts are not sufficient to establish an ontological difference.

³⁴⁵ Ibid.

³⁴⁶ Ibid.

³⁴⁷ 2000, pp. 245-6.

Seibt takes some of these different uses very seriously. Take, for instance, the differences between mass and count nouns that we have already noted in Chapter One. While it is well-known that mass and count nouns are used very differently, Seibt notes how we can use the same noun or even a proper name to switch between mass and count uses or ‘nominal aspect’. Consider ‘three chickens’ versus ‘much chicken’, ‘I like books’ versus ‘much book for the money’.³⁴⁸ “Even proper nouns or pronouns can be given a ‘mass’ interpretation—you may wish that someone were less Bill and more president, or join the American army to ‘be all you can be.’”³⁴⁹

This slides into her second observation, namely that “there are inferential symmetries between verbal and nominal aspects.”³⁵⁰ One way of summarizing this is that the way mass nouns stand to count nouns is analogous to the way process or activity verbs stand to event-nominals. Just as there are non-countable masses, e.g., ‘the water in the glass’, there are non-countable processes, e.g. ‘Jake’s running’.

...As Aristotle already observed, mass nouns and activity verbs both imply that their denotations are ‘homoeomerous’ or *like-parted*. (Almost) every part of some running is some running, as (almost) every part of some milk is some milk. Whatever has the property of homoeomerity does not come in fixed portions or units and thus cannot be counted as such.³⁵¹

On the other hand, Seibt points out (as Mourelatos explains in (1978)) certain event verbs “can be combined with numeral quantifiers just like count nouns (cf. ‘three weddings’, ‘his having knocked thrice’).”³⁵² Certain verbs, such as ‘to wed’, correspond to an event nominal, such as ‘a wedding’, where the implication is that these are events or structured units that can be counted. In contrast to ‘runnings’, each

³⁴⁸ Ibid., p. 247.

³⁴⁹ Ibid.

³⁵⁰ Seibt 1997, p. 167. Cf. Krika 1989 and Mourelatos 1978.

³⁵¹ 1997, p. 167.

of which contains some runnings, no wedding contains a wedding as a proper part, or so says Seibt. I will have much to say about this below.

So, event verbs are ‘count-quantifiable’³⁵³ like count-nouns are, and process or activity verbs are (putatively) non-countable like mass terms are, and these lead Seibt to the following:

This suggests considering the possibility that the categories commonly associated with these pairs of category implications, objects and events, and masses and activities, respectively, are special cases of more comprehensive categories.³⁵⁴

Since there are also many salient differences between processes such as runnings, and masses such as milk, I am hesitant to agree with her suggestion, which follows merely from the similarities in homoeomerity and non-count-quantifiability (on the side of ‘massy’ entities), and heteromerity and count-quantifiability (in the case of ‘county’ entities).³⁵⁵ However, let me go along with her to see where this leads.

If these four kinds of categories were really just a species of two more comprehensive categories, what would these two categories be? Seibt calls them the categories of countable and non-countable entities. She defines them as follows:

Let us say that a **countable** entity is any entity of kind K and of dimension $n \leq 4$, whose n -dimensional extent E has no m -dimensional proper part E' which is of kind K , for $m < n$.

Let us say that a **non-countable** entity of kind K and of dimension $n \leq 4$, whose n -dimensional extent E has a n -dimensional proper part E' which is of kind K .³⁵⁶

According to Seibt, then, something is a countable entity just in case it is heteromerous, or non-‘like-parted’, and it is non-countable just in case it is

³⁵² Ibid.

³⁵³ This observation and phrase comes from Mourelatos 1978.

³⁵⁴ 1997, p. 167.

³⁵⁵ For the best treatment I’ve seen of this phenomena, and a more cautious approach to these similarities, see Pelletier and Schubert 1989.

³⁵⁶ Seibt 2000, p. 247. Of course, there are counterexamples to the above such as a crown made up out of three crowns. I believe this example is from Wiggins, but I cannot find the source.

homoeomerous, or ‘like-parted’. No defense for this is given besides noting the linguistic features previously mentioned.

Her third and fourth observations are, respectively, that non-countables can fulfill the category implications of count-terms, whereas non-countable entities “cannot be recategorized as special types of countable entities.”³⁵⁷ In short, this amounts to claiming that while countable entities can be reduced to non-countables, the converse does not hold. It is in these observations that her most important, and most egregiously invalid arguments can be found.

I think it is important at this point to put in a lengthy quote rather than give a gloss on observation (iii):

We may now ask the question whether one of the new categories of countables and non-countables may be ‘reduced’ to the other...Here it is crucial to observe that most masses and activities have *minimal* (spatial, temporal, or spatio-temporal) amounts. The homoeomerity of non-countable entities holds only within certain limits: some spatial parts of water...are spatially too small in order to be water and some temporal parts of running, say, the left foot’s touching the ground, are too short to qualify as running. Given that masses and activities are only relatively homoeomerous, *we may consider every countable item as a mass or activity with a minimal degree of homoeomerity*. Within the spatio-temporal regions covered by the extensions of ‘milk’ and ‘running’ there are several amounts of milk and running; on the other hand, if the predicates ‘is a house’ or ‘is a soccer game’ are satisfied by the content of a connected spatial or spatio-temporal region, they are satisfied only by the whole region. Count terms like ‘house’ and ‘soccer game’ can be taken to refer to non-countable entities which occur *only* in their minimal amounts. More precisely, countable entities can be taken to be non-countable entities which are minimally homoeomerous...³⁵⁸

Here, then, is a gloss: since the entities we call homeomerous (e.g., water, a running) actually have smallest parts, and are not actually like-parted (i.e., they have minimal amounts), other non-like parted entities, such as people or weddings, which also have minimal amounts or smallest parts (namely, their entireties) can be treated as a special

³⁵⁷ Seibt 1997, p. 169.

or limiting case of masses or activities (i.e., homoeomerous entities) that only occur in their smallest amounts. “The category implications associated with countable entities can be fulfilled by non-countable entities—all countable entities can be *recategorized* as maximally ‘coarse-grained’ non-countables.”³⁵⁹ I will have much to say about this argument shortly. Seibt’s claims about the successful recategorization are not grounded on observation (iii) so much as they stand or fall with the particulars of her DMT account.

Observation (iv) is crucial—it is the thesis that non-countables *cannot* be recategorized as countables, or, reduced to them. Her argument for this goes as follows. “An entity *a* is countable iff it is a concrete unit of functional organization, i.e., iff it can be counted by counting spatio-temporal regions in which *a* exists .”³⁶⁰ On the other hand, “a general entity may not be counted in this way—if the size of an area featuring *rabbithood* doubles, this does not entail that there are two general entities identical with *rabbithood*. A general entity is an entity which is ‘repeatable’ or ‘multiply occurring’ in space and time.”³⁶¹ In these passages, Seibt unwittingly conflates the ‘non-countable’ and the ‘general’.³⁶² She starts to defend that the non-countable cannot be reduced to the countable, and proceeds to do so by defending how the general can not be reduced to the particular.³⁶³ Granted, she keeps them somewhat separate, but notice the slipperiness in what follows and how she uses this slipperiness to blur the line between the particular and general:

³⁵⁸ Seibt 2000, p. 248. Longest emphasis mine.

³⁵⁹ 2000, p. 249.

³⁶⁰ 1997, p. 170.

³⁶¹ *Ibid.*

³⁶² E.g., see Seibt 2000, p. 249.

³⁶³ Even if one of her theses is that the non-countable and general are not distinct, she ought not conflate them in her arguments to this effect.

Objects and events, for instance, the prime examples of countable entities, are also often presented as the prime examples of particular entities. On the other hand, the category implications of non-countable entities leave open whether the entities which satisfy them are particular or general entities. The prime examples of entities satisfying the category implications for non-countables, masses and activities, display the characteristic traits of both or neither particular and general entities. Masses and activities are concrete entities like particulars, since they have concrete physical properties; on the other hand, they are multiply occurrent like general entities—you and I have the same stuff in our glasses and when we drink from them we engage in the same activity.³⁶⁴

One odd factor here is that in this context Seibt should be arguing that the particular and general distinction breaks down in reality, and doubtless, her opponent is someone who holds that the world is divided between particular and concrete on the one hand, and abstract and general on the other. Yet we see here a series of question-begging stipulations and questionable interpretations that do not establish her conclusions. Especially the last sentence fails to prove any points at all—her opponent would just claim that she is trading on equivocations. When you and I have the same stuff in our glass, we have two distinct portions of the same kind of stuff, and when we engage in the same activity we are engaging in two distinct tokens of the same type of activity.

Seibt does have one further argument that non-countables cannot reduce to countables, but this one is question-begging as well:

To be sure, we can postulate that the denotations of mass nouns and activity verbs are particular entities, or alternatively, that they are general entities. We can read the sentence ‘There is milk on the table’ either as denoting a particular, an amount of milk, or as a collection of minimal amounts, or as denoting a general entity, a type of milk. But it is important to note that such interpretations do not amount to proper recategorizations of non-countables. Each proposal loses important components of the category implications of mass nouns and activity verbs—either the implication that the denoted entity is concrete or that it can occur multiply.³⁶⁵

³⁶⁴ 1997, p. 170.

³⁶⁵ Ibid., pp. 170-1.

This just won't do. Her opponent in this context is one who holds that the world is divided between the concrete and particular on the one hand, and the abstract and general on the other. These types of theorists (e.g. Quine³⁶⁶) hold that our talk of masses and activities have a 'dual life' or are functionally ambiguous. That is, we can take our talk of masses and activities and divide them between those utterances which are about general or abstract entities (e.g. 'water is a liquid'), and those which are about particular or concrete entities (e.g., 'my milk is cold'). These treatments do have problems,³⁶⁷ but Seibt does not adequately point them out herself.

Instead, she responds to the 'dual-lifers' like Quine with a kind of bootstrapping maneuver. She points out how theorists like Quine and Strawson³⁶⁸ regard mass nouns and activity verbs as either "categoreal freaks," "primitive" or "protean," "archaic," "deficient," "ontological monstrosities" and "atavistic"³⁶⁹, or "they are taken to denote particular entities in subject position, and in predicative position general entities."³⁷⁰ Seibt asks, "what could motivate either one of these reactions?" After having painted such theorists as frantic with a string of (often correctly) attributed adjectives, she claims that the reason they react this way is as follows:

The fact that non-countables are pressed into the Procrustes bed of the particular-general distinction—either by treating them as countables or by accepting that terms for non-countables are systematically ambiguous—is some clear evidence for the extent to which contemporary ontologists are influenced by the myth of substance.³⁷¹

³⁶⁶ See Quine 1960, pp. 90-99.

³⁶⁷ Cf. Pelletier and Schubert 1989.

³⁶⁸ See Strawson 1959, esp. pp. 217-225.

³⁶⁹ These are her glosses of their commentary, Seibt 1997, p. 172.

³⁷⁰ See Seibt 1997, fnote 31, p. 172.

³⁷¹ Seibt 2000, p. 250.

So, in the general arc of her reasoning, she argues against the substance paradigm (partly) by arguing against the classic distinction between the abstract and the general versus the concrete and the particular, and she argues against the distinction by saying how those who accept the distinction do so because they embrace the fallacious substance paradigm. In any case, even though her argument here is unmoving, she infers her fifth observation that the explanation for why ontologists do not realize that “non-countables cannot be captured within an ontology of countables”³⁷² is that they accept the (false) principle:

(SUB1*) all entities belong to exactly one of the following two categories—they are either individuals, i.e., concrete particulars, or they are universals, i.e., general and abstract entities.³⁷³

If we just reject this principle, she says, and accept her aforementioned theses, new pathways open up for a new ontology. Seibt recommends that we reject all the classic presuppositions of the error-prone and myopic substance paradigm and start afresh. In particular, we can develop a monistic system that only admits non-countable processes as its basal entities. We can reduce all other entities (e.g., objects, events etc.) to these processes. Seibt does not suppose to have firmly established the process account on her five observations. Rather, the resultant theory DMT (Dynamic Mass Theory)

is founded on the methodological observation that the inferential role (categorial role) of certain expressions can be satisfied by a variety of ontological categories. The proper reaction to this observation is a pluralist spirit: DMT is designed as one of a variety of candidate ontologies for our common sense talk, to be recommended or rejected according to explanatory success.³⁷⁴

³⁷² Ibid.

³⁷³ 2000, p. 251.

³⁷⁴ Seibt 1997, p. 174.

I will now describe DMT. I will ignore the changing technical particulars of her developing account, and just focus on the common elements and the spirit of the enterprise.

What, intuitively, are these basal processes, or ‘dynamic masses’ like?

Dynamic masses are non-countable individuals...The prime examples for dynamic masses are ‘subjectless’ activities, i.e., activities not performed by an animate or inanimate subject, insofar as these are **not** understood as particular filled space-time regions but rather as functionally individuated ways of occurrences[sic]. Such activities are linguistically expressed by ‘feature-placing statements’ like ‘it is raining’, ‘it is itching’, or, ‘the sound is coming from over there,’ or ‘the sunlight was shining through the windows.³⁷⁵

Like in Broad’s account,³⁷⁶ Seibt’s paradigmatic processes which are to serve as the reductive base for objects are subjectless processes—processes not undergone by anything. Aren’t, however, these processes at least undergone by regions of space or space-time? She says ‘no’, but, as I will show, her account makes irreducible mention of space-time regions which take on the roles of *substance*, individuator, and a multi-process ‘bundler’, as did Spinoza’s account (according to Bennett) in Chapter 2. If, however, space-time regions *cannot* be employed to take on the substance role, then Seibt’s account cannot in fact reduce objects to processes.

In contrast to Aristotle’s treatment of substances, according to which they “are continuant, countable, the locus of change, particular, non-instantiable, independent, externally discrete, internally unified, simple, and individual,” Seibt’s dynamic masses, the basic entities of DMT, “merely have two category features: they are dynamic or occurrent and they are individuals. This makes it possible to treat entities that are commonly categorized as objects, properties, events etc. as special cases of

³⁷⁵ Seibt 2000, p. 251, bolding hers.

³⁷⁶ Broad 1933 *loc cit.* And, see Chapter One for a discussion of Broad.

dynamic masses.”³⁷⁷ But how does DMT work? We will focus our attention on the reduction of ordinary objects with processes or ‘dynamic masses.’

In a nutshell, *any* physical individual is identified with a dynamic mass, be it a property, individual, event, process, or change. DMT is monocategorial, but different kinds of the aforementioned entities are differentiated by varying ‘homoeomerity patterns’ in spatial and temporal dimensions and different ‘functional shapes’.³⁷⁸ Predication, or property attribution, of just about any kind whatsoever, is treated as the ‘intersection’ or ‘interference’ of distinct, hyper-intensionalized, masses. Things themselves are “four-dimensional activities.”³⁷⁹

Let us use an example of Seibt’s to clarify. Let the name ‘Kim’ refer to what we take to be a person’s body. “Within the DMT framework ‘Kim’ denotes a four-dimensional dynamic mass, an ultimately specific activity.”³⁸⁰ Predication of properties Kim has at a time, or changes in Kim over time, are actually statements about the intersection of distinct dynamic masses:

Consider an alteration in Kim, say, a change in Kim’s temperature, or a change in Kim’s shape; at t_1 Kim has a temperature of $36,5\text{ C}^\circ$, at t_2 Kim has a temperature of $38,5\text{ C}^\circ$, at t_3 Kim is bent, at t_4 Kim is straight. Since DMT countenances all types of changes as ‘entities in their own right’, changes need not be reduced to sequences of states...in DMT we can describe Kim’s changes as follows. During the interval $[t_1, t_2]$ the complex dynamic masses denoted by ‘Kim’ and by ‘is getting up’ are spatially superposed. Unlike ‘Kim is running’, the sentences ‘Kim is warming up’ and ‘Kim is getting up’ express that a change occurs where Kim is throughout the intervals of $[t_1, t_2]$ and $[t_3, t_4]$. That a change occurs in the course of Kim’s warming up or getting up is captured by the requirement that a dynamic mass denoted by ‘is warming up from $36,5$ to $38,5\text{ C}^\circ$ ’ and by ‘is getting up’ are *events*, i.e., four-dimensional minimally homoeomerous dynamic masses, whose later parts are different from their earlier parts. The truth-makers of sentences about alterations of things are thus defined as follows in DMT:

³⁷⁷ Seibt 2000, p. 252.

³⁷⁸ Ibid., p. 272.

³⁷⁹ Seibt 2000, p. 262.

³⁸⁰ Seibt 1997, p. 174.

(D2) The truth maker of the S-sentence ‘a V-s during the temporal interval $I = [t_1, t_2]$ ’ consists of the denotations of ‘A’: DM_i, and the denotation of ‘V-s’: DM_k, just in case DM_i and DM_k are spatially superposed during I .³⁸¹

So, when we say things like ‘my beach towel is blue’ we are asserting that there are two dynamic masses, a ‘being blue’ and a ‘beach toweling’, which are superposed.

Of course, DMT suffers from the problem that also besets all bundle theories; the ‘bundling’ problem. Bundle theorists reject featureless substrata in which properties inhere, and hold that a ‘thing’ is a ‘bundle’ or ‘compresence’ of properties that are in some sense “together”. The problem for all bundle theorists is to explain how some properties form a thing “together”, while others do not. DMT has the problem of tying together the various processes of the world into processes intuitively had by the same thing. Since there are not really *things* at all, this problem is particularly pressing for DMT. Seibt asks, “How are we to express the ‘horizontal’ internal unification of things, i.e., how are we to justify the assumption that different predication (‘my chair is black,’ ‘my chair has a steel base’ etc.) are about one and the same thing?”³⁸²

I will present below her attempt to solve the bundling problem. I will argue that her method fails; either, in the definiens, she makes irreducible reference to already bundled complex processes in the course of defining bundling, or she pushes space-time regions into playing the brute *substance* role she decries.

Before I move on to my criticisms, let me briefly summarize my strategy. I think it is sufficient to reject her account by establishing the following three points.

³⁸¹ Ibid., pp. 175-6. Unfortunately, the above schema is consistent with a substance-attribute schema. Why can’t, for all (D2) says, the denotation of *a* not be a substance, and ‘V-s’ a property, where we understand spatial superposition as a functional-role filler for instantiation?

³⁸² Seibt 2000, p. 267.

First, her arguments involving homoeomerity are fallacious, especially as she employs them in observations three and four. Second, her account has no explanatory success. The bundle problem remains, her putative solution to identity over time has all the problems of substance-based accounts (and perhaps even more), and her treatment of coincidence amounts to nothing more than a restatement of the problem. Her account is no better than the substance framework, and it is successful only to the extent that it re-introduces substances in the form of space-time regions. Third, the notions of concrete non-particulars ['CNPs'] and subjectless processes are both incoherent. Her notion of CNP's make the general non-repeatable, and the particular general. She reinterprets the particular/general and abstract/concrete distinctions in a very confused way. Lastly, some entity which is called a 'process' but is not undergone by *anything* does not deserve the name. A process account may work, but there needs to be *some* substrate, either 'stuff' (i.e., bare objects) or reified space-time regions, for the processes to be *in*. Processes are not a promising reductive monocategorial base.

Seibt's *key move*, repeated again and again in many papers³⁸³ is to claim that countables can be recategorized as non-countables by virtue of certain features of hetero- and homoeomerity. But this move won't work. I have already provided one sample of this argument with the extended quote above (corresponding to fnote 358), but I will now discuss another presentation of the same argument (from 1997).

When Seibt rhetorically asks whether countables can be reduced to non-countables, a key move is to notice that

³⁸³ Cf 2000, p. 248, 1997 p. 168, 2003, pp. 32-5, 2002, pp. 83-86.

non-countable entities are homoeomerous, but only within certain limits. There are spatial parts of water...that are too small in order to qualify as water and there are temporal parts of running...that are too short to qualify as running. The fact that all masses and activities have minimal...amounts is crucially important.”³⁸⁴

Here is why:

if masses and activities are only relatively homoeomerous, we **may** treat every countable item as a mass or activity with a minimal degree of homoeomerity. The extensions of ‘milk’ and ‘running’ cover connected spatial and spatio-temporal regions which contain several amounts of milk and running; on the other hand, if the predicates ‘is a dog’ or ‘is a football game’ are satisfied by the content of a connected spatial or spatio-temporal region, they are satisfied only by the whole region. Count terms like ‘dog’ and ‘football game’ **can be** taken to refer to non-countable entities which occur only in their minimal amounts.³⁸⁵

One of the crucial premises above is that non-countable entities (such as water and running) are homoeomerous. But they are not, at least not the examples she picks.

Discussions on homoeomerity, or *like-partedness* date back to Aristotle, and can also be found in the work of Gibbons.³⁸⁶ The strict and traditional understanding of homoeomerity comes to this:

Some stuff *s* of kind *S*, or a thing *t* of kind *K*, or an event/process *e* of kind *E*, is homoeomerous just in case; *every* part of *s* is *S*, *every* part of *t* is *K*, *every* part of *e* is *E*.

Otherwise *s*, *t*, or *e* are heteromerous, or, non-like parted. All of the examples that Seibt gives as paradigm cases of homoeomerous entities are actually heteromerous, as classically understood.³⁸⁷ Water is heteromerous, running is heteromerous, and so on.

Another premise she employs is that, in contrast to non-countables, which are homoeomerous, countable entities, such as objects and events, have *no* proper parts which are of the same kind. We could call this ‘maximal heteromerity’. But the claim

³⁸⁴ 1997, p. 168.

³⁸⁵ Ibid., bolding mine.

³⁸⁶ See Gibbons 1969.

that weddings or dogs are maximally heteromerous, that they have no proper parts which are of the same kind as them is just incredible. Suppose you have a whole description of a wedding—every molecule involved. Suppose that you exclude *some* small spatio-temporal region, or the actions of one molecule or dust-mote during the middle of the service from the description. Is *that* entity not a wedding? Why not? Take all of a dog except for the tip of one of its hairs. Is that not a dog? This is, of course, the problem of the many, it relates to a large literature on event individuation and identity, and that a dog doesn't have a proper part which is also a dog is hardly something to be addressed in stride.³⁸⁸

Here is a brief summary of the argument:

- (a) Things that we call ‘homoeomerous’ actually have minimal (extended) amounts. Also, they are considered non-countable. But, they are homoeomerous.
- (b) Things that we call ‘heteromerous’ are ‘maximally heteromerous’ (i.e., while they have minimal amounts, these minimal amounts are the whole spatio-temporal region in which they occur). Also, they are considered countable.
- (c) So, what have been considered “countable entities **can be** taken to be non-countable entities which are minimally homoeomerous...”³⁸⁹

Both (a) and (b) seem false, and the inference from them to (c) is questionable. In fact, the ‘can’ in the conclusion is quite ambiguous. If this means just that we can do it, that is, merely *call* countables ‘non-countables’, then no argument need be given. That is true in any case. If she means the stronger conclusion, that countables can *successfully* and *permissibly* be recategorized as non-countables, I cannot see how (a) and (b) establish this at all. For the things we call ‘homoeomerous’ are not homoeomerous. They are heteromerous. The things we call heteromerous are not

³⁸⁷ Except that of space and time, see footnote 27 in 1997, p. 168.

³⁸⁸ Cf Lewis 1999, Unger 1980.

³⁸⁹ Seibt 1997, p. 169, bolding mine.

maximally heteromeric. And, even if they were, why would this license us to treat countables as a species of non-countables? How is it that (a) and (b) warrant us to hold that “the category implications associated with countable entities **can** be fulfilled by non-countable entities”?³⁹⁰

When Seibt deals with some of the problems with this argument, she mostly resorts to hand-waving and stipulation. For instance, when she adopts a more sophisticated view of homoeomerity, she defines the following two distinctions:

- [1] *Likepartedness*: An entity of kind K is likeparted iff *some* of its spatial or temporal parts are of kind K.
- [2] *Strict likepartedness*: An entity of kind K is likeparted iff *all* of its spatial or temporal parts are of kind K.³⁹¹

She responds to an imagined interlocutor, who holds that the things we call homoeo- and heteromeric do not mark a distinction (in the actual world) at all—everything is a bit of both according to different levels of ‘granularity’, in the following way:

On the other hand, if we read (C5)³⁹² as saying that for *all* times during N’s V-ing it holds that N has V-ed, then only strictly likeparted or strictly self-contained entities can qualify as truth-makers for sentences about activities. Vendler took ‘activities’ to be strictly likeparted; others criticized this decision because, strictly speaking, in every occurrence—even a running, readings...—we *can* identify phases...Indeed, we *can* easily argue that not every part of running is a running, just as not every part of water is again water—the homeomerity of ‘activities’ has been compared to the homeomerity of stuffs and taken to hold only for a certain ‘grain-size’. In my view this discussion is partly misguided; when we discern phases in an occurrence we are no longer conceiving of it as an activity but view one part of it as an accomplishment—all that the discussion displays is possible ‘type shift’. Nevertheless, the debate about the ‘granularity’ of ‘activities’ can be used to motivate the following generalization of the predicate of homeomerity:

(HOM) *Homeomerity*: An *n*-dimensional ($1 \leq n \leq 4$) entity E of kind K is homeomerous in dimension *n* iff (a) *all* or (b) *some* or (c) *none* of E’s parts in

³⁹⁰ Ibid., bolding mine.

³⁹¹ 2003, p. 32.

³⁹² 2003, p. 31, “(C5) *Completeness Condition*: According to (M3-iv), from ‘N is V-ing’ we can infer ‘N has V-ed’, i.e., *activities are always already completed once going on.*”

dimension n are of kind K . In case (a) E is *maximally likeparted*, in case (b) *likeparted*, and in case (c) *minimally likeparted*.³⁹³

Somehow she turns an objection against her view (which she quickly dismisses) into a motivation for it (“...misguided...‘type shift’[and, why isn’t the type shift important?]...nevertheless...”), and defines as a special case of homoeomerity what everyone else means by ‘heteromerity’. Look carefully. According to (HOM) and her definitions [1] and [2] just above, a thing can be homoeomerous even in case (c), when it has *no* parts which are of the same nature or kind as the whole. She calls this ‘minimally likeparted’, a species of *homeomerity*, while the rest of us call these items ‘heteromerous’. ‘Minimal likepartedness’ is not like-partedness *at all*.

Here is an argument where I prove that everything is alive. Call the things that are definitely alive ‘maximally alive’. Call inanimate things which have never been alive ‘counterfactually alive.’ Call what we usually call dead things ‘minimally alive’. Since these are all species of ‘aliveness’, and they cover everything, everything is alive. This surely bad argument is quite similar to Seibt’s argument that everything can be treated as homoeomerous.

On a charitable reading regarding the ‘can’, (c) means merely that we can treat countables as non-countables because the aforementioned concerns, (a) and (b), together with her DMT account, support (c) by inference to the best explanation.

But DMT, and the supposition that countables can be reduced to non-countables, is not at all explanatory or satisfactory. Familiar problems such as coincidence and identity over time are either not solved at all, or, to the extent that they are, they are not solved any differently than by standard substance views.

³⁹³ Seibt 2003, pp. 32-3.

The problem of persistence is (in part) the challenge to explain how one and the same thing can have contrary properties at different times. Endurantists say that a thing has different properties by being ‘wholly present’ at distinct times, whereas perdurantists say that a thing has different properties at different times in virtue of having distinct temporal parts which exist at distinct times and have contrary properties. Part of Seibt’s motivation (especially in 1997) for DMT is that it opens up a new way of understanding existence over time: “So far endurance and perdurance are the only conceptions of transtemporal sameness currently discussed. From within the confines of substance ontology this alternative indeed appears exhaustive.”

According to the substance paradigm:

There are only two ways in which a countable particular entity can be at location L (a region in space or time or space-time)—it can either be at L as a whole or it can be at L in virtue of having a part which is at L as a whole...But if we jettison the presupposition that all individuals must be countable particulars...new avenues of interpretation open up. Non-countable individuals are at location L by being wholly at L and by having parts which are wholly at L . A non-countable individual like milk or snowing is wholly in (almost any of) its parts, since (almost any of) its parts are like the whole and thus—given the categorial nature of masses/activities as concrete repeatables—are the whole...within DMT the difference between particulars and general entities...is simply a matter of degree.³⁹⁴

The solution seems to be that ‘things’ are persistent over time by being identical with processes which recur like universals. If I am reading this correctly, there is a concrete individual (a dynamic mass), like *Milk*, such that *Milk* is pasteurized over there, non-pasteurized over there, dirty and brown here, pure and white there.³⁹⁵

There is also a non-specific dynamic mass, *Human*, and a more specific dynamic mass, such as *Johanna Seibt* and *George Bush*, such that *Human* is *George Bush* over there (or, ‘interfering’ with *Bush* there), and *Johanna Seibt* over there. Some dynamic

³⁹⁴ 1997, pp. 176-7.

masses, such as *Johanna Seibt*, “are so specific that they occur only once in space at the same time and thus can satisfy the categorial role of expressions for what is traditionally called a ‘particular entity’.”³⁹⁶

This, at the very least, is odd. But it seems worse than that. *Apropos* of the quote above: even if all parts of some milk were also milk, it doesn’t follow that these smaller portions of milk are like the whole in every conceivable respect. In fact, each proper part of the entire milk weighs less than the entire milk. Suppose they all have the same density. It follows that the proper parts of the milk have a smaller volume than the whole. It follows, then, that they don’t occupy the same place as the whole. If the whole is at L then its parts have to be at places smaller than L and therefore distinct from (but not disjoint from) L .³⁹⁷

In any case, now I want to make it clear why DMT is *not* an improvement over the substance paradigm. Seibt’s main critique of substantialistic three- and four-dimensionalisms is that they all adhere to a set of principles that make them fall prey to the “myth of substance” mentioned above. One of the principles is that, with sentences of the form:

(1.9) a is F at t_1 and G at t_2 [where F and G are incompatible properties]

the following ought to hold:

(P4) Principle of Subjecthood: α is the entity persisting through the change described by sentence (1.9) iff α is the logical subject of the predication occurring in (1.9).

I myself cannot see what is wrong with this principle. Indeed, if (P4) was not used to guide an analysis of (1.9) I would hesitate to say that (1.9) has been analyzed at all.

³⁹⁵ This is somewhat like what Zemach lays out in Zemach 1970.

³⁹⁶ 1997, p. 177.

According to Seibt, what is wrong with this principle is that when it is employed by the endurantist to analyze change over time, the endurantist is forced to give treatments that either cannot account for the putative indiscernability of the object over time, or for its change.³⁹⁸ With perdurantists, the problem is that, by accepting (P4), “the postulated substrata of change [i.e., stages] are presented as logical subjects of properties they could not possibly have [e.g., breathing].”³⁹⁹ It seems to me what she believes is wrong with (P4) is that employing it makes for unsatisfactory endurantist and perdurantist explanations. The former brutally assume an identity over time, while the latter posit distinct objects which are brutally assumed to be genidentical.

But in this respect I do not see how her account has an advantage. If accepting (P4) is problematic, then Seibt has the same problems. How does she analyze sentences like (1.9)?

The truth-makers of sentences about alterations in things are thus defined as follows in DMT:

(D2) The truth-maker of the S-sentence⁴⁰⁰ ‘a V-s during the temporal interval $I = [t_1, t_2]$ ’ consists in the denotations of ‘A’: DM_i , and the denotation of ‘V-s’: DM_k , just in case DM_i and DM_k are spatially superposed during I .

Definition (D2) is supplemented by the postulate that for every S-sentence of the form ‘A is F at t_1 and is not-F at t_2 ’ we can state an equivalent S-sentence of the form ‘A V-s during the temporal interval $I = [t_1, t_2]$ '.⁴⁰¹

I cannot see how one can claim to reject (P4) yet accept (D2) and its postulate. (D2), together with its postulate, seems to clearly state that what it means for a sentence to express a change in thing over time is for a self-same and

³⁹⁷ Thanks go to Irem Kurtsal Steen for some helpful suggestions in regard to this argument.

³⁹⁸ 1997, pp. 153-158.

³⁹⁹ 1997, p. 164.

⁴⁰⁰ “Let S-sentences be all sentences about alterations in things and persons...” 1997, p. 147.

numerically identical mass to be denoted by the same phrase, and for it to have one property (namely, be interfering with another mass) at one time, and another property (e.g., *not* be interfering with that mass) at another time. The theoretical expenditure for DMT is at least as much as that with standard endurance and perdurance accounts.

Seibt *claims* to break with (P4) in the following manner:

The crucial step in this resolution of the *aporia* of change is the break with presupposition (P4), the principle that the subject of change is also the logical subject of the predication in terms of which the relevant change is formulated. Kim's body, i.e., the generic process α , is the logical subject of predication expressing alterations, i.e., expressing sameness through change; yet given DMT's conception of predication this does not mean that the dynamic mass denoted by 'Kim's body' itself 'takes on' or 'has' different features at different times. It only means that the dynamic mass denoted by 'Kim's body' is superposed with the activities which are or constitute these features. The subject of the change is not the generic process α but its ultimate specification β , i.e., the ultimately specific human body which is spatio-temporally co-extensive with Kim's body.⁴⁰²

Let's take a simple sentence:

(W) Kim's body is warm at t_1 and cold at t_2 .

It seems here that 'Kim's body' will either denote a generic recurring process α , 'Kim's body in general', which is not itself the subject of change, or 'Kim's body' will denote a once-occurring specific individual β which persists only from t_1 to t_2 . If Seibt is correct with the above quote, 'Kim's body' does *not* refer to α , and hence she avoids accepting (P4). But then, she says that 'Kim's body' refers to β , which *is* the subject of change referred to by sentences such as (W). Is (P4) false because they are using the wrong

⁴⁰¹ 1997, p. 176.

⁴⁰² 1997, pp. 179-80.

Greek letter? If there *is* an entity β which is the ultimate subject of change, and is supposedly ‘spatio-temporally co-extensive with Kim’s body’, why not just reject this weird ‘general entity’ *Kim’s body* and just stick with the four-dimensional worm β ? What does the supposition that there is a generic recurring body that is superimposed with the specific body accomplish?

In any case, Seibt’s account is not an improvement over substance-based accounts of identity over time, since she posits brute recurrence of the presumed self-same general process across time in order to explain the identity of (particular) objects across time. The primitiveness has been merely switched from more to lesser understood entities. To the extent that her theory accounts for identity over time of objects, it does so by postulating brute identity over time of processes.

Her account also offers cold comfort to the non-coincidentalist, her solution being merely a re-statement of the problem in an even worse guise:

As should be clear from our discussion above, in DMT a space-time region can be occupied by an infinity of individuals. In DMT the gold out of which a ring is made is as much an individual as the ring it makes up; these two individuals are (partially or even wholly) spatio-temporally superposed, as are the weight, the color, the shape, in general: any specific or general feature of the ring.⁴⁰³

We had the problem of the coincidence of the *statue* and the *clay*, now we have the coincidence as well of *the weight* and *the color*. Our comfort is supposed to be that they are not called *things* (although they are individuals).

⁴⁰³ 2000, p. 275.

I think the notion of *concrete non-particulars*, to the extent that we have even been presented with a notion, is very suspect. In (1997), Seibt makes the following claims:

...within DMT the difference between particular and general entities...is simply a matter of degree.⁴⁰⁴

...the categorial implications for non-countables require that the entities satisfying these implications are indeterminate with respect to the particular-general distinction.⁴⁰⁵

These two passages imply that there is not a sharp divide but instead a smooth penumbra running from particular to general. But, then she also states that “All dynamic masses are concrete general entities.”⁴⁰⁶ If this is true, and all entities are dynamic masses, then in fact there are no particular entities, only general ones. If non-countables are really indeterminately general, why say that they *are* general?

Are these masses individuals or not? In (2000), she says “dynamic masses are non-countable, non-particular individuals...”,⁴⁰⁷ but in (1997) she says “concrete *non-countable* entities like masses and activities...are neither individuals nor universals, or they are some of both.”⁴⁰⁸ So, sometimes they are individuals, sometimes they aren’t. Or maybe they are both individuals and universals. Running with some of the same themes, Seibt says that “non-countables are **both or neither** particular and general entities.”⁴⁰⁹ Which one is it?

⁴⁰⁴ p. 177.

⁴⁰⁵ p. 171.

⁴⁰⁶ 1997, p. 177.

⁴⁰⁷ 2000, p. 241.

⁴⁰⁸ p. 172.

⁴⁰⁹ 2000, p. 249, bolding hers.

What does it mean for there to be an individual, a dynamic mass, and for that individual to be not countable, not particular, and not (exactly) a general entity? At one point Seibt mentions in passing that dynamic masses might be generics, but never elaborates enough to make it clear, and never exploits the rather large literature on generics:⁴¹⁰

In DMT, not only an *infima species*, by any dynamic mass is a—more or less generic—individual...We speak about generic individuals when we say that *water* boils at 98 C°, that the *newspaper article* caused millions of readers to turn vegetarian...that the *lion* is tawny...We speak about more specific individuals when we say that *this amount of water* has been boiling for ten minutes...The more generic an individual, the more ‘monotonous’ or like-parted it is in certain dimensions.⁴¹¹

This proposal would depend a lot on what Seibt construes generics to be. If generic talk is generalizations about kinds, and the individuals that fall under them, then generics talk would be talk of classes or their members. But, if particulars for Seibt are in fact generics, which are general, then there *are* no particulars of certain kinds. But then, how can we make sense of generics? I don't think we know what to do with this proposal unless we hear more.

With all of the varying and conflicting things that Seibt says about her dynamic masses, it is questionable whether a coherent idea has been placed before us to consider. It is all well and good to question the traditional distinction between the concrete and the particular on the one hand, and the abstract and the general on the other. But, until we have before us a replacement structure, we can hardly be blamed for not ditching these distinctions.

⁴¹⁰ Cf. Pelletier and Carlson 1995.

⁴¹¹ 1997, p. 177.

Lastly, I believe we should reject her claim that we should found the world upon what she calls ‘subjectless’ processes, that is, processes which occur but do not occur *in* or *to* anything at all. Unless we have already accepted her position, merely appealing to feature-placing sentences such as ‘it is raining’ or ‘it is itching’ does not present a gripping reason to suppose that there *are* subjectless processes. Our mere ability to speak in such a way as to not quantify over anything does not mean that there are not things out there, or processes happening to things. Granted, feature-placing sentences can be used to some extent to characterize processes, but gerunds with imperfective aspect do the job much better, e.g “the stock market is fluctuating,” “the star is pulsing,” and “the cancer is growing”. These paradigm cases of processes all happen in or through or to something—some substrate or other.

Even in the most eligible cases of subjectless processes there always seems to be one thing or other that the process is occurring in or through. Let’s look at her own examples—“such as an electromagnetic wave traveling through space,” “The sunlight was shining through the windows,”⁴¹² “the fog is growing thicker,’ ‘the vortex is traveling to the right.”⁴¹³ I don’t quite understand why she doesn’t think these are occurring in, through, or to something. A portion of space is the medium through which the electromagnetic wave travels or pulses, the sun is shining, what is growing thicker is the fog, and the vortex is a process through a liquid or gas.

⁴¹² Both 1997, p. 173.

⁴¹³ Both 2002, p. 85.

She says “not any happening is a ‘change in a subject.’ Sentences about happenings are frequently not answer to the question what is happening with whom: ‘it is raining,’ ‘it is snowing,’ ‘it is itching,’ ‘it is burning’.”⁴¹⁴ Why isn’t the raining happening in a section of atmosphere, the itching at a portion of skin, or the burning in a tree or some skin? Seibt offers no reason. I propose that since she asserts that processes are paradigmatically *not* about changes or happenings *in* things, she could not be talking about processes (which are, to her mind, what *we* call processes). Processes *always* occur in or to something. As I have discussed at length in Chapter Two, if we seek to drop out all other particulars and still say what we want to say about the world, at the very least, we must reify or substantialize space. In fact, Seibt’s own account contains irreducible references to portions of space-time as particulars. Most of her definitions that are employed to reduce objects to non-substantial processes employ (irreducible) mentions of spatio-temporal regions which act like reified particulars that play the role of the “thing” or “substance”.⁴¹⁵

She also admits that she assumes that

spacetime is homoeomerous but inhomogeneous in the sense that different regions of spacetime are different spacetimes. As stated the conception of spacetime suggests a ‘substantial’ rather than a ‘relational’ stance, which can be accommodated in DMT only on the basis of circular definitions.⁴¹⁶

‘In-homogeneity’ she lists elsewhere as a characteristic aspect of the particular, and her space-time regions play the substance role, scare quotes

⁴¹⁴ Ibid.

⁴¹⁵ See 2000, pp. 268-272.

⁴¹⁶ 2000, p. 259, fnote 22.

notwithstanding. If she would want to deny that spacetime regions are particulars, or that we could somehow make do without referencing particulars, we could then just rehash the arguments of Chapter Two.

While I agree that the substance framework has its problems, Seibt's alternative is even worse. Her account invokes more mystery than it gets rid of, processes cannot be subjectless, concrete non-particulars do not make any sense, and, to the extent that she succeeds, it is because spacetime-regions play the substance role.

Nevertheless, going over this material is important. Just as in Chapter Two we saw how one can not get away with *eliminating* things altogether (and replacing them with non-individuate stuff or processes), we see now how we can neither *reduce* (commonsense) things entirely to processes or bare objects as well. We will now move on to Chapter Four, where we will also see that one can not countenance a stuff and thing *pluralism* either.

Chapter 4: Stuff and Object, and Stuff and Process Pluralisms

So far I have examined, and rejected, views which attempt either to *eliminate* things and replace them with stuff or processes, or, views which try to *reduce* things to stuff or processes. Perhaps a more fruitful approach would be to develop some kind of ontological *pluralism*, i.e., countenance both stuff and things, or both stuff and processes, or perhaps all three. A variant on this theme will be the preferred approach, namely, to accept both processes and things, but regard stuff as eliminable.

First I will examine the work of Ned Markosian, who has a stuff/thing pluralism. Then I will look at Henry Laycock's stuff/thing pluralism. I will argue that both views fail and have unpalatable entailments. Lastly, I will present Toomas Karmo's thing/process pluralism, and recommend the approach. At the end of this chapter I will pull all of the foregoing work together, before moving on to the positive proposal of the dissertation.

4.1 Markosian's Stuff-Thing Pluralism

Is the world a world of things, or a world of non-particular “stuff”? Or, is the world inhabited by both stuff and things, which are irreducible to each other? Ned Markosian supports the latter position in several articles,⁴¹⁷ in part via a survey of possible answers to what he calls ‘The Simple Question’:

What are the necessary and jointly sufficient conditions for an object’s being a simple?⁴¹⁸

The term ‘simples’, in metaphysics, refers to entities, which, whatever else they are like, have no other entities as proper parts. They are variously understood to be ontological ‘building blocks’,⁴¹⁹ ‘elementary particles,’ ‘mereological atoms’,⁴²⁰ or, items which can jointly compose further entities, but which are not themselves

⁴¹⁷ Markosian 1998a, 2004a, 2005 forthcoming.

⁴¹⁸ Markosian, 1998a, p. 214. Markosian also states that answers to the Simple Question will typically be instances of this schema: (S) Necessarily, x is a simple iff _____; where the blank ought be filled in by a substantive criterior.

⁴¹⁹ Markosian 1998a, p. 215.

⁴²⁰ This phrase is from Van Inwagen 1990, p. 5.

composed of entities distinct from themselves (we could call them—‘uncomposed composers’).⁴²¹

Markosian notes that the utility of answering the above question is at least twofold. First, it can help answer van Inwagen’s Special Composition Question (*in what circumstances is a thing a (proper) part of something?*)⁴²². Second, it can help settle whether there could be ‘atomless gunk,’⁴²³ or, matter whose parts all contain proper parts *ad infinitum*, which decomposes neither into an infinite array of discrete point-particles, nor into a finite number of formally indivisible, smallest sized or infinitesimally small extended corpuscles.⁴²⁴ An answer to the Simple Question would also help answer another one (paramount during the Ancient, Medieval, and especially Early Modern periods), namely, whether absolutely solid extended objects are infinitely divisible,⁴²⁵ and whether there could be any (three-dimensionally) extended objects at all (if there are simple objects).⁴²⁶

Markosian examines the nature of simples partly with an argument by elimination; he surveys and dismisses two other views. The first of these is the ‘Pointy View of Simples’ (‘PV’), according to which, necessarily, an object is a simple just in case the spatial region it occupies is point-sized. The second view, called the ‘Metaphysical Indivisibility View of Simples,’ (‘MIV’), is roughly the view

⁴²¹ If we assume the falsity of composite-object nihilism.

⁴²² Van Inwagen 1990, p. 20.

⁴²³ Lewis 1991, p. 20.

⁴²⁴ For a defense of gunk and discussion of issues surrounding it, see Zimmerman 1996a and 1996b.

⁴²⁵ For discussion of these issues, see Zimmerman *loc. cit.* and Holden 2004.

⁴²⁶ Zimmerman in 1996b, p. 1 sets up the problem this way: “Let us say that an extended object is ‘composed wholly (or entirely) of simples’ just in case it is an aggregate of absolutely unextended parts spread throughout an extended region—that is, just in case there is a set *S* such that: (a) every member is a point-sized part of the object, and (b) for every *x*, *x* is part of the object if and only if it has a part in common with some member of *S*. Could a truly extended substance be composed of unextended (‘simple’) parts? Reflection upon the fact that it must be at least *possible* for extended

that, necessarily, an entity is a simple just in case it is impossible to divide it.

According to an unqualified version of the MIV, simples might be point-like or extended. After rejecting each of these views Markosian proposes that simples are ‘maximally continuous objects,’ the intuitive idea being that “simples are objects that occupy the largest matter-filled, continuous regions of space around.”⁴²⁷ More formally, we have the following definition:

x is a *maximally continuous object* =df *x* is a spatially continuous object and there is no continuous region of space, *R*, such that (i) the region occupied by *x* is a proper subset of *R*, and (ii) every point in *R* falls within some object or other.⁴²⁸

The view is then stated as:

The Maximally Continuous View of Simples (MaxCon): Necessarily, *x* is a simple iff *x* is a maximally continuous object.⁴²⁹

It is consistent with MaxCon that there are pointy simples, and all manner of extended simples, in any shape or size you can imagine, just so long as they occupy a continuous region of space which is not continuous with any larger region which is also completely matter-filled.⁴³⁰

Consider, however, a maximally continuous sphere. One would think that such a sphere has a left and a right half, which are distinct entities—proper parts of the sphere. *No*, says the MaxConner. The sphere is made up of some stuff, some of which occupies the left half of the region occupied by the sphere, some of which occupies the right half of the region occupied by the sphere. These two are portions of

objects to touch one another suggests that the answer to this question is: No.” Of course, Zimmerman is using ‘simple’ in a way that is not accepted by all.

⁴²⁷ Markosian 1998a, p. 222.

⁴²⁸ Ibid., p. 221. Note that Markosian’s definitions are based on those in Cartwright’s classic “Scattered Objects” (in Lehrer 1975, pp. 153-171). But, where Markosian speaks of an object’s spatial continuity or not Cartwright speaks of its connectedness or not.

⁴²⁹ Ibid., p. 222.

stuff which are not parts of the sphere, because they are not objects (or, what are classically called *substances*).⁴³¹ They are, instead, ‘portions’.

The believer in the possibility of extended simples, the contemporaries of which include Mark Scala and Josh Parsons,⁴³² in addition to Markosian, agree in many ways with those who have been classically called ‘potential-parts theorists,’ which includes such august company as Aristotle and Hobbes.⁴³³ The potential-parts theorist, like the believer in extended simples, holds that extended (maximally continuous, versus ‘scattered’) objects are unitary substances, and are not made up of distinct objects (i.e., parts), even if they are divisible. Such non-parts are called ‘potential parts’, or, ‘conceptual parts,’⁴³⁴ or just ‘portions of stuff,’ where, “it must be claimed that portions are not things.”⁴³⁵ For the potential-partner, a maximally continuous cake which gets cut up into twelve slices was not, before the slicing, twelve slices arranged cake-wise. This kind of ‘stuff ontologist’ and the potential-partner believe in the possibility of concrete, but non-particular entities.⁴³⁶ Here is a representative quote by potential-partner Kenelm Digby:

[I]f (for example) a rodde be layed before us, and halfe of it be hid from our sight, and the other halfe appeare; it is not one part or thing that shew it selfe, and other part or thing that doth not shew it self; but it is the same rodde or thing, which sheweth itself according to the possibility of being one new thing, but doth not

⁴³⁰ Indeed it is also consistent with MaxCon that there be a world that is completely matter-filled, spreading off infinitely in all directions, and this world, according to MaxCon, would contain just one object—a solitary simple.

⁴³¹ Markosian 1998, pp. 222-3.

⁴³² See Scala 2002 and Parsons ms.

⁴³³ For a good treatment of potential-parts theory, including that of Aristotle and Hobbes, see Holden 2004.

⁴³⁴ Markosian 1998, p. 224. Note some similarities of conceptual parts with what Hume in the *Treatise* calls mere ‘distinctions of reasons.’ (1.1.7)

⁴³⁵ Markosian 2005, p. 6.

⁴³⁶ The phrase ‘concrete non-particulars’ first makes its appearance, I believe, in Laycock 1975. The possibility of concrete non particulars is discussed as well in Seibt 1997 and 2000.

shew itself according to the possibility of being the other of the two thinges, it may be made by division.⁴³⁷

Contrasted with the potential-parters/stuff-theorists are the actual-parters/thing-theorists. Actual parters believe that the parts do pre-exist the division. Most philosophers have been actual-parters, and the actual-parters hold such sway today that it often seems a presupposition rarely needing defense.⁴³⁸ A representative Early Modern actual-parts theorist was Walter Charleton. As Holden glosses:

as [Walter] Charleton snarls, the potential parts theorist ‘would needs have it that all Distinction doth depend *ab Extrinseco*, i.e. ariseth only from *mental Designation*, or actual Division.’ But—‘O the Vanity of affected subtily!’—this is absurd, for—as we saw above—‘Division doth not give [parts] their peculiar Entity and Individuation, which is essential to them and the root of Distinction.’⁴³⁹

Most contemporary philosophers who bother to think about the issue are non-stuff-ontological actual-parters.⁴⁴⁰ Dean Zimmerman is one example:

(A) Every extended object has a left and a right half which are discrete and are themselves extended objects.

This assumption, which—given the relativity of ‘left’ and ‘right’—implies both infinite divisibility and ‘the doctrine of arbitrary undetached parts’, will be contested by some. However I cannot but think that such objectors are using the word ‘part’ in a special sense to mean something like ‘organically unified part’ or ‘naturally demarcated part.’ After all, however arbitrarily the division may fall between the right and left half of an object, it cannot be denied that the object *has* a right and left half. If the object didn’t completely fill up the left half of the region it occupies, then it wouldn’t be occupying the whole of that region after all. And since the left-half region does not contain the *whole* object, it must be exactly filled by only a *part* of it.⁴⁴¹

⁴³⁷ From *Two Treatises, in the one of which the Nature of Bodies is expounded; in the other, the Nature of Man’s Soule; is looked into*. This quote comes from Holden 2004, p. 92 fn 31.

⁴³⁸ As Holden 2004 often points out in chaps 1&2.

⁴³⁹ From *ibid.*, p. 117.

⁴⁴⁰ ‘Stuff ontology’, as it is currently being used in the literature, is ambiguous. There are those who believe that there is stuff which is not a thing or things, and those who believe that things are just stuff, or, mereological fusions of matter. The ‘non-stuff-ontological actual parters’ are not stuff ontologists in the first sense, although they could be in the second sense.

⁴⁴¹ 1996b, p. 8, emphasizes his.

and Kris McDaniel another; "...I hold that talk about matter is reducible to talk about things."⁴⁴²

In what follows, I hope to answer various questions about simples, stuff, things, potential parts, actual parts, gunk, and fundamental entities, mostly via an examination and critique of Ned Markosian's work. My main thesis is that MaxCon is false. It may be necessary for something to be a simple that it be maximally continuous, but it is not sufficient. I will also show several awkward consequences that follow from assuming a stuff-thing dualism, and stuff-thing coincidence. This should have consequences that go beyond Markosian's account and sully any proposal that posits or entails such a dualism.

The paper will be divided into three parts. In part I I will argue that Markosian's arguments against the Pointy View of simples are unsound. In part II I will argue that his arguments against the Metaphysical Indivisibility (MIV) view are unsound. In part III I directly attack MaxCon with two main arguments. First, I employ a thought experiment about a possible world, 'Plenum World,' a world like ours but where the 'ether,' or dense but somewhat causally inert matter exists which completely fills what is empty space in our world.⁴⁴³ In this world, if MaxCon is true, then there would be only one object, a great big MaxCon simple, and talk in that world would not track particulars at all but rather non-individuate portions. But, this would be wrong. Since our talk in Plenum World *would* track individuals, then MaxCon is false. Secondly, in part III I show how the defender of MaxCon faces the

⁴⁴² McDaniel forthcoming, n 48.

⁴⁴³ Kris McDaniel has recently made me aware of a paper by Rea (2001) called "How to be an Eleatic Monist" that deals with very similar issues. I have not had time to read this before finishing the dissertation.

following problem. The phenomenon of ‘stoincidence,’ namely, thing-stuff coincidence, leads the MaxConner to have to accept either a dubious doctrine of ‘contingent particularity’ of things, or, admit that there are no things at all. Either option entails unacceptable consequences. Markosian’s ontological pluralism of things and stuff fails. MaxCon and the rest of Markosian’s stuff-ontological apparatus give us no reason to countenance non-particulate stuff in addition to things.

4.1.1 Unsound Arguments Against the Pointy View of Simples

The Pointy View of simples (PV) has been held by many.⁴⁴⁴ The basic idea, which has some intuitive appeal, is that the only objects which could have no proper parts are point-sized objects. How could they have parts if they have no extension? Markosian lays out the view as follows:

- Object O *occupies* region R =_{df} R is the set containing all and only those points that lie within O.
- x is a *pointy object* =_{df} the region occupied by x contains exactly one point in space.

The view can be stated as follows:

The Pointy View of Simples: Necessarily, x is a simple iff x is a pointy object.⁴⁴⁵

⁴⁴⁴ E.g., Grunbaum 1967. See Zimmerman 1996b, p.1.

⁴⁴⁵ Markosian 1998, p. 216.

Markosian argues that PV does not provide us with a necessary condition for simplicity. He does agree that *if* there were pointy objects, they would be simple, while denying that pointiness is necessary for simplicity. I agree with his conclusion, but not with his reasons for accepting it.

Markosian's main argument against PV is that it entails that both of the following are true:

- (1) Necessarily, if any extended and spatially continuous object exists, then an infinite number of objects exist.⁴⁴⁶
- (2) It is not possible that there exists just one physical object in the entire world, and that that object is spatially extended.⁴⁴⁷

This is because, if PV is true, then there cannot be only a completely solid sphere in existence. Let's suppose that there is a solid (i.e., maximally continuous) sphere in existence, and call it, following Markosian, 'Spero'.⁴⁴⁸ Either the sphere is completely composed of (pointy) simples or partially or wholly composed of infinitely divisible gunk.⁴⁴⁹ In any case, there couldn't be a finite number of entities in existence in this situation, and certainly not only the sphere. There would either be an infinite number of pointy simples, one in each spatial point occupied by the sphere, or an infinite number of portions of gunk. "Both (1) and (2) seem unacceptable to me. Why should it not be possible that the only physical object that exists is a perfectly solid sphere?",⁴⁵⁰

But this just gives us a *tu quoque* against Markosian. On MaxCon, as we will see, it is also impossible for there to be just a single solid sphere, or any other single

⁴⁴⁶ Ibid., p. 218.

⁴⁴⁷ Ibid., p. 219.

⁴⁴⁸ Ibid., p. 222.

⁴⁴⁹ We need to keep in mind here that the thesis that simples, if there are any, are pointy, is distinct from the thesis that extended objects, if there are any, are composed of only pointy simples.

⁴⁵⁰ Markosian 1998, p. 219.

extended object. If what Markosian says elsewhere is true, then there is also an infinite number of entities in the world if there is any extended thing. As I mentioned above, Markosian replies to the most obvious objection to MaxCon (that there are two halves to the sphere that pre-exist the statue) in the following way:

...it seems to me that the plausibility of the premises of the above argument for the conclusion that Spero must have at least two parts can be accounted for in a way that does not commit us to accepting the argument's conclusion. Let us distinguish between two kinds of 'part'. On the one hand, there are what we might call 'metaphysical parts', which are the things that actually compose composite objects, and each of which is a genuine object in its own right. And on the other hand, there are what we might call 'conceptual parts,' which may or may not be genuine objects, but which correspond to the sub-regions of the region of space occupied by an object, along with the matter, or stuff, that fills those sub-regions. The idea, then is that in at least some cases, when we talk about the 'parts' of an object, we are really talking about its conceptual parts. Moreover, it seems to me that talk about the conceptual parts of an object, whenever it makes sense, can be translated into talk about the sub-regions of the region occupied by that object, along with the matter that fills those sub-regions.⁴⁵¹

What about a maximally continuous statue which is made so that its arm rotates relative to the rest of it? Would not this statue actually have a distinctly existing part, namely, an *arm*? Markosian fends off this objection in a similar way as the one before:

...talk about the motion of the arm of the statue can be translated into talk about the motion of the matter that fills the arm-shaped sub-region of the region occupied by the statue at any time relative to the matter that fills the remaining sub-region of the region occupied by the statue at that time, in a way that does not commit us to saying that there are two objects involved in the case.⁴⁵²

Markosian calls the matter that fills the arm-shaped region of the statue, or the left half of Spero, not only conceptual parts, but 'portions'.⁴⁵³ But what are these portions? Aren't portions *things*? 'No', says Markosian. One of the ten substantive

⁴⁵¹ Ibid., p. 224.

⁴⁵² Ibid.

⁴⁵³ Markosian 2005, p. 6.

theses that Markosian delineates between stuff and things in a follow-up paper that builds on the ideas laid out in “Simples,” is that “The stuff that constitutes a thing is distinct from that thing.”⁴⁵⁴ Also, two other theses of Markosian are that “For every two portions of stuff, there is a portion of stuff that is the fusion of those two portions,” and, “some portions of stuff constitute things, but not every portion of stuff constitutes a thing.”⁴⁵⁵ Lastly, while rejecting DAUP, or, the doctrine of arbitrary undetached parts,⁴⁵⁶ Markosian does accept a related thesis, DWAPO, or the ‘doctrine of wholly arbitrary portions’—“For every region of space, R, such that every point in R is filled with matter, there is a portion of matter that exactly fills R.”⁴⁵⁷

Given these supplementary theses, neither can Markosian allow an extended sphere to exist on its own. As well as Spero, there is the stuff constituting it. The stuff constituting it is made up of infinitely many arbitrary portions (unless, *per impossibile*, there were smallest possible regions that had a finite but non-zero extension). Markosian would reply that there *can* be only one *thing* in existence—the simple sphere—since the other entities—portions—are not things at all:

Talk of portions of matter might sound suspiciously like talk of things, namely, portions. But...it must be claimed that portions are not things. If someone should insist that in talking about stuff I avoid even the appearance of thing talk and thing quantifiers, I would be happy to do so, although the result might involve some strange-sounding locutions. For example, thesis (2) above⁴⁵⁸ would have to be phrased this way: For every object, and for every time at which that object is

⁴⁵⁴ Ibid. (Note how according to MaxCon and additional principles the point particle is distinct from the stuff making it up.)

⁴⁵⁵ Ibid., p. 9.

⁴⁵⁶ DAUP is the doctrine that “for every material object M, if R is the region of space occupied by M at time t, and if sub-R is *any* occupiable sub-region of R *whatever*, there exists a material object that occupies the region sub-R at t,” Van Inwagen 1981. Van Inwagen argues against DAUP, but the argument employs, I believe, false premises about the nature of commonsense objects and their relations to their parts. As we will see, rejecting DAUP entails either accepting non-particular ‘stuff’, which is very problematic, or denying that, for instance, we have eyeballs.

⁴⁵⁷ Markosian 2005, p. 9.

⁴⁵⁸ Namely, “(2) *For every object, and for every time at which that object is present, there is exactly one portion of matter that constitutes that object at that time.*” Ibid., p. 6.

present, there is some matter such that that matter constitutes that object at that time and for any other matter it is not the case that that other matter constitutes the object at that time.⁴⁵⁹

Bracketing for now the issue of whether Markosian really avoids quantifying over *things*, *objects*, or *substances* when he speaks of portions, it is unclear how this will help him if his objection against PV is to have any force which cannot also be levied against him. Let's use the terms 'sthings', 'shobjects', 'shentities', and their neologistic cognates as disjunctive terms which can refer to either particulars or putative concrete-non-particulars, such as portions. While MaxCon does, strictly speaking, allow for there to be only one extended object in existence, it does not allow there to be only one extended shobject in existence. In fact, if there is a single extended shobject, there are an infinite number of shobjects. In addition, if MaxCon is right, these infinite number of sthings aren't even things, and have several problems which we will get to. Perhaps there are some moves Markosian could make here, but, unless he wanted to give up some of the core of his position, at the very least he must admit that as well as the sphere there is the *stuff* in addition to it. So, there cannot be only a sphere in existence.

At the same time, while the problem Markosian raised for the PV is just as much a problem for the MaxConner, it is hard to see what the real force of Markosian's objection was to begin with. Neither an actual infinity of parts, nor the impossibility of there being only one thing when there is an extended object, are incoherent. While there *are* problems with supposing that extended objects are wholly composed of pointy simples,⁴⁶⁰ the believer in pointy simples is free to revise her

⁴⁵⁹ Ibid., pp. 6-7.

⁴⁶⁰ See Zimmerman 1996b.

view so that she can countenance either discrete, non-contiguous point-particles, and allow only these to be simples, *or*, allow for the possibility of gunky stuff, where she supposes that worlds where there is only gunky stuff contain no simples at all. Such a view is tenable unless we suppose both that simples are fundamental entities, *and*, that every world has some fundamental entities. And we've been given no reason as of yet to suppose that simples, while stipulated to be things with no proper parts, can also be stipulated to be fundamental entities such that every world contains some. Gunky worlds with no metaphysically indivisible hunks of gunk or point-particles are precisely those worlds where it seems there are no simples at all.

So, while I myself do not believe the PV is necessarily true, we have not been given any reason to believe it is false by Markosian.

4.1.2 Unsound Arguments Against the Metaphysical Indivisibility View

As Markosian notes, “the Greek word ‘atom’ originally meant *indivisible thing*. So it is natural to think of simples—mereological atoms—as indivisibles.”⁴⁶¹ Mark Scala points out how Newton seemed to believe that there are simples which are physically indivisible (and non-deformable) extended corpuscles:

It seems probable to me that God in the Beginning formed Matter in solid, massy, hard, impenetrable, movable Particles, of such Sizes and Figures, and with such other Properties, and in such Proportion to space, as most conduced to the end for which he formed them; and as these primitive Particles being Solids, are incomparably harder than any porous Bodies compounded of them; even so very

⁴⁶¹ Markosian 1998, p. 220.

hard as never to wear or break in pieces; no ordinary power being able to divide what God himself made one in the first creation.⁴⁶²

It seems natural to think that smallest-sized nomically or metaphysically indivisible particles would be simple, if there are any, since there would be no independently existing entities that make them up. So, why not think of simples as indivisibles, whether pointy or extended? This seems like a good position indeed, unless we assume that having some spatial structure or extension, and hence at least formal or conceptual divisibility is sufficient for complexity. But this seems false for two reasons. First, if spatial structure is necessary for having proper parts, then a point-particle which is a temporarily colocated fusion of two or more pointy simples, would itself be a simple.⁴⁶³ Second, if there are microscopically extended, homogenous, non-deformable, intrinsically unchanging fundamental particles none of whose parts ever exist apart from any of their other parts in any possible world, then these would be labeled complex. There does seem to be a lot of appeal in the idea that simple entities are those maximally continuous entities, either pointy or extended, which are such that none of the matter or ‘stuffing’ which occupies their interior (or merely their point-location) can exist apart from, and non-contiguous to, any of the rest of its stuffing. But what can be said against the MIV?

First, we have to distinguish, like Markosian, between two different views of simples as indivisibles. The first, weaker view, is that simples are mere nomic indivisibles. That is, necessarily, something is a simple just in case it is physically

⁴⁶² See Scala 2002, p. 394. Quoted from Brush 1983.

⁴⁶³ See fn. 20 on p. 217 of Markosian 1998 in relation to this, as well as McDaniel forthcoming, p. 9. The most likely actual co-location of fundamental particles goes against Markosian’s arguments against co-locatable pointy objects. (Cf. Simons 1994 pp. 379-380). Also, we could imagine that two pointy particles, according to the laws of nature, somehow overlap and ‘fuse’ to make a single pointy object, with the parts separable when properly energized, for instance.

impossible to divide it.⁴⁶⁴ There are some problems with this view, but the counter-examples Markosian gave against it leave it unscathed.

First, he asks us to consider a physically unbreakable chain. “The Physically Indivisible View (henceforth, ‘PIV’) of Simples entails that such a chain would be a simple. But it seems clear to me that such an object would have proper parts.”⁴⁶⁵ Markosian seems to ignore that any respectable view of simples based on indivisibility would not make unbreakability alone *sufficient* for simplicity (although it must be necessary), for certainly there can be complex, physically unbreakable things. So, the PIV he argues against is a straw-man. A better formulation of the PIV would be

PIV’: Necessarily, something is a simple just in case it is both physically indivisible and a maximally continuous object.

PIV’ is untouched by this counter-example as well as the next one Markosian asks us to imagine:

[A]nother apparent counterexample to the...[PIV]...:imagine a bomb made of some relatively mundane materials—bits of metal and plastic, say—that is cleverly arranged so that any attempt to separate the materials making up the bomb from one another will, as a matter of physical necessity, result in the entire thing’s being annihilated. Such a bomb would count as a simple, on the [PIV]; but it seems clear that such a bomb would have the relevant bits of metal and plastic...as proper parts.⁴⁶⁶

But, since Markosian builds into the example that the bomb is made up of *bits* and *pieces* distinct from the whole bomb, we have to wonder what imagined proponent of PIV simplicity he is arguing against. This could only be a counterexample if the PIV

⁴⁶⁴ Markosian 1998, p. 220.

⁴⁶⁵ Ibid.

⁴⁶⁶ Ibid.

theorist in question would allow complex things to be labeled ‘simple’ from the outset.

The real problem with the Physically Indivisible View of simples is that it decrees that items which are merely contingently indivisible are necessarily simple. Imagine a maximally continuous extended sphere, one hemisphere made up of black matter, the other made up of white matter. Electrostatic forces bind the two hemispheres together, and, conjointly with other laws of nature governing the world, render it so that no being can evolve who is strong enough to pull them apart, and no tools can be made to divide them. Since this sphere would be physically indivisible, and maximally continuous, it would count as a simple according to PIV. Consider, however, a nearby possible world where we tweak the laws a bit so that a monster can evolve and pull the two halves apart. (Suppose that all the laws governing the sphere’s behavior remain the same.) This intrinsic duplicate of our sphere is not a simple. However, intrinsic duplicates of simples ought to count as simples, so PIV is false. Markosian does not invoke this kind of objection against PIV because he denies that intrinsic duplicates of simples are necessarily simples.⁴⁶⁷ If this objection would work against PIV, it would also work against MaxCon. For, according to MaxCon, a homogenous sphere goes out of existence, even if it undergoes no intrinsic change, if it comes to be completely surrounded by and continuous with some other matter. Markosian will deny that an intrinsic duplicate of the sphere (the sphere-shaped portion) is a simple.

So, since the PIV version of simples as indivisibles fails, perhaps the indivisibilist can avail himself of a better criterion. A better idea is that, necessarily,

something is a simple iff it is a maximally continuous object and it is metaphysically impossible to divide it.⁴⁶⁸ This view is not susceptible to the above kind of counterexample.

What can be said against it? Markosian argues that if this view is right, then nothing will count as a simple.⁴⁶⁹ The argument seems to run as follows, in two main steps:

Argument 1:

1. Assume, for *reductio*, the MIV.
2. All extended objects are metaphysically divisible.[“For what else beside a pointy object would be metaphysically indivisible?”]
3. Pointy objects can either be extended and divisible or else essentially pointy.
4. Nothing could motivate the notion that there could be essentially pointy objects.
5. So, pointy objects can be extended and divisible.
6. If this is the case, then, if MIV is true, there could be no simples.
7. [enthymeme] ‘Simples’ must have some extension, in some possible world.
8. So, MIV is false.⁴⁷⁰

Let me go on to present Markosian’s second supporting argument before I examine this one. Next, Markosian throws a bone to the MIV theorist in the form of a revised theory, and then putatively rejects it, in the following way:

Argument 2:

- A. Since argument 1 is so pressing, the MIV theorist could reply by saying that what really captures MI is the following: MIV Revised: Necessarily, x is simple iff it is metaphysically impossible to divide x without first changing x ’s intrinsic properties.
- B. But, all and only pointy objects would satisfy the right-hand side of the biconditional of MIV Revised. [because of (2) above].
- C. But then, MIV Revised would be equivalent to the PV, and suffer the objections it does.
- D. So, MIV Revised is false as well as MIV and PIV.⁴⁷¹

⁴⁶⁷ We will get to these matters more in detail below.

⁴⁶⁸ Markosian 1998, p. 220. There he does not put in the condition of maximal continuity. But, it seems enthymematic for Markosian at this point that, according to the MIV view, in order for an object to be a simple, it is necessary for the object to be both indivisible and a maximally continuous object. It seems he has to assume this, otherwise scattered metaphysically indivisible objects could count as simple.

⁴⁶⁹ Ibid., p. 221.

⁴⁷⁰ Ibid.

I don't need to address Argument 2 if I am correct that Argument 1 is unsound, but I laid it out only to stress the importance that premise 2 has in Markosian's argumentation. If I can defeat that premise, then his argument against MIV fails, and then I don't need to defend MIV Revised. And I think I can successfully deny 2.

If premise 2 is true, then it is an *a priori*, necessary truth that anything extended is metaphysically divisible. (Markosian does not offer any *a posteriori* reasoning for it.) That is, for any extended object O, which has distinct, disjoint, but contiguous parts *x* and *y* (conceptually, at least), there is another possible world where (a counterpart of) *x* exists without (a counterpart of) *y* or unattached from (a counterpart of) *y*. But, why think this is true, for every possible extended object? Perhaps there are some, or could be, extended metaphysically indivisible objects, and these are just the kinds of objects to count as extended simples.

There are other problems with Argument 1. Premise (4), that "nothing could motivate the notion that there could be essentially pointy objects" seems especially suspect. Suppose that quarks are pointy objects, and all their mass is contained in the point where they are located. Furthermore, it seems that quarks are picked out and delineated by their relational properties. It might be that, if quarks could somehow be expanded, that their center of gravity would change, in such a way that they would have vastly different effects. If such non-pointy particles as these did exist in our world, it could be that scientists wouldn't classify them as quarks at all. Or, if such a transformation occurred, we would have as much reason to suppose that a quark went out of existence as we would have to say that it merely expanded. A lot is going to

⁴⁷¹ Ibid.

depend on the details of course, but, I see no reason to suppose that there *cannot* be essentially pointy objects.

4.1.3 Objections to MaxCon

I have two main objections to MaxCon. First, a thought experiment will help show that, if MaxCon is right, then we are forced to claim that certain obvious individuals would in fact not be things at all. Second, I will show that MaxCon cannot be right, because, if it is, then stuff-thing coincidence occurs, from which it follows that there are either ‘contingent particulars,’ or worse—no things at all. Both consequences are unacceptable. So, MaxCon is wrong.

4.1.3.1 Plenum World⁴⁷²

To refresh your memory, the technical definition of MaxCon is that, necessarily, something is a simple just in case it is a maximally continuous object, where *maximally continuous object* is defined as follows:

x is a *maximally continuous object* =df x is a spatially continuous object and there is no continuous region of space, R , such that (i) the region occupied by x is a proper subset of R , and (ii) every point in R falls within some object or other.⁴⁷³

⁴⁷² Once again, it just came to my attention that Rea argues about similar matters in Rea 2001, but I have not looked at this material yet.

⁴⁷³ Markosian 1998, p. 221.

MaxCon implies that any maximally continuous portions of matter are not only not simples, but not objects or *things* at all, when these portions of matter are continuous with any other portions of matter, or, proper (conceptual) parts of some larger simple.

The following argument shows that this consequence is unacceptable. Imagine a world, just like our world, with the exception that all of the empty space is filled with ‘ether’. Call it ‘Plenum World.’⁴⁷⁴ Ether, if it existed, would be completely space-filling matter that is causally inert with the exception of being a medium for energy transmission. Not only is this conceivable, but it was thought actual until the completion of the Michelson-Morley experiment of 1887.⁴⁷⁵ It certainly seems logically possible. This world would be a true plenum, with no empty space at all. If MaxCon is right, then there is only one object in this world—the whole thing. But, this would be wrong—there would be many things in Plenum World. So, MaxCon must be wrong.

Markosian must insist that in Plenum World, we speak of non-individuate portions, not objects. However, any feasible treatment of ‘portions’ that Markosian would give for Plenum World would be logically equivalent to the talk of objects in our world. So, either objects don’t exist in our world (only portions do), or, objects do exist in Plenum World. Since objects *do* exist in our world, then they do in Plenum World. But then MaxCon is false.

Indeed, despite what Markosian says, one does have the sneaking suspicion that all this ‘portion-not-thing’ and ‘stuff-not-thing’ talk is just veiled thing talk.

⁴⁷⁴ This is much like Spinoza (and Descartes) thought the world is. See Bennett 1984 chapter 4.

⁴⁷⁵ “Albert Michelson...and Edward Morley...argued that if we were drifting through a sea of ether, like a fish in water, then, if light was a wave in the ether, a light beam shining in the direction of the Earth’s motion should behave slightly differently from a beam traveling at right angles to the motion. Using

Markosian's main reasons for denying that it is are, that (1) putatively, he can translate all talk of portions which quantifies over them into talk which does not quantify over them as particulars,⁴⁷⁶ and, (2) if it were not true, then his thesis would be false,⁴⁷⁷ and, (3) stuff has different modal properties than things do. I will address (3) later, since this commits Markosian to problematic stuff-thing coincidence, the subject of the next sub-section. (2) is not a reason so much as a reason to find other reasons, so we are left with (1). The problem with (1), however, is that this reply shows not that these portions are *not* things, but merely that we can talk about them in a way that doesn't commit us to their being things. With a healthy dose of adjectives and adverbs, and quantification over regions, we *might* be able to not countenance any objects *whatsoever*, but that doesn't show that there are no things.⁴⁷⁸ The only way (1) can work is if we also assume that MaxCon is true, which is just the thesis under question in those contexts when someone denies that portions are not things.

Indeed, there is a somewhat maddening insouciance when Markosian is challenged to defend the notion that there *are* portions that *are not* things. To quote Kris McDaniel, from his paper “Against MaxCon Simples”:

Matter as Markosian conceives it seems to be very thing-like; it can fall under different kinds, instantiate properties, change position in space, persist through time, and undergo change; moreover, matter always comes in *thing-like* portions. In order for talk about matter to do the work that Markosian wants it to do, we need the resources of quantification over portions of matter. Why don't they count as *things*?⁴⁷⁹

extremely sensitive methods, they found no difference whatsoever. This was one of the great null experiments of all time.” Silver 1998, p. 198.

⁴⁷⁶ 1998, pp. 223-4; 2005, pp. 6-7; 2004a, p. 334.

⁴⁷⁷ 2005, p. 6, and, “for a third thing, the matter-thing identity thesis...is inconsistent with the thesis about the irreducibility of stuff to which, as I mentioned above, the MaxConner is committed.” 2004a, p. 334.

⁴⁷⁸ For an example of ‘ontological nihilism’, which does not really work, see Cortens and Hawthorne 1995.

⁴⁷⁹ McDaniel 2003, p. 270.

Markosian's replies to the above are as follows:

- (A) "First, I would say that matter does not always come in thing-like portions, since many portions of matter are altogether unlike any thing at all."
- (B) "Second, I would say that although matter may be similar to things in certain ways, insofar as matter has properties, etc., nevertheless, that doesn't make it true that each portion of matter is identical to some thing or other."
- (C) "I admit that I am committed to there being special quantifiers that range over portions of stuff...I will insist (as anyone who holds the irreducibility of stuff thesis must) that the relevant stuff quantifiers are not in any way equivalent to or even reducible to thing quantifiers."⁴⁸⁰

With the (A) reply, Markosian seems to be talking past McDaniel. 'Thing' has, in this context, two salient possible readings. One is that by 'thing' we mean a common sense object, a medium sized dry good. The second sense of 'thing' is formal—a thing is an item of quantification, such as an army, a heatwave, or a trade surplus. Any thing we can quantify over is a *thing*, in this sense. It seems to me like McDaniel was asking why it is that portions do not get treated as standard items of quantification, and Markosian replies that this is because matter is not a common sense object. But, since many entities which are not common-sense objects get quantified over in the standard way, Markosian hasn't replied to McDaniel properly.

(B) and (C), while not exactly question-begging replies, come close to being so. McDaniel asks what reasons we have for treating stuff any differently than things, implying that we haven't been given good enough reasons to suppose this already, as laid out by Markosian in "Simples." Markosian's reply with (B) is to repeat a gloss on a conclusion he argued for in "Simples," and; in (C), to insist that he has already been employing, or that we already employ, 'stuff quantifiers.' But this reply is right in the

⁴⁸⁰ 2004a, p. 334.

context of McDaniel’s puzzlement as to what these quantifiers would be, whether the idea is coherent, and why we would even need them.

McDaniel gives further reasons to hold that portions must be things, and to these Markosian responds, but, as I will show, unsatisfactorily. McDaniel defends the following principle, which Markosian notes is inconsistent with MaxCon⁴⁸¹

The Supervenience of Constitution (SoC): Necessarily, for any portion of matter that constitutes some object, z , any qualitative duplicate of that portion of matter constitutes a qualitative duplicate of z .⁴⁸²

SoC, McDaniel notes, is “extremely plausible.” And why wouldn’t it be? It says that a qualitative duplicate of a portion of matter constituting an object also constitutes an object. “Consider some collection of objects that you believe compose a whole. Surely whatever factors determine that these objects compose something have nothing to do with what occurs outside of the region occupied by the objects in question.”⁴⁸³

Markosian at this point notes that, on the assumption of MaxCon,⁴⁸⁴ a qualitative duplicate of a stand-alone-arm of a statue is an object, while the ‘arm’ of the maximally continuous statue is not—and hence, he has a counterexample to SoC. But, of course, this is a case of one man’s *modus ponens* being another man’s *modus tollens*. McDaniel would reply that, since it is so obvious that the disembodied statue

⁴⁸¹ 2004a, p. 335-6. It is not, really. MaxCon is only inconsistent with SoC and DAUPO, according to McDaniel (personal communication) or, the ‘doctrine of arbitrary undetached portions’ that McDaniel lays out in 2003, p. 272. Note that I am extremely truncating some of Markosian’s and McDaniel’s exchange here, but not, I think, in any way that interferes with the substance of the dialectic. SoC is not inconsistent with MaxCon, but it would be if we merely added to SoC an additional principle—that any qualitative duplicate of an object z is also an object. If we treat SoC as saying this, and Markosian as treating it as saying this, then we can proceed in such a way as to ignore some of the problems here. Also, given that Markosian accepts a very similar principle to DAUPO, namely, DWAPO (see 2005 p. 9), then the disagreement comes to a disagreement about the augmented SoC principle.

⁴⁸² McDaniel 2003, p. 271.

⁴⁸³ Ibid. Probably McDaniel meant to substitute ‘constitute’ for ‘compose’ in the quote.

⁴⁸⁴ I can’t see how else this response could work. See 2004a, p.336.

arm is an object, it is obvious that the qualitative duplicate connected to the statue is one as well, and so we have a counterexample to MaxCon. Markosian notes, after this question-begging reply, in the very next paragraph, that another reason he has to reject SoC is that it is inconsistent with MaxCon.

But we already knew that MaxCon is inconsistent with (the augmented) SoC. And, we have been given no independent reason to prefer MaxCon over SoC. Which is more intuitive—that qualitative duplicates of portions of matter which constitute objects themselves constitute objects, or, that maximally continuous extended objects have no proper parts? It seems the former is more obvious, especially when we consider that the latter implies that an object can go out of existence when it suffers no intrinsic change, as when two maximally continuous objects come into full contact, or that a portion which is not a particular can become one, when undergoing no intrinsic change—merely by becoming disconnected from another portion.

Markosian moves beyond question-begging and sticking to his guns when he actually challenges some of the reasons McDaniel has for endorsing SoC. But these replies also fail. McDaniel supports SoC in the following way:

When does some matter constitute an object? I say that the following condition must be met by a relation in order to deserve the name ‘constitution’: just as it is the case that necessarily, if some x s compose some y then any qualitative duplicates of the x s compose a qualitative duplicate of y (provided that the same relations obtain between the duplicates of the x s), it is the case that the constitution relation supervenes on the qualitative character of its relata.⁴⁸⁵

Markosian replies, “These remarks suggest an argument by analogy from a principle about composition...that McDaniel apparently endorses.” But, he goes on,

⁴⁸⁵ McDaniel 2003, p. 271.

this argument fails, for two reasons. First, the relevant principle about composition is highly controversial. As a defender of Brutal Composition,⁴⁸⁶ for example, I would reject it. So would some philosophers who endorse van Inwagen's proposed answer to the Special Composition Question.⁴⁸⁷

If I read this correctly, McDaniel's principle fails because (1) Markosian would reject it because he supports a thesis that contradicts it, and (2) some 'organicists' would reject it.⁴⁸⁸ None of these, though, are good reasons for rejecting the composition-constitution analogy or the compositional principle McDaniel outlines. It seems to me that McDaniel's principle is far more reasonable than the doctrine that it's just a brute fact with no explanation whatsoever whether any simples compose any further object,⁴⁸⁹ or that the only composite objects are organisms.⁴⁹⁰ Granted, the principle *is* moot, but when there is a disagreement about a moot point, one needs to adduce further reasons to settle the issue, which Markosian has not done.

Another reason we are given for rejecting McDaniel's claim that "constitution must be analogous to composition" is that it is "controversial. In particular, in view of the fact that constitution is a stuff-thing relation while composition is a many-one relation between things, it is quite reasonable to believe that the two are disanalogous in other ways."⁴⁹¹ However, it is Markosian's usage of 'constitution' which is atypical, perhaps stipulative. As 'constitution' is commonly used in the philosophical literature, the constitution relation is not a stuff-thing relation, but a thing-thing relation, between, for instance—a collection and a thing⁴⁹²; a (particular) quantity of

⁴⁸⁶ See Markosian 1998b.

⁴⁸⁷ Markosian 2004a, p. 337.

⁴⁸⁸ Markosian does note, in footnote 9 on p.337, however, that Van Inwagen himself would support it.

⁴⁸⁹ Which is what 'brutal composition' amounts to—see Markosian 1998.

⁴⁹⁰ See Van Inwagen 1990.

⁴⁹¹ Markosian 2004a, p. 337.

⁴⁹² Wiggins 1980, p. 30.

water and a pool⁴⁹³; an animal and a person⁴⁹⁴; a statue and a piece of clay⁴⁹⁵; and a body and a mass of cellular tissue⁴⁹⁶.⁴⁹⁷

Furthermore, if constitution is a ‘stuff-thing’ relation, more questions arise than are settled. Is the stuff relatum of a stuff-thing related pair particular (and referred to singularly), or a plurality? If stuff is referred to as singular, then wouldn’t the stuff be a thing? Perhaps the stuff is referred to plurally, so that we understand, for instance, ‘the water constitutes the ice-statue’ as ‘the H₂O molecules constitute the ice-statue’, and, similarly, ‘some stuff constitutes the simple’ as, ‘disjoint portions x₁...x_n constitute the simple’.⁴⁹⁸ But then constitution *would* be a many-one relation, and hence Markosian’s denial of the analogy between constitution and composition would not work. So, he must claim that stuff is neither plural nor singular. But then, ‘stuff’ is starting to sound abstract, reminiscent of universals which are neither plural nor singular, or, like talk of generics or types—such as, “water is wet.” But, Markosian’s stuff is concrete. Nor are they types—he speaks of token portions. What *are* these non-things?

Also, Markosian seems to model the whole of the constitution relation upon only a sub-set of the possible relata—namely, the relation between a MaxCon simple and the stuff that constitutes it. Markosian admits that there could be pointy simples,

⁴⁹³ Cartwright 1974 and 1979.

⁴⁹⁴ Rudder Baker 2000.

⁴⁹⁵ Burke 1992 and 1994.

⁴⁹⁶ Zimmerman 1995, p. 70.

⁴⁹⁷ Only Laycock in 1975 and 1981 (and Burke (1997)) seems to think constitution is (or can be) a stuff-thing relation, but he thinks that this is a *many-one* relation (in 1981), akin to plural quantification, and so actually analogous to composition in this respect. There’s an important side-point here. If Markosian is right that there is no analogy between composition and constitution, it’s hard to see how his answer to the Simple Question can help answer questions about the Special Composition Question...*pace* his claims to that effect in 1998, pp. 213-214. It isn’t the ‘special constitution question.’

⁴⁹⁸ For a proposal like this, see Laycock 1981.

which we could suppose compose some water molecules, which could in turn constitute an ice-statue, either singularly, as a *collection*, or, plurally, as in *the water molecules*. So, constitution can be a thing-thing or a many-one relation, or else disjoint, disconnected simples could not constitute objects distinct from themselves—a consequence Markosian would not endorse.

Markosian *may* be right that constitution is a stuff-thing relation, and *may* be right that stuff is concrete, but not particular, but, until a solid proposal is on the table, we have no reason to believe that he has fended off McDaniel’s complaints.

So, we can conclude that Markosian has not discharged his duty to tell us what stuff or stuff-portions are, and can reasonably claim that, *prima facie*, stuff should be treated either as singular items, namely, portions, or with plural quantification.

This should also lead us to see that nothing in Markosian’s writings assuages the intuition that in Plenum World there *are* smaller than world-sized individuals, not merely non-individuate portions. Since MaxCon entails that none of our counterparts in Plenum World are individuals or particulars, MaxCon is false.

4.1.3.2 Stoincidence

Markosian maintains a thing-stuff dualism. Stuff is not identical to things, nor are things or stuff ontologically reducible to one another. Markosian’s account entails a radical kind of coincidence between stuff and things, which Markosian happily

accepts. Here are some typical arguments Markosian gives for the conclusion that some stuff and a thing can be in the same place at the same time, made up of the same stuff, while being distinct:

An object will typically have different temporal and modal properties from the matter that constitutes it. For example, the matter that constitutes me right now has existed for much longer than I have. And the matter that constitutes my bicycle right now could survive being melted, but my bicycle could not. Here's another good argument for the conclusion that the stuff that constitutes a thing is not identical to that thing. It is possible for an object to be constituted by some matter at one time, and then to be constituted by some different matter at a later time...[in contrast]....every portion of matter has each of its sub-portions essentially.⁴⁹⁹

In fact, according to Markosian, even a simple point-particle will be distinct from the matter that constitutes it! Markosian holds that pointy simples are possible, and, if they exist, will be MaxCon simples.⁵⁰⁰ Also, every portion of matter that constitutes a thing is distinct from that thing, and, "for every object, and for every time at which that object is present, there is exactly one portion of matter that constitutes that object at that time."⁵⁰¹ From the preceding we can deduce that a point-particle will be distinct from the matter making it up.

On Markosian's account, there is a thoroughgoing coincidence of things and stuff. The phenomenon of coincidence or 'colocation,' if possible, has many problems. But, it is usually construed as the problem of two or more *things* being in the same place at the same time (that are made up of the same matter). Markosian can rightly say that, on his account, he does not have coinciding *things*, rather, his account only entails that every *thing* coincides with some *stuff* which it is distinct from.

⁴⁹⁹ 2005, pp. 5-6, and 9.

⁵⁰⁰ 2004a, fn. 2.

⁵⁰¹ 2005, p. 6.

This response provides no comfort for Markosian. Let's call the coincidence between some (non-particular) stuff and a thing 'stoincidence,' short for, 'stuff-thing coincidence.' Stoincidence has not only all the problems of coincidence, but a few more besides. In particular, stoincidence forces the MaxConner into either accepting a problematic doctrine that particulars are only contingently particular, or, that there are no things at all. Neither are palatable, and they follow from MaxCon, jointly with other plausible premises, so MaxCon ought to be given up.

I have already explained the problems of coincidence in Chapter One. Usually, coincidence has been viewed as the problem of *thing-thing* coincidence, not *stuff-thing* coincidence. As we noted, a few problems with *thing-thing* coincidence are, (1) intuitive oddness, (2) the denial the sort of thing a thing is would supervene on its intrinsic properties, and (3) the 'too-many-thinkers' objection.

Does stoincidence avoid these objections? Not at all. Take a simple, maximally continuous cup. Make it come into perfect contact with another maximally continuous cup. Poof! Both cups go out of existence and are replaced by a new simple, call it a 'double-cup'. While both cups go out of existence, the *stuff* they are made out of does not, so now we have two cup-portions-not-particulars coinciding perfectly with the double-cup. What is the relation between the cup-portions and the cups before the contact? They are not identical, since the cup-portions, but not the cups, can survive perfect contact. According to Markosian, the cup-portion was *constituting* the cup. But, why isn't the cup-portion a cup? It is cup-shaped, it can be drank out of, it will shatter if dropped, and so on. How do we differentiate the cup from the cup-portion, since both are made up of the same stuff, with all the same

intrinsic properties? How can the cup-portion *fail* to be a cup? Markosian can't say that the intrinsic properties of a thing make the thing a cup—since the cup and cup-portion have all the same intrinsic properties—and the cup-portion is not a cup. So he must say that some modal or extrinsic properties of a thing make a thing a cup. But, how can we think *de re* of the cup, for instance, and not the cup-portion, in order to differentiate their modal or extrinsic properties, unless we've *already* differentiated them by their intrinsic properties? I don't see how the appeal to stuff helps us get around the objection that, if coincidence, or, stoincidence in this case, is possible, then sortal differences would be brute differences. But, sortal differences *cannot be* brute differences.

Perhaps Markosian could bite the bullet on these brute facts. There are *many* brute facts and primitives on Markosian's proposals. For starters, both the *thing* and *stuff* concepts are primitive for Markosian:

But I do not have any analysis to offer of the concept of a thing. Nor do I have available an analysis of the concept of some stuff. I will instead take these notions to be unanalyzable, and I will take the terms 'thing' and 'stuff—as well as their synonyms...to be primitives.⁵⁰²

The constitution relation? Unanalyzed. Portion talk? Insisted to be not thing-talk, but the portion talk is unanalyzed.⁵⁰³ The parthood and occupation relations? "Unanalyzable."⁵⁰⁴ Facts about composition? Brute facts:

[B]ecause I accept this thesis, which I call Brutal Composition, I must say that among the most basic facts about the physical world are some facts about things. For consider some simples that compose a composite object. According to Brutal Composition, it is just a brute fact that these simples compose something.⁵⁰⁵

⁵⁰² 2005, p. 4.

⁵⁰³ 2005, p. 6-7, 1998, pp. 222-227, 2004a section 2. It is paraphrased slightly in 2005, but not in a way that does not seemingly make reference to things.

⁵⁰⁴ 2005, p. 10.

⁵⁰⁵ 2005, p. 13.

Markosian may be comfortable with so many brute facts and primitives, but I don't think we should be. Unless he has something substantive to say about the concepts he employs, in such a way that we can distinguish the items of his ontology by sort (e.g., cup vs. cup-portion), then we need not accept that he *has* singled out distinct entities where he says he has. He can reply, of course, that he has singled out a non-arbitrary feature that does not appeal merely to intrinsic properties to distinguish cups from cup-portions—namely, connectedness. But this is just puzzling. Why does contact make something go out of existence? It will not do to rely on MaxCon at this point. Furthermore, I don't think Markosian has firmly squared with how radical his proposal is, which entails that what kind of thing a thing is does not supervene on its intrinsic properties. A maximally continuous person is *not* a (thing-) person when they dive into a pool of maximally continuous water.⁵⁰⁶ In fact, all a simple person needs to do in order to go out of existence is put their finger tip in the pool.⁵⁰⁷

This brings us to the ‘too many thinkers’ objection. Does arguing that a thing-person coincides with a stuff-person avoid the awkward consequences of standard thing-thing coincidence? Not really. In fact, there are even *more* awkward consequences to the stoincidence analogue of the ‘too many thinkers’ objection to coincidence. Markosian deals with some of these issues when he addresses the ‘Maximally Continuous People in Perfect Contact Scenario’ in his paper “Simples, Stuff, and Simple People.”⁵⁰⁸

⁵⁰⁶ When we suppose that at least part of the persons body comes into perfect contact with at least some of the water.

⁵⁰⁷ See fn 15 of McDaniel 2003.

⁵⁰⁸ 2005, sections 3 and 4.

Suppose that, in another possible world there are ‘simple people’. That is, maximally continuous people. Suppose we have some young lovers Romeo and Juliet. If Romeo and Juliet came into (perfect) contact, then Juliet would go out of existence, given MaxCon. But, if Romeo and Juliet came into contact, she would not go out of existence, so, MaxCon is false.

Markosian replies in the following way.⁵⁰⁹ Juliet *does* go out of existence, but it’s not so bad for her:

...Juliet need not worry. For while it is true that the thing that is Juliet will go out of existence, it is also true that the stuff that is Juliet will continue to exist. Not only that, but the stuff will continue to support all of the properties—being alive, consciousness, being a person, loving Romeo—that she cares about having....Juliet...will continue to exist, to be alive, to be a person, and to love her Romeo just as much as ever. Being a thing that goes out of existence is not, as it turns out, the worst thing that can happen to a person.⁵¹⁰

At least in worlds like this, where there are macroscopic simple objects that remain relatively stable, our naming and individuating practices will actually pick out at least two entities associated with proper names:

...they will be ambiguous in this sense: many names will have two distinct—although intimately related—actual referents at a given time. One of them will be a thing and the other will be some stuff. Similarly with personal pronouns. When I utter the word ‘I’ on this account, my utterance picks out both a thing and a portion of stuff. Each referent has the property of being a person; or, in order to avoid the appearance of treating the stuff in question as a thing, we can say that each referent is personable, i.e., exemplifies the property of personhood.⁵¹¹

So, Markosian’s reply is that ‘Juliet’ refers to at least two entities—or the entity pair as a whole—Juliet the thing-person and Juliet the stuff-person. After Juliet comes into perfect contact with Romeo, tokens of ‘Juliet’ cease to refer to a thing-person, but

⁵⁰⁹ Note that I am skipping over a lot of interesting detail, in order to get to the parts salient for the too-many-thinkers objection.

⁵¹⁰ 2005, p. 28.

⁵¹¹ Markosian 2005, p. 25.

continue to refer to a stuff-person. Before examining this in detail, let me explain what is wrong with standard coincidence in regards to the too-many-thinkers objection.

Suppose that Queen Elizabeth coincides with a distinct, but particular, mass of matter. They are distinct since Queen Elizabeth can lose parts, but the mass cannot. Suppose Queen Elizabeth thinks, truly, ‘I once had high-tea in Morocco.’ Does the (mere) mass of matter have the same thought? If it does, then the mass of matter is not a mere mass of matter; it is also a person with a mistaken belief.⁵¹² If the mass of matter does not have this thought, then we must believe that an entity’s thoughts do not supervene on the events going on in its brain; for the mass of matter has the very same events going on in it as the person does. So, if coincidence is possible, we must believe either that, where we think there is one person, there are at least two (or, that there is a quasi-person that is intrinsically indistinguishable from the genuine article, denied personhood in an *ad hoc* way), or, that an intrinsic duplicate of a thinker somehow is prevented from thinking.

Does it help to posit that there is a ‘stuff-person’ which is not a thing that coincides with a thing-person? No, it only makes things worse. Markosian embraces one side of the dilemma above and accepts that there are two persons where we thought there was only one. Even before Juliet touches Romeo, since stuff-Juliet could survive contact, and thing-Juliet could not, we have two thinkers in the same

⁵¹² And, if the mass of matter is a person—who would it be except Queen Elizabeth?

place at the same time, thinking the same thoughts (e.g., “I’m going to go out of existence if I touch Romeo!”), one of them thinking falsely, the other, truly.⁵¹³

It’s hard to know what to do when your opponent embraces what you believe to be a *reductio* of his position, but perhaps I can show some further entailments that would make matters even worse than mere thing-thing coincidence. If Markosian is right in what he says about Juliet, and if, by extension, the same treatment would apply to cups, chairs, dogs, rocks, and so on—then either every particular is only contingently a particular, or else, there’s no reason to suppose that there are any *things* at all. Since both entailments are, as I’ll show, unacceptable, and follow from the doctrine of stoincidence, Markosian must give up stoincidence. But, to give up on stoincidence is to give up MaxCon and its stuff-ontological corollaries.

I think that the reply Markosian gives to the Maximally Continuous People in Perfect Contact Scenario is supposed to be generalizable. That is, just as Juliet the-stuff-person will survive perfect contact, so will stuff-cups survive contact. But, if this is right, then, every particular will only contingently be a particular. Now, as I will show, this will mean either a great deal, or, nothing at all. In either case, Markosian ought to give up on stoincidence.

Note, for future reference, the oddities in the following:

...Juliet need not worry. For while it is true that the thing that is Juliet will go out of existence, it is also true that the stuff that is Juliet will continue to exist. Not only that, but the stuff will continue to support all of the properties—being alive, consciousness, being a person, loving Romeo—that she cares about having....Juliet...will continue to exist, to be alive, to be a person...⁵¹⁴

⁵¹³ Of course, if *stuff Juliet* scratches her nose, she goes out of existence too. It’s pretty rough, and short, being Juliet on Markosian’s account. Of course, if he wants to say that Juliet will continue existing even if she touches Romeo while scratching her nose, then there must be at least *three* people in the same place at the same time. Thanks to Kris McDaniel for help and suggestions on this point.

⁵¹⁴ Markosian 2005, p. 28.

When I utter the word ‘I’ on this account’, my utterance picks out both a thing and a portion of stuff. Each referent has the property of being a person; or, in order to avoid the appearance of treating the stuff in question as a thing, we can say that each referent is personable, i.e., exemplifies the property of personhood.⁵¹⁵

...for example, if someone says ‘Let’s call this dog Shun,’ while pointing at a particular dog, then a certain episode of dogginess is thereby invoked and attached to the name ‘Shun.’ From then on...the name refers, at any given time, to whatever portions of stuff is involved in that episode of dogginess at that time.⁵¹⁶

According to this account, some non-particular stuff can have the property of ‘being a person’ and, I imagine, ‘being Juliet.’ Similarly, we should think, some mere stuff could have the property of ‘being John’s cup,’ ‘being an instance of *canis lupus*,’ and so on. Now, this predicate, ‘being Juliet,’ can be either univocal or not when applied to stuff-Juliet or thing-Juliet. If not, then there are *two* properties of ‘being Juliet’; ‘being a thing-that-is-Juliet,’ and ‘being some stuff-that-is-Juliet.’ But, if this is the case, then some stuff survives and has the property of ‘being some stuff-that-is-Juliet,’ but nothing survives that has the property of ‘being a thing-that-is-Juliet,’ and so Juliet does *not* continue to support all the properties she cares about having, if, for instance, she cared about being ‘a thing that is Juliet,’ or, ‘a thing that loves Romeo.’ It seems Markosian would not prefer to have the property of ‘being Juliet’ be equivocal. Because, if Juliet cared about both properties, then she would have something to fear (since she’ll lose one of them); if she cared only about being a thing-that-is-Juliet, she should fear; and, why on earth would she care about

⁵¹⁵ Ibid., p. 25.

⁵¹⁶ Ibid., p. 24.

remaining some-stuff-that-is-Juliet, unless this is a distinction without a difference from being a thing-that-is-Juliet?⁵¹⁷

But, if the property of ‘being Juliet’ is univocal when applied to both stuff-Juliet and thing-Juliet, (which Markosian seems to think, since both the thing and the stuff have the property of ‘being personable,’ and, it’s the *same* property), then it seems that Juliet-the-thing, *could have been a non-particular*.⁵¹⁸ That is, Juliet can keep on existing, and retaining the property of being-Juliet, even while going out of existence as a thing. But then, even Markosian could have been a stuff-person, since he has a stuff-counterpart in, for instance, Plenum World, that has the property of being Markosian but not the property of being a thing. If Markosian’s solution to the contact scenario is to be generalized, we get the result that *every (physical) particular is only contingently a particular*.

Now, this result either means a great deal, or—nothing at all. In either case Markosian is in trouble. If it means a great deal, it is because *some* substantive, orthodox philosophical thesis has been falsified. If it means nothing at all, then it is because the notion of *things* or *being a thing* does no philosophical or semantic work at all—we have no reason to suppose that there are things, and we can do all the work we want with non-individual portions and properties such as ‘being Juliet’. But, since

⁵¹⁷ I apologize for the often ugly usage here and in what follows. I do not know how to improve on this.

⁵¹⁸ Note that Markosian will seem to think that names, such as ‘Juliet’, will be ambiguous on this view. But,

“Not in the ordinary sense of ‘ambiguous’ (having different possible referents). But they will be ambiguous in this sense: many names will have two distinct—although intimately related—actual referents at a given time. One of them will be a thing and the other will be some stuff.”2005, p. 25. The problem here is that if he keeps things this way his reply to the contact scenario won’t work. If ‘Juliet’ names two sthings, then Juliet is either a plural referring expression which refers to stuff-Juliet and thing-Juliet, or, names a particular which is the fusion of stuff-Juliet and thing-Juliet. In neither case will ‘Juliet’ survive contact.

the *thing* concept *does* do so much work (in fact, Markosian's work is predicated upon there being a great deal of difference between things and stuff), and we *cannot* do all the work we want by only countenancing non-individuate portions, then the doctrine of 'contingent particularity' must *not* mean nothing at all. So, an orthodox philosophical thesis must be false if there are contingent particulars.

If Juliet (or any other object, for that matter) is a particular, and might not have been a particular, and this means *something* substantive—then something nasty is afoot. If Juliet (a *thing-person*) might have been Juliet (a *stuff-person*), then, either, the necessity of identity is false, or, what we think of as objects are actually just properties.

In the sentence, "Juliet (the thing) might have been Juliet (the stuff)," the 'been' has three salient readings. It might mean, Juliet (the thing) might have *constituted* Juliet (the stuff). But, according to Markosian, stuff constitutes things only. It could mean; some non-particular stuff could have predicatively been Juliet, where we don't invoke particulars at all. That is, some (non-particular) stuff could be 'Julieting'. Markosian seems to hint that this is what we might understand by 'being Juliet' in the following:

So what does the name 'the Taj Mahal' refer to? [in a world where there is only stuff, no things] Here is a brief sketch of how I think the Stuff Ontologist should answer this question. When a name is first introduced, it is introduced in connection with an episode of some sortal property, such as *the property of being a building*.⁵¹⁹

If somesthing⁵²⁰ can have the property of *being a building* without there being a (thing) building, then supposing that there are things that are buildings seems ontologically gratuitous. Why multiply entities beyond necessity? Once we have the

⁵¹⁹ Markosian 2005, p. 23, emphasis mine.

portions, which are not things, can't we just construe things as stuff having certain complex (singulary) properties or activities, *a la* Jubien?⁵²¹ Cars and rocks are not *things*, rather, non-individuate stuff-portions which are contingently and predicatively ‘carring,’ or, ‘rocking.’ I think there are other reasons to think this, but, without a defense and a lot of work, we have no reason to think this will work, nor should we accept this lightly.

Could the ‘been’ in “Juliet (the thing) might have been Juliet (the stuff),” mean that Juliet (the thing) might have been *identical* to Juliet (the stuff)? Only if the necessity of identity is false, and some doctrine like ‘temporary’ or ‘occasional’ identity were true.⁵²² Some thing can only come to be identical with some stuff from which it is distinct if the two were not necessarily distinct. Besides the various problems with temporary identity, Markosian would not want to accept it because then he would be giving up several of his theses about the relations of things and stuff.⁵²³

Since Markosian would not want to accept either temporary identity or that objects are just property-stuff clusters or activities, he would have to deny as significant the consequence that objects are only contingently particular. He seems to do just this when he states that

...Juliet need not worry. For while it is true that the thing that is Juliet will go out of existence, it is also true that the stuff that is Juliet will continue to exist. Not only that, but the stuff will continue to support all of the properties—being alive, consciousness, being a person, loving Romeo—that she cares about having....Juliet...will continue to exist, to be alive, to be a person, and to love her Romeo just as much as ever. Being a thing that goes out of existence is not, as it turns out, the worst thing that can happen to a person.⁵²⁴

Not being a thing is not such a big deal, and being a once-particular, now-portion does not affect a sthing in any important way. A sthing which is now just some stuff can have all the properties we need in things—principles of persistence,⁵²⁵

⁵²⁰ Ambiguous between a thing/particular and some stuff which is not a thing.

⁵²¹ See Jubien 1993.

⁵²² See Gallois 1998.

⁵²³ See Markosian 2005, pp. 6-10.

⁵²⁴ Ibid., p. 28.

⁵²⁵ “every portion of matter has each of its sub-portions essentially” Markosian 2005, p. 9.

individuation, identity and difference,⁵²⁶ the association of portions with sortals,⁵²⁷ parthood relations,⁵²⁸ the bearers of properties,⁵²⁹ etc., etc.. The only two salient properties that separate things from portions of stuff, (on Markosian's account, at least) is that the latter, but not the former, are maximally continuous with something else, and the latter are not given the honorific title of *things*.

The price of making things being only contingently things, and regarding this as unproblematic or non-radical is that, now, thinghood is neither significant nor does any work that the stuff itself cannot do. If this is so, there's no reason to suppose there are any *things* at all. From what Markosian has said, stuff, or stuff-portions at least, can do *all* of the work that things can. Then, either we do not need to countenance things at all, or Markosian's stuff is really no different than what we all meant by 'things' all along. If the former, then the *thing* concept does no conceptual work—we could describe everything with portions of matter and their properties. If this is so, then there's no reason to countenance a stuff-thing dualism. If the latter, then the stuff postulated by Markosian is not any different in kind from things, leaving us with no reason to countenance a stuff-thing dualism. So in no case do we need to posit the dualism.

Let me be a little clearer. Let's imagine that there is a world W1 just like our own with the exception that every macroscopic object is a MaxCon simple. In this

⁵²⁶ “there is *some* matter such that that matter constitutes that object at that time and for *any other matter* it is not the case that...” Ibid., p. 7, emphasizes mine.

⁵²⁷ “When a name is first introduced, it is introduced in connection with an episode of some sortal property...sooner or later, the name comes to be correlated with an episode of some sortal, with the correlation working as follows. For any time at which the name has a referent, the referent of the name at that time is whatever portion of stuff happens to be involved in the episode in question at that time.” Markosian 2005, p. 24.

⁵²⁸ “the relation of parthood that relates a thing to a thing and the relation of parthood that relates a portion of stuff to a portion of stuff are the same relation.” Ibid., p. 10.

world there is no ether. Then, let's imagine Plenum World, W2, which is just like W1 except that there *is* ether. In W2, there are no objects (except the big simple); stuff-portions and their properties play the role of every object in W1. If this can be done, then quantifying over things in W1 does no extra metaphysical or explanatory work. We need not quantify over things in our world either, since, if this kind of talk can work of W2 and W1, we should be able to speak of the person-stuff here, the rock-stuff here, and so on. But then the concept of thing does no work.

But it does! Not only is Markosian committed to there being things, and his work is founded upon there being an important distinction between things and stuff, but, it is quite obvious that the notion of an ‘object,’ ‘thing,’ or ‘entity’ is crucial to our best logic and semantics. This should lead us to suspect that, since Markosian is treating stuff and stuff-portions in such a way that would give us a theory of the world that is logically and descriptively equivalent in power to a theory which countenances things only, his notions of stuff and stuff-portions are not in a different class than things themselves. It’s things ‘all the way down’, since every portion of matter is just a thing. The persistence conditions of common sense things and portions of matter may be different, but this doesn’t show that stuff is in a different category than things—rather, stuff may just be a special kind of thing or things, or, stuff-concepts might just help us think of the same old things in different ways.

I conclude that MaxCon, and Markosian’s thing-stuff dualism (and anybody else’s, for that matter, which would entail the same kinds of problems with stoincidence), are *so* problematic, that they ought to be denied.

⁵²⁹ Markosian 2004a, pp. 339-40.

4.2 Laycock's Stuff-Thing Pluralism

Another pluralist about stuff and things who maintains that these are irreducible to each other is Henry Laycock. Laycock supports both the ontological primacy of matter over the things it constitutes (or at least, the independence of matter from things), and the conceptual priority of stuff-concepts over thing-concepts. However, he is not explicitly revisionist about objects. Laycock's primary doctrine can be summed up in a slogan—*stuff is concrete, but not particular*. In what follows, I will present Laycock's theory and show that, if constitution is not identity, this view collapses into a monist stuff view, or entails that no objects exist. This should lead us to reject his position.

Laycock's main works in this area are “Some Questions of Ontology” and “Theories of Matter”.⁵³⁰ In the former he argues for the non-particularity of concrete stuffs mainly by addressing the flaws of logical-semantic treatments of mass terms as found in the works of Quine⁵³¹ and Strawson,⁵³² whereas in the latter he gives more straightforwardly ontological arguments for his claims. I will focus mainly on “Theories of Matter.”

In “Theories of Matter,” (henceforth, ‘TOM’), Laycock sets up the ontology of objects for a fall.

⁵³⁰ 1981 and 1975, respectively. (Although, there is the forthcoming *Words Without Objects*, which is going to print by OUP as I write this. Regrettably, I have only had time to look at the first two chapters of his new book, and so my criticisms here should only be seen as touching upon his earlier work (and only a portion of *that*)). Also, see Laycock 1989 and 2002.

⁵³¹ E.g., in 1960 and 1966.

⁵³² E.g., 1959, 1961, 1970.

Evidently, it is a consequence of the ontology of objects that there can be nothing which substantially occupies space, nothing which is bulky or material, apart from material *objects*, and paradigmatically, such things as sheep and statues, moons and planets, rocks and trees and tables.⁵³³

What could be wrong with that?

Laycock answers, “if we pose the question wherein the concepts of matter and material object differ, the answer would appear to be that they differ *precisely* with respect to the concept of objecthood.”⁵³⁴ As Laycock will argue, matter exists distinctly from any object or objects. He notes some familiar differences in the modal properties of matters and things they make up. The sugar of a sugar-cube is distinct from it, since we can dissolve the cube in some coffee, so that it no longer exists, yet the sugar keeps on existing spread throughout the coffee.⁵³⁵

The main structure in the paper is the following. Laycock notes three different interpretations of matter and its relations to objects, rejects the first two, and defends the third. We could summarize them like this:

1. The concept of “matter” is to be understood in terms of the concept of “object.” “Matter” is to be understood as synonymous with “body.”
2. Quantities of matter are distinct from the material objects they compose, but they are nonetheless objects themselves.
3. The concept of “matter” is distinct from that of “object(s)”. Matter, or “matter,” cannot be reduced to or understood in terms of objects, or objectual concepts.⁵³⁶

Rejection of (1)

An adherent of (1) hopes to reduce or explain material concepts and the semantics thereof with objectual or *thing* concepts. For instance, talk of water is just to be understood as shorthand for talk about particular bits, pools, molecules, and

⁵³³ Laycock 1975, p. 413.

⁵³⁴ 1975, p. 414.

⁵³⁵ Ibid., pp. 418-21,

streams of water, or, when we speak generally of water, ‘water’ is supposed to refer to that large scattered individual, *Water*, or, that portion of the world which contains all the water there is.⁵³⁷ So, talk of matter is just shorthand for talk of objects, and can be eliminated to result in an ‘objects-only,’ stuff-free semantics and ontology.

Laycock rejects this possibility. Talk of water cannot be reduced to that of, say, ‘pools’, since the water may remain after the pool is gone. Pools of water and hunks of bronze are not instances of *water* and *bronze*, they are rather instances of *pool of water* and *hunk of bronze*. The water in the pool is just a concrete (non-particular) instance of *water*.⁵³⁸

The second argument against the reduction of matter to objects is an attack on what we could call the ‘particularizing instinct.’ As Laycock notes, “the temptation to objectify matter or ‘entify’ it, to assimilate talk of matter to talk of objects, seems at its strongest when one is confronted with the role of mass nouns in definite reference.”⁵³⁹ For instance, we are tempted to say that when we can point to some water and refer to it as “that particular water”, that entails that there is a particular *thing*, which is identical with the water. However, Laycock contends that “it is quite wrong to suppose that one can always move from ‘this particular ____’ to ‘this particular’ *simpliciter*, since the latter carries a connotation of thinghood and individuality which the former, if I am right, does not.”⁵⁴⁰ The following particularizing principle Laycock sees as false:

(PP) When we can refer to some stuff S with definite reference, then we have a case

⁵³⁶ Ibid., p. 426.

⁵³⁷ See Quine 1960, p. 98.

⁵³⁸ Laycock 1975, p. 433.

⁵³⁹ Ibid., p. 434.

⁵⁴⁰ Ibid.

of singular reference.

Suppose we see some scattered brown water on the floor. Then we can permissibly say “the water on the floor is brown.” But, does it follow that there is a *thing*, or *object*, such that it is water and it is brown? Or, does this entail that $[(\exists x):Wx \ \& \ Bx]$? Laycock denies this. One reason is the following. “[Although] not only objects, but also matter may be particular, matter and objects relate to particularity in quite different ways. That is, whereas objects are *essentially* particular, matter is just *contingently* so.”⁵⁴¹ So, while there may be particular stuffs (e.g., gold), and particular hunks of stuff (gold bits), it does not follow that the stuffs themselves are particular, since pools, bits, and statues composed of stuffs are essentially particular, whereas the matter is just ‘contingently particular.’ This is because any given stuff merely contingently composes an object, and can persist past its destruction. The stuff which composes an object never inherits the essential properties of the object.⁵⁴² Some water, for instance, has none of the essential properties of puddles and ice statues. There are some essential properties of what it takes to be some water. But, these are not properties that, when had, necessarily result in the existence of a particular thing which is merely some water and nothing else. We only have particulars when we have an individual which falls under a (count) substance sortal, and while some of the world’s water may be a part of some objects which fall under substance sortals, they (putatively) need not, and it is far from obvious that there is a single thing, *Water*, which has what it takes to be counted as an object.

⁵⁴¹ Ibid., p. 435.

⁵⁴² Except, perhaps, properties that are essential to *all* physical objects and stuff, e.g. occupying space, maybe having mass etc..

I have my reservations about the foregoing arguments. In particular, I think that Laycock's notion of "contingent particularity" is dubious and unclear, and it seems to bring about all the problems of "stoincidence" that I identified in the previous section in regards to Markosian. If there is some stuff, some water, and it coincides with but is distinct from an ice-statue, then we have two entities in the same place at the same time. I have already argued that calling one of them a thing and the other some stuff does not help matters. Similarly, if Laycock is correct, I, a person, coincide with some distinct flesh-stuff which is only contingently particular, while I am essentially particular. I have already noted the negative entailments of the notion of contingent particularity of stuff, and Laycock's claims are not immune to the same charges. (See above Section 4.1.3). So, we should reject his notion that there is non-particular stuff which constitutes things, but is not identical to them.

Let me explain what is motivating Laycock. What does it mean to say that "whereas objects are *essentially* particular, matter is just *contingently* so."⁵⁴³ Elsewhere, Laycock states that "we can and do think of stuff as having an *independent* reality [from objects]."⁵⁴³ Do we think stuff has an independent reality from objects? And, what is "contingent particularity"?

When Laycock says that matter is merely contingently particular, he does not mean that some stuff is contingently identical with an object. If that were the case, then some stuff would be contingently identical with a particular, but for Laycock, stuff is never identical with a particular, contingently or not. Therefore, he must mean that any matter M which makes up a commonsense object O , M contingently makes up O . That much seems true. Now, there are two ways to take the idea that matter

only contingently composes some objects—one weak, the other strong. The weak reading is that any matter always makes up some object(s) or other, but not necessarily the object(s) that it in fact does. The strong reading is that, while some matter M contingently makes up an object, it is possible for it to make up no object or objects whatsoever. However, this latter seems to imply that there could be matter with no form, or ‘pure featureless matter’, which Laycock decries as “just as absurd as the idea of a pure (featureless) animal.”⁵⁴⁴ That leaves us with the weak reading, that any matter M always contingently composes some object(s) or other. But, the force of the weak reading is not enough to entail that matter is non-particular. It just means what it says, namely, that some matter only contingently constitutes some object or other, which is another way of saying that it is contingent how some matter is arranged. Everyone knows this, and it is not clear how this makes matter concrete, but non-particular.

Towards the end of (1981) Laycock states that on the weak reading, either matter or stuff turns out to be non-material, or the view is reduced to the thesis that matter is merely conceptually more basic than physical particulars.⁵⁴⁵ Laycock tentatively defends the first disjunct, but this is very unsatisfactory, because it leaves us with a doctrine similar to prime matter:

It is clear, however, that we cannot *think* of those supposed members of the class of basic particulars which are lumps of matter, as themselves being basic existents: in order to understand the behavior of mass terms and the character of stuff, it seems *necessary* to think of those objects as collections of more basic existents which are themselves nonmaterial.⁵⁴⁶

⁵⁴³ 1981, p. 27, italics his.

⁵⁴⁴ 1981, p. 40.

⁵⁴⁵ pp. 39-40.

⁵⁴⁶ Ibid., pp. 40-1.

We better not accept a theory of matter that ends up with matter being non-material!

I'd rather contend that we *can* think in just the ways Laycock says we cannot. In regards to the latter disjunct, that the *concept* of matter is more basic than that of object, this does not adequately show that there is a mirrored hierarchy in the world itself.

Besides these foregoing concerns, I find that it is an unacceptable consequence of Laycock's position that there are no material *objects* whatsoever. If so, then Laycock's inter-irreducibility claims collapse back into a stuff monism, which I have shown in Chapter Two to be untenable. I will explain how Laycock's pluralist position could collapse into monism.

Laycock argues, in several forms, that referring expressions of the form 'a quantity of *S*', such as, 'the quantity of gold in my tooth,' does not entail that there is an entity, a *quantity*, such that it is identical with the gold in my tooth.⁵⁴⁷

Similarly,

to say that there is, e.g., some bronze which is the bronze of some particular statue's torso, is not to say that there is some object in the world which is that bronze. Such talk, in contrast with talk of 'quantities', does not generate potentially indefinite sets of countables—it generates no sets of countables at all.⁵⁴⁸

Similarly, any set of matter, of whatever type or types, that *constitutes* an object, is never identical with it. Presumably, for Laycock, not only is no object identical with a hunk of matter at a time, but no object is identical with a succession of hunks of matter over time, since each object could have failed to be made up of (exactly) the hunk of matter which actually constitutes it at those times.

⁵⁴⁷ 1975, p. 425.

⁵⁴⁸ Ibid., p. 426.

The problem is that the following principle seems plausible:⁵⁴⁹

- (P1) For any proper name N of a composite physical object a of kind K (excluding stuff-kinds) which exists from t_1 to t_2 , there will be a (complete) physical description D available of a from t_1 to t_2 which does not employ N or K .

Accepting (P1) is part and parcel of accepting that the nature of macroscopic objects (and composite objects of any size) supervenes on the nature of their component parts. Take any composite object you wish, such as a table, a chair, or a sheep. Over a time period, or at a time, we can always give a physical description of these items which do not mention the item's kind (e.g., *table*) or the proper name of the item (e.g., 'Joey', if we named our table). By 'physical description' I mean a description of the object in terms of its constituent fundamental particles or gunk constituting matter, their relations, activities, and fundamental physical quantities (e.g., charge, mass, etc.). If a composite object *cannot* be described in this manner, in terms of some material particles (or waves, or strings, or mass-energy, or 'gunk' of kind F, or whatever the fundamental or *infima species* physical items are) and their behavior, then that object is not a *physical object*.

If (P1) is correct, then the existence and the properties of the supervenient object will be entailed by a full description of its subvenient base. The object "enters in" the world by entailment from the nature of its constituting particles.⁵⁵⁰

If Laycock is right about what he says about objects and their relation to the stuff that composes them, either macroscopic composite objects *never* enter the picture at all when we describe their constituent stuff, or, they do enter the picture, but they do so *mysteriously*. Take an example. Suppose I have my table Joey which

⁵⁴⁹ The idea for this was somewhat inspired by Zimmerman 1998, Section 3.

exists from t_1 to t_2 . There is also, according to Laycock, the stuff which makes up Joey but is distinct from it. Suppose I give a description of all the constituent particles, their properties and relations which make up Joey from t_1 to t_2 . (Ignoring vagueness issues for the moment.) With this description, even though we never mention Joey by name or the kind *table*, either facts about Joey and its being a table are entailed or not.

If Laycock is right, it is hard to see where and how facts about Joey would come into the picture. Joey is not identical to any collection of matter, nor to a string of collections of matter. How are we ever talking about Joey, if we are never talking about stuff that is part of Joey? While some stuff makes up Joey, none of it is identical to Joey. In fact there is no purely physical description which speaks about Joey, since a purely physical description about Joey is just talk about the stuff, and Joey is not stuff if Laycock's right. It is hard to see how. For Laycock, *no* reductive physical talk about composite items can be talk about objects, since physical objects are neither hunks of matter, nor successive spatio-temporally contiguous strings of matter.

On the other hand, if Laycock would like to insist that objects do come into the picture when we describe the subvenient base, then this would be a mysterious phenomenon. There would be free-floating "physical objects" such as a particular table, Joey, which would be distinct from any of its parts. If talking about its parts, even all of the ones it actually has, is not to talk about Joey, just what the heck is Joey? Why consider it a physical object?

⁵⁵⁰ Cf. Chalmers 1996 and Jackson 2000.

The notion that some stuff S can constitute an object O , but not be identical with it is suspicious. To accept this is to accept coincidence. Since Laycock accepts the primacy of stuff, one way to get around the coincidence is to assert that there is only stuff, no objects. But then we have arrived at a stuff monism that I criticized in Chapter Two. Until the “constitution” relation which is not identity is cleared up by Laycock, we should have our reservations.

Overall, it is not very clear at all that Laycock has defeated claim (1), that the concept of matter is to be understood in terms of the concepts of object or body.

Rejection of (2)

Some have instead accepted (2), or the idea that matter, while distinct from the objects it composes, nonetheless comes in the form of objects in their own right, which could be called ‘masses’, ‘hunks’, ‘aggregates,’ ‘parcels’, or what in particular Helen Cartwright calls ‘quantities.’

To reject (2) is to reject the identification of matter with collections or fusions of stuff (which are distinct from the objects they constitute). Laycock’s foil in this regard is Cartwright, and her work in “Heraclitus and the Bath Water,” and “Quantities.”⁵⁵¹ Cartwright notes that we employ sensible locutions such as “the water that was in the tub yesterday is in the bucket today,” “Roderick wiped up what Alvin spilled,” and so on, which seem to imply that we have criteria of identification and individuation for collections or aggregates of stuff. She goes on to argue that since we employ such talk, and understand claims of identity and distinctness in

⁵⁵¹ 1974 and 1979, respectively.

reference to aggregates, in a case such as where we recognize that we have two glasses of water, then (Laycock paraphrases):

there *must* be some concept ‘F’ such that the water in one glass will be one F and the water in the other glass another F. Equally, she has argued that if the gold of which a certain ring is made is the same gold as the gold of which some other ring was made, then there must be one G which that gold is (on the inverse Quinean principle, perhaps, of no identity without entity)...[which Laycock believes false]⁵⁵²

Cartwright cashes out talk of such sortals by employing the term ‘quantity of F,’ which functions as something like a rigid designator, whose reference can be secured parasitically via demonstrative reference to an object (e.g., ‘*that* quantity of water which composes *that* puddle).⁵⁵³

The objection which Laycock takes most seriously against Cartwright’s proposal is that it is impossible in principle for there to be any Fs which both apply to quantities and provide principles of individuation, persistence, and counting. This is because countability is a necessary condition for something to be an object, and matter is not countable. Hence, matter is not identical to any object or objects. To defend the notion that matter is not countable Laycock employs the following *reductio*⁵⁵⁴:

1. Suppose we have two statues, *x* and *y*, which consist of gold.
2. Suppose, for *reductio*, that *Fx* and *Fy*, where ‘F’ is a sortal count term that allows us to count ‘gold’ (Suppose it is one of ‘collection of gold,’ ‘quantity of gold,’ ‘hunk of gold’ etc.)
3. Suppose that we melt *x* and *y* down, and make them into a third statue *z*.
4. Then the gold constituting *z* will have come from *x* and *y*.

⁵⁵² Laycock 1975, p. 418. Italics his.

⁵⁵³ Cartwright, however, chooses to use set-talk, which perhaps is not a good idea when treating stuff as concrete as material stuff itself.

⁵⁵⁴ The following is a paraphrase from (1975) pp. 418-419. In correspondence, Laycock confirmed that the following paraphrase is a more or less accurate representation of his argument. Laycock used ‘bronze’ instead of ‘gold’ in his example, but ‘gold,’ an element, works better for our purposes.

5. But (4) comes down to saying “that the *one F* constituting *z* has come from *x* and *y
- 6. (5) then entails that there is only one *F* constituting *z*, but by (2) and (4) we see that there are two *F*s constituting *z*—
- 7. Contradiction.
- 8. So, “the [gold] of some statue (the water in some glass, etc.) *cannot* be an *F*, whatever count noun ‘*F*’ may be.”*

This argument is unsound. There are a family of terms, such as ‘quantity’, ‘amount’, and ‘area,’ that are radically equivocal between their particular and general uses. We can use ‘quantity’ and ‘amount’ or ‘quantity of...’ and ‘amount of...’ to pick out particular masses of matter, as well as picking out certain general quantities, such as a mole⁵⁵⁵ of atoms, or six ounces (in general), or six ounces of water (in general). With terms like ‘area’, we can pick out a general repeatable area, such as six cubic feet, or refer to a particular area, such as the six cubic feet of that room. We can see that, with the previous argument, if ‘quantity’ is used in the particular sense throughout, (6) won’t follow from (5). And, if (6) is so understood that (7) follows from it, then (6) will not follow from previous premises. If ‘quantity’ is used in the general sense throughout, then none of the inferences follow from (5) on. Of course, if the terms are used in a mixed sense throughout the argument, then it commits the fallacy of equivocation. If more specific general terms, such as ‘mole’ are used in their particular sense, then (among other things) (5) won’t follow from (4). If ‘mole’ is used in the general sense, then again none of the inferences follow from (5) on.

Let’s fix our ideas with an example. Suppose we have two (very tiny) statues, *x* and *y*, each made of one mole of gold. There is the sense of the amount they are made of, as a universal, which is one mole each. But, let’s use it in a particular sense, such that *x* is made up of mole1, and *y* mole2. Take *x* and *y* and mix them together to

make a new statue z . Then the gold constituting z will have come from x and y . But it is *not* true that this amounts to saying that the one mole constituting z has come from x and y — z is two moles of gold. So, (5) does not follow from (4). (6) won't follow from (5), since obviously two moles constitute z , and so no contradiction follows. So, it doesn't follow that the gold of some statue cannot be a mole of gold. Moles, as understood via such rigid uses of ‘mole’, are individuated by the particular atoms they are moles of. If we used ‘mole’ in the general sense, we should easily see that sentences like (5) would be making some kind of category error.

What about ‘quantity’? If the tokens of the word are being used in their intended technical and particular senses, then we should see that (6) does not follow from (5). While there is only one quantity composing all of z , this is consistent with the existence of two quantities each of which composes (half of) z . Similarly, a rectangle can have one area that makes it up, and two areas that make it up⁵⁵⁶. There is no contradiction here. There only appears to be a contradiction in saying both that one quantity makes up z , and that two quantities make up z , if we deny that one quantity can be two quantities. And why would we want to do that?

Obviously, terms like ‘quantity’ that Cartwright introduces are meant to be technical sortals. Quantities of S , where ‘ S ’ names a substance type, e.g. gold, are count terms that get individuated by the collections of stuff of type S that are in their extension, such as *that* quantity of gold in the container. If there are 44,000 gold atoms in the container, then there are $(2^{44,000} - 1)$ quantities of gold in the container, but there is only one which is the quantity of *every* atom of gold.

⁵⁵⁵ $6.02257 * 10^{23}$ atoms, molecules, ions, or radicals.

⁵⁵⁶ I thank Tom McKay for this example.

Perhaps, however, this is grist for Laycock's mill: I have not shown that gold *per se* is countable, merely that *atoms* of gold are countable, or 'quantities', or moles, and so forth. I find this reply weak. What is gold *per se* except for gold atoms? Any answer that insists that gold atoms are not gold is mysterious. But, Laycock might reply, can we count *matter per se*? I agree that we cannot, but I insist that the question is not ontologically compelling. If there are fundamental particles, give me a list of them, and we can certainly count *them*. Once we have counted them all, have we left any *matter* out? I may not be able to count *fur*, but I can certainly count *hairs*. And, if fur is nothing but hairs, I don't see what the problem is. If, however, there are no fundamental particles, and reality at base level is non-individuate mass-energy, then I agree that we would have a bigger problem. But this is not the line Laycock pursues in TOM.

Laycock's main arguments (that I have covered, and (2) just barely) for the non-particularity of matter is, (1) that matter constitutes, but is not identical with objects, and (2), that chemical stuff mass terms behave differently than count terms. I grant (2), but deny that the requirements that substances such as gold be non-particulate are met merely because it is syntactically impermissible to preface mass terms by numbers (among other grammatical features). Laycock claims that this fact, in combination with the fact that stuffs constitute, but are not identical to individuals, further strengthens the case for the non-particularity of matter. However, as I argued in my discussion of Markosian's theory, supposing that there is concrete, non-particular matter that coincides with, but is distinct from things forces us to accept stoincidence, which is unpalatable.

4.3 Karmo’s Thing-Process Pluralism, and Recap.

Other multiple-category theorists consign constituted objects to the category of *event* or *process*, and identify masses with enduring (*non-event-like*) objects to which these events ‘happen.’ No proposal along these lines has ever been worked out in great detail, but the basic idea is clear enough. Mereologically incontinent bodies are like waves and tornadoes—they are processes that ‘migrate through’ various masses of matter. The fact that processes are dependent entities—‘accidents’ or ‘modifications’ of the things to which they happen—is supposed to dispel any air of mystery about how a process and its ‘substratum’ can be in the same place at the same time. After all, there is nothing mysterious about the fact that a wave can coincide with the water it presently modifies, or that a tornado can be in the same place as the masses of gas, liquid, and dust presently caught up in it.⁵⁵⁷

Before I cover Toomas Karmo’s brief “disturbance” account as means of a segue to the positive proposal of the dissertation, I think it is valuable to recap some of what I have established in the dissertation so far, and show what is motivating my

⁵⁵⁷ Zimmerman 1995, pp. 91-2.

positive proposal. The main point of this dissertation is to answer the Thing Question of Chapter One, namely,

- (TQ4) Is every physical individual a *substance*, or, reducible to substances and their properties (or, to properties and bundles/compresences of properties)?

Also, I wish to explore what the relations are between things, stuff, and processes, and

to give a coherent account of these relations in a way that solves the paradox of coincidence and other problems of material constitution. None of the accounts I have presented so far have achieved this, while Chisholm's later account is on the right track.

In Chapters Two and Four, in my examination of Spinoza, Hawthorne and Cortens, and Seibt, I have shown that we can neither *eliminate* things entirely from our ontological account (and posit processes or 'processy' properties as replacement items), nor *reduce* things entirely to processes. While I haven't touched on this in great detail yet, I will show also, that processes themselves are not completely reducible to things (and their properties) either.

In Chapters Three and Four, while discussing the works of Chisholm, Jubien, and Sidelle, I have argued that we cannot *reduce* commonsense things to mereologically stable bare objects (and their properties), nor can we *eliminate* commonsense things and construe them as conventional objects carved out of objectively non-individuate stuff. However, my examination of Chisholm and Jubien leads me to believe that there are strong reasons to hold mereological essentialism. Among these reasons are Jubien's intuition that an object's property of being made of such-and-such precise stuff is uniquely situated by serve as its haecceity, and Chisholm's observation that mereological essentialism is the only doctrine

compatible with the intuition that an object is nothing more and nothing less than a precise sum of material parts. I will further defend mereological essentialism in the next chapter.

I have shown in Chapter Four that inter-irreducibility views, such as those defended by Markosian and Laycock, lead to ‘stoincidence’, which is every bit as bad as coincidence. Also, Markosian and Laycock, together with Seibt, all defend the existence of ‘concrete non-particulars’. I have argued that we have been given no reason to suppose that the concrete is not particular “all the way down”, and that the supposition of concrete non-particulars is dubious at best, incoherent at worst. I have found no reason in my studies to believe that there is stuff which is not reducible to or identical with things, nor have I seen any reason to believe that things can be reduced to or identified with processes which are non-particular.

No one whose work I have examined has achieved *all* of the following:

- (1) Answer the Thing Question satisfactorily.
- (2) Give an adequate account of the relation between stuff, things, and processes.
- (3) Solve the paradox of coincidence.
- (4) Give an adequate account of the nature of commonsense things and their relation to those items that constitute them.

What none of the accounts mentioned (except later Chisholm) have attempted is to achieve (1) - (4) with an account that posits two types of entities that are not reducible to each other—bare objects, or, hunks of matter which obey ME, and reified, ontologically serious processes, “disturbances”, or *modes* of objects. Commonsense objects are processes which “pass through” the strict philosophical objects, or hunks of matter.

Such an account seems promising. It answers the Thing Question in the negative. There are not only *substances* and their properties; there are also processes which are (particular) individuals. In regard to (2), the view I am proposing would say that stuff and (bare) things are coextensive—stuff talk and fusion talk is just talk of the same ontological items expressed in different ways. Talk of commonsense objects is just talk of processes which pass through the fusions, or, the way the fusions are behaving. An account like this solves coincidence in the way outlined in the Zimmerman quote above. There is nothing mysterious about a boat coinciding with a hunk of matter, if for there to be a boat is just for a hunk of matter to be *boating*, just as there is nothing mysterious about a wave being in the same place as the water it is passing through. The foregoing together help to accomplish (4).

The only other account like this, other than Chisholm's later view, is found in the brief article “Disturbances” by Toomas Karmo.⁵⁵⁸ I first became aware of this article by its mention in Dean Zimmerman's “Theories of Masses...,”⁵⁵⁹ and it was then that I became convinced, not only of its intrinsic interest, but also that it is worth taking seriously as a solution to the problem of coincidence.

I have already described “Disturbances” to some extent in Chapter One. According to Karmo the relation between, for instance, a stream and the water that constitutes it is that the stream is a *disturbance* which passes through distinct portions of water. The water is the disturbance's medium, but is not the disturbance itself. The disturbance is the activity which passes through the water.

⁵⁵⁸ 1977.

⁵⁵⁹ 1995.

Similarly, “a living creature can be conceived of as a disturbance migrating through a consignment of organic chemicals, since the consignment of organic stuffs constituting a living thing one month is distinct from the consignment constituting it the next.”⁵⁶⁰ Karmo then notes some limited suggestions by Aristotle to this effect, and concludes the article. It is around one and a half pages, which is, of course, very brief. The account that follows can be seen as an expansion of these ‘Karmoian’ themes. It also has many similarities to Chisholm’s *modes* account. Rather than criticize each account, and compare my view with theirs each step of the way, I have preferred to create a “new” account that shares much in common with them. Obviously, I owe a great deal of gratitude to both Chisholm and Karmo. I also thank Karmo for some valuable correspondence.

He has a much more detailed account of the disturbance view in his dissertation, *Occurrences, Pseudo-Occurrences, Propositions, and Individuals*.⁵⁶¹ But, much of that work is about giving a typology of occurrences, and one hypothetical treatment of disturbances are as Fregean *begriffe*. These have little to do with my account. For typologies of occurrences and mentions of verb aspect, I rely much more on later work by Mourelatos, Gendler Szabo, and Parsons.⁵⁶² I have many merely technical quibbles with Karmo’s second interpretation of disturbances as genuine individuals. I prefer, however, to lay out my view and give mentions of his where appropriate, rather follow a comparative method.

Let me now move on to explain what, in my opinion, is the nature of true objects, why commonsense objects are processes, and how processes relate to objects.

⁵⁶⁰ 1977, p. 147.

⁵⁶¹ 1978.

Chapter 5: Merelogical Essentialism and Process Hyleism

I have so far presented how, according to the radical stuff ontologist, our world is a world of non-individuate ‘stuff.’ Objects either do not exist, or, if they can in some sense be accounted for, it is in terms of logical constructions, mind-dependent conceptual carvings out of the objectively non-objectual stuff, or functions from times and places to hunks of matter, and so on.

The radical process ontologist holds that our world is primarily a world of processes, or a sequence of unfolding events, and that objects either do not exist, or,

⁵⁶² 1978, 2004, 1990, respectively.

they can somehow be said to exist, but are really mere fictions, semi-arbitrary intersections, or logical constructions out of the subjectless processes.

The Aristotelian-informed sortal essentialist, arch-enemy of both of the above, claims instead that our world is a world of objects, and if there were no objects there would be nothing at all. The sortal essentialist, roughly, claims that both of the aforementioned views run into incoherence and deny any real meat to the world. In fact, on both these views, the sortal essentialist contends, there could be no meat, since there could be no *pieces* of it. There would be no sausage, merely stuff arranged sausagely, or, an unfolding of sausagings, neither of which makes for a substantial, balanced Aristotelian breakfast.

Thus, while I have shown how process ontology and stuff ontology are both weak on their own, in this chapter I will show that combining elements of them in a certain way makes for a satisfactory marriage. This blend of stuff and process ontology, which I hereby dub, somewhat regrettably, ‘Process Hyleism’⁵⁶³ can withstand objections from the sortal essentialist, avoid the problems the sortal essentialist faces, solves various metaphysical puzzles, and is a coherent, comprehensive, and appealing ontology. All of this counts as inductive support for it. I do not believe that Process Hyleism follows from defensible premises by a deductive argument. But, mereological essentialism does, and Process Hyleism has inductive support as the best way to deal with counterintuitive results of ME.

Before developing the view, I shall motivate the need for it by presenting an extended deduction that concludes that objects are nothing more and nothing less than precise parcels of stuff which persist just so long as all of their parts do, regardless of

which sortals they fall under, and regardless of their spatial relations (but not regardless of their temporal relations). This conclusion is the conjunction of Mereological Essentialism (ME) with a denial of Aristotelian Sortal Essentialism (ASE). It entails that no objects can gain or lose any parts, and it needs an explanation because it violates basic intuitions. The argument establishes it, but doesn't provide the explanation, and I shall show that the best inductive explanation of how both its conclusion and our common sense intuitions can be true is that Process Hyleism is true. Without Process Hyleism, the argument which supports ME and the denial of ASE would amount to a paradox.

Roughly, according to Process Hyleism ordinary common-sense object talk is actually talk of processes, and cats and rivers are actually processes which flow through various mereologically inflexible objects, analogous to how a wave passes through successive portions of water, or to how an earthquake is a process of shaking which passes through distinct portions of earth. After I elucidate the view in more detail, I will move beyond metaphors to a more perspicacious presentation.

While certain key assumptions and limitations in the development of the view will render unmitigated consent unlikely, I shall consider the positive view of the dissertation a success if it demands, as I think it does, serious consideration as a possible solution to the problems of material constitution.

⁵⁶³ Pron. ‘*hi-lism*’. *Hyle* is Greek for *matter*.

5.1 Establishing That the Only Objects are Simples and ‘Bare’ Fusions

The following is a brief outline of the subsequent argument. First, I will argue for a restricted mereology that is somewhat akin to pure unrestricted mereology (also called ‘Collectivism’ or ‘Universalism’). Second, I will show further reasons for rejecting an unqualified, unrestricted mereology. Next, I will give reasons to support both extensional mereology and mereological essentialism. This, in conjunction with a controversial form of three-dimensionalism, entails that the only objects that exist are either simples (or, portions of “gunk”) or fusions thereof, where such fusions persist regardless of which sortals they fall under, just so long as all of their parts persist and exist simultaneously.⁵⁶⁴ I have some premises which I cannot adequately defend even in the space provided here. My assumption of a particular form of three-dimensionalism will seem particularly odious to four-dimensionalists. Such readers can read this instead then as a conditional proof. (If four-dimensionalism is to be rejected, then...) I am more interested here in pointing out how a three-dimensionalist should answer some questions, and what follows from these answers, rather than defending this version of three-dimensionalism against all four-dimensionalist criticisms.

5.1.1 Extensional Mereology and the Impossibility of Coincidence

⁵⁶⁴ That is, as long as they exist simultaneously according to some reference frame or other.

The first step in the deduction is to argue for what is called ‘Extensional Mereology’ (EM). Extensional Mereology is the following doctrine: for any x and y , x and y are identical if x and y have all the same (proper) parts. Another way of stating it is as follows: for any x and y , if every z which is a proper part of x is a proper part of y , and vice versa, then $x = y$.

Why would one hold this? The short answer is given by the following argument:

- 1) If EM is false then coincidence is possible.
- 2) Coincidence is impossible.
 \therefore EM is true.

The negation of EM is the proposition that there can be two objects which have all the same proper parts yet be distinct. This is just coincidence. But, as I argued in Chapters One and Four, coincidence is impossible. So, EM must be true. Independently, EM is just quite intuitive. What more could it take for objects x and y to be one except for the sharing of all their material parts? Accepting EM entails denying coincidence, but it does not explain the appearance of coincidence away. That task has to wait until we have all the proper machinery in place.

5.2 Temporally Restricted Mereology

I will assume that there are some metaphysically fundamental entities (I will call them ‘simples’⁵⁶⁵) which have no other entities as proper parts. According to the picture where simples exist, every composite object inevitably has a decomposition into determinate fundamental entities, such as quarks, electrons, neutrinos, perhaps ‘super-strings,’ and so on. If science hasn’t reached rock-bottom yet, then simples will just be whatever the rock-bottom entities are, if there are any.

I would like to establish the following thesis of temporally restricted mereology, or ‘TREM’ for short:

(TREM) $(\forall Y: SY)(\forall z: Fz) [(\text{C}(Y, z)) \equiv (\exists x: Ix)(\exists w: R_w) E@RT(Y, x, w)]])$

Which should read: For all Y’s, such that the Y’s are simples, and for all z, such that z is a fusion, the Y’s will compose z just in case there exists an x such that x is a temporal interval (an instant being the limiting case), and there exists a w such that w is a reference frame, such that the Y’s exist-at x relative to w. (Note: the first quantifier is plural, ‘C’ is the two-place relation ‘compose’ which holds between a single item and a plurality, and ‘E@RT’ is a three-place relation ‘__ exists-at __ -relative-to __’.)

[Note that the Y’s exist-at x relative to w iff every instant i of x is such that the Y’s are not time-like separated at i, relative to w. To say what exactly it takes to be non-time-like separated would take us on a regrettable and unnecessary detour into Relativity Theory. Suffice it to say that what it is to be non-time-like separated in Relativity Theory is well understood.]

TREM has been formulated to allow us to understand how composition is relative to a time without embracing Presentism, and is made to work with Special

⁵⁶⁵ Classically, they are called ‘atoms’, though not to be confused with the atoms of modern atomic theory. Some hold that there are no simples, only atomless infinitely divisible ‘gunk’. I have no commitments to whether there is or could be gunk. I believe the view sketched below could work on the supposition of gunk, but it is simpler for my purposes to assume that there is no gunk.

Relativity Theory.⁵⁶⁶ However, since I will not deal with any special problems regarding Relativity, I can work with a simpler version of TREM, TREM*

$$(\text{TREM}^*) (\forall Y: SY)(\forall z: Fz)[C(Y,z) \equiv (\exists x: Ix)[E@(Y,x)]]$$

Which should read: for all Y's, such that the Y's are simples, and for all z, such that z is a fusion, the Y's will compose z just in case there exists a temporal interval x such that the Y's exist-at x. (From this point on, I will avoid the asterisk and use 'TREM' to mean TREM*. It should be understood that I can fallback to TREM *proper* if any problems of Relativity arise.)

More straightforwardly, TREM says that a group of simples will compose a fusion (and hence a fusion exists) if and only if there exists a time such that they exist at that time. TREM states, in part, that composition of physical objects is relative to a time, and if there is no time when a fusion exists then that fusion will not exist *simpliciter*. Let us now look at the arguments for it in order to understand the rationale for TREM.

5.2.1 Fusing Implies Simultaneous Existence

Argument for the left to right embedded conditional of TREM:

The short version of this argument is simple, although some complex clarification and defense of a premise is needed:

- (1) Assume, for *reductio*, that some simples (the Y's) compose a fusion z, yet there exists no time x such that the Y's exist at x.
- (2) So, there is a fusion z which can exist even though there is no time at which all of its parts exist.
- (3) (2) is impossible.
- (4) So, (1) must be false.
- (5) So, if some simples (the Y's) compose a fusion z then there will exist a time x

⁵⁶⁶ Presentism is the view that the only time that exists is the present time, and the only things which exist are those things which are in the present time. For an attempted reconciliation of Presentism and (Special) Relativity, see Hinchliff 2000.

such that the Y 's exist-at x .

To motivate this argument and defend premise (3), I should present my rationale for rejecting the more popular Unrestricted Mereology (UM). UM, also called ‘Collectivism’ or ‘Universalism’, is the thesis that for any distinct x and y , they compose a ‘third’ object or fusion z , regardless of x and y 's spatial or temporal distance.

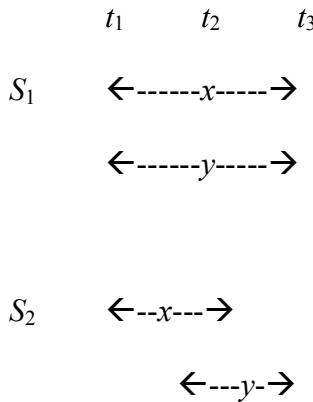
5.2.1.1 Problems With Unrestricted Mereology, Defending Wholly Present Persistence

My reasons against UM are more appealing to three- rather than four-dimensionalists. Three-dimensionalists believe that objects persist by being “wholly present” whenever they exist, and “sweep through” time, one and the same, now wholly present at t_1 , now wholly present at t_2 . Three-dimensionalists reject that objects have what are called “temporal parts”. Four-dimensionalists hold that objects persist over time by having distinct temporal parts wholly present at distinct times. They believe in what are called “space-time worms”, namely, four-dimensional objects which are smeared across time as well as space, and have momentary (or instantaneous) “slices” or “stages” as constituent parts. Four-dimensionalists hold that

our talk of common sense persisting objects latches onto either space-time worms, or to their stages.⁵⁶⁷

As I explained earlier, I am going to assume that three-dimensionalism is true and trace out an account of objects, their relations to their constituting matter and the events and processes that they figure in, in such a way that the overall account is amenable to the three-dimensionalist. The strength of four-dimensionalism is inductive (or perhaps abductive), and is due to its power in explaining, or explaining away, various metaphysical puzzles. It is exactly my contention that the three-dimensional position that I am trying to formulate solves the puzzles in a more explanatorily satisfying and plausible manner, when combined with the stuff-process ontological machinery. I believe that Process Hyleism also solves all the same puzzles, without giving up on the more common sense three-dimensional notion of persistence. In any case, it is time to see what else is wrong with Unrestricted Mereology, on the assumption that three-dimensionalism is true.

One argument against UM is that, if it is true alongside three-dimensionalism, then the count of fusions comes out incorrect. Let me first advert to the following chart:



⁵⁶⁷ For worm views, see Lewis 1986, pp. 202-204, and Heller 1990. For the stage view, see Sider 2001.

S_3 $\leftarrow x \rightarrow$
 $\leftarrow y \rightarrow$

Let me assume for simplicity that absolute simultaneity occurs. The ‘S’s’ represent situations, the ‘t’s’ times, and ‘x’ and ‘y’ name particles, and the arrow tips represent their creation and annihilation. In S_1 x and y are created and annihilated at the same time, in S_2 they overlap at t_2 , but only x exists at t_1 , and only y at t_3 . In S_3 they do not overlap at all. According to TREM, x and y compose a fusion z for the whole of their careers in S_1 , in S_2 x and y fuse at t_2 but not at t_1 or t_3 , and in S_3 x and y never fuse.

This goes along well with a three-dimensional understanding of persistence. Since in S_2 , the object z is just the fusion of x and y ; and fusions are just objects; and objects persist by being wholly present; z is wholly present when and only when all of its parts are. In no sense could we understand the fusion z to be wholly present at t_3 . If z just *is* (said with a particular earnestness) x and y , then how can *it* (said with a shrillish raising of the voice) be wholly present at t_3 , when one of its parts, x , no longer exists? A similar treatment goes along with S_3 . If fusions are objects, three-dimensionalism is true, and a fusion can be wholly present only when all of its parts are, then there just cannot be a fusion z which is composed of x and y , since at no time are x and y both wholly present. One who adheres to a completely Unrestricted Mereology holds that both in S_2 and in S_3 there is a fusion z composed of x and y which has only one of those two parts present at t_1 . However, if we adhere to an understanding of fusions in combination with an intuitive understanding of what the

three-dimensionalist would say about them, we can see why the three-dimensionalist ought to deny the existence of such fusions.⁵⁶⁸ Three-dimensionalists ought to think that objects exist at a time only if they are wholly present at a time, and persist throughout an interval only if they are wholly present throughout the interval. This means that the three dimensionalist should accept the following definitions and principle:

- (WP-S) x is wholly present at an instant $t =_{\text{df}}$ every part that is ever a part of x exists at t and is part of x at t .
- (WP-D) x is wholly present throughout an interval $I =_{\text{df}}$ everything that is at any instant t of I part of x , exists at every instant of I and is part of x at every instant of I .⁵⁶⁹
- (WP) Things exist at a time by being wholly present at a time (according to WP-S), and persist across an interval by being wholly present throughout that interval (according to WP-D).

(WP-S) defines what it means to be “wholly present” *synchronously*; at a time, whereas (WP-D) is the definition of being wholly present *diachronically*; across time. Admittedly, WP represents a very hard-nosed approach to the understanding of what ‘wholly present’ means. (I say ‘hard nosed’ because these principles entail

⁵⁶⁸ Restricting fusions temporally is also a straightforward way of dissolving the “paradox of endurance” alleged by Stephen Barker and Phil Dowe in 2003. Irem Kurtsal Steen brought this to my attention.

⁵⁶⁹ This is essentially the same as the definition of ‘strongly wholly present’ in Sider 2001, p. 64. Sider resists formulating three-dimensionalism in terms of this definition, because it entails mereological essentialism, which he thinks “should not be *built into* the statement of three-dimensionalism, for most three-dimensionalists reject it.” I respond that I am not building it into three-dimensionalism *simpliciter*, but I recommend that the three-dimensionalist try a mereological essentialist version to see where it leads rather than rejecting it *tout court*, which has usually been the case. I don’t think that ‘wholly present’, as it has been used, unproblematically *means* (WP-D) + (WP-S). I merely think that this is one candidate to be meant, and I will argue that it is the best one to be meant. Thanks to Mark Heller for some helpful points here.

mereological essentialism; I will say more on this below). Yet, it is also the clearest and most straightforward answer to the question of what it means for an entity to be wholly present that also spells out the relation of an entity to its parts. (No views that I am aware of that embrace both endurantism and the notion of a temporary part have managed to avoid a host of objections that arise against them). I will deal more with the objections to the entailments of WP below.

We should see that TREM, in combination with WP, entails that a fusion ceases to exist if any of its parts either gets completely annihilated or no longer exists simultaneously with the rest of the fusion. This is because TREM entails that a group of simples will compose a fusion if they exist simultaneously. And WP entails that that fusion will persist just so long as all of its parts remain in existence.

The joint entailments of TREM and WP represent a plausible, clear, non-trivial, and non-arbitrary answer to van Inwagen's Special Composition Question (SCQ): When is it true that there exists something such that some distinct things compose it?⁵⁷⁰ Some rivals of TREM/WP answer: *always*⁵⁷¹ (Universalism), *never*⁵⁷² (Nihilism), *when they compose a life*⁵⁷³ (Organicism), *it is a brute, unexplained fact when they do*⁵⁷⁴ (Brutalism). None of these answers provides us with the intuitively right number of composite objects *and* appropriately balances respect and mistrust towards the composite objects countenanced by commonsense.⁵⁷⁵

⁵⁷⁰ Van Inwagen 1990 pp. 21-33

⁵⁷¹ see Sider 2001 chapter 9

⁵⁷² Dorr 2002

⁵⁷³ Van Inwagen 1990

⁵⁷⁴ Markosian 1998

⁵⁷⁵ Perhaps there is one more option, tacitly assumed by many such as Wiggins 1980: Compositions exist whenever we intuitively think they do. This position has no name, but we can call it 'Intuitivism'. Of course, intuitivism gives intuitively correct results in the count of composite objects, and the

TREM too allows more objects than commonsense does, but I will show below why this is permissible. Also, TREM is more parsimonious than Universalism, and tracks commonsense better than Organicism or Nihilism. TREM is also less slavish to common sense than Intuitivism, and offers an explanation for composition, unlike Brutalism.

The most plausible rival of the TREM and WP picture is Unrestricted Mereology (UM). Before I explain why UM is implausible, let me note that there is one objection commonly posed against UM that I find unfair. Some people think that the incredulous stare⁵⁷⁶ you can give the UM'ist carry some weight, since if the UM'ist is right, there is an object composed of my nose, the Colossus of Rhodes, and the first time machine ever built (if there will be one). This straightforward weirdness doesn't carry much weight, however, since weirdness is ubiquitous in philosophy. Besides, as a supporter of TREM, I cannot rely on the incredulous stare to criticize UM, because TREM too entails the existence of many weird objects (but not any temporally gappy ones).

There is a problem with UM which I can show by considering the following situation. Suppose, for simplicity, that throughout my life I do not lose or gain any parts. Neither did Winston Churchill, let's suppose. Now, imagine that all the matter that used to make up Churchill persisted after his death and somehow ended up composing me. It is the fusion of stuff that makes me up. Is it the same as or distinct from whatever is referred to by the phrase 'the fusion of Mark and Churchill'? Given

fusions it countenances are common-sensical. As is usually the case in philosophical matters, this intuitive appeal comes with the price of lacking in principle.

⁵⁷⁶ It is probably well-known already that this phrase was coined by David Lewis. See Lewis 1986, pp. 133-135.

EM, the answer seems to be that they are the same thing. But the UM'ist counts three fusions in this situation: the one that makes up Churchill, the one that makes up Mark, and the one that makes up the sum of Churchill and Mark. In fact, there is only one fusion.

Or maybe he doesn't; maybe the UM'ist could say that this is merely a situation where one fusion persists, first as identical to Churchill, later as identical to Mark, and throughout as identical to Churchill-plus-Mark. (Let us also ignore the time elapsed between Churchill's death and Mark's birth.) What could be wrong with that?⁵⁷⁷ The problem is this: assuming the falsity of temporary identity, the only way the UM'ist can cash this out is if he also assumes four-dimensionalism. Without recourse to temporal parts, the response I am considering is easily defeated: it entails that Churchill is identical to me. Surely he is not.⁵⁷⁸ Therefore, there is little sense in this response. Unless, of course, temporal parts come to the rescue: the fusion of Churchill and Mark is one elongated object, spread across time. It has a segment located at Churchill's life span, and a distinct segment located at mine. (On the worm view, these segments are, respectively, Churchill, and I. On the stage view, they more or less are, respectively, Churchill's life, and my life.) With the resources of four-dimensionalism, the UM'ist can demarcate both a sense in which there is only one sum of stuff throughout, and a sense in which two distinct people are involved in the situation. Furthermore, the one thing is related to the two people in just the way that UM requires: they are its parts.

⁵⁷⁷ Thanks to Tom McKay for some helpful comments on this section.

⁵⁷⁸ It might be thought that this cuts against TREM as well. This would be true, if not for the added process-ontological machinery which will follow.

It is, however, unwise to make four-dimensionalism a crutch for UM in this way for two reasons. First, if UM requires four-dimensionalism to account for our Churchill-Mark case, then those arguments for four-dimensionalism which rely on UM⁵⁷⁹ become circular. Second, if UM has four-dimensionalism built into it, then there is no reason for the three-dimensionalist to accept it as a logical law of mereology. Mereology alone does not tell us that temporal parts exist. It tells us the laws/logic of parts and wholes, and composition, not which base level components actually exist and obey those laws.

To repeat, many philosophers who hold UM suppose either that it has four-dimensionalism built into it,⁵⁸⁰ or that given UM, four-dimensionalism follows from a few plausible premises.⁵⁸¹ If these positions are correct, then, if the three-dimensionalist wants to hold his position, he must deny unrestricted mereology. But, they are most likely not correct. UM does not have four-dimensionalism built into it. Even if it does not, however, the three-dimensionalist ought to deny even a completely unrestricted mereology without temporal parts, since this would allow fusions whose parts are temporally disjoint, and such fusions could not be wholly present at every time they exist. TREM allows us to respect the strictures of non-arbitrariness, since being non-time-like-separated is not arbitrary (arguably, simultaneity according to a reference frame is a significant natural property.). It also

⁵⁷⁹ E.g., ‘the argument from vagueness’ in Sider 2001, pp. 120-140. On p. 133 we also see the assumption of the falsity of ME.

⁵⁸⁰ See Jubien 1993, p. 6 & Quine 1960, p.1. The above claim needs to be qualified, though. They don’t so much assume that UM and four-dimensionalism go hand-in-hand, but they stipulate the base-level individuals to be portions of space-time and help themselves to UM at the same time. But these two views, which are separable, are often run together.

⁵⁸¹ Sider, *loc. cit.*

supplies us with much of what is useful in UM, without committing us to four-dimensionalism.

Now I can summarize why we must reject (2) towards the beginning of section 5.2.1 above, “there is a fusion z which can exist even though there is no time at which all of its parts exist..” An object can be wholly present at a time, and wholly present across an interval, only if all of its parts are. Nothing (physical) can exist without existing at a time, and fusions exist at a time, and over time, only by being wholly present at that time or throughout an interval. After all, ‘fusion’ is just a fancy general term for any composite object. Whenever there is a fusion of some things, at that time all the parts that fusion will ever have must exist and be wholly present.

5.2.2 Simultaneous Existence Implies Fusing

In Chapter Three, I have already defended the right to left embedded conditional of TREM informally. Below, I state the argument slightly more formally. (This is based largely on an argument Sider gives for UM⁵⁸²)

- (1) Assume, for *reductio*, that there exists a time interval x such that some simples Y exist-at x , yet the Y ’s do not compose a fusion z .
- (2) Composition is definite. That is, it is definite whether or not any fusion exists (according to some reference frame or other).
- (3) It is possible that the Y ’s compose a fusion.⁵⁸³
- (4) If (1) and (3) are true, then there is a possible temporal series where the Y ’s compose a fusion z at t_1 (of some I_1), go through a series of minute changes and definitely do not compose a fusion at t_3 .⁵⁸⁴

⁵⁸² *op cit.*, pp. 120-140

⁵⁸³ I am assuming here that nihilism is false.

⁵⁸⁴ Where we assume all the x ’s exist simultaneously throughout the interval.

(5) But, given (2), there would be a precise moment t_2 , where a fusion z of the Y 's exist, where instantaneously after this, z does not, while the differences in the x 's is astoundingly minute (suppose, one electron of z becoming one Planck length (10^{-33} cm.) further away from the nucleus it orbits).

(6) But, (5) is impossible. Since (2), (3) and (4) are blameless, it must be that (1) is false.

So, since there is nothing special about I_1 , [by Universal Generalization from the negation of (1)]:

(7) If there exists a time interval x such that some simples Y exist-at x , then the Y 's will compose a fusion z .

Since I have established both the left to right and right to left embedded conditionals of the biconditional TREM, from this point on I will presume that TREM is established; any Y 's will compose a fusion z just in case there is a time that those Y 's exist at.

5.3 Mereological Essentialism Defended

WP and TREM entail Mereological Essentialism (ME):

(ME) For any x , if y is ever a part of x , then y is always a part of x , provided x exists.

Another way of stating ME is that objects have all their parts essentially. ME is entailed for any fusion f . Suppose that objects persist over time by being wholly present at each moment as defined by

(WP-D) x is wholly present throughout an interval $T =_{\text{df}}$ everything that is at any instant i of T part of x , exists at every instant of T and is part of x at every instant of T .⁵⁸⁵

⁵⁸⁵ This is the same as the definition of ‘strongly wholly present’ in Sider 2001, p. 64. Sider resists formulating three-dimensionalism in terms of this definition, because it entails mereological essentialism, which he thinks “should not be *built into* the statement of three-dimensionalism, for most three-dimensionalists reject it.” I respond that I am not building it into three-dimensionalism *simpliciter*, but I recommend that the three-dimensionalist try a mereological essentialist version to see

Then, f 's simple parts will continue to compose f only if they all persist. Furthermore, f cannot gain a part either: According to WP-D, anything which is ever a part of f is a part of it at any time f exists. This could not be if f could at some time gain a part that it didn't have at an earlier time. So, f can neither gain nor lose parts. So, ME is true of any fusion f . TREM is not a spinning wheel here. We need TREM to get fusions at all to adhere to WP-D, since WP-D is consistent with composite object nihilism.

I have already defended ME against certain reactions as part of my presentation of Chisholm's view in Chapter Three. The most common reactions against ME are rooted in the intuitive truth of the following: an object can gain a part and persist, an object can lose a part and persist, an object could have had different parts than it in fact had, has, or will have. If these intuitions were indeed right, then ME would be false. However, they can safely be rejected. I have already shown how the mereological essentialist, especially one who has a less restricted mereology than the early Chisholm, can cash out all talk of part change in terms of interrelations between distinct fusions, or changes in the *arrangement* of their parts.

The ME'ist need not be furtive, modest, or apologetic about her views. As I have already pointed out, Mereological Essentialism has a respectable philosophical pedigree. On many interpretations Heraclitus, Democritus, Lucretius, Hobbes, Hume, Butler, Reid, Arnauld & Nicole, Abelard and Leibniz are Mereological Essentialists, and more recently, Roderick Chisholm has joined the club.

where it leads rather than rejecting it *tout court*, which has usually been the case. I don't think that 'wholly present', as it has been used, unproblematically means (WP-D) + (WP-S). I merely think that this is one candidate to be meant, and I will argue that it is the best one to be meant.

Three-dimensionalists should especially welcome mereological essentialism. If you (1) reject four-dimensionalism, (2) are against altering the identity relation, (3) reject coincidence, yet (4) accept that there are bare objects, then you must accept mereological essentialism.⁵⁸⁶ This is because, if you accept bare objects, you are accepting that there are hunks of matter that have all of their parts essentially. If you deny coincidence, then the hunks of matter will “crowd out” commonsense objects with which to coincide. If you reject temporary, contingent, or relative identity, then the hunk of clay cannot be temporarily, contingently, or relatively identical to the statue. If you reject four-dimensionalism, you cannot say that the clay and the statue share temporal parts. You must cleave to ME, if you hold the above four positions, and do it proudly.

5.4 ‘TOOSOFT,’ and, What to Do About it

In this section I will bring together all the theses I established previously, in the form of a single thesis, TOOSOFT. (The Only Objects are Simples Or Fusions Thereof.)

(TOOSOFT) For any (physical) object x , x is either a simple or a fusion, and, if x is a simple, x persists across an interval I just in case it is wholly present across I , or, if x is a fusion, then x persists across I just so long as all of its simple parts are wholly present across I . This is true regardless of which sortals x falls under.^{587, 588}

TOOSOFT is entailed, trivially and somewhat redundantly, by all that I have established so far because the following conditional is true:

⁵⁸⁶ Cf. Zimmerman 1995.

⁵⁸⁷ Except: sortals like ‘fusion’, or substance sortals for simples, e.g. ‘electron.’

TREM & EM & ME ⊃ TOOSOFT

Let me explain how. If TREM is true, then if there is a time where some simples $x_1 \dots x_n$ exist at it, they will compose a fusion f . If EM is true, then f is identical to an object o if o has $x_1 \dots x_n$ as parts, regardless of how spatially scattered o is and which sortals it falls under. Furthermore, if ME is true, then f cannot lose or gain any parts and persist. Generalized, we get TOOSOFT. (Since simples have no proper parts, they trivially obey TOOSOFT according to WP.) Since TOOSOFT applies to all (physical) objects, then all objects are either simples or fusions, and they persist iff all of their parts persist, regardless of what sortals (such as, ‘cat’, ‘H₂O molecule’) they fall under.

Embracing bare fusions (or collections of matter) while rejecting coincidence forces us to accept TOOSOFT. If there are bare fusions, then they persist just so long as all of their parts do, regardless of whether they compose any object of common sense. Now, suppose that a mass of gold molecules constitutes a ring. If coincidence is impossible, then that mass would “crowd out” any objectual entity with the distinct persistence conditions of the ring. Hence, there cannot be any object with the persistence conditions of the ring. This is exactly what TOOSOFT expresses; the only objects are the mere masses, parcels, quantities, or fusions.

As we can see, TOOSOFT has some troubling consequences, which strain the bounds of credulity.

For instance:

- (i) There could not be merely two things simultaneously in existence.

⁵⁸⁸ This is similar to what Sider 2001 p. 181 calls the ‘Nothing but 3D sums’ view. According to Sider, “the persistence of 3D sums best matches a kind of pre-analytic picture we have of the nature of persistence—a kind of ‘ideal of persistence’.” (p. 185) Of course, he argues against this view.

- (ii) If I am a fusion, then if I am melted down into a soup in a large tureen, I would still exist.
- (iii) When a car is built, or an egg is fertilized, if all the constituent simples always existed simultaneously, then nothing new came into existence.
- (iv) If the special theory of relativity were false, and no simples were created or destroyed, then the number of things, and what there is, would remain constant, regardless of how things were arranged.
- (v) Since most of our object talk allows for the persistence of objects through change of parts, most of our object talk is false. In fact, if TOOSOFT is true, then there just *are* no part-changers. If this is the case, then maybe there are no commonsense part-changing objects at all—just mere “lumps,” “parcels,” and fusions. (The worry here is that TOOSOFT seems to entail an early Chisholmian position about common-sense objects, according to which common sense objects are nothing more than mere “fictions” or logical constructions out of a succession of distinct objects or fusions, and strictly speaking don’t persist.)

I will now show how we can save common sense from TOOSOFT, and render it compatible (but not painlessly so) with many of our common sense intuitions. In the next section I will explain how the resultant theory is able to solve various metaphysical puzzles and how we can defend it against certain objections. In particular, I want to establish that if we identify commonsense macroscopic and complex microscopic objects with processes, then we can accept TOOSOFT and assuage the concerns raised by (ii), (iii), and (v) above.

5.5 Processes

5.5.1 Processes in English

Just what are processes? Roughly speaking, processes are relatively homogenous activities that are usually referred to by gerundival phrases (i.e., imperfect nominals) in sentences with progressive verb aspect.

Compare the following sets of sentences:

- (1) Ted ran to the store.
- (2) The water will evaporate.
- (3) The policeman fell into the ditch.

- (1') Ted was running to the store.
- (2') The water will be evaporating.
- (3') The policeman was falling into the ditch.

The grammatical features of (1) and (1'), (2) and (2'), etc. are identical except in regards to verb aspect; sentences (1)-(3) have perfective form, (1')-(3') have imperfective verb aspect, i.e., progressive form. I will contrast the perfective with the progressive rather than the imperfective in what follows, to avoid confusing verb aspect with tense. (Note that all the pairs share the same tense.) We use the progressive form to speak of things that are/will be/have been in progress (more colloquially, ‘going on’), while the perfective refers to things which have been/are/will be completed, or ‘gone-over’.⁵⁸⁹ To distinguish processes from events, in the sense I am doing here, is to distinguish, for instance, Ted’s run to the store, from the running he is doing while he is running to it; the forest fire, from the burning the forest underwent; or a ball’s completed roll from the rolling it is doing while it is in motion.

⁵⁸⁹ This phrasing is from Stout 2003.

Most of the relevant literature distinguishes processes from states. States too are often indicated by gerundival phrases in progressive sentences. Look at the following:

- (4) The deck was sloping.
- (5) The object was occupying space.
- (6) The pincushion is bristling.⁵⁹⁰

These are stative predication, or, ‘pseudo-occurrences’⁵⁹¹ or ‘unchanges’⁵⁹² which can be true even at an instant when no change occurs. The bristling of a pincushion or the occupying of space by an object is not usually thought of as an activity or process which is going on or happening but rather a state that obtains. But, in the particular way I shall define processes and identify them with objects, states shall not be differentiated. Dummy “states” like (5) can be safely ignored, while (4) and (6) are treated as limiting cases of processes. The parsimonious value of this shall become apparent later.

Process nominal phrases, just like object and event nominal phrases, are ambiguous between types and tokens. Just as we can speak of each particular whale being an instance of the type *whale*, or a tree frog as a token of the type *frog*, so can a particular decaying of a particular cesium-23 atom be an instance of the type of activity *decaying*, or the sleeping of John be an instance of the activity type *sleeping*. The processes with which I will identify (particular) ordinary objects will of course be process-tokens, not types.⁵⁹³

⁵⁹⁰ These examples are from Karmo 1978.

⁵⁹¹ This phrasing is from Karmo 1978.

⁵⁹² Dean Zimmerman tells me that somewhere Chisholm credits Cardinal Mercier with the invention of this phrase, but I cannot find the source.

⁵⁹³ Two other distinctions related to notions of particularity and counting have been made between processes and events, in order to show that processes are not particulars or individuals. (1) That processes are (relatively) homoeomerous, or, ‘like-parted’, and cumulative, while events are not (See

5.5.2 Kinds of Processes

Processes can be either *telic* or *atelic*. Telic processes are activities of things which are picked out in a certain way so that they point toward a certain eventuality or end-state. *Finishing one's taxes, giving birth, neutron decay, and snuffing a candle* are examples of telic processes. Atelic processes do not point towards any end-point, nor does the fact that they are happening logically imply that they will ever stop.⁵⁹⁴ Some examples of atelic processes are *spinning, moving, laughing, growing, and running*. Atelic processes do not come to completion, except in the trivial sense of ceasing to occur. But, the terms for atelic processes, when modified by certain adverbials can indicate telic processes. Take, for instance, ‘running for an hour’ or ‘pushing the cart to the top of the hill.’ Some adverbial modifiers do not undermine the atelicity: ‘running quickly,’ and ‘growing at one centimeter per hour.’ The telicity or atelicity of a process is indicated not so much by particular verbs themselves but rather by the wider sentential context in which they appear.⁵⁹⁵ The processes that will serve as my reductive base for objects are atelic. Arguably, telic processes reduce to

Seibt 2000, esp. pp 244-250, and Seibt 1997, pp. 167-177). (2) That process-term-occurrences are mass-terms/phrases, whereas event nominals are count-terms/phrases (See Mourelatos 1978). I will not argue further against these views but rather just stipulate that the reified processes to which I will reduce common sense objects to are particular entities.

⁵⁹⁴ Even if, nomically, they must.

⁵⁹⁵ See Seibt 2000, pp. 245-246.

processes that are atelic, and the telic components are inessential intensional elements that do not demarcate a fundamental difference in kind.⁵⁹⁶ I note this distinction only to avoid certain counterexamples.

Another, related distinction is between intentional and purposive agent-centered processes, or ‘a-processes’, and more mechanical natural processes, or ‘n-processes’. Jogging, meeting, seeing, learning, etc. are all examples of a-processes that agents undergo or perform. N-processes include erosion, neutron decay, evaporation, electron spin, tectonic plate movement, amoebae splitting, and so on. The processes with which I will identify common sense objects are modeled on n-processes. I will reduce persons and animals with higher cognitive faculties to processes as well, and their reductive base will be modeled on n-processes. But, I will not attempt to explain cognition, representation, etc., in terms of n-processes in this chapter.

To summarize: the token processes to which I will reduce common sense objects are atelic, non-intentional, reified token activities that are (usually) referred to by gerunds or gerundival phrases in sentences with progressive verb aspect.

5.5.3 Processes vs. Events

5.5.3.1 Some Differences Between Processes and Events

⁵⁹⁶ Thanks to Daniel Nolan and Kris McDaniel (personal communication) for some comments in this regard.

Processes of this circumscribed sort are three-dimensional entities that endure through time. They persist by being wholly present and sweeping through time, like objects, and unlike events, which are spread out in time with distinct temporal parts wholly present at distinct times. To support this, I will show how processes are more receptive of temporally sensitive adjectives than events, and how they are measured differently than events. This gives only weak support. Stronger support for enduring processes will be given via an examination of the progressive and perfective, and how to treat the notion of instantaneous velocity.

Processes continue through time, and can be persistent or intermittent (in an enduring, as opposed to perduring manner), whereas event tokens do not admit such qualities. Helen Steward, in *The Ontology of Mind*⁵⁹⁷ points out that it makes sense to ask of processes how they go on through time, whereas with events we simply ask for when they occurred, and for how long.

A process like the humming of my computer, for example, can be persistent, continuous, ongoing, constant, incessant, perpetual, unremitting, sporadic, intermittent, irregular, steady. But none of these adjectives can be comfortably applied to an event—at least, where such an adjective is so applied, it must be given a different sense.⁵⁹⁸

For example, if we say that “John built the house incessantly”, or “The rock crushed the window sporadically”, we have either ill-formed constructions, or, the apparent event which is adverbially modified is best thought of as a veiled process-predication, or progressive construction. For example, if “John built the house incessantly” is well-formed, then it is equivalent to “John’s building of the house was incessant.” In neither case can we get rid of the progressive component.

⁵⁹⁷ Steward 1997.

Processes also admit quantificational measurements.⁵⁹⁹ A lamp's glowing can be measured, as can the accelerating of a car, the spinning of a disk, the manufacturing of Coke bottles, or the chugging of some beer. Events, indicated as components within such phrases as "Pharaoh built the Pyramid of Cheops", or "The rock fell and hit Larry on the head," cannot be measured in themselves, except in regard to the amount of time they took, or derivatively, by measuring the constituent processes, such as the *rate* of building of the Pyramid, or the *rate* of the falling of the rock.

5.5.3.2 Against the reduction of processes

We could just accept that processes endure and move through time, that one and the same wholly present humming is now loud, now soft. Most readers, however, would not want to admit processes as an extra category, and our philosophical reductionistic instincts prefer to see processes instead as series of stages, which resemble in certain qualitative respects, each stage causing its successor. Holding that processes are distinct from events is ontologically profligate, you might think, and processes are just redundant entities, derivative from events or successions of instantaneous states. I think this reaction is mistaken.

⁵⁹⁸ Ibid, p. 98. Steward, however, holds that processes have temporal parts. I believe her example supports my thesis more than hers.

⁵⁹⁹ Karmo 1978, p. 5.

5.5.3.2.1 Against reduction to events: Lessons from the perfective and the progressive

It is more reasonable to reduce events to processes, because events are just alterations in, continuations of, cessations of, startings of, completions of, or interactions between processes. A recent essay by Zoltan Gendler Szabó on the progressive and perfective⁶⁰⁰ serves to show that an analysis of the semantics of the progressive and perfective reveal that progressive forms or concepts are more basic than their perfective aspect-correlates, but he does not draw any ontological conclusions from this. Processes, in a less restrictive sense than I have laid out above, if reified (correctly), are uniquely situated to be the truth-makers for a large class of progressive sentences, and so Gendler Szabó's semantic analysis bolsters my metaphysical thesis.

In “On the Progressive and the Perfective”⁶⁰¹ we have a thorough diagnosis of why any analyses that attempt to reduce or explain progressive sentences in terms of perfective sentences are doomed to failure. We will use a couple of simple sentences as our examples:

- (13) The ball rolled across the street.
- (14) The ball was rolling across the street.

(13) is perfective, and (14) is its progressive correlate. One puzzle about aspect, as opposed to tense, where sentences that employ past or future tenses can be analyzed in terms of present tense sentence correlates, is that progressive sentences cannot be analyzed in terms of perfective ones. Sentences like (14) can be true even if ones like (13) are false, for the simple reason that the ball could be stopped, explode, etc.,

before reaching the other side. This phenomenon has been labeled the ‘imperfective paradox’. It does not seem all that paradoxical, but has been called that since, as Gendler Szabó notes

To appreciate why this has been regarded as paradoxical, we need to recall a fundamental assumption of semantic theorizing in the 70’s and early 80’s. It was then widely believed that the appropriate framework for dealing with questions of tense and aspect was classical tense logic or some suitable extension of it.⁶⁰²

And the ‘paradox’ is that the progressive cannot be understood in terms of the perfective. Such tense logics inevitably demand that we understand processes or actions in progress in terms of the supposedly more well understood perfective completed states, but this always has awkward results. Two early analyses by Montague⁶⁰³ and Scott⁶⁰⁴ are roughly similar⁶⁰⁵:

(A) $\text{Prog}[\varphi]$ is true at an instant t iff φ is true at every instant t' in some open interval containing t

As both Parsons⁶⁰⁶ and Gendler Szabó note⁶⁰⁷, this is obviously wrong since if ‘the ball was rolling across the street’ is true, then ‘the ball rolled across the street’ must be true as well. A patch was offered by Bennett and Partee (1972) in the hope that intervals, in addition to instants, might come to the rescue⁶⁰⁸:

(B) $\text{Prog}[\varphi]$ is true at an interval i iff φ is true at some interval i' that contains i as a non-final part.

⁶⁰⁰ Gendler Szabó 2004.

⁶⁰¹ Ibid.

⁶⁰² Ibid., p. 32.

⁶⁰³ 1969.

⁶⁰⁴ 1970.

⁶⁰⁵ My source for the following treatment is Gendler Szabó 2004, p. 32.

⁶⁰⁶ 1990, p. 168.

⁶⁰⁷ 2004, p. 32.

⁶⁰⁸ Gendler Szabó’s 2004, p. 32.

This construal has the obvious point in its favor that φ can be true at an interval where it is not necessarily true at its sub-intervals, but, as Szabó Gendler notes, (B) “still says that if $Prog[\varphi]$ is true at a time, φ must also be true at some time or other.”⁶⁰⁹ So, if it is true that ‘the ball was rolling across the street,’ then (B) entails that ‘the ball rolled across the street’ must be true at some time or other. This is obviously unacceptable.

All other attempts to analyze the progressive in terms of the perfective do so by invoking possible worlds, events, or both, or some technical variation of these methods. Dowty (1979) sought to clarify the relation between the progressive and perfective by invoking ‘inertia worlds’. Inertia worlds can roughly be understood, relative to some interval i in a world w , where $Prog[\varphi]$ is true of i , as a subset of all the counterpart worlds $w_1 \dots w_n$ where $Prog[\varphi]$ is true up to the counterpart intervals i' , and things go on or take their course along a certain vector in $w_1 \dots w_n$ as given by the progressive verb in $Prog[\varphi]$. Here is Dowty’s condition:⁶¹⁰

(C) $Prog[\varphi]$ is true at i in w iff for every inertia world w' of w at i , φ is true in w' at some i' that contains i as a non-final part.

So, ‘the ball is rolling across the street’ is true at an interval i in our world just in case there are a set of worlds which are relevantly like ours up to their counterpart intervals i , where at those worlds ‘the ball rolled across the street’ is true in those worlds of a larger interval i' that contains i as a non-final part.

The problem with this account is that it will not allow any $Prog[\varphi]$ to be true when it is obvious that the activity is about to be interrupted. For instance, suppose

⁶⁰⁹ Ibid.

⁶¹⁰ My source, however, is Gendler Szabó 2004 p. 33.

that our ball is rolling across the street but is about to be run over by a steam roller. According to (C), it will not be true that the ball is rolling across the street since in every world where things are relevantly similar to our own, and things go on like they do here, it will never be true that the ball will have rolled across the street.

Accounts that invoke events⁶¹¹ are not sufficiently different in essence, since they invoke concepts like ‘reasonable options’ and ‘continuation branches’ of counterpart events in other worlds, which play the same roles as inertia worlds. Gendler Szabó does an excellent job in showing the shortcomings of any such account. I will skip on the discussion of the other accounts, since they are just variations on the theme of why such accounts will systematically fail.

The reason all such accounts which attempt to reduce the progressive to the perfective will fail is that they will all entail, or, “almost entail”⁶¹² that

(D) $\text{Prog}[\varphi] \Rightarrow \text{Possibly}[\varphi]$

is truth-preserving. This is what we should expect when one attempts to spell out the truth conditions of ‘x was/is/will be Φ -ing’ in terms of ‘x has/is/will have Φ -ed’. But, of course, any account which entails (D) must be wrong, since something can be rolling across the street even if it is impossible that it will roll across it, or building a house even if necessarily one will never finish building it, and so on.

Gendler Szabó, however, gives us many good reasons to *reverse* the direction of analysis. That is, we can reduce the perfective form to the progressive one. This might seem odd, or unwarranted, but Gendler Szabó shows how this will illustrate certain inferential connections, shed light on the relation between them, and illustrate

⁶¹¹ e.g., Landman 1992.

⁶¹² Gendler Szabó 2004 p. 38.

some obvious conceptual asymmetries. Besides, the notion that the perfective is somehow more basic or ‘default’ is just due to the lack of a blatant perfective marker, which is present in many other languages like Russian.⁶¹³ (Also, non-inflected clauses do not have perfective aspect.⁶¹⁴)

Gendler Szabó notes that the schema $\text{Perf}[\varphi] \Rightarrow \text{Prog}[\varphi]$ is valid. (He explains away certain obvious putative counterexamples which need not concern us here.) That is, whenever sentences such as ‘the rock rolled across the street’ are true, their progressive correlates like ‘the rock was rolling across the street’ are true as well, although the converse does not hold. So, whenever a perfective sentence is true, so is its progressive correlate. This suggests that perfective events, or completed processes, might somehow be reducible to or understood in terms of the progressive events and the processes that are their constituents. This intuitively makes sense, since things get done by the doing of them, and could not get done otherwise.

Gendler Szabó notes with approval that Terence Parsons, in *Events in the Semantics of English*,⁶¹⁵ is also aware that the progressive cannot be analyzed in terms of the perfective. Parsons’ solution for how to treat the differences in the perfective and the progressive is to introduce two primitive predicates, the ‘*Hold*’ or ‘*Hold(x,y)*’ predicate, and the ‘*Culminate*’ or ‘*Cul(x,y)*’ predicate. According to Gendler Szabó’s reading of Parsons’ semantics, the modeling of (15), (16), and (17) will be (15’), (16’), and (17’)⁶¹⁶:

- (15) Mary crossed the street.
- (16) Mary was crossing the street.

⁶¹³ Ibid p. 50.

⁶¹⁴ Ibid., p. 52.

⁶¹⁵ 1990, chapter 9.

⁶¹⁶ Gendler Szabó 2004 p. 53

(17) Mary was across the street.

(15') $\exists e \exists i \exists t (i < \text{now} \wedge t \in i \wedge \text{crossing}(e) \wedge \text{Agent}(e, \text{Mary}) \wedge \text{Theme}(e, \text{the street}) \wedge \text{Cul}(e, t))$

(16') $\exists e \exists i \exists t (i < \text{now} \wedge t \in i \wedge \text{crossing}(e) \wedge \text{Agent}(e, \text{Mary}) \wedge \text{Theme}(e, \text{the street}) \wedge \text{Hold}(e, t))$

(17') $\exists s \exists i \exists t (i < \text{now} \wedge t \in i \wedge \text{being}(s) \wedge \text{Theme}(s, \text{Mary}) \wedge \text{across}(s, \text{the street}) \wedge \text{Hold}(s, t))^{617}$

So, while (15') quantifies over some crossing event that culminates at a certain time, according to Parsons in (16') the very same crossing event ‘holds’ at a certain time. Parsons’ account, unlike the others, does not entail that (16) will be true only if (15) will be. With sentences such as (17), Parsons’ treatment quantifies over states that agents can be in.

Parsons’ account is quite correctly criticized by Gendler Szabó for two interrelated reasons. The first is that Parsons’ theory “makes the meaning connections between progressive sentences and their perfective correlates a matter of *lexical semantics*, in that it leaves the predicates ‘*Cul(x,y)*’ and ‘*Hold(x,y)*’ unanalyzed.”⁶¹⁸ Also, Parsons’ account does not predict the right kind of inferential relations between sentences such as (15)-(17).⁶¹⁹ Note that (15) implies (16) and (17), but there is nothing in Parsons’ modeling in (15')-(17') to show this. Gendler Szabó shows how we can solve these problems by reducing the ‘*Cul(x,y)*’ predicate to the ‘*Hold(x,y)*’ predicate. This is very interesting, for it indicates how we can understand any perfective utterance in progressive terms, and allows us to get a grip on some of the logical relations between progressive and perfective sentences.

⁶¹⁷ The Agent/Theme distinction that Parsons’ makes tracks what is often called the Agent/Patient and Subject/Object distinctions in semantics. Roughly, the agent or subject is the person or object that is doing the acting, while the theme or patient is that which is acted upon or through.

⁶¹⁸ Ibid, p. 53.

⁶¹⁹ Ibid.

Gendler Szabó recommends translating (15) as follows:⁶²⁰

(15'') $\exists e \exists i \exists t \exists s \exists i' \exists t'$ ($i < \text{now} \wedge t \in i \wedge \text{crossing}(e) \wedge \text{Agent}(e, \text{Mary}) \wedge \text{Theme}(e, \text{the street}) \wedge \text{Hold}(e, t) \wedge i' < \text{now} \wedge t' \in i' \wedge \text{being}(s) \wedge \text{Theme}(s, \text{Mary}) \wedge \text{across}(s, \text{the street}) \wedge \text{Hold}(s, t') \wedge \text{cause}(e, s) \wedge \forall e'' ((\text{cause}(e, e'') \wedge \text{cause}(e'', s)) \supset \exists i'' \exists t'' (i'' < \text{now} \wedge t'' \in i'' \wedge \text{crossing}(e'') \wedge \text{Agent}(e'', \text{Mary}) \wedge \text{Theme}(e'', \text{the street}) \wedge \text{Hold}(e'', t'')))$

This might seem baroque, but no other treatment that I have seen does the modeling in such a way as to deal with a bevy of problems,⁶²¹ and to predict the right inferential connections. As Gendler Szabó states, if the logical form of (15) is modeled as (15''), then (15) will entail (16) and (17). “The revised logical form predicts the validity of the relevant inferences; they turn out to be instances of conjunction elimination within the scope of existential quantifiers.”⁶²² Also, and perhaps more excitingly, Gendler Szabó’s model lets us see how we can analyze all perfective sentences in terms of their progressive correlates, which could bolster the view that “it may be that we comprehend what it is for an event to culminate only through our prior understanding of what it is for it to be in progress.”⁶²³

While it was not Gendler Szabó’s intent to be doing any ontology, or making any deep metaphysical conclusions, I think that his account is grist for the process ontologist’s mill. Parsons, in part by holding onto his ‘Cul’ and ‘Hold’ as lexical primitives, parses the distinction between processes and events in the following way:

My account of the difference between processes and events is that a process is actually a series or amalgam of events. A walking process is a bunch of overlapping walking events—small ones, large ones, and so on. A so-called ‘process verb’ is a verb having the property that when it is true of an event e it is typically true of many culminated ‘subevents’ of e that have the same subjects and

⁶²⁰ Ibid., p. 52.

⁶²¹ See ibid., sections 4 and 5.

⁶²² Ibid., p. 54.

⁶²³ Ibid.

objects. A running is an event that typically consists of ‘shorter’ events that are also runnings by the same person⁶²⁴

So, for Parsons, there is no reason to hold any strong ontic difference between processes and events. Processes are merely events with sub-events like their wholes, the distinction being marked by whether or not it is proper to apply the ‘Hold’ or ‘Cul’ predicate. Gandler Szabó’s account, on the other hand, drops out the ‘Cul’ relations, and treats progressively denoted processes as ‘events’ that did, are, or will ‘Hold’, while perfective events occur when a process has, is, or will occur and cause a target state.

If you look closely at (15'') above, and keep it mind that it will entail (16'), the most straightforward reading of the ‘crossing’ event or entity e, which holds through an interval and causes a target state s, is identical with the crossing entity denoted in (16'), and this type of entity is, I believe, exactly what I have been calling an activity or process all along. With Gandler Szabó’s account that supersedes Parsons, the most crucial, and, undefined notion, is that of an event’s Holding. There seems to be two ways to understand this. One is that the state of affairs described by an ‘event’s holding’ is just that a succession of distinct states that have a certain structure or qualitative similarity are ongoing, each one causing the next. The other way of understanding it is in my preferred sense, which I think is more natural (and will be further defended in the next section). That is, that an ‘event’s holding’ denotes a state of affairs where a process is ongoing, by being wholly present at distinct times, worming its way through the spatio-temporal manifold until it either reaches some

⁶²⁴ Parsons 1990, p. 184.

target state (when the process term/phrase is modified to be, or is naturally, telic), or merely ceases (when the process is atelic).

So, both progressive and perfective sentences reduce (in part) to an ‘event’s holding’, which is more basic than an event’s being completed. This makes sense. To understand that a ball rolled across the street is to understand both that it was rolling and that it achieved a target state, which contains the more basic progressive notion of the ball’s rolling. And event-holdings are processes. I think the foregoing gives (non-conclusive) support to the notion that perfective events are just processes which have ceased or caused some target state. We can quibble about whether or not these processes should be called ‘events’, but so long as it is noticed that these processes, or events which hold, are not reducible or identical to events which have been completed, yet the reverse is true, the point remains.

5.5.3.2.2 Against reduction to states and static properties; considerations of motion and instantaneous velocity

One could object that events do not reduce to processes, rather, both events and processes reduce to (instantaneous) states. However, according to the picture I am laying out, processes are not sums of states or “stages”, and the putatively distinct instantaneous states that they would overlap with at different times are redundant entities—they tell us nothing more than how processes are at times. Boring static⁶²⁵ states such as those employed in (4) or (6) above are either the limit nodes of

processes or atypical, dispensable, and misleading processes or “unchanges” such as standing still.

Furthermore, suppose that both processes and events are reduced to instantaneous states. Then we have the following dilemma. Either these instantaneous states involve intrinsic change/dynamism or not. If they do not, then objects cannot be said to be changing, or having any dynamic properties in virtue of how they are at an instant. Imagine a ball which is rolling back and forth along a cross section of half-pipe. On the current proposal, there is no intrinsic difference between the two states of the ball when it reaches the same location twice, but moving in opposite directions.⁶²⁶ This would mean that we cannot make sense of an object’s moving as being intrinsic to how it is at an instant. By extension, we couldn’t make sense of an object’s turning green, or changing shape, as being changes in the object at that instant.⁶²⁷ On the other hand, if these instantaneous states *are* dynamic, then they themselves turn out to be irreducible processes, and not a different kind of entity to which processes could be reduced. So, either there are no genuinely dynamic states, which would lead to problems (as we’ll see), or, there can be, but they would be processes.

To maintain genuine dynamism had at an instant, one might posit the existence of genuine states of motion at an instant like Tooley does⁶²⁸, or hold what

⁶²⁵ My talk of a *static* state could appear as a redundancy. However, it is not unusual to find mentions of dynamic states, such as a state of thinking a thought.

⁶²⁶ Arntzenius 2000 gives an example like this on p. 190.

⁶²⁷ This is not the “no change” objection against the Russellian or four-dimensionalist accounts of change which state that change is variegation of properties between two states of a thing at different times. My objection has to do with dynamic, change-involving properties had at an instant, e.g., instantaneous velocity. (See Arntzenius 2000 for the problems of instantaneous velocity.)

⁶²⁸ Tooley 1988 is an example of this.

Arntzenius⁶²⁹ calls the “impetus view” as opposed to the “standard”, “at-at” theory of motion.

How does an arrow move through space? Zeno of Elea argued that it cannot. Take the smallest units of time—instants, or, time “atoms.” At an instant, the arrow cannot move to a place where it is not. Neither can it move at the place where it is. But an arrow is always where it is. At any instant it is at rest. But, if at no instant it is in motion, then it is never in motion. Generalized, *nothing* moves.

Nothing could be more obvious than that things move. One way out, the most common route taken, is to embrace what is called the “at-at” theory of motion. On the “at-at” theory, motion is nothing more and nothing less than to be *at* different locations *at* different times. As Bertrand Russell states:

Motion consists *merely* in the occupation of different places at different times, subject to continuity...There is no transition from place to place, no consecutive moment or consecutive position, no such thing as velocity except in the sense of a real number which is the limit of a certain set of quotients.⁶³⁰

One can accept Zeno’s premises, yet deny that it entails that nothing moves, since motion is nothing more than being at different places at different times. As Tooley glosses, “Russell contends that, properly understood, there is nothing unacceptable in Zeno’s claim. For what the argument shows, in effect, is that one needs to set out what might be called a *static* theory of change.”⁶³¹ And, a static theory of change is “an account according to which there are no states of change—that is, no properties

⁶²⁹ Arntzenius 2000.

⁶³⁰ Russell 1937, p. 473. See Tooley 1988, pp. 225-6.

⁶³¹ Tooley 1988, p. 226.

which an object has at an instant, and in virtue of which it is changing. Change is, instead, simply the possession of different properties at different times.”⁶³²

Another way to look at this is to take a God’s eye view of the four-dimensional spatio-temporal manifold. Motion of an object is just variation in the object’s three-dimensional position in the four-dimensional manifold.

What about velocity? Average velocity *during an interval* is just the ratio of the difference between the distance traveled in the interval and the time of the interval. This sounds good. What about, however, instantaneous velocity? No matter how it is interpreted, according to the “at-at” theory, strictly speaking there is no intrinsic instantaneous velocity. There is no intrinsic difference between an object in motion (at an instant) and an object at rest (at an instant). This is because instantaneous velocity is defined in the following way:⁶³³

Given the above account of the average velocity during an interval, a natural approach is to consider smaller and smaller intervals containing the instant, t_0 , and if it is found the velocities associated with such indefinitely smaller intervals always tend to the same limit, v , then v can be taken as the velocity of the object at the instant, t_0 . That is to say, if $f(t)$ is a function specifying the location of an object at different times, then the velocity of that object at time t_0 is equal to the limit of the ratio,

$$\frac{f(t) - f(t_0)}{t - t_0}$$

as t approaches t_0 . Velocity at an instant is, in short, the value of the first derivative of the relevant function at the time in question.⁶³⁴

On this view, there are no genuine (intrinsic) states of motion had at an instant, or instantaneous velocities, since “the velocity of an object at any time necessarily

⁶³² Ibid.

⁶³³ Well, not necessarily. There are varying methods, e.g. the limit conception of Weierstrass, the infinitesimal conception of Robinson, Lawvere . See Arntzenius, p. 192. But, as Arntzenius notes, on

involves reference to the positions of that object at neighboring times. Velocity cannot consist, therefore, in the possession of properties that are intrinsic to an object at a time.⁶³⁵ Instantaneous velocity is not genuinely salvaged by the calculus, it is rather a *façon de parler*, because on this account average velocity and instantaneous velocity are different in degree, not kind.

But, *so what?*, one might wonder. The problem is that the “at-at” view has unacceptable consequences, and it is just one among a variety of views about motion and velocity that we could accept. I think what Arntzenius calls ‘the impetus view’ of instantaneous velocity and Tooley’s ‘theoretical property view’ of states of motion has fewer counterintuitive consequences, and allows us to regain not only velocity and motion at an instant, but dynamism at a time in general. This will be grist for the process philosopher’s mill, and allow us to see how something can sensibly be said to be occurring, and irreducibly so, during an instant.

I will discuss the following negative consequences of the “at-at” view. The view entails that: (1) There is no intrinsic difference between a moving object and an object at rest. (2) Markovianism is false. (3) Velocity is not a genuinely explanatory property, and that the velocity of an object cannot be an element that enters into causal relations. (This is also related to (2).) I find all these consequences unacceptable, and Tooley’s view gets rid of these problems by embracing states of motion at instants.

any of these views “velocity is still some kind of relationally defined, non-intrinsic, quantity that can not be used to explain why the balls continue to move in the directions that they do,” ibid.

⁶³⁴ Tooley, 1998, p. 227.

⁶³⁵ Ibid.

As I have already touched upon it above, the problem with (1) is its plain queerness. Why should there be *no* difference between a moving and a stationary object at a time, or between the same object moving in different directions? About our ball which rolls back and forth,⁶³⁶ (supposing that it can come into exactly the same location when moving to the left as it did when moving to the right) Arntzenius asks, ‘how does the ball ‘know’ to keep moving right at one time and ‘know’ to keep moving left at the other time?’⁶³⁷ Ironically those who really want to postulate (static) states and establish that everything reduces to a succession of them, typically want to embrace something like the “at-at” theory, but in doing so, they must deny that many properties of an object at a time supervene on how that object is at that time. If, however, the “at-at” theorist wants to claim that the velocity of an object at a time *is* supervenient on its location at that time and surrounding times (as he must), then the “at-at” theory is incompatible with Markovianism and causal continuity.

Markovianism is the doctrine that (if we ignore Relativity Theory for the moment) “the full state [of the universe] at a time renders prior histories of states probabilistically irrelevant w.r.t. [*sic*] future developments of states...all influences that the past has upon the future run through the present.”⁶³⁸ The world could be Markovian whether or not determinism is true. If determinism is true, then the state of the world at a time fixes the state of the world at every subsequent time. If determinism is false, then the state of the world at a time fixes the probabilities for how the world will be at the subsequent time.

⁶³⁶ My example is inspired by Arntzenius 2000, p. 190.

⁶³⁷ Ibid. This is a paraphrase, as Arntzenius’ example involves two different balls.

⁶³⁸ Ibid., p. 191.

The “at-at” theory is incompatible with Markovianism in general, and determinism in particular. As Arntzenius notes, “we should have no *a priori* commitment to determinism. But surely determinism shouldn’t be bound to fail just because of Zeno’s arrow argument.”⁶³⁹ Determinism would fail on the “at-at” theory because the state of the world at an instant would not determine the state of the world at any subsequent instant. According to the “at-at” theory, there is no fact of the matter at t_1 what the arrow’s velocity is, or what its position will be subsequently at t_2 . Rather, you wait and see what happens, and can then figure out what its ‘as-if’ instantaneous velocity was at the moment. Strictly speaking, according to the “at-at theory”, the state of the world at one time does not fix it at other times:

The idea that the state of an isolated system at a time, or of the world, determines its state at all times is an idea that many philosophers and scientists have had regarding various types of systems throughout history. With the emergence of Newtonian mechanics it became rigorously provable in a wide range of cases. Laplace stated that the state of the (Newtonian) universe at any given time completely determined the state at all other times. Now it is obvious that determinism so formulated, i.e., in terms of the state *at a time*, could not possibly hold for a Newtonian system unless the state at a time includes the velocity at that time. This is presumably the main reason why velocities are normally regarded as part of the physical state of a system at a time, and why accelerations and higher-order derivatives are typically not regarded as part of the physical state of a system at a time. But on the ‘at-at’ view, as developed so far, there is no such thing as instantaneous velocity. Hence, e.g., Newtonian mechanics is not deterministic. Surely this is wrong.⁶⁴⁰

Given the nature of quantum mechanics, it is generally held now that we have better reason to believe that determinism is false. This doesn’t really make a difference, however. We at least believe that the present state of the world fixes the future

⁶³⁹ Ibid., p. 190.

⁶⁴⁰ Ibid., p. 191. Tooley chimes in similarly: “Force cannot be viewed, ultimately, as the cause of acceleration, for force and acceleration are fictions. Nor can one view the positions and velocities of objects at one time as causally determining their positions and velocities at later times, since what we refer to as the velocity of an object does not correspond to any property of that object *at a given time*.” 1988, p. 240.

probabilities, but this will not be true if there are no instantaneous velocities genuinely had as properties of objects at times. If there are no instantaneous velocities, they certainly cannot play an explanatory or causal role.

Furthermore, if the “at-at” theory is true, then the later states of an object are not only epistemologically relevant to an object’s velocity at a time, they are ontologically constitutive of it.⁶⁴¹ It seems counterintuitive that how fast an object is going *now* depends on where it will be later.⁶⁴²

It is important to recognize that the “at-at” theory is not forced on us. It has problematic consequences, and is just one of a variety of alternatives. Of the alternatives, the best one holds that velocity or ‘impetus’ is a genuine intrinsic property had by objects at instants. Some other alternatives are the “no-instants” views⁶⁴³ and the “Hegelian view.” But these latter views are very problematic as well.

The “no-instants” view attempts to skirt around Zeno’s paradox by asserting that there are no instants. These kinds of views exploit pointless geometry as a model for “atomless time.”⁶⁴⁴ The problem with the former is that

one can not state differential equations or any of the usual equations in the usual manner...One has to translate this into claims about homomorphisms. The simplest way to do physics is obviously to do it within standard geometry and then at the end say ‘ignore measure 0 differences, they do not really exist.’ If simplicity and naturalness of physical theory is any epistemological guide, the ‘no-instants’ view does not appear plausible.⁶⁴⁵

The motivation to avoid Zeno’s paradox and the “at-at” view renders the “no-instants” view untenable if there is a simpler approach, and there is.

⁶⁴¹ Tooley, 1988, p. 242.

⁶⁴² For many other problems with the “at-at” theory that I did not cover, see Tooley 1988, pp. 239-248, and Arntzenius 2000, pp. 189-196.

⁶⁴³ Arntzenius pp. 201-205, Tooley pp. 230-232. Tooley does not call it the ‘no-instants’ view, although Arntzenius does.

⁶⁴⁴ Cf. Caratheodory 1963, Arntzenius 2000, pp. 201-3.

Graham Priest's "Hegelian" sort of view, discussed by Tooley, seems to be a non-starter: "To be in motion is to occupy more than one place (in fact a continuum of places) at the same time, and hence to be and not to be in some places."⁶⁴⁶ According to Priest, "something is in motion only if it occupies more than one position at a given time."⁶⁴⁷ If we can accept a simpler and more intuitive theory of motion and velocity, one which doesn't state that motion requires things to both be and not be in one place, then we should do so.

We can. We should be realists about states of motion and instantaneous velocities. The view we should prefer in regards to motion and velocity is the alternative that Tooley calls 'velocity as a theoretical property' and Arntzenius calls the 'impetus view':

One could claim that the reason that a ball at any instant keeps moving in one direction rather than another is that at each instant it has an impetus of a certain magnitude and direction. Of course, this requires that one does not have an 'at-at' theory of impetus, that impetus exists at each instant, and that it causes motions rather than is defined in terms of motion. One could also put it this way. On this view there is a kinematic quantity in addition to position, which one could call 'intrinsic velocity,' which equals impetus divided by mass, which is part of the intrinsic state of an object at time t . This quantity is not defined in terms of position developments, but it is a law of nature that 'intrinsic velocities' always equal the temporal derivatives of position developments. Thus, compared to the 'at-at' view, one has additional ontology (one has a larger state-space) and one needs an additional law to forbid developments in this state-space in which position developments of objects in a neighborhood of time t do not correspond to their 'intrinsic velocities at t '.⁶⁴⁸

Tooley gives a much more detailed introduction of the "velocity as a theoretical property" view, but the mathematical details need not concern us.⁶⁴⁹ The view is

⁶⁴⁵ Arntzenius 2000, p. 205.

⁶⁴⁶ Priest 1985, p. 343. Cf Tooley 1988, p. 232.

⁶⁴⁷ Tooley 1988, p. 232.

⁶⁴⁸ Arntzenius 2000, p. 196.

⁶⁴⁹ See Tooley 1988, pp. 236-239.

similar to the one laid out by (but not necessarily endorsed by) Arntzenius. Velocity is a theoretically postulated intrinsic property of objects at times, and “one that is *causally related* to an object’s position at different times, rather than as a logical construction out of them.”⁶⁵⁰

This view gets us out of all the problems mentioned, and while it has some of its own problems, it strikes the right balance between theoretical expenditure and intuitive plausibility. Remember the unacceptable consequences of the “at-at” theory:

- (1) There is no intrinsic difference between a moving object and an object at rest.
- (2) Markovianism is false.
- (3) Velocity is not a genuinely explanatory property, and the velocity of an object cannot be an element that enters into causal relations.

According to the impetus view, (1)-(3) are all false. As Tooley points out, the impetus view allows us to state plausible laws of causation and motion,⁶⁵¹ accept causal continuity,⁶⁵² and account for accidentally orderly movement in probabilistic worlds.⁶⁵³ Lastly, (although I won’t get into the details of this) the impetus view allows us to account for discontinuous changes in velocity and motion better than the “at-at” view.⁶⁵⁴

I can only see the following problems with the impetus view. We have to accept that a thing has the slightly esoteric property of having an impetus in a certain direction at an instant. Also, “one could argue that if intrinsic velocity exists, then theories that we would typically regard as time-reversible should in fact not be

⁶⁵⁰ Ibid., p. 237.

⁶⁵¹ Ibid., pp. 239-240

⁶⁵² Ibid., pp. 241-2.

⁶⁵³ Ibid., pp. 243-244.

⁶⁵⁴ Ibid., pp. 245-8.

regarded as time-reversible.”⁶⁵⁵ However, when we compare the impetus view to the alternatives this seems a small price to pay.

I now return to the main point of this section. The enemy of irreducible processes would state that events do not reduce to processes, rather, *both* events and processes reduce to instantaneous states (this is consistent with holding that instantaneous states are events as well), and successions of them. I have just shown that this view faces the dilemma that these instantaneous states either have no dynamism built into them, or they do. If they have no dynamism built into them, then they face all the problems with the “at-at” view that I just discussed, amongst others. If they *do* have dynamism built into them, so that, for instance, a ball can be said to be *moving* at an instant, then a process *can* exist or be undergone by an object at a time. Hence these states irreducibly involve change. There are no static entities to which all predication of change can be reduced. Once we have processes, (static) states are just unnecessary items.

A further tactic philosophers use to putatively rid themselves of dynamism is to reduce processes to properties (among other things), treating, for instance, process-occurrences as <object, property, time> triples.⁶⁵⁶ But, as we’ve seen, some activities are irreducible to (static) properties. Take an electron which is spinning at t . The activity-averse philosopher says that this process occurrence is identical to <electron, spinning, t >. It is unclear whether he would think that the process is the whole triple, or just the “spinning” component (Jaegwon Kim and Kim-style theorists don’t usually distinguish between events and processes). In neither case, however, would the

⁶⁵⁵ Arntzenius 2000, p. 197.

⁶⁵⁶ See Jaegwon Kim 1973.

process of spinning be reduced to entities which are not dynamic. I guess one could just *say* that having the property of spinning at a time is not dynamic, but taking an active process an object undergoes, and *calling* it a property is not to reduce activity to a stative property. It is as if, with this tactic, we have effectively beaten the dynamicity out of the electron with the stick of formalization. But note the verb alive and kicking in the triple.⁶⁵⁷ If this is the kind of “property” that processes are supposed to reduce to, then the proposal postulates a distinction without a difference.

We cannot take care of this problem by replacing the instant in the above triple by a temporal interval. If we did that, then at no instant in the interval could the electron be said to spin. That, in turn, might force us to accept the “no-instants” view decried above, or push us into the “at-at” view again.

I can allow that dynamic processes reduce to states, but I would deny that these states are not dynamic. What goes on in the world (besides perhaps the intrinsic nature of simples) reduces to basic, irreducible activities such as an electron’s spinning, emitting a photon, a neutrino’s moving, etc. If this is so, then we have no reason to believe that we can reduce activity to properties which do not imply such activity. I have no quibbles with treatments like Kim’s, but resist interpretations of them which seem to presuppose that the troubling dynamism has disappeared.

So, the upshot of the previous section is that moving and having a certain velocity can be said to be dynamic and yet had at an instant. Some of the foregoing concerns will be used to model and motivate how entities which, unlike moving, are not common-sensically thought of as processes indeed are processes undergone by

⁶⁵⁷ I believe I heard this phrase in a Zeno Vendler article, but cannot find the source. Dean Zimmerman tells me it might be from Jonathan Bennett’s *Events and their Names*.

hunks of matter at moments, and across time. I will construe commonsense objects (a frog or a boat) as such processes (as a *frogging* or a *boating*.)

*

The last two sections, on the progressive and perfective, and instantaneous velocity, both give inductive support to the idea that something can be said to be occurring, or going on, at an instant, and that these goings-on cannot be reduced to static entities. Furthermore, they can both be used to motivate the notion that the very same thing can be going on, or the same process occurring, over time.

I do not suppose that I have fully established that processes are endurers without temporal parts, which carry their dynamicity along with them. But I have shown how this position is inductively motivated and supported, and in what follows I will assume it. For instance, when a ball is rolling the selfsame rolling continues through time, being wholly present at different times. Further support for this position will be given by how the developing account solves and explains the puzzle cases.

5.5.4 The relationship between processes and events

Events reduce to processes (and their participant objects). That is, events are nothing more than the interactions of, alterations in, continuations, cessations, or starts of processes. The event of Brutus killing Caesar is just the interfering of a process of stabbing with processes that constitute the living of Caesar (e.g., blood flow, oxygen intake). That a ball rolled from point A to point B in an interval i is just the continuation of a process of rolling through that interval. That a ball stopped

rolling is the cessation of a rolling process. The event of a beginning of a romantic relationship is just the start of some loving. (An account of process causation is beyond the purview of this chapter. But the foregoing remarks naturally suggest that the causal *relata* are processes, and hence the account developed here might fit in well with a version of the Dowe/Salmon model of causation.)⁶⁵⁸

I remain neutral on the details of the reduction of events to processes, and hope to develop this further. I include these brief comments only to give a flavor of how this might be done.

5.6 (Commonsense) Objects as Processes

5.6.1 Processes as Part-Changers

If TOOSOFT is correct, then there are no part-changers. But processes can play the role as referents for our commonsense putatively part-changing object terms. The ‘best candidate’ theory of reference and content can be used to make sense of this.

Let me illustrate ‘best candidate’ theory with a stock example.⁶⁵⁹ Suppose that by ‘contact’ we thought we meant a relation of touching between (at least two) things such that there is no space in between at least one part of each of them (which we could call ‘perfect contact’). But physical science taught us that no objects are related in this way. Should we then conclude that contact never occurs in our world? Of

⁶⁵⁸ Dowe 1992, Salmon 1984.

course not. We reasonably conclude that ‘contact,’ rather than referring to ‘perfect contact,’ instead, in our world, refers to macroscopically observed closeness to the point of inter-impenetrative resistance (or certain chemical bonds).⁶⁶⁰

Meaning supervenes on our use *and* the way the world is, and reference for a certain term and its cognates latches on to the most perfect candidate, even if it is not perfectly deserving, regardless of our knowledge of its true nature.⁶⁶¹ Suppose most people thought that to be a mind is to be a soul, but we find out that there are no souls. Should we conclude that there are no minds? No. The intension of ‘mind’, like most concepts, includes a cluster of salient features that the extension supposedly must possess. Often, when we find out that the things in question, in this case minds, do not have some of the properties we attributed to them, we should not conclude that there are no such things, but that we were somewhat mistaken about them.⁶⁶²

So, TOOSOFT warrants our being nihilists about common sense objects only if there are no suitable candidates to play the part-changing object role. But there are such candidates—processes.

5.6.2 Processes, commonsense objects, genuine objects: their relations

⁶⁵⁹ To my knowledge this idea was first laid out in Lewis 1983 and 1984.

⁶⁶⁰ I believe this example was in Sider 2001 or Lewis 1983.

⁶⁶¹ Lewis 1983 & 1984.

⁶⁶² The ‘best candidate’ name is a bit misleading, however. For instance, the best candidate for the term ‘the aether’, or what was supposed to be the ubiquitous material that filled what we now know is empty space, would be the vacuum. But, in this case, the best candidate—the vacuum, while the most deserving candidate for the reference of the term ‘the aether’, is just too imperfectly deserving for us to say that the aether exists, it is just actually the vacuum.

Commonsense objects are processes that exist and behave in the same way as the more obvious processual items that I discussed above. Just as runs are ‘runnings,’ and waves are ‘wavings’, so a tree is a ‘treeing’, and a dog a ‘dogging’. Commonsense objects are the joint activities of the simple particles which compose fusions. The fusions persist so long as all their parts do, regardless of how they behave or what commonsense items they constitute.

This is a naturalistic view, and it is a variation on the common philosophical theme that the macroscopic supervenes on the microphysical. Take a very simple object, a beaded drop of water on a leaf. The billions of H₂O molecules that compose the drop are connected to each other by weak hydrogen bonds which result from the polar covalent bonds between each water molecule’s oxygen molecule and its two hydrogen molecules. H₂O molecules will slip back and forth over each other, bonding non-instantaneously, and then unbonding and moving on to bond with others billions of times per second. Within each H₂O molecule itself is a bundle of activity (e.g. valence-shell electron-sharing), and in each nucleus, within each proton itself, there is constant activity, of the type modeled by quark chromodynamics. If string theory is correct, then putatively fundamental particles such as electrons or quarks are at ground level all the same type of thing, ‘strings.’ The apparent differences between them result from their different vibratory patterns. So, even a modest entity like a small drop of water is a complex, non-stop, dizzying dance of a swarm of particles—the drop’s activity being a function of the activities of its constituent simples. These kinds of envisaged supervenience relations between macro-activities and irreducible micro-activities are plausible and non-ontologically stratified.

Standard philosophical views about the relation of the droplet to its constituent matter are: (a) they are identical; (b) the drop is distinct from and coincides with or is constituted by a fusion of matter; the fusion is distinct from but constitutes the drop; (c) one of them does not exist. The first is straightforwardly false, since the fusion has properties the drop does not have (e.g., the ability to survive evaporation).⁶⁶³ The second, coincidence, brings in a host of well-known problems.⁶⁶⁴ Also, constitution theorists (a sub-set of the coincidentalists) keep the constituted and constituting items in the same general ontological category (object), while trying to ameliorate coincidence. But they either leave constitution undefined, or they define it but coincidence reemerges again in an otiose form. Nihilism as a conclusion should continue to be regarded as a *reductio* of its premises until we have good reasons to find Ockham's razor, 'causal-redundancy' premises, and compositional skepticism more intuitive (or argued for by premises that are all more obviously true) than the proposition that there are composite objects.⁶⁶⁵ Nihilism is unsatisfactory since it takes away good Moorean meat about composite objects with one hand, while returning you an empty collection of simples arranged platewise with the other hand, upon which there is only a useful, but fictional—meal.⁶⁶⁶

I offer an alternative. There is the fusion of particles which compose the drop, and there is the drop, but the drop is just an activity that the fusion is temporarily engaged in, similar to the relation we ordinarily think of between a group of soldiers and their battling. The annihilation of the drop is nothing but the cessation of that

⁶⁶³ For problems with the counterpart-theoretic reply to this, see Chapter Three.

⁶⁶⁴ See Zimmerman 1995.

⁶⁶⁵ For 'causal redundancy' (partial) eliminativist arguments, see Merricks 2001. For compositional skeptical arguments in favor of (partial) eliminativism, see van Inwagen 1990.

behavior, just as the battle ends when the fighting stops. When the drop loses or gains some parts, but intuitively persists, a different but overlapping fusion is now engaging in the same (token) activity as the first fusion was. Similarly, even if some soldiers die during the battle, and some reinforcements arrive, we still say the same battle is occurring. But we do not mean, when the battle goes on, that the same object is persisting. Rather the same (token) activity is ongoing. It is the same with the drop, and according to the theory, with all (composite) objects that change parts yet intuitively persist.

Let me now clarify the relation between the objects of this theory and processes. We already have a rough idea of what it is for an object to engage in a certain activity, or an object O to Φ . While particular Φ -ings can be analyzed in terms of their sub-processes, in general we cannot analyze schematically and reductively what it is to Φ for all possible processes, nor for primitive ones. We can say nothing informative about what it is for an electron to spin, for instance. Let us call the general relation between any object (simple or fusion) and any process it undergoes *containment*.⁶⁶⁷ Containment is a primitive asymmetric relation. An object O contains a process Φ ($CO\Phi$) just in case $O \Phi$'s. When an object O contains a process Φ (at t) we can call O a *host* of Φ (at t), and Φ a *parasite* of O . If an object O' is a proper part of an object O which contains a process Φ , we will call O' a *partial host* of Φ . In this technical sense of the term, ‘containment’ is not a mereological

⁶⁶⁶ Dorr 2002, Dorr and Rosen, 2002

⁶⁶⁷ I recently became aware of some similarities between my containment relation and the following ‘migration’ relation and the relation of ‘participation’ as laid out in Grenon, Smith, and Goldberg, 2003, p. 6.

notion. Objects do not have processes as parts. Processes are just what objects are *doing*.

Another important relation to note between processes and objects is that of *process migration*.⁶⁶⁸ Processes can change their hosts, such as when a wave passes through various portions of water. Since the genuine objects (simples and fusions) cannot change parts, processes single themselves out as the reference magnets for our talk of commonsense items which can change parts.⁶⁶⁹ For a simple illustration of process-migration, let's use the vivid example of a wave. Let us call a particular waving-process Φ . Suppose that the wave moves through discrete but contiguous portions of water-molecule fusions named Armistad, Bumpkin, and Chucky. For the wave to move through the water is nothing more than for Φ to migrate in the form of certain conserved quantities and structure to adjacent portions of water, such that we would say, Armistad is Φ -ing at t_1 , Bumpkin is Φ -ing at t_2 , Chucky is Φ -ing at t_3 , etc., *and*, the one waving-process token Φ is wholly present throughout. By extension, whenever a commonsense object seems to persist through a part change, what is actually occurring is that a process changes its host. So, in the same way as a waving persists by moving through contiguous but distinct water-portions, a person (properly speaking, a personing process), for instance, persists by migrating through various distinct portions of flesh, which is what happens when we eat and excrete. (Not all processes change their hosts, however.)⁶⁷⁰

⁶⁶⁸ This usage comes from Zimmerman, 1995, p. 91.

⁶⁶⁹ Dean Zimmerman, in correspondence, suggests other reasons to think that processes would be reference magnets for our part-changing object-talk (if I'm right that there are no part-changing objects); (1) the processes are in the right places at the right times to suck up the reference of object talk, and (2) if I'm right about what I say elsewhere, they'll suck up the reference for our causation talk involving objects.

⁶⁷⁰ A particular hydrogenating, for instance, could in principle have the same host fusion indefinitely.

5.6.3 Identity Conditions of Processes

We reidentify a non-gappy process as the same process over time when we observe salient qualitative and spatio-temporal continuity. We identify a spatio-temporally gappy process as one and the same when there is causal continuity. Below I offer the diachronic identity conditions of a process, somewhat similar to Eli Hirsch's analysis of object persistence as spatio-temporal continuity under a substance sortal, as follows.⁶⁷¹ This is intended to work for macroscopic ordinary objects when construed as processes, not processes such as recessions or globalization. Note also that the variables in the following range only over simples and fusions:

'Maximally Spatio-Temporally Contiguous' (MSC) =df Fusions x and y are maximally spatio-temporally contiguous just in case: x and y overlap all their parts with the exception of exactly one simple z , which either x or y has as a part.⁶⁷²

(P=) Process Φ at t_1 = Process Ψ at t_2 just in case:

1. There exists an x and a y *and*,
2. $Cx\Phi$ at t_1 *and*,
3. $Cy\Psi$ at t_2 , *and*,
4. Φ and Ψ are the same type of process, *and*,
5. (a) $x = y$, and $Cx\Phi$ continuously from t_1 to t_2 , *or*,
- (b) $x \neq y$, but, either x is 'maximally spatio-temporally contiguous' (MSC) with y , or, there exist some $z_1 \dots z_n$'s such that, x is MSC with z_1 , y is MSC with z_n , and each successive $z_1 \dots z_n$ are MSC with their successor, and, it is true of each z that $Cz\Phi$, *or*

⁶⁷¹ Hirsch 1971.

⁶⁷² TREM is being assumed as background here.

- (c) $(x \ll y)$ or $(y \ll x)$, and x and y have a product⁶⁷³ z whose behavior from t_1 to t_2 is such that: if the difference w of x and y did not exist, then z would be Φ -ing from t_1 to t_2 , *or*,
- (d) $x \not\sqsubset y$, and the Ψ -ing of y is caused by the Φ -ing of x , in such a way that there is a conserved physical quantity Q of x which is exchanged with y .⁶⁷⁴

(5a) is intended to account for process persistence when the host does not change, (5b) for gradual fusion-replacement, and (5c) for gross host changes. (5d) is intended for cases of *complete* part-change, which I wouldn't want to rule out *a priori* (such as when a wave continues but changes its host completely and instantaneously from t_1 to t_2 , or, if some kind of 'tele-transportation' is possible which preserves identity). As an example, with gradual part changes, when a snake (now understood as a snaking) sheds its skin, some snaking which was once contained in a particular fusion is now contained only in the parts that remain snaking. The sloughed off skin is no longer a partial host of that process. Since there was snaking throughout, in successive distinct but largely overlapping fusions, we identify it as one and the same snaking.⁶⁷⁵ For more gross part-changes, such as the loss of a finger, we track the same process of personing from the fusion which included 'fingering' to the one which does not, since the presence or absence of the fingering is inessential for the process to persist.⁶⁷⁶

Some processes are gappy, however. Consider a rotting apple thrown in the freezer for a month, and then taken back out. Some, myself included, would be tempted to say that the same (token) rotting process continues to occur upon leaving

⁶⁷³ The mereological analogue of the set-theoretic intersection.

⁶⁷⁴ ' $x \not\sqsubset y$ ' means ' x is disjoint from y ', which means that x and y share no parts in common. In regards to conserved physical quantities and causation, see Dowe 1992.

⁶⁷⁵ Note that 'the problem of the many' (Unger, 1980) applies to processes. I won't try to solve that here.

⁶⁷⁶ For some interesting thoughts on organic entity persistence and counterfactual identity of the events the entity is involved with, see Van Inwagen 1990, pp. 161-168.

the freezer.⁶⁷⁷ If it is indeed the same, then the rotting is a gappy process. Some processes such as erosion seem inherently gappy.⁶⁷⁸ A process can persist, even when retarded or stopped, just so long as its host remains relatively stable and disposed to Φ in the same manner when the retarding force is diminished. For instance, if someone dies in the emergency room from a heart attack, but gets revived after being brain dead for a few minutes, we correctly track this personing process as the same process, since the host remained relatively stable and disposed to ‘person’ once the retarding force (e.g., lack of oxygen supply) was removed.⁶⁷⁹

Note that (P=), how the world is (on the assumption that Process Hyleism is true), the best candidate theory of content, and normal usage entail that the subject of predication over objects is usually a process, and not a bare object. This is because, for one thing, according to the theory, commonsense composite objects really are processes. Furthermore, most processes will have radically fluctuating underlying hosts, i.e.—successions of bare objects, and single bare objects are not the kinds of things that can undergo the changes that processes can, namely, changes that involve a change in parts. So, any particular bare object will not ‘suck up the reference’ for most predication, while the process involved will be eligible.

For instance, take a sentence such as “John ran a marathon and lost two pounds.”⁶⁸⁰ What is the subject of predication? Well—John. But, a ‘Johnning’ process or the succession of hosts which were Johnning? There are multiple reasons for eliminating a hunk or hunks of matter from being the subject of predication. For

⁶⁷⁷ The example of the apple, and the continuity of the process comes from Stout, 1997.

⁶⁷⁸ Stout discusses gappy processes as well in Stout 2003.

⁶⁷⁹ For some similar ideas about gappy lives, see Van Inwagen 1990, pp 145-146.

one thing, the bare object which was Johnning and started the marathon is not the bare object which was Johnning and crossed the finish line. Also, certainly no bare object lost two pounds. Rather, the bare object which crossed the finish line is two pounds lighter than the distinct one which started the race. But, the Johnning process is eligible for reference as the subject of predication here. For starters, it is in the right places at the right times, if ($P=$) gives us correct notions of how to track processes (or, if you prefer, objects-as-processes), and, it is plausible that a process can lose weight, by changing its host, whereas it is not plausible that a bare hunk of matter loses weight (when we except changes in gravity/acceleration. It is more correct to say that a bare object's mass remains constant). The weight does not get 'double-counted', however. The process, to use a Chisholmian phrase, 'borrows' its weight from its host (as well as properties such as its center of gravity, overall electric charge, etc.). More will be said about the relation between properties of host and process in section 5.7.1.

5.7 Solutions to Puzzles

This process account can solve many gripping metaphysical puzzles, and not in a piecemeal manner. The only other account I have seen that can solve as many problems with as few counterintuitive results is Theodore Sider's stage theoretic four-dimensionalism.⁶⁸¹ My account, I think, is the best three-dimensionalistic game in town.

⁶⁸⁰ Thanks to Tom McKay for the example, and my whole committee for pushing me on certain of these points that I needed to be pushed on.

⁶⁸¹ Sider 2001.

5.7.1 Coincidence

Here is a stock argument for coincidence.⁶⁸² Suppose you have an amorphous piece of clay, call it ‘Piece’. Shape it into a statue of Ray Charles, and call the statue ‘Ray’. Since Piece pre-existed Ray, they must be distinct. But, since Piece is not destroyed by fashioning it into Ray, Piece and Ray now coincide. Furthermore, if you flatten Ray, Piece will survive. Some contend that there is yet another entity that coincides with Ray and Piece, namely, the clay itself. If you rip apart Ray into pieces, the clay will survive past the destruction of both Ray and Piece. Analogous problems will arise for most macroscopic objects.

According to Process Hyleism, there is never more than one genuine object involved here. We just have the same fusion throughout, constituting (in virtue of Piecing or Statueing) the piece and statue. The fusion’s simples are always fused when co-existent and contemporaneous, even when scattered. First the fusion is Piecing, then it is both Piecing and Statueing, and, when its parts are scattered, it is behaving in a way for which no name comes to mind. No paradox of coincidence arises.

An immediate objection comes to mind: the process account just pushes the problem back one step, since now we have an analogous paradox of coinciding processes. After Piece is fashioned into Statue, do we not have Piecing coinciding with Statueing? If so, how is this an improvement?

⁶⁸² For references to defenders of colocation, see Burke 1992 pp. 12-17, esp. notes 1 & 2.

Yes, we do have coinciding processes in cases such as the above, but this is an improvement over standard coincidentalism since the phenomenon of coinciding processes is not counterintuitive. Something can be spinning and heating up at the same time. A person can be singing and dancing, laughing and crying, and a hunk of matter can be both Piecing and Statueing. Part of the queerness of regular object coincidence is that we believe that distinct material objects cannot (completely) interpenetrate and overlap. Also, coincidence is counterintuitive in that ‘two’ objects would be made up of all the same matter, with exactly the same properties, and it is hard to see how the ‘two’ items could differ in sort. But, if we have a (partial) replacement ontology and construe commonsense objects as processes which can coincide, none of the aforementioned queerness of coincidence applies. Distinct processes are not material objects which cannot interpenetrate. Rather, two different things can be said to be going on in the same region, or, one and the same bare object can be doing two things. That a single hunk of matter is engaged in two actions which differ in sort is much easier to swallow than the notion that there are two distinct objects made up of all the same stuff. For example, that some matter is both ‘tabling’ and ‘wooding’ is not as puzzling as there being a table and some distinct wood which it is made of.

So, coincidence of processes is to be embraced, and is part and parcel of solving, or rather, dissolving, the paradox of coincidence. Coincidence as a paradox is dissolved since entities which cannot coincide (i.e., objects) have been seen to be entities which can (i.e., processes and processes, and, processes and bare objects).

Several worries arise here which need to be addressed if Process Hyleism can hope to solve the paradox of coincidence. First, there is the process analogue of the bundle theory bundling problem, which has been brought up by Johanna Seibt in connection to her own process view.⁶⁸³ The problem is to give criteria which will assign processes as processes of one and the same thing. Why are certain processes ‘bundled together,’ while others are not?

Second, while I have assuaged some of the problems of coincidence, there is still a problem of process-object coincidence. The worry here is with regards to overdetermination and causal division of labor. If, say, a coffee mug coincides with a certain hunk of matter, is only one of these entities holding the coffee, or both? How do we decide? This relates to a general worry about ontological profligacy of agents or acting entities. If a person-process sits down for a meal, does the bare object eat too?

The ‘bundling problem’ is most easily solved. The bundle problem is a problem for both bundle property theorists and process accounts such as Seibt’s in that there is literally no *thing* for the properties to inhere in, or, analogously, to be undergone by. Bundle and subjectless processes accounts, in order to try and solve this difficulty, inevitably have to posit something to play the ‘thing role’, either *bundles* or reified *space-time regions*. In doing so, such theories go against their own principles. But I have no such problems with traditional substances, having no wish to ban them, and nominate bare objects to play the (non-mysterious) substrate role for

⁶⁸³ See Seibt 2000, p. 267. I discussed Seibt’s failure to address the bundling problem in Chapter Four, starting at page 152.

the processes to be undergone by. So, the answer is, different processes are processes of the same thing provided they go on in the same bare object.

The connected overdetermination, causal division of labor, and ontological profligacy of agents worries are a little more difficult. Coming back to our earlier questions: which item is holding coffee, the mug (i.e.—the mugging) or the bare object (which is mugging)? If the person-process sits down to eat, does the bare object eat too?⁶⁸⁴ A more general way of construing this worry is as follows: If objects are processes, then processes will in fact be doing what we think objects do. But, the processes are performing these actions in virtue of the actions that the bare objects are performing. If this is so, it seems like at least *two* things are doing the same action.

The correct response is to say either that (a) while a process and its host are not identical, their actions *are* (when a process and a bare object coincide), or, that (b) processes are causal agents/actors, whereas bare objects are not. Either response seems available to the Process Hyleist, and can defuse the problem, and there are intuitions that support both options. I myself am not sure how to choose, but am confident that, if pressed hard enough, I could.

In support of (a), what can be said for the idea that a process and a fusion can be said to be engaging in the same token action? One reason is that we have not been presented with a problem by supposing so, and there seems to be no reason to ‘double count’ actions in this case. The mug is ‘a mugging,’ and is hence holding coffee, and the bare object is ‘mugging’, and, in doing so, also holding the coffee. What reason do we have to suppose that these actions are not one and the same? The only reason I

can think of is that something along the lines of the following principle is acting as an enthymeme in the mind of my possible interlocutor:

- (P) If there are two entities, they cannot be doing the same (token) action in the same place at the same time.

But, note that, if by ‘entities’, the interlocutor means genuine objects, i.e.—bare objects, then I would agree, but that is not the phenomenon in question. It is the phenomenon of a bare object and a process each doing the same (token) action in the same place at the same time that is in question. And, nothing has been said against the idea that two entities in different ontological categories can do the same thing in the same place at the same time. So, in lieu of a clear objection, then the proponent of (a) has no objection to ward off. So, perhaps (a) is acceptable.

Nevertheless, I must admit that there does seem *something* dubious about (a), and perhaps there is a problem that I have not been fastidious enough to find. In this case, the Process Hyleist could accept (b), i.e., embrace the idea that only the process is an agent or actor.

There are several reasons for holding that processes have causal effects, but not bare objects. For starters, (single) bare objects don’t jointly act together long enough to do what genuine objects (i.e., processes) can do, such as, anything that involves part-changes. A bare object cannot be eating, since this involves intake that a bare object cannot be the subject of. Even a more stable process such as ‘mugging’, where we suppose that the bare object which is the host of the mugging does not change over an interval, is not itself holding the coffee, since to explain *why* the mug holds coffee is to refer to all kinds of electro-static forces, reactions, and activities

⁶⁸⁴ Thanks go to Tom McKay for some of these examples and objections.

which, properly speaking, must be part of the process. Bare objects, in and of themselves, apart from processes, don't *do* anything at all.

There is an analogy here of Process Hyleism, which we could also call *hyloenergeism*, and Aristotelian *hylomorphism*. For Aristotle, a commonsense object is a composite of form and matter, or, rather, an enmattered form. Prime matter, or, *materia prima*, apart from any form, would be featureless. But, no matter is truly featureless, according to Aristotle, and always has some-form-or-other (but not necessarily the form that it does in fact have). Similarly, a bare object, stripped of any activity it is undergoing, would, while not being featureless,⁶⁸⁵ not have much in the way of causal powers. Even an object such as a piece of gold is not a true bare object, rather, it is 'a golding' which the matter is performing. The same matter could be rearranged to make water, plutonium, or unobtainium. So, the Process Hyleist conceives of commonsense objects not as enmattered forms, but rather, processes-in-some-matter-or-other (but not necessarily in the matter that is in fact its host).

I already gave arguments above (in section 5.6.3) for saying that, in most cases, bare objects are not the subject of predication. If this is so, they are not the subject of predication of causal powers either. So, while I remain mostly neutral in regards to choosing between options (a) and (b), option (b) is slightly favored. The programmatic nature of the foregoing is not in and of itself an objection to Process Hyleism, just so long as nothing seems to point to this being an irreconcileable problem.

⁶⁸⁵ And hence not as mysterious as *materia prima*—bare objects, would, for example, have a mass.

5.7.2 The Ship of Theseus

Other problems can also be solved. Take the ship of Theseus.⁶⁸⁶ Suppose that a certain ship, call it S_1 , has its planks gradually replaced over many years until it contains none of its original parts. Call the resultant ship S_2 . However, the wily and impecunious shipwright, who replaced the boards, saved all the original ones and put them together in the same way, so that, after all the boards were replaced resulting in S_2 , he completed his ship—call it S_3 . S_3 has all of the same parts as S_1 did in the exact same arrangement. Which ship is S_1 ? S_2 or S_3 ? If no parts were lost, the shipwright has the same genuine object (i.e., fusion) that Theseus used to have, but not the same commonsensical object (i.e., not the same process). Although the fusion underlying S_3 is the same fusion that Theseus had, that is ‘shipping’ in exactly the same manner in which S_1 used to ‘ship’(verb), it is not the same process as S_1 by the test ($P=$) for identity listed above. S_2 is the same process (colloquially, the same ship) as S_1 .

5.7.2 Tib and Tibbles

⁶⁸⁶ For more details on this problem, see Sider 2001 pp. 6-10.

Process Hyleism deals with cases of undetached parts/fusion in the following way. Let us take the classic Tib/Tibbles case⁶⁸⁷. Here is how Sider presents the puzzle:

We begin with a cat, Tibbles, and a certain proper part of Tibbles, Tib, which consists of all of Tibbles except for the tail. Tibbles and Tib are obviously numerically distinct. But suppose now that Tibbles loses her tail; it seems that both Tibbles and Tib survive: Tib because nothing has happened to it beyond having something external to it detached, and Tibbles because cats, like trees, can survive the loss of certain parts... Tibbles and Tib are distinct; but they coincide after detachment.⁶⁸⁸

Crucial to the generation of the puzzle is the premise that Tib survives because it undergoes no intrinsic change. But this is true only if ‘Tib’ names a fusion, not a process, and if ‘Tib’ picks out a fusion then Process Hyleism can resolve the puzzle.

If Tib is a process then it does not survive the tail severance. Tib undergoes radical intrinsic change. ‘Tibbing’ includes blood flow between itself and the tail, the travel of nerve impulses between itself and the tail, and when Tibbing goes on it prevents the coagulation of blood and scab-formation at the base of the tail. When the tail is severed Tibbing ceases, and does not become the process of Tibbling.

The only candidate that could be identified with Tib and survive the tail severance is the mere fusion which made up all of Tibbles except its tail. In that case, there is no problem according to Process Hyleism. First, one fusion contained ‘Tibbling’, and now, after the tail is severed, only a proper part of it contains ‘Tibbling’. This intuition is accounted for by condition (5c) of (P=) above. Two

⁶⁸⁷ This example, which is based on the Stoic problem of Deon and Theon, was first brought up in recent times in Wiggins’ *Sameness and Substance*, (1980) p. 209. For more on this puzzle see Rea 1997, p. xviii.

⁶⁸⁸ Sider 2001 p. 142

things did not become one, nor did they come to coincide. One object, a part of another one, just started behaving in a relevantly similar way as the whole used to. Or, to put it another way, a partial host of Tibbling became the host *simpliciter* of Tibbling.

5.8. Conclusion

Process Hyleism can also be employed profitably to deal with problems of personal identity, the ‘paradox of increase,’⁶⁸⁹ the bundle/substratum debate, non-existent individuals,⁶⁹⁰ and more. It does not, however, help solve problems of vagueness, and suffers from a version of the ‘Problem of the Many.’⁶⁹¹ But, we can apply the usual supervaluationistic or many-valued patches in a process domain as well. While I have tried to remain theory-neutral on properties, Process Hyleism fits well with trope theory, and, in regards to philosophy of mind, certain adverbial forms of cognition, representation, and perception. It can help give interesting answers to some questions of modality, in much the same way as Michael Jubien’s theory does.⁶⁹² Process Hyleism also has an advantage in that it does not replace bona-fide absolute identity with anything like relative identity, temporary identity, or some weakened ‘temporal counterpart relation’ surrogate. I shall not cover these issues here, however.

⁶⁸⁹ See Chisholm 1976, Appendix C.

⁶⁹⁰ See Rescher, 1996, Appendix.

⁶⁹¹ Unger 1980.

⁶⁹² In Jubien 2001

I have not tried to argue conclusively for Process Hyleism. Rather, I hoped to show that it is a viable candidate in the logical space of possible solutions to a variety of metaphysical puzzles. The fact that it solves a large number of problems gives it some support, in the form of an inference to the best explanation. In particular, Process Hyleism is appealing in that it is custom-tailored to cohere well with naturalistic scientific theses about matter and microprocesses, and quantum modeling of supervenient macro-phenomena. Also, it is thoroughly three-dimensionalist about the persistence of commonsense objects and bare fusions (although it would be a stretch to call Process Hyleism commonsensical). The genuine objects are just the simple, non-composite objects, whatever they are, and fusions of them. These bare objects will persist just so long as all of their parts do, and exist contemporaneously. Commonsense objects, however—tables and chairs, people and rocks—will persist just so long as some host fusion or other continues undergoing a certain processes. This is all commonsense objects are—relatively coherent, stable, ongoing activities of a constantly changing, interlocking swarm of particles, a seething sea of quantum-foam fluctuations and processes.⁶⁹³

⁶⁹³ Thanks go to; Andre Gallois, Tom Holden, Toomas Karmo, Tom McKay, Johanna Seibt, and Dean Zimmerman, for reading earlier drafts of material that contributed to Chapter Five. Thanks go to (again) Gallois and Zimmerman for comments on an early draft of Chapter Five, as well as to Mark Heller, Kris McDaniel, Daniel Nolan, Jose Benardete, and Adam Sennet, who also made valuable comments. Thanks also go to Sandy Berkovski for some valuable help with Chapter Five. I also would like to thank Ishani Maitra and Eric Hiddleston, and many graduate students, all of whom gave

Bibliography

- Arntzenius, Frank “Are There Really Instantaneous Velocities?” *The Monist*, vol. 83, no. 2, 187-208
- Audi, Robert (ed.) 1995 *The Cambridge Dictionary of Philosophy*. Cambridge, Cambridge University Press
- Barker, Stephen, and Dowe, Phil 2003. “Paradoxes of Multi-Location”, *Analysis* 63.2, April, pp.106-114.
- Bealer, George 1975 “Predication and Matter,” *Synthese* 31; 493-508
- Bennett, Jonathan 1984 *A Study of Spinoza’s Ethics*. Hackett Publishing.
- Bennett, Michael, and Partee, Barbara 1972 “Toward the Logic of Tense and Aspect in English,” Santa Barbara, CA: System Development Co.
- Black, Max 1952 “The Identity of Indiscernibles,” *Mind* LXI, 153-64
- Blackburn, Simon 1994 *The Oxford Dictionary of Philosophy* Oxford, Oxford University Press.
- Boolos, G., 1984, “To be is to be the value of a variable (or to be some values of

valuable feedback at a couple of presentations of this material at Syracuse University. Thanks most of all go to Irem Kurtsal Steen, who gave many enormously helpful suggestions.

- some variables)," *Journal of Philosophy*, 81: 430-449.
- Broad, C.D. 1933 *Examination of McTaggart's Philosophy*. Cambridge, Cambridge University Press.
- 1960 *Mind and Its Place in Nature*. Paterson, New Jersey: Littlefield Adams.
- Brush, Stephen G. 1983 *Statistical Physics and the Atomic Theory of Matter, from Boyle and Newton to Landau and Onsager*. New Jersey: Princeton University Press
- Burge, Tyler 1975 "Mass Terms, Count Nouns, and Change," *Synthese* 31; 459-478
- 1977 "A Theory of Aggregates," *Nous* 11; 97-117
- Burke, Michael 1992 "Copper Statues and Pieces of Copper: A Challenge to the Standard Account," *Analysis* 52, 12-17
- 1994, "Preserving the Principle of One Object to a Place: A Novel Account of the Relations Among Objects, Sorts, Sortals, and Persistence Conditions," *Philosophy and Phenomenological Research*, 54, 591-624
- 1997 "Coinciding Objects: reply to Lowe and Denkel," *Analysis* 57: 11-18
- Cartwright, Helen Morris 1974 "Heraclitus and the Bath Water," *Philosophical Review* O 65; 74: 466-485.
- 1979 "Quantities," *Philosophical Review* JA 70; 79: 25-42.
- Caratheodory, C. 1963 *Algebraic Theory of Measure and Integration*. New York: Chelsea
- Chalmers, David 1996 *The Conscious Mind*. Oxford University Press
- Chisholm, Roderick 1973 "Parts as Essential to Their Wholes," *Review of Metaphysics*, 26: 581-603.
- 1975 "Mereological Essentialism: Some Further Considerations," *Review of Metaphysics*, 28: 477-484.
- 1976 *Person and Object*. La Salle, Illinois: Open Court Publishing
- 1986 *Roderick M. Chisholm*, "Self-Profile," Bogdan, Radu. J. (ed.), Dordrecht: D. Reidel.
- 1989 *On Metaphysics*. Minneapolis, MN: University of Minnesota Press
- Cortens, Andrew, and Hawthorne, John 1995 "Towards Ontological Nihilism," *Philosophical Studies* 79: 143-165
- Curley, Edwin 1994 *Spinoza reader : the Ethics and other works*. Princeton, N.J.: Princeton University Press
- Dainton, Barry 2001 *Time and Space*. McGill: Queen's University Press
- Denkel, Arda 1989 "Matter and Objecthood," *Dialogue* XXVIII, 3-16
- 1995 "Matter, Form and Object: Rejoinder to Sidelle," *Dialogue* XXXIV, 381-87
- Dorr, Cian 2002 *The Simplicity of Everything*. Dissertation, Princeton
- and Rosen, Gideon 2002 "Composition as Fiction." in Richard Gale ed. *The Blackwell Guide to Metaphysics*. Padstow, Cornwall, England: Blackwell Publishers

- Dowe, Phil 1992 "Wesley Salmon's Process Theory of Causality and the Conserved Quantity Theory," *Philosophy of Science*, 59, 195-216
- Dowty, David 1977 "Towards a Semantic Analysis of Verb Aspect and the English 'Imperfective' Progressive," *Linguistics and Philosophy* 1: 45-78
- Eklund, Matti "The Picture of the World as an Amorphous Lump", forthcoming in Zimmerman, Sider, Hawthorne (eds.) *Contemporary Debates in Metaphysics*. This paper can be found in draft form online at <http://spot.colorado.edu/~eklundm/pral.pdf>
- Evans, Gareth 1985 *Collected Papers*. Oxford: Clarendon.
- Gallois, Andre 1998 *Occasions of Identity*. Oxford: Clarendon Press
- Gendler Szabó, Zoltan 2004 "On the Progressive and the Perfective," *Nous*, vol. 38, no. 1, 29-59
- Gibbons, P.C. 1969 "Heteromerity," *Australasian Journal of Philosophy* Vol. 47, No. 3, December
- Grandy, Richard E. 1975 "Stuff and Things," *Synthese* 31, 479-485.
- Grenon, Pierre, Smith, Barry, and Goldberg, Louis, 2003 "Biodynamic Ontology: Applying BFO in the Biomedical Domain," forthcoming in Pisanelli, D.M. (ed.), *Ontologies in Medicine: Proceedings of the Workshop on Medical Ontologies, Rome*, Amsterdam: IOS Press.
- Grunbaum, Adolf 1967 *Modern Science and Zeno's Paradoxes*. Middletown, Connecticut: Wesleyan University Press.
- Hacker, P.M.S. 1979 "Substance: The Constitution of Reality," *Midwest Studies in Philosophy*; 4: 239-261.
- Hawley, Katherine 2001 *How Things Persist*. Oxford: Clarendon Press
- Heller, Mark 1990 *The ontology of physical objects: Four-dimensional hunks of matter*. New York, New York: Cambridge University Press
- Henry, D.P. 1972 *Medieval Logic and Metaphysics*. London: Hutchinson University Library
- Hinchliff, Mark 2000 "A Defense of Presentism in a Relativistic Setting," *Philosophy of Science*, 67 (3 Supplement) S575-S586.
- Hirsch, Eli 1971 "Essence and Identity," in Milton K. Munitz ed. *Identity and Individuation*. New York, New York: New York University Press
- Holden, Thomas 2004 *The Architecture of Matter: Galileo to Kant*. Oxford: Oxford University Press
- Hume, David 2000 *A Treatise of Human Nature*. Norton, David F., and Norton, Mary J. (eds.) Oxford University Press.
- Jackson, Frank *From Metaphysics to Ethics*. Oxford University Press
- Jubien, Michael 1993 *Ontology, Modality, and the Fallacy of Reference*. Cambridge: Cambridge University Press
- 2001 "Thinking About Things," *Philosophical Perspectives*, 15, *Metaphysics*
- Karmo, Toomas 1977 "Disturbances" *Analysis*, 37, 147-148
- 1978 *Occurrences, Pseudo-Occurrences, Propositions, and Individuals*. Dissertation, St. John's College, University of Oxford
- 1982 "Occurrences and Pseudo-Occurrences," *Synthese* ; 52: 299-312.
- Kim, Jaegwon 1973 "Causation, Nomic Subsumption, and the Concept of Event,"

- The Journal of Philosophy*, vol. 70, no. 8, 217-236
- Kim, Jaegwon & Sosa, Ernest 1995 *A Companion to Metaphysics*. Oxford: Blackwell
- Krifke, M. 1989 *Verbal Aspect and the Mass/Count Distinction*. Fink, München
- Kripke, Saul A. 1972 *Naming and Necessity*. Cambridge, Massachusetts: Harvard University Press
- Landman, Fred 1992 "The Progressive," *Natural Language Semantics* 1: 1-32
- Laycock, Henry 1975 "Theories of Matter," *Synthese* 31, pp. 411-442.
- 1981 "Some Questions of Ontology," *Philosophical Review* *****
- 1989 "Matter and Objecthood Disentangled," *Dialogue* XXVIII, 17-21
- 2002 *Stanford Encyclopedia of Philosophy* entry on 'Object', fn 3, "Object", The Stanford Encyclopedia of Philosophy (Winter 2002 Edition), Edward N. Zalta (ed.), URL = <http://plato.stanford.edu/archives/win2002/entries/object/>.
- The citation above refers to the version in the following archive edition: * Winter 2002 (first archived)
- 2005 *Words Without Objects*, unpublished ms, forthcoming book with Oxford University Press.
- Lehrer, Keith 1975 *Analysis and Metaphysics*. Dordrecht: Reidel
- Leonard, Henry S. And Goodman, Nelson 1940 "The Calculus of Individuals and its Uses," *The Journal of Symbolic Logic* Vol. 5 No. 2.
- Lesniewski 1927-31 *O podstawach matematyki* (in Polish), *Przegląd filozoficzny*, vols. 30-34.
- Lewis, David 1983 "New Work for a Theory of Universals," *Australasian Journal of Philosophy*, 61, 343-77
- 1984 "Putnam's Paradox," *Australasian Journal of Philosophy*, 62, 221-36
- 1986 *On the Plurality of Worlds*. Oxford: Basil Blackwell
- 1991 *Parts of Classes*. Oxford: Basil Blackwell
- 1999 "Many, But Almost One," reprinted in *Papers in Metaphysics and Epistemology*. Cambridge University Press.
- Lowe, E.J. entry on "Thing", in *The Oxford Companion to Philosophy*
- 1995 "Coinciding objects: in defence of the 'standard account,'" *Analysis* 55: 171-78
- Markosian, Ned 1998a "Simples," *Australasian Journal of Philosophy*, Vol. 76, 213-228
- 1998b "Brutal Composition," *Philosophical Studies*, 92, 211-249
- 2004a, "Soc it to Me? Reply to McDaniel on MaxCon Simples," *Australasian Journal of Philosophy* Vol. 82, 2004, 332-340
- 2004b "Two Arguments from Sider's *Four-Dimensionalism*" *Philosophy and Phenomenological Research* Vol. LXVIII, No. 3, 665-673
- 2005 forthcoming, *the Monist*, "Simples, Stuff, and Simple People." [page numbers indicate online-available pdf version page numbers at <http://www.ac.wvu.edu/~markosia/papers/SSSP.pdf>]
- McDaniel, Kris 2003 "Against Maxcon Simples," *Australasian Journal of Philosophy*, vol. 81, no. 2, 265-275
- ms "Brutal Simples," forthcoming in Zimmerman (ed.) *Oxford Studies*

- in Metaphysics* vol. 3. All page numbers are for the ms edition.
- McKay, Thomas 2005 *Plurals and Non-Distributive Predication* unpublished ms, forthcoming with Oxford University Press 2006.
- Mellor, D.H. 1998 *Real Time II* New York: Routledge
- Merricks, Trenton 2001 *Objects and Persons* Oxford: Oxford University Press
- Montague, Richard 1969 "On the Nature of Certain Philosophical Entities," *The Monist* 53: 161-94
- Mourelatos, Alexander 1978 "Events, Processes, and States," *Linguistics and Philosophy*, 2, 415-434
- Olson, Eric 2001 "Material Coincidence and the Indiscernibility Problem," *Philosophical Quarterly*; 51(204): 337-355
- Parsons, Josh draft ms "Entension" posted at
<http://weka.ucdavis.edu/~jp30/papers/entension2.pdf>
- Parsons, Terence 1990 *Events in the Semantics of English*. Cambridge, Massachusetts: The MIT Press
- Pelletier, Francis Jeffry, and Schubert, Lenhart K. 1989 "Mass Expressions," in *Handbook of Philosophical Logic, Vol. IV: Topics in the Philosophy of Language*, Gabbay, D., and Guenthner, F. (eds.), Dordrecht, The Netherlands, D. Reidel
- and Carlson, Greg N. (eds.), 1995, *The Generic Book*. Chicago, IL: Chicago University Press
- Plantinga, Alvin 1975 "On Mereological Essentialism," *Review of Metaphysics*, 28: 468-476.
- Priest, Graham 1985 "Inconsistencies in Motion," *American Philosophical Quarterly*, 22: 339-46
- Quine, W.V.O. 1959 *Methods of Logic*. New York: Holt Dryden
- 1960 *Word and Object*. Cambridge, Massachusetts: The MIT Press
- 1963 *From a Logical Point of View*. New York: Harper & Row
- 1966 *The Ways of Paradox*. New York
- 1990 *Pursuit of Truth*. Cambridge: Harvard University Press.
- Rea, Michael 1997 *Material Constitution: A Reader*. Rowman & Littlefield
- 2001 "How to be an Eleatic Monist," *Philosophical Perspectives*, 15, 129-52
- Reid, Thomas 1854 *On the Intellectual Powers of Man*. From Sir William Hamilton, ed., *The Works of Thomas Reid*, D.D. (Edinburgh,: Maclachlan and Stewart
- Rescher, Nicholas 1996 *Process Philosophy*. Albany, NY: State University of New York Press
- Robinson, Abraham 1966 *Non-standard Analysis*. Amsterdam
- Rudder Baker, Lynne 2000 *Persons and Bodies: A Constitution View*. New York: Cambridge University Press
- Russell, Bertrand 1937 *The Principles of Mathematics*, 2nd edition. London: George Allen & Unwin
- Salmon, Wesley 1984 *Scientific Explanation and the Causal Structure of the World*. Princeton, New Jersey: Princeton University Press
- Scala, Mark 2002 "Homogenous Simples," *Philosophy and Phenomenological Research*; 64(2): 393-397.

- Scott, Dana 1970 "An Advice on Modal Logic," in K. Lambert (ed.) *Philosophical Problems in Logic*, 143-74. Dordrecht: Reidel
- Seibt, Johanna 1996 "The Myth of Substance and the Fallacy of Misplaced Concreteness," *Acta Analytica* 15, pp. 61-76
- 1997 "Existence in Time: From Substance to Process," in: *Perspectives on Time. Boston Studies in Philosophy of Science*, ed. by J. Faye, U. Scheffler, M. Urs, (Dordrecht: Kluwer), 143-182.
- 2000 "The Dynamic Constitution of Things" *Poznan Studies in the Philosophy of the Sciences and the Humanities*, Vol. 72, pp. 241-278
- 2002 "Quanta, Tropes, or Processes: On Ontologies for QFT beyond the Myth of Substance," in: Kuhlmann, M. et. al., (eds.) *Ontological Aspects of Quantum Field Theory*, World Scientific: Singapore, 53-93.
- 2003 "Free Process Theory: Towards a Typology of Processes" in *Processes: Analysis and Applications*, (ed., Seibt), Special Issue of *Axiomathes*, 14, pp. 23-57
- Sellars, Wilfrid 1981 "Naturalism and Process," *Monist*, 64: 37-65.
- Sidelle, Alan 1991 "Formed Matter Without Objects: A Reply to Denkel," *Dialogue*, pp. 163-171.
- 1998 "A Sweater Unraveled: Following One Thread of Thought for Avoiding Coincident Entities," *Nous* 32:4, 423-448
- 1989 *Necessity, Essence, and Individuation: A Defense of Conventionalism*. Ithaca, New York. Cornell University Press.
- Sider, Theodore 1999 Review of Michael Jubien, *Ontology, Modality, and the Fallacy of Reference*, Cambridge: CUP, 1993. *Nous* 33:2, 284-294.
- 2001 *Four-Dimensionalism*. Oxford: Clarendon Press
- Silver, Brian 1998 *The Ascent of Science*, Oxford: Oxford University Press
- Simons, Peter 1974 "Continuants and Occurrents—I," *Aristotelian Society*; Supp(74): 59-75.
- 1987 *Parts*. New York: Oxford University Press
- 1994 "Ways," *Kriterion*, 4(7): 12-15.
- 2000a "How to Exist at a Time When You Have No Temporal Parts," *The Monist*, vol. 83, no. 3, 419-436
- 2000b "Identity Through Time and Trope Bundles," *Topoi* 19: 147-155.
- Steward, Helen 1997 *The Ontology of Mind: Events, Processes, and States*. Oxford: Clarendon Press
- Stout, Rowland 1996 *Things That Happen Because They Should*. Oxford: Oxford University Press
- 1997 "Processes," *Philosophy*, no. 72.
- 2003 "The Life of a Process," in Guy Debrock ed. *Process Pragmatism: Essays on a Quiet Philosophical Revolution*. New York, New York: Rodopi, pp. 145-158
- Strawson, P.F. 1959 *Individuals: An Essay in Descriptive Metaphysics*. New York, New York. J.W. Arrowsmith.

- 1961 "Singular Terms and Predication," *The Journal of Philosophy*, LVIII
- 1970 "Particular and General," reprinted in *Universals and Particulars*, Loux, M.J. (ed.). New York
- Tooley, Michael 1988 "In Defense of the Existence of States of Motion," *Philosophical Topics*, vol. XVI, no. 1
- Unger, Peter 1980 "The Problem of the Many," *Midwest Studies in Philosophy* 5: 411-67
- Van Inwagen, Peter 1981 "The Doctrine of Arbitrary Undetached Parts," *Pacific Philosophical Quarterly* 62, 123-37
- 1990 *Material Beings*. Ithaca, New York: Cornell University Press
- 1993 *Metaphysics*. Boulder, Colorado. Westview Press
- Vendler, Zeno 1957 "Verbs and Times," *Philosophical Review* 56, 143-60
- Wallace, Megan ms "On Composition as Identity." This can be found at
<http://www.unc.edu/~megw/OnCompAsID.pdf>
- Whitehead, Alfred North 1978 *Process and Reality. An Essay in Cosmology*, ed. by D.R. Griffin and D.W. Sherburne. New York: The Macmillan Co.
- 1926 *Science and the Modern World*. New York, New York: The Macmillan Co.
- Wiggins, David 1980 *Sameness and Substance*. Cambridge, Massachusetts: Harvard University Press
- Wisdom, John 1969 *Logical Constructions*. New York: Random House
- Zemach, E. "Four Ontologies," 1970 *The Journal of Philosophy*, 63: 231-247
- Zimmerman, Dean 1995 "Theories of Masses and Problems of Constitution" *Philosophical Review* vol. 104, No. 1, pp. 53-110
- 1996a "Indivisible Parts and Extended Objects: Some Philosophical Episodes from Topology's Prehistory," *The Monist* vol. 79, no. 1, pp. 148-180.
- 1996b "Could Extended Objects Be Made Out of Simple Parts? An Argument for 'Atomless Gunk,'" *Philosophy and Phenomenological Research*, vol. LVI, no. 1
- 1997 "Coincident Objects; could a 'stuff ontology' help?," *Analysis* 57.1, JA 1997, 19-27
- 1998 "Criteria of Identity and the Identity Mystics", *Erkenntnis* Vol. 48, Nos. 2 & 3, 281-301

VITA

NAME OF AUTHOR: Mark Edward Steen

PLACE OF BIRTH: Manassas, Virginia

DATE OF BIRTH: March 7, 1971

UNDERGRADUATE SCHOOLS ATTENDED:
San Francisco State University

DEGREES AWARDED:
Bachelor of Arts in Philosophy, 1997, San Francisco State University

Bachelor of Arts in History, 1993, San Francisco State University

PROFESSIONAL EXPERIENCE:

Instructor, Bilkent University, Ankara, Turkey, 2005

Instructor, Syracuse University, 2000-2004

Teacher's Assistant, Syracuse University, 1999-2000