

## On the Common Sense Argument for Monism

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### ABSTRACT

The *priority monist* holds that the cosmos is the only fundamental object, of which every other concrete object is a dependent part. One major argument against monism goes back to Russell, who claimed that pluralism is favoured by common sense. However, Jonathan Schaffer turns this argument on its head and uses it to defend priority monism. He suggests that common sense holds that the cosmos is a whole, of which ordinary physical objects are arbitrary portions, and that arbitrary portions depend for their existence on the existence of the whole.

In this paper, we challenge Schaffer's claim that the parts of the cosmos are all arbitrary portions. We suggest that there is a way of carving up the universe such that at least some of its parts are not arbitrary. We offer two arguments in support of this claim. First, we shall outline semantic reasons in its favour: in order to accept that empirical judgements are made true or false by the way the world is, one must accept that the cosmos includes parts whose existence is not arbitrary. Second, we offer an ontological argument: in order for macro-physical phenomena to exist, there must be some micro-physical order which they depend upon, and this order must itself be non-arbitrary.

We conclude that Schaffer's common sense argument for monism cannot be made to work.

Priority monism is the claim that there is one fundamental entity, upon which all other entities are ontologically dependent (by ‘entity’, we mean any portion of the universe which can be distinguished from other portions by its identity-conditions). The priority monism we shall address in this paper regards the entire spatiotemporal cosmos as the fundamental entity. Shoes, ships, sealing-wax and any other spatiotemporal entities are all parts of, and exist in virtue of, this entity.<sup>1</sup>

One argument against monism goes back at least to Russell, who claimed that pluralism is favoured by common sense: “I share the common-sense belief that there are many separate things; I do not regard the apparent multiplicity of the world as consisting merely in phases and unreal divisions of a single indivisible Reality” (1985, 36; quoted in Schaffer 2010a, 46). In response to this argument, Schaffer first points out that it does not contradict priority monism. The priority monist allows that there is a plurality of different things; they just insist that one of these things (the cosmos) is fundamental, and that everything else is a part of it (Schaffer 2010a, 46).

Second, Schaffer argues that common sense favours priority monism over any pluralist position. To this end, he appeals to a distinction in mereology, between mere aggregates and integrated wholes. A *mere aggregate* is a collection of entities such that the parts (the entities in the collection) are ontologically prior to the whole (the collection itself). For example, the grains of sand in the heap would seem to be prior to the heap. But in an *integrated whole*, the whole itself is prior to its parts. Consider the relation between a circle and any semicircles one could carve from it. If we start with the integrated circle, then any semicircle carved from it will be merely an arbitrary portion of the circle. Hence, common sense would seem to suggest that the circle must be prior.

Accordingly, Schaffer (2010a, 48–49) provides a common sense argument for priority monism:

- P1: according to common sense, integrated wholes are prior to their arbitrary portions.
- P2: according to common sense, the cosmos is an integrated whole.
- P3: according to common sense, the many proper parts of the cosmos are arbitrary portions.
- C: according to common sense, the cosmos is prior to its many proper parts.

We wish to challenge this argument. We are not concerned to establish the truth of pluralism, nor to give reasons for thinking that monism cannot be correct. We merely want to establish that Schaffer’s argument does not give one reason to think that priority monism is correct.<sup>2</sup> To do this, we shall challenge P3.<sup>3</sup> In response to this premise, we wish to argue that there are at least some spatiotemporal entities which are not arbitrary portions of the cosmos. So what is at issue in this paper is a certain line of thought which is conducive to monism; the

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<sup>1</sup> In this paper, we shall be considering only spatiotemporal entities. We shall thus ignore the relation between the cosmos and abstract entities such as numbers or sets.

<sup>2</sup> Schaffer’s premises and conclusion are presented in terms of the deliveries of common sense, but in what follows we shall drop any reference to the origin of these claims. The point of our argument is that there is good reason to think that not all the proper parts of the cosmos are arbitrary portions. To support this claim, we shall appeal both to semantic reasons which resonate with common sense, and to scientific reasons which certainly go beyond it.

<sup>3</sup> We shall not question P1 or P2, but see Schaffer (2010, 48–49) for some discussion about the source of these premises.

suggestion that the different entities in the universe are arbitrarily carved portions. It is this arbitrariness claim which shall be our direct target in what follows.<sup>4</sup>

In section I, we shall outline an argument Schaffer offers in defence of P3, and briefly sketch the position we shall defend. Sections II and III shall each present an argument in defence of our position, on ontological and semantic grounds respectively. Lastly, in section IV we shall consider and reply to a possible response which is available to Schaffer.

## I

To get a handle on what precisely is at issue in this paper, consider a line of thought Schaffer offers in defence of his premise 3: “Common sense appreciates that there are many ways to carve the world. Consider all the ways that one may slice a pie, or all the ways of drawing lines on a map. There seems no objective ground for carving things in just one way” (2010a, 48).<sup>5</sup> We accept that this line of thought tells against a certain type of metaphysical position. Positions of this type can be characterised by the positing of what we shall term a *Complete Scheme (CS)*, a way of carving up the universe such that:

- (i) every portion so carved is carved on objective grounds; and
- (ii) every entity in the universe is a portion so carved.

The term ‘*objective ground*’ is Schaffer’s own. We understand him to mean by this that such grounds would be the way the world is itself, regardless of all and any interests of any persons. The notion of objective grounds for carving things in one way or another allows us to clarify the notion of an arbitrary portion. An arbitrary portion is not a fictional entity; rather, it is a proper part of the world, but one whose identity and distinction from other parts depends on its being identified and differentiated by some observer, according to the interests of that observer. To say that there are objective grounds for carving the world into certain portions is to say that these portions have identity and existence conditions which are not dependent on their being recognized by any observer as those very portions.

We accept that there are reasons to believe that no scheme can possibly meet both (i) and (ii). First, it is possible to carve the world in different ways. Such reasons may be found in the reactions of some philosophers to debates about whether points on a Euclidean plane are real parts of the plane or idealised constructions from it (Putnam 1990, 97), and whether any of the various conceptions of biological species carve reality at its joints or should be understood in terms of so called ‘species pluralism’ according to which there is no one correct conception of biological species (e.g. Dupré 1993). One is not being *ipso facto* untrue to the way the world is by choosing to carve it in one of these ways as opposed to another. Furthermore, there are many objects whose specifications are dependent on the particular interests of the persons doing the carving (e.g., interest rates, moral patients, music). It seems impossible to capture these objects in any scheme which satisfies (i).

For these reasons, we accept that a CS is impossible. But the notion of a CS does point to something important. We propose to capture this point by refining the notion of a CS,

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<sup>4</sup> Schaffer’s priority monism, although related to Spinoza’s monism, differs from it: both share the idea that the cosmos as a whole is independent and all entities are dependent on that whole, but there seems to be no suggestion in Spinoza that the many proper parts of the cosmos are arbitrary (cf. Spinoza E1p14).

<sup>5</sup> Schaffer links this claim both to Spinoza’s monism and to Dummett’s amorphous lump view (2010a, 48, n. 26). It is an interesting question whether, in doing so, Schaffer takes a step towards existence monism, the view that the cosmos is the only existing concrete entity. At the very least, we see a tension between Schaffer’s professed acceptance that the cosmos has parts (2010a, 33) and any appeal to the amorphous lump view, which explicitly rules this out (cf. Dummett 1973, 577).

into what we shall call a *Near-Complete Scheme (NCS)*. This is a way of carving up the universe such that:

- (iii) every portion so carved is carved on objective grounds; and
- (iv) every entity in the universe is either a portion so carved, or is ontologically dependent on some such portion or combination of portions.<sup>6</sup>

An NCS keeps the first condition for a CS, but adjusts the second, while nonetheless holding to an important asymmetry between the objects it picks out and all other objects. It captures the sense we have that interest rates, music, moral patients and so on all depend for their existence on the existence of things which do not require the existence of interest rates, etc., in order to themselves exist; things which, unlike interest rates, etc., are not dependent for their existence on the interests of any persons.

In what follows, we shall defend the necessity of an NCS. We shall not, in this paper, be defending any particular NCS, though we will gesture towards where we think the best such scheme might be found. Rather, we will present reasons for thinking that such a scheme is necessary, given certain assumptions about the world and how we understand it.<sup>7</sup>

## II

In this section and the next, we shall develop two arguments in favour of an NCS, the first on semantic grounds, the second based on ontological considerations. The semantic argument supports the claim that priority monism cannot account for the truth of certain judgements about parts of the world. The ontological argument supports the claim that priority monism cannot account for the ontological grounds of certain parts of the world (macrophysical objects).

The semantic argument begins with two assumptions: first, that we can make judgements about the parts of the universe which can be true or false (e.g., judgements about what parts exist, about the properties of particular parts, about the relations of parts to each other, etc.); and second, that some of these judgements will be true or false partly in virtue of the way the world is (in virtue of what items exist in the world, what their properties are, etc.). Given these two assumptions, we argue that it follows that one must think of the world as having a nature (as being the way it is) independently of whatever judgements can be made of it. This independent nature would constitute the objective grounds required for an NCS.

The first of these assumptions we take to be uncontentious, but the second must be spelled out more carefully. We think that it cannot be made consistent with Schaffer's denial

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<sup>6</sup> The sense of ontological dependence which we will use is asymmetrical existential dependence, which can be defined as follows: an entity *x* depends for its existence on the existence of another entity *y* if and only if, necessarily, if *x* exists, then so does *y*, and *y* may exist without *x* existing. See Correia (2008) for further specifications concerning the notion of ontological dependence.

<sup>7</sup> Schaffer also develops a second line of thought in support of premise 3. He suggests that common sense recognises that many objects have arbitrary boundaries; that their edges are not clearly defined, and so they cannot be precisely distinguished from each other in a non-arbitrary way (2010a, 48). In response to this line of thought, note first that it is in fact compatible with there being objective grounds for carving reality, as Schaffer himself accepts (2010a, 49). Second, there are grounds for treating this vagueness as an epistemic or conceptual matter, rather than a metaphysical one. Many concepts are by their very nature imprecise, allowing distinctions to be drawn only in a particular context (e.g., 'tall', 'rich', 'bald'). Other concepts are precise at one level of discourse, but not at another. If someone tells you 'that table is a metre long', they have given you what might be a very precise measurement at one level of discourse, but imprecise at another (e.g., if you were asking how many millimetres the length of the table was). These basically pragmatic considerations can account for many of the kinds of cases Schaffer mentions. For example, we suggest the concept 'mountain' has a degree of precision, but only at a certain level of discourse. The crucial point here is that we are committed to saying that not everything in the cosmos can be vague in this way. We shall argue in favour of this claim in section III below.

that there are objective grounds for carving the world in any particular way. To explain the relation between our second assumption and Schaffer's denial of objective grounds, we shall consider a position which tries to balance both of these demands. This is the position which has been developed (and modified) by Hilary Putnam over the past three decades.

Putnam's starting point is that questions such as 'what is the nature of reality?' make sense only in the context of a particular theory or conceptual scheme (1981, 49). In order to frame a question of this sort, we must do so against an agreed background, within which our terms are defined. The example of a mini-world with three individuals, A, B and C, is meant to illustrate this point. On Carnapian logic, which takes each object to be an individual, this world contains three objects. But on a Lezniewskian logic which incorporates objects made of composites of individuals, this world has seven objects: A, B, C, and the mereological sums [A+B], [A+C], [B+C] and [A+B+C]. The question 'How many objects are in this mini-world?' will receive different answers depending on which logic (and therefore, which use of the term 'object') one chooses to employ. More importantly in the present context, this question only makes sense given *some* standard or other as to what counts as an object. There is no sense to the question 'How many objects does the mini-world *really* have, independently of any particular logical scheme?' (Putnam 1990, 98).

The standard realist response to this is to accept that there are many ways of thinking about reality, but that the world itself exists independently of how we choose to think about it. But Putnam points out that the realist cannot provide a description of reality which is neutral between the various possible standards we can apply. All one can do is choose a particular set of standards and interpret reality using these (1990, 97). Even concepts such as 'object' or 'exist' are relative to some conceptual scheme or other (1990, 97; 2004, 37; 43). The world itself does not decide which set of standards we ought to use (2004, 51). This claim we take to be equivalent to Schaffer's denial of objective grounds for carving reality in any particular way.

However, Putnam acknowledges that given particular standards, what makes one's judgements true or false are the facts about the world. In the case of the mini-world, "If I choose Carnap's language, I must say there are three objects because that is how many there are" (1987, 33; see also 2004, 45). This acknowledgement we take to be equivalent to our second assumption, that some of our judgements will be true or false partly in virtue of the way the world is. What we wish to stress is that this imposes a necessary limit to the degree to which one's carving up of the world can be arbitrary. In order to think of one's judgements as being made true or false by the way the world is, one must have some conception of the way the world is. This conception must be relatively determinate, and it must involve the idea that the way the world is (the nature of the world) is independent of what anyone judges to be the case. We suggest that this independent nature constitutes precisely the objective grounds which Schaffer denies can dictate which way the world should be carved up.

To illustrate the claim that one must have a conception of the way the world is, and that it must include the idea that the world is independent of one's judgements, consider again the mini-world. We hold (as Putnam does) that the way the mini-world is makes an independent contribution to deciding the truth or falsity of judgements about it. Given this, we suggest that one must have a conception of the mini-world as having a nature which is not itself determined by the standards of counting one chooses to use. For let us say the reverse were true: that the nature of the mini-world was entirely determined by one's standards. In that case, once one had chosen one's standards, the truth or falsity of one's judgements would thereby have been decided, because those standards would, *ex hypothesi*, have determined the nature of the world which is supposed to decide the truth or falsity of the judgements. On this understanding, the nature of the world could not make any contribution in addition to that made by the standards one chooses. This would be problematic in two ways. First, it would

render otiose the claim that given a particular set of standards, it is the nature of the mini-world itself which decides the truth or falsity of the judgements. Second, it would make unclear how one could possibly make false judgements about the mini-world when one correctly understands and applies one's own standards. But this does seem possible.<sup>8</sup>

What holds in the case of the mini-world holds for the actual world as well. One chooses the standards to apply to it, but for the world itself to make a separate contribution to deciding the truth or falsity of one's judgements, it must be the way that it is independently of one's standards. This independent nature would constitute objective grounds for carving at least certain parts of the world in one way rather than another; these grounds being objective in that they are the way the world is itself, regardless of all and any interests of any persons. This independent nature thus constitutes the objective grounds which an NCS requires.

We suggest that this conception of the world must be 'determinate'. By this, we mean that it cannot be exhausted by ideas such as 'whatever is the case' or 'however it is that things are'. It must be a conception of the world which allows one to think that it is the way the world is which makes one's judgements true or false. If the content of this conception was something like 'whatever is the case', then the thought that it is the way the world is which makes one's judgements true or false becomes vacuous (something like 'this judgement is rendered true or false by the way that whatever all these judgements are about actually is'). One way of putting this point is that one can slice a pie in as many different ways as one likes, but in order to be aware that what one is doing is slicing a pie which can be sliced in many other ways, your conception of the pie cannot be just 'whatever I have when I put these slices together'. This description, while correct, fails to capture the independence of the pie from any particular way of slicing it. If the pie is characterised in this way, one's awareness of what one is doing will be empty (it will be an awareness that one is slicing whatever it is that these ways of slicing are in fact slicing). We would lose the notion that what we are doing in slicing (or judging) is constrained by a reality external to our activity.<sup>9</sup>

In saying that this conception of reality must be relatively determinate, we are happy to admit that it will probably contain gaps. There may well always be aspects of reality which are not fully known or understood. For these, a hand-waving gesture such as 'whatever is the case' may be appropriate. But this cannot be the case with one's understanding of the entire world, on pain of losing any sense of one's judgements being made true or false by how things are.<sup>10</sup>

This conception of the world does not exhaust our understanding of what there is. In a wide variety of cases, what exists and its properties are in fact determined by our local standards (those particular to a culture, a society or a language). For example, actions or persons cannot be chivalrous except in certain social contexts; likewise, the world will not contain any banknotes unless a certain number of people believe it to. These are examples of

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<sup>8</sup> The point here does not concern which standards one chooses. Rather, what is at issue is whether or not the standards one chooses can themselves decide the nature of the world. If they do, and if one correctly understands and applies them, the question is what the error of one's judgements might then consist in. The position we are defending provides a clear answer: the world has an independent nature, which one's judgement might fail to match. It is not clear that any answer to this question is available if one denies that the world has an independent nature.

<sup>9</sup> The key point here is the constraint (which is suggested by McDowell – e.g., 1996, 25). Schaffer's monism may be consistent with there being an external reality, but it is not a reality which could constrain our judgements in the way required, by helping to make them true or false. We develop this point further in section IV.

<sup>10</sup> It is worth pointing out that this conception of reality is not intended to serve as an *epistemic* constraint; for instance, as a constraint on when one is *justified* in asserting something of reality. Rather, it is a constraint on being able to think of one's empirical judgements as being made true or false by reality. This issue is prior to that of deciding whether or not one is justified in making any particular judgement.

properties and entities which are not independent parts of the world. Because we can make true or false judgements about these properties and entities, it follows that the conception of the world as independent does not exhaust all of our true thought. For this reason, the conception of the world we are defending is an NCS rather than a full-blown CS. However, we suggest that any properties or entities which are dependent on our judgements or standards are also dependent on other entities which are themselves independent of our judgements and standards. That is, entities and properties such as chivalry, banknotes, and anything else which depends for its existence on particular standards or judgements will also depend on the existence of an objective nature.

We have two reasons in support of this suggestion. First, any judgements and standards will be dependent on subjects who make or use them. These subjects will themselves be dependent on other entities, but these other entities cannot all be dependent on the judgements or standards, on pain of vicious circularity.<sup>11</sup> Second, the most plausible account of the ontology of entities and properties which depend on judgements characterises them as resulting from subjects taking independent features of reality to be a certain way.<sup>12</sup> For example, while the type 'banknote' is functionally defined rather than being a natural kind, all actual banknotes will be constituted by or identical to physical items whose existence does not depend on judgements about them.<sup>13</sup> Similarly, the property of being chivalrous will attach to persons whose existence is not dependent on any judgements or standards (or it will attach modes of behaviour of such persons; these modes of behaviour may be dependent on judgements, but not the persons behaving in these ways).

This first criticism of Schaffer has the form of a transcendental argument: given that we can make true judgements about the world, and given that these judgements are made true or false by the way the world is, we must conceive of the world as having a nature which is independent of our judgements regarding it. A standard rejoinder to transcendental arguments of this sort is that they only demonstrate what one must think to be the case, not that anything actually is the case. Therefore, the rejoinder might be continued, we have not shown that there are any objective grounds for carving up reality in one way rather than another. At best, we have only shown that one must think that there are such grounds, in order to make sense of one's judgements about reality being true or false.

We accept that this rejoinder is correct as far as it goes, but we do not think that it shows that our transcendental argument is irrelevant to Schaffer's position. Our argument does give one reason to think that there must be an objective order to the world. If one has reason to think that one's judgements about the world can be made true or false by the way the world is, then one has reason to think that this state of affairs (one's judgements about the world being made true or false by the way the world is) is possible only if the universe has a nature which is independent both of one's judgements and one's standards. And this gives one reason to think that the universe has a nature which is independent of either judgements or standards.

### III

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<sup>11</sup> It is possible that this point (the dependence of arbitrary portions on our standards or interests, and the dependence of these standards or interests on the subjects who apply or have them) could be developed into an independent argument against premise 3. The suggestion would be that in order for there to be arbitrary portions as we have defined them, it is necessary that there exist subjects with interests; but these subjects cannot themselves be arbitrary portions, on pain of either circularity or infinite regress (we owe this suggestion to Olley Pearson).

<sup>12</sup> For more on this approach to the ontology of social entities and properties, see Searle 1995.

<sup>13</sup> The claim that banknotes are constituted by the bits of paper is developed by Baker (2000). The claim that they are identical with the bits of paper is argued by, for example, Van Inwagen 2002, 141.

In this section we will develop an ontological argument which supports the idea of an NCS. This argument begins with the basic idea that, since there are macrophysical objects in the cosmos, the microphysical structure of the cosmos must be such that it enables the possibility of macrophysical objects. Importantly for the purposes of challenging Schaffer's argument, this is a form of asymmetrical existential dependence: macrophysical objects depend for their existence on microphysical objects, but the latter could exist without the former. It is easy to illustrate this asymmetry by considering an alternative history of the cosmos where one of the fundamental physical forces, such as the strong nuclear force which binds the nuclei of atoms together, had been significantly weaker: the cosmos would still have a microphysical structure, but there would be no 'clumps' of matter, no macrophysical objects.

So, what are the necessary microphysical requirements for the existence of macrophysical phenomena? The key here seems to be the ability of the proper parts of macrophysical objects to bind together, specifically, the ability of subatomic particles to form atoms, atoms to form molecules, and molecules to form macrophysical objects. We suggest that this binding ability requires non-arbitrariness in the microphysical structure of the cosmos; if this structure were to be arbitrary, the stability required to form macrophysical objects could not be achieved.

Physics tells us that the binding of molecules and atoms is dependent on the electron configuration of individual atoms, which in turn depends on the energy levels of specific electrons and is moderated by the Pauli Exclusion Principle.<sup>14</sup> Similarly, the manner in which subatomic particles form atoms is dependent on the individual charges of subatomic particles – the negative charges of the electrons and the positive charges of the protons, where each proton consists of three quarks which make up the total charge of the proton.

Charge is one of the most important properties when considering the requirements for the possibility of bond forming and the stability of macrophysical objects. In fact, the *elementary charge*, namely  $1.6021892 \times 10^{-19}$  coulombs, is one of the fundamental physical constants. This is the charge of protons, whereas electrons have a negative charge of equal strength. Interestingly, the charge of all other freely existing subatomic particles that have a charge is either equal to or an integer multiple of the elementary charge. Quarks have charges that are integer multiples of one third of the elementary charge, but they are not freely existing – quarks occur only as parts of other subatomic particles. The total charge of the atom is of course neutral. What is most important for our purposes is that even if we were unable to accurately state the charges of each subatomic particle which together form an atom, we do know that their sum has to be zero, as otherwise the atom would not be stable. The upshot of this is that certain entities, namely electrons and quarks, must possess an exact charge. The requirement of *exactness* imposes a crucial constraint for the microphysical structure of the cosmos. Given that our cosmos includes macrophysical phenomena, the microphysical phenomena must have certain exact properties (such as the exact elementary charge). These properties cannot be arbitrary; nor can they vary according to our particular interests.

This is not quite sufficient for our conclusion though, since it seems that arbitrarily carved portions of the cosmos also have exact properties. Consider the city of London, a rather arbitrarily carved portion of the cosmos: it has a number of exact properties at any given time, such as the number of underground stations, annual budget and the number of citizens. There is, however, a fine difference between the exact properties that the city of

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<sup>14</sup> The Pauli Exclusion Principle states that no two identical fermions can have the same quantum number at the same time.



London or any other arbitrarily carved portion of the cosmos may have and the exact properties that, for instance, electrons have. The latter are *necessary* properties, whereas the former are only contingent. Accordingly, only non-arbitrary proper parts of the cosmos could possess the kind of exact, necessary properties that are required for the stability of macrophysical objects.

Consider the property ‘number of citizens’. We could circle any area of land and count the people living there, giving the property of the number of citizens in that area, and this may be the basis of all sorts of things, such as taxation. However, it seems arbitrary which area of land we decide to circle; there are no constraints for this. The property ‘number of citizens’ is, we might say, an arbitrary property: although it is exact at any given time, it has no fixed requirements. It can change as our interests alter, and we could even have decided not to introduce it at all. In contrast, if the charges of electrons and protons were not identical, then the microphysical structure required for the existence of macroscopic objects would not have existed. That is, it is *necessary* for the emergence of macroscopic objects that the sum of the charges of subatomic particles adds up to zero, whereas the population of London is thoroughly contingent.

It could be objected here that, for instance, the arbitrarily carved portion of the cosmos that consists of two electrons in my left hand surely has certain necessary properties, e.g., the sum of the charges of these electrons. This will hardly undermine the argument though, for the necessity involved here is based on the necessary properties of the individual electrons, so the portion of the cosmos in question will not have necessary properties in its own right.

Another possible objection concerns systematic changes in the microphysical structure of the cosmos. For instance, if the charge of the electron changes, an equal change in the charge of the proton would presumably maintain stability (as well as other changes in fundamental physical constants). This is a fair point, but it misses the target: variation over time in certain fundamental physical constants *may* be possible, but what is important for the stability of matter is that their relative values remain the same. In fact, there are very specific constraints for the possible changes in fundamental physical constants which would still enable the emergence of macrophysical objects (cf. Barrow 2001). Accordingly, the necessity of exact properties appears to be a good indicator of the non-arbitrariness of the microphysical structure of the cosmos.

If what has been said so far is correct, then we have a strong case not just for the non-arbitrariness of the microphysical, but for the necessity of this non-arbitrary microphysical structure for all macrophysical phenomena. For it is easy to see that even interest rates and music require stability on the microphysical level; in fact, they require much more than that, namely the existence of rational beings who are able to set up a stock market and play music. In other words, the existence of these macrophysical phenomena is ontologically dependent on the existence of rational beings, whose existence is dependent on the ability of their constituent molecules to form bonds, and so on. It is important to note that this argument does not commit us to the claim that microphysical particles are ontologically fundamental or basic. That is, we adopt a fallibilist position about what the basic objects in fact are; we only insist that there must be some basic objects, which are non-arbitrary and upon which the non-arbitrary portions of the universe depends. Thus, in contrast with Schaffer’s view that only the cosmos as a whole can be basic and non-arbitrary, we are prepared to allow for a whole range of basic, non-arbitrary objects.

#### IV

Consider again Schaffer's common sense argument in favour of priority monism. If an NCS is necessary, then premise P3 of this argument must be amended. At most, all we can assume is that some of the proper parts of the cosmos are arbitrary portions. But some of its proper parts must also be non-arbitrary; these are the parts which would be picked out in an NCS. If this is the case, Schaffer's common sense argument can no longer go through.

It might be suggested in response to our arguments that P3 could be derived from P1 and P2, and that the three premises together could then be used to establish the conclusion. But this would require an extra premise, along the lines of

P1a: according to common sense, integrated wholes can have no parts other than their arbitrary portions.

If P1a is accepted, then P3 would indeed follow from P1, P1a and P2. It might be possible to take issue with P1a, but more importantly in the present context, the arguments we have given in sections II and III would count against P2, given the claim about integrated wholes expressed in P1a. That is, our arguments give reason to believe that the cosmos is not an integrated whole, on this understanding of such wholes. And if P2 cannot be accepted, then P3 loses its support. So unless our arguments can be refuted, neither P3 nor Schaffer's common sense argument can be rescued.

There is a way in which Schaffer could respond to both the arguments we have given. He could grant that these arguments each show that there must be more to the universe than a collection of arbitrary portions, but argue that this does not entail the conclusion that the universe must contain non-arbitrary parts. Instead of appealing to non-arbitrary parts, the suggestion would be that we can appeal to the whole itself, the entire spatiotemporal cosmos. The cosmos consists of a whole whose parts are all arbitrary portions, but which is not itself an arbitrary portion.

Given this, it might seem that Schaffer can answer each of the arguments outlined above, by accepting the premises of each but denying that in either case the conclusion that the world has non-arbitrary parts actually follows. The argument in section II starts with the premise that our judgements about the world are made true or false by the way the world is itself, and moves to the conclusion that the world is the way it is independently of how we judge it to be. But Schaffer could argue that the cosmos as a whole may have its own nature, without that nature involving or depending on any non-arbitrary parts.

Similarly, the argument given in section III moves from the premise that some necessary (i.e., non-arbitrary) basis is required for any arbitrary portions to exist, to the conclusion that the universe must contain some non-arbitrary parts. Yet it seems that Schaffer can accept this premise, but argue that the non-arbitrary basis for the existence of the arbitrary portions is provided, not by any parts of the universe, but by the cosmos as a whole. This is a line of thought which emerges from a further argument for monism which Schaffer entertains. Specifically, Schaffer wishes to dismiss the view that empirical considerations – input from physics – would support pluralism:

[...] it is one thing to assume that physics is fundamental, and another to assume that fundamental physics will deal in particles [...]. The monist can and should allow that physics will tell the complete causal story of the world. The monist will maintain that this physical story is best told in terms of fields pervading the whole cosmos, rather than in terms of local particles. (Schaffer 2010a, 50-51.)

This passage highlights the typical pluralist's commitment to mereological atomism, but Schaffer claims that physics does not support this commitment. He argues that physics suggests that the cosmos is in an entangled state and hence particles do not feature in it in the sense that atomism suggests.<sup>15</sup>

In response to this possible reply, we first concede that it is possible that the cosmos could have been such that it had an independent nature which neither involved nor depended upon having any proper parts (that is, there are possible worlds in which priority monism is correct). For example, the cosmos might have been a simple entity, without any proper parts but nonetheless having a nature independent of any judgements about it. However, we suggest that one cannot accept the premises of either of the arguments we have developed (the semantic argument in section II, or the ontological argument in section III) and hold that the cosmos is actually such that it has no non-arbitrary parts.<sup>16</sup>

Let us start with the semantic argument. Its premises were that we can make judgements about the world, and that these judgements are made true or false by the way the world is. From this, we argued that the way the world is, which makes our judgements true or false, is independent of these judgements. The issue is whether this independent nature must involve proper parts.

The judgements we make need not be about the world as a whole; typically, they are about particular parts of it (particular entities, states of affairs, etc.). We suggest that the world as a whole cannot be that which makes certain judgements about its parts true and others false. The judgements we have in mind are those which meet two conditions: they are made true by an independent reality; and the features of reality which make different judgements true are themselves different from each other, independently of our judgements about them. It would not help here to appeal to arbitrary portions, parts which are different from each other only insofar as we regard them as being different. The identity and existence of these portions depend on our applying certain standards to the world. Therefore, they could not make a contribution to the truth or falsity of our judgements independently of our standards.

Schaffer is aware of the problem of how the priority monist can explain the fact that the world is heterogeneous (though as we shall see, this problem is in fact different to the one we are raising). He mentions three possible responses the monist can make to the problem of heterogeneity. One response would be to regionalise properties: to say that seemingly monadic properties have an extra argument place for a region of space-time. So instead of simply predicating a property such as roundness, one might predicate 'roundness here' of a particular region of space-time (Schaffer 2010a, 60). A second response would be to build regions, not into the properties themselves, but into their instantiations: roundness is not just instantiated, but instantiated-here.<sup>17</sup>

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<sup>15</sup> Note also the reference to 'fields' here. Schaffer briefly discusses quantum field theory, but on some level Spinoza may have been a proponent of a 'field metaphysic' (cf. Viljanen 2007).

<sup>16</sup> Therefore, we reject claim 15 in Schaffer 2008, the claim that either the ultimate parts must be basic in all worlds or the ultimate whole must be basic in all worlds (§3.2.4). We agree that the direction of priority must be a necessary truth, but we suggest that it can be *contingently necessary*. That is, given certain features of the universe which may not themselves be necessary, then necessarily priority monism is false. Therefore, we deny that it could be possible to have worlds which are otherwise indiscernible save for differences in the direction of priority. But we do not think this possibility must be assumed in order to deny Schaffer's claim 15. Similar remarks have been made about the gunk/atomism debate (Sider 1993). Both atomistic and gunky worlds seem possible, but if it were the case that, for instance, living beings are not possible in a gunky world, then we would know that the actual world could not turn out to be gunky.

<sup>17</sup> A related approach is the monistic semantics developed by Horgan and Potrč (2000). On this account, the truthmakers of statements about particular parts of the cosmos are variations at different spatiotemporal locations of properties belonging to the cosmos as a whole. (Note that Horgan and Potrč, unlike Schaffer, are existence monists, and thus deny there are any entities other than the cosmos itself.) We think that this monistic

We think that neither of these suggestions can answer the problem we are raising. The appeal to regionalised instantiations would seem to meet our first condition for putative truth-makers, in that the properties instantiated presumably could exist independently of our judgements about them. However, properties which are instantiated in this relativistic way do not meet the second condition. It seems clear that regions of the cosmos are arbitrary portions. In Schaffer's own examples they are distinguished indexically. Even if they were not (if they could be distinguished by references on a grid of space-time points), regions would be differentiated from each other only insofar as we distinguish them.<sup>18</sup> Therefore, they cannot serve as truth-makers in a way which meets the requirements of the semantic argument. The same point holds, *mutatis mutandis*, for the appeal to regionalised properties.

Schaffer's other response, which he himself favours, is to appeal to distributional properties (2010a, 59). This involves no appeal to different regions. Rather, the whole cosmos itself bears a heterogeneous property (Schaffer's example of such a property is 'being polka-dotted'). The necessary variation between truth-makers would thus be found, not in differences between properties, nor in differences between property bearers, but in the heterogeneous nature of the property itself. Specifically, the fact that the world is heterogeneous is to be explained by the entire cosmos bearing the property of 'being heterogeneous'. This is a determinable property, which is determined by the path the cosmos traces through a multidimensional "physical configuration space" (2010a, 60).

We accept that if the cosmos as a whole has a distributional property or properties, this would suffice to make it heterogeneous. However, this brings us to the afore-mentioned difference between the problem we are raising and the issue of heterogeneity. What our account requires is not just heterogeneity, but a particular distribution of different properties to different portions of the cosmos. Schaffer might reply that this distribution is provided by the particular determination of the heterogeneity of the universe. That is, as the universe moves through physical configuration space, the specific way it is heterogeneous will change. But we think that this too is insufficient. Take a true judgement such as 'The ball is red'. What, on Schaffer's account, could the truth-maker for this judgement be? It seems it must either be the state of the entire cosmos at the moment the judgement is true, or the state of that particular (spatial) region of the cosmos at that moment. But neither of these accounts seems adequate. The appeal to regions we have already dealt with. If the truth-maker is the state of the entire universe at that time, then we seem faced with the original problem of the whole cosmos being the truth-maker for a large array of truths.<sup>19</sup> Furthermore, we doubt that such an account would be able to handle certain changes. For example, we don't see how the cosmos' movements through physical configuration space could explain the difference between the following two scenarios: a ball changes colour; a ball of one colour disappears

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semantics cannot accommodate the premises of our semantic argument, for reasons similar to those we shall outline against any appeal to regionalised properties and regionalised instantiations of properties.

<sup>18</sup> The extent of any region through space and time would be a matter of stipulation or convention. An alternative approach might be to identify regions by appealing to properties or to the instantiations of properties. This would threaten to make any predications of properties circular. Furthermore, it would struggle to accommodate cases where an object changes one of its properties, or where an object simultaneously has more than one determinate property from the same determinable (e.g., a ball which is multicoloured).

<sup>19</sup> Schaffer denies that this is a problem at all (2010b). However, he does not address the most obvious problem with the suggestion that the only truth-maker is the entire cosmos: the problem of coarseness. It is correct that different judgements can be made true by the same state of affairs (e.g., 'The ball is red' and 'The ball is coloured'). However, the total condition of the ball is not appropriate to serve as the truth-maker, since it includes features which are irrelevant to either of the judgements under consideration. This objection to coarseness applies, only far more strongly, to any appeal to the cosmos as the truth-maker of either of these judgements. Such appeals to relevance are common in the literature (e.g., Rodriguez-Pereyra 2009, 230-234). This point does not show that Schaffer's truth-maker monism is wrong, but motivates the claim that it is a problematic view.

and a different ball with a different colour appears in the same spot. Note that we are not saying that this difference could not be distinguished; rather, we are saying that on Schaffer's account, there would appear to be no metaphysical difference between the two cases.

Turning to the argument developed in section III, we need to keep in mind that we are only interested in a world which contains macrophysical objects. The argument developed in section III concerns the non-self-sufficiency of macrophysical objects, their dependence on the proper parts that make them up. It was suggested that this requires stability on the microphysical level, and that such stability can only be produced by a non-arbitrary microphysical structure. This should already be enough to block Schaffer's possible reply. According to current physics, the stability of matter depends on a fine-tuned microphysical organisation. As we observed, one of these fine-tuned properties is the elementary charge, which must be identical in strength and of a different polarity in electrons and protons; otherwise atoms would not hold together. Hence, the stability of all macrophysical objects depends on this non-arbitrary microphysical organisation.

A further objection may be derived from the idea that the cosmos is in an entangled state, which Schaffer uses to construct another argument for monism (Schaffer 2010a, 53 ff.). The argument suggests that the phenomenon of quantum entanglement can be applied to the whole cosmos and hence the cosmos must be viewed as an entangled system itself.<sup>20</sup> This line can be further augmented with the formalism of relativistic quantum field theory, which effectively removes any reference to particles as objective components of the cosmos and replaces them with fields. The upshot is that the cosmos can be viewed as an entangled system which is a fundamental whole and has emergent properties.

Since our aim was only to address Schaffer's common sense argument, we will not engage with his quantum mechanical argument in detail. However, the quantum mechanical argument does not refute our arguments. The idea we are defending, of a Near-Complete Scheme, does not commit us to the claim that the cosmos as a whole cannot be independent of its proper parts (rather, it is a claim that those parts are either non-arbitrary or depend on some non-arbitrary parts). It is specifically worth noting that this ontological claim does not need to assume mereological atomism.

We have demonstrated that Schaffer's common sense argument in favour of priority monism cannot work, for both semantic and ontological reasons. In the process of criticising this argument we have made some suggestions as to what a NCS could look like. We remain neutral as to the details of this scheme, but we believe that there are good reasons to think that one must exist.<sup>21</sup>

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<sup>20</sup> Schaffer notes that, following Teller (1986), one could attempt to maintain that particles are fundamental by introducing external *entanglement relations*. Teller himself develops a type of quantum holism from this idea, the intention of which is that we have *nonsupervenience* between entangled systems and their separate components; that is, an entangled system can have emergent properties (cf. Morganti 2009). We wish to make no commitments regarding such speculative accounts of quantum mechanics. In any case Schaffer is suspicious of Teller's account and suggests, on the basis of quantum field theory, that this line may not help in retaining particles in the fundamental theory (Schaffer 2010a, 54).

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