

# NOTHING

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## INTRODUCTION

The question ‘why is there something rather than nothing?’ has been supposed to be one of the most fundamental questions of philosophy, and has excited generations of scientists, philosophers, theologians and ordinary folk. One way that we might seek to answer this question is by claiming that there has to be something, because there could not have been nothing. This is what I seek to establish here. The converse, the claim that there *could* have been nothing is the doctrine of metaphysical nihilism, and the only prominent argument in support of that doctrine is ‘the subtraction argument’.

In considering the possibility of nothing, it is easy to run into the pitfalls associated with treating nothing as a special kind of something. Using ‘nothing’ to denote nonexistence, we are faced with the seemingly meaningless question of whether nonexistence exists. Since nonexistent things by definition do not exist, there is a sense in which ‘nothing’ cannot exist. We run in to difficulty when we think of ‘nothing’ as a ‘thing’, a problem first encountered in ancient Greece. Famous comical passages illustrate this:

Nothing is better than eternal happiness

A cheese sandwich is better than nothing

So a cheese sandwich is better than eternal happiness.

In order to avoid such pitfalls, I restrict my discussion of nothingness for the most part to a discussion of the empty possible world. It is this possibility that the metaphysical nihilist embraces, holding that there is a world at which there are no concrete objects.<sup>1</sup> This

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<sup>1</sup> Discussion of the empty possible world of metaphysical nihilism refers to the world at which there are no *concrete* objects. Many philosophers believe that there are some necessarily existing abstract objects (Cameron, 2007a: 273). They might believe, for example, in the necessary existence and abstractness of sets, universals, tropes or numbers. For my purposes, it is sufficient to discuss the possibility of a world devoid of concrete

restriction enables me to clearly consider the arguments in favour of nothingness, and to structure my response. I aim to show here that the subtraction argument for metaphysical nihilism fails, and to construct an argument to suggest that we have cause to question the metaphysical nihilist hypothesis, placing the onus on the proponent of that view to provide a defence of it.

Certain prominent views of possible worlds are incompatible with metaphysical nihilism, and thus a person's conception of possible worlds might prevent them from embracing the possibility of the empty world. This raises the question of whether the possibility of metaphysical nihilism is 'spoils for the victor' (Armstrong, 1989: 64) in the modality debate, or whether our answer to the question of which theory of modality should be adopted is informed in part by its consistency with whatever conclusion we come to about the possibility of metaphysical nihilism. Though I do not suggest an answer to this question, it is important to note its relevance to the debate, and to map out the territory in terms of theories of modality. A discussion of possible worlds is not directly relevant to the argument I wish to make here, though it is important for placing that argument in context. An appendix is therefore included to explain why some prominent theories of modality are incompatible with metaphysical nihilism.

In the first chapter, I consider the subtraction argument for metaphysical nihilism. I discuss each premise in turn, suggesting modifications to overcome problems with the initial form of the argument as presented by Thomas Baldwin (1996). Though many of these problems can be rectified, I claim that the argument relies heavily on the intuition that all concrete objects are 'subtractable' from every possible world, an intuition too close to the conclusion of the

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objects as if there cannot be no concrete objects, then there certainly cannot be nothing in the deeper sense that excludes abstract objects along with concrete objects. If it is not possible to have a world containing no concrete objects, the nihilist hypothesis is rejected.

subtraction argument to render it dialectically effective. I therefore argue that the subtraction argument fails to establish the thesis of metaphysical nihilism.

My second chapter is an attempt to construct a positive argument against the possibility of metaphysical nihilism. I reject one attempt to that end, offered by Van Inwagen (1996), and instead construct an argument based on the inconceivability of nothingness. I establish this inconceivability by arguing for the impossibility of imagining nothingness, given the experiential and perceptual nature of imagination and the impossibility of perceiving, or having an image of nothing. Given that imagination is at the core of conceivability, and taking inconceivability to be at least evidence suggestive of impossibility, I conclude that we have *prima facie* cause to reject the hypothesis of metaphysical nihilism. We should then suppose that there is something rather than nothing because there could not have been nothing.

## CHAPTER 1: THE SUBTRACTION ARGUMENT

### 1. Introduction

The only major metaphysical argument designed to establish the possibility of an empty world is the subtraction argument. It is developed in its original form by Baldwin (1996) as a reaction to papers by Van Inwagen (1996) and Lowe (1996) seeking to establish the impossibility (or in Van Inwagen's case the extreme improbability) of the empty world. I will discuss the first of these at the beginning of the next chapter. Here I first outline the subtraction argument before considering each of Baldwin's premises in turn, reviewing the literature surrounding them and suggesting modifications. In particular, I consider different interpretations of the third premise, and conclude that interpretations that render the subtraction argument valid are too close to the metaphysical nihilist conclusion to be persuasive to one who is agnostic or sceptical about the possibility of an empty possible world. For the subtraction argument to go through, one is forced to accept an intuition too close to nihilism for the argument to have any dialectical advantage. I thus claim that the only metaphysical argument for the possibility of the empty world fails to establish the metaphysical nihilist hypothesis.

The subtraction argument as introduced by Baldwin has the following premises (Baldwin 1996: 232):

- (1) There might be a world with a finite domain of concrete objects.
- (2) These concrete objects are, each of them, things which might not exist.
- (3) The nonexistence of any one of these things does not necessitate the existence of any other such thing.

The argument then proceeds as follows:

- (4) Beginning from the actual world  $w$ , by (1) there is an accessible possible world  $w_1$  whose domain of concrete objects is finite.
- (5) By (2) there is a possible world  $w_2$ , accessible from  $w_1$  that has in its domain all of the objects in the domain of  $w_1$ , apart from some object  $x_1$  and any dependents, which exist in  $w_1$  but not in  $w_2$ .
- (6) It follows from (3) that the domain of  $w_2$  is smaller than that of  $w_1$ .
- (7) This subtraction process can be repeated until we arrive at  $w_{\min}$ , the world at which there remains only one or more concrete objects such that the nonexistence of one implies the nonexistence of all.
- (8) By (2) these objects might not exist, and by (3) the resulting world will be  $w_{\text{nil}}$ , a world containing no concrete objects.
- (9) There is a possible world accessible from the actual world containing no concrete objects.

Before considering premises (1)-(3) in detail, I shall briefly clarify some points about the argument in (4)-(9). (4) makes it clear that it is not essential (though it is possible) that  $w_1$  is the actual world. Baldwin needs a notion of accessibility between worlds for his argument to go through, and so nothing is lost for him by not taking a stance on whether  $w_1$  is the actual world. All that is required is that the worlds mentioned are possible relative to one another, so that  $w_1$  is possible relative to  $w$ ,  $w_2$  possible relative to  $w_1$ , and so on. If accessibility between worlds is also transitive, then if  $w_3$  is accessible from  $w_2$ , and  $w_2$  from  $w_1$ , then  $w_3$  is accessible from  $w_1$ . Baldwin need not make the somewhat controversial claim that the actual world has in its domain only a finite number of concrete objects.

In (5) it is assumed that any things whose nonexistence is implied by the nonexistence of  $x_1$  will also be absent from the domain of any world not containing  $x_1$ . Worlds  $w_1$  and  $w_2$  are identical apart from the fact that  $x_1$  and its dependents exist at  $w_1$ , but not at  $w_2$ . Similarly, in



(8) the domain of  $w_{\min}$  might in fact consist of more than one concrete object, but the nonexistence of one must imply the nonexistence of all (Baldwin, 1996: 232). (9) is taken to be the metaphysical nihilism that Baldwin seeks to establish. If accessibility between worlds is transitive then  $w_{\text{nil}}$  is accessible from the actual world, because we began with the accessibility of  $w_1$  from the actual world. If the first three premises are true and the argument is valid, there is a possible world accessible from the actual world at which there are no concrete objects, and this is the metaphysical nihilist hypothesis.

## **2. The First Premise**

I begin this section with a brief discussion of concrete objects, given that Baldwin's notion of concreteness plays an important role in his argument. I then discuss two objections to the first premise of the subtraction argument. The first arises because on some conceptions of spacetime and of objects, objects are taken to be infinitely divisible, with the result that any one concrete object generates an infinity of concrete parts. The second objection concerns sets, and the concern that an infinity of concrete sets can be generated from the existence of one concrete object. Whilst I do not think either of these objections is sufficient to defeat the subtraction argument, we it is important to investigate them in order to suggest how the defender of the argument might proceed.

### **a. Concrete Objects**

The first premise of Baldwin's argument relies on a notion of concreteness, which as Baldwin notes, Lewis (1986: 81-6) has suggested is difficult to pin down. There are a number of ways we might seek to elucidate the distinction, and Baldwin's strategy is an example of what Lewis has termed 'the negative way'; taking abstract objects to be those lacking the features possessed by paradigmatically concrete entities (Rosen, 2009). Baldwin (1996: 233) defines concrete objects thus: 'I shall take it that the primary mark of concreteness is failure to satisfy

the identity of indiscernibles'. On this view, something is concrete if and only if it can be distinguished from something exactly intrinsically similar to itself.

This is an example of the way of negation because it takes the discernibility of exactly intrinsically identical objects to be a paradigmatic feature of concrete objects, and abstract objects to be those that lack this feature. The most common way to be able to distinguish between two intrinsically identical objects would be with appeal to spatiotemporal location. We would know that we had two objects rather than one, even if they were exactly identical in all their intrinsic qualities, if we could see that they were located in two different places. It is worth noting that Baldwin and also Rodriguez-Pereyra assume that the distinction between concrete and abstract is exhaustive and exclusive (Lowe, 2002: 62). They assume that everything is either concrete or abstract, and that no thing can be both concrete and abstract.

#### **b. Objection (A) to Premise (1): Parthood**

The first objection to the first premise that I wish to consider concerns the infinite parts of an object. Given that subtracting any finite number of objects from an infinite domain of such objects will still result in an infinite number of objects in that domain, the first premise of the subtraction argument requires that the domain of concrete objects be finite, and thus *prima facie* able to be emptied by successive subtraction. Rodriguez-Pereyra (1997: 163) notes that there is a threat to this part of the first premise if we grant that the parts of a concrete object are at least as concrete as the object itself. If we take spacetime to be continuous, then if one spacetime region exists, there are infinitely many. These are the infinite parts of that region (Rodriguez-Pereyra, 1997: 162). Every concrete object occupying that region of spacetime will have infinitely many parts occupying the infinitely many regions within that region. If each of these parts is itself an object, then it is false that there might be a finite number of concrete objects.

There are at least two ways that Baldwin might try to avoid such an objection. He could adopt Rodriguez-Pereyra's solution (1997: 163-4) and develop a notion of objects that are maximal occupants of connected regions of spacetime. This view is consistent with objects being infinitely divisible as running the subtraction argument requires only that there be a finite number of *these* objects, the objects that are maximal occupants of a connected region of spacetime. It is with these objects that the subtraction is performed. Alternatively, Baldwin could claim that there might be a world with a finite domain of metaphysical simples (where a simple is a point-size object that has no spatial extension and no parts), and run the argument from that world. All we require is that there is the *possibility* that a finite number of things can be subtracted in stages, leading us to the *possibility* of an empty world. I will discuss these alternatives (maximal regions and metaphysical simples) in turn.

Rodriguez-Pereyra's view strikes me as ad hoc; if it is acceptable to ignore the infinite parts of a spatiotemporally connected object then there is no reason not to take all of spacetime as connected, and subtract it all together. The stipulation that the subtraction should be performed only with these maximal occupant objects is arbitrary, we might as well perform the subtraction with the concrete object that is the mereological sum of all the concrete objects at a world. There is no reason to begin the subtraction with maximally connected spacetime regions. If one thinks that all of the objects can be removed from spacetime at once (and perhaps spacetime with them) and adheres to a view of possible worlds compatible with metaphysical nihilism, then he or she will already be convinced of the conclusion of the subtraction argument. Such a stipulation about spatiotemporal connectedness would remove the element of successive subtraction that comprises the argument, and render it extremely unpersuasive for anyone who was not already convinced of the conclusion.

Cameron (2006: 119) makes a similar point, strengthened by the following concern. An object can fail to exist even when some or all of its parts remain. A wall, for example, ceases

to exist if its bricks are scattered, even though all of those bricks still exist. The subtraction argument thus does not work in accordance with Rodriguez-Pereyra's suggestion, because the subtraction of an object does not necessarily entail the subtraction of its parts. For the argument to work, Cameron (2006:119) notes that we require an additional premise; that every contingent object can be subtracted with all of its parts. With this additional premise, it is easy to see that subtracting all of the concrete objects at a world by subtracting the concrete object that is their mereological sum would be a perfectly legitimate application of the revised argument, but it is an application that entirely removes the process of successive subtraction, as we arrive at the empty world in just one move. I thus reject the first response to the parthood objection.

In accordance with the second view, I am comfortable with the idea that there might be a finite number of subtractable simples that either do or do not compose objects. This prevents any charge of arbitrariness with regards to which things we subtract, as we simply run the argument with the smallest possible unit of mereology. Cameron (2006: 200-201) suggests that in order to avoid an infinity of objects we would need to hold either that there are simples and space is discrete, or that there are extended simples, or that there are only point-size simples that do not compose objects. On the first view, an object has a spatial part at every area it occupies, but space is not infinitely divisible; there is a smallest region of space. Objects thus cannot have an infinity of spatial parts. The second view allows space to be infinitely divisible, but an object does not have a spatial part at every region of space it occupies. Instead, this view takes objects to be wholly located at every region of space they occupy, in the same way as endurantists take objects to be wholly located at every moment they exist in time. In this way, objects can occupy an infinity of spatial regions without being made up of an infinity of spatial parts (Cameron, 2006: 201). The third view is mereological nihilism, the claim that there are no composite objects whatsoever, merely simples arranged

in a particular way. Whilst any of these views is plausible, the third is one to which I am particularly sympathetic, but is somewhat counterintuitive and as such requires a rigorous defence of the sort that I cannot provide here.

Cameron (2007a: 274) objects that such views about a finite number of simples make poor justification of the first premise given that the possibility of a finite number of concrete simples floating in the void is on no stronger an epistemic footing than the possibility of no concrete objects at all, rendering the argument unpersuasive. I think this is mistaken. As mentioned previously, all that is required for the first premise to be accepted is the *possibility* that there are a finite number of concrete simples. Since the possibility of there being no concrete objects is what the proponent of the subtraction argument is trying to establish, the epistemic footing of that position should not be taken to be established at the point of evaluating the first premise. Furthermore, Cameron's point would perhaps carry more weight if acceptance of the possibility of metaphysical simples led directly to the conclusion of metaphysical nihilism, but given that it is possible to accept either doctrine without acceptance of the other, the cost-benefit analysis Cameron performs here is unwarranted.

To reject the metaphysical possibility of there being a finite number of concrete simples along the lines of the argument I presented above, one would have to make one of the following arguments. One might argue that spacetime is necessarily continuous (there is necessarily no 'smallest unit' of spacetime) or objects necessarily *peritend* (have a spatial part at every region of space that they occupy). This would mean that objects necessarily have an infinity of spatial parts. Alternatively one might argue that necessarily, there are composite objects. Cameron, in fact, holds that many metaphysical theses are contingent, including the thesis that there are concrete objects (see 2008b). Cameron (2007b) argues that composition is contingent. Cameron's own views thus appear to commit him to the possibility of

metaphysical simples, and thus to accepting the first premise of the subtraction argument, whatever its epistemic footing. Cameron aside, the ways for rejecting the possibility of simples are weighty metaphysical theses and the debate has not been settled in any case. I think it is therefore reasonable to claim that it is at least some possible world at which spacetime is discrete or objects extend or there are no composite objects, and this is all that is required for the first premise; there *might* be a world with a finite domain of concrete objects.

### c. Objection (B) to Premise (1): Sets

The second objection raised against the first premise arises due to the nature of sets. Sets are generally considered to have identity conditions only to the extent that their members do, and hence one might argue that sets should count as concrete if their members are concrete. For simplicity, consider unit sets. The unit set of  $x$  is the set that has only  $x$  as a member, denoted  $\{x\}$ . If we think, as is plausible, that such sets should count as concrete if their member is concrete, then the existence of one concrete object will generate an infinity of such things (Baldwin, 1996: 233). This is contrary to (1), because it means that there cannot be a world containing a finite number of concrete objects. Take  $x$  to be a concrete object at world  $w$ .  $\{x\}$  will also be a concrete object, as will the set of the unit set of  $x$ ,  $\{\{x\}\}$ , along with  $\{\{\{x\}\}\}$ ,  $\{\{\{\{x\}\}\}\}$ , and so on to infinity.

Baldwin (1996: 233) notes the above challenge to his first premise, and attempts to avoid it in appeal to his criterion of concreteness. He takes the identity of the unit member to be an *intrinsic* property of the set, which also determines the identity of the set. Whilst there can be two exactly similar objects  $x_1$  and  $x_2$ , the unit sets  $\{x_1\}$  and  $\{x_2\}$  are discernable because they have different intrinsic properties. If there are two exactly similar physical objects with separate identities, the sets containing each object will be distinguishable because the identity of the members dictates the intrinsic properties of the sets. The sets are then distinguishable

but not concrete, as they are distinguishable on the basis of their intrinsic properties; the sets are not exactly similar, even though their members are.

Rodriguez-Pereyra (1997: 162) questions whether the identity of the member of a set can really be a property of the set, unless set and member are identical. Instead, he thinks that the property of having  $x_1$  as a member determines the identity of  $\{x_1\}$ , but that this is a *relational*, rather than an intrinsic property, because it involves another particular ( $x_1$ ). This is a problem because Rodriguez-Pereyra (1997: 161) thinks that aspects of Baldwin's argument suggest that he wants the thesis of the identity of indiscernibles to apply only to the intrinsic properties of objects. If two things are identical in their intrinsic properties, then they are indiscernible. A weaker thesis would be to suggest that things are indiscernible if they share all their intrinsic and relational properties, as this would allow two exactly similar objects to exist, so long as they bore different relations to some other object or objects. If this were Baldwin's view, unit sets could count as non-concrete in virtue of their relational properties. On what Rodriguez-Pereyra takes to be Baldwin's view, this path is blocked as objects are concrete if they share the same intrinsic properties and are discernable.

There is a further problem for Baldwin's first premise in relation to sets, noted by both Rodriguez-Pereyra (1997: 162) and Cameron (2006: 198). If having  $x_1$  as its only member is an intrinsic property of  $\{x_1\}$ , then it would seem that being the only member of  $\{x_1\}$  should be an intrinsic property of  $x_1$ . Accordingly,  $x_2$  has the intrinsic property of being the only member of  $\{x_2\}$ . Consequently,  $x_1$  and  $x_2$  are no longer identical; no intrinsic duplicate of  $x_1$  can exist and thus  $x_1$  cannot fail to satisfy the identity of indiscernibles, and is not a concrete object on Baldwin's account of concreteness.

There are some modifications we could make to set aside these problems. Firstly we might reject the claim that the intrinsic properties of sets and objects work the same way. Whilst the

identity of the members is an intrinsic property of a set, objects do not necessarily count set membership amongst *their* intrinsic properties. Objects and sets are different types of entities with different types of intrinsic properties. I see no reason to accept Cameron and Rodriguez-Pereyra's stipulation that they should have similar intrinsic properties. We could then accept Baldwin's solution to the problem.

Alternatively, one might solve the problem by redefining what is meant by 'concreteness'.

David Efird and Tom Stoneham, for example, claim that: 'a concrete object is one which exists at a location in space-time, has some intrinsic quality, and is such that if it has a boundary, it has a natural boundary' (2009: 134). Their aim in that paper is to show that the premises of the subtraction argument can be supported by basic modal intuitions and so they appeal to examples of concrete objects of the sort that there intuitively might have been none; cabbages, kings and ceiling wax as opposed to numbers, propositions and properties (Efird and Stoneham, 2005: 311). The concrete objects have in common the fact that they exist at locations in spacetime, and have some intrinsic qualities. By this definition, sets are abstract.

Thirdly, we could just take the notion of concreteness to be basic without then attempting to define the common features of concrete objects, claiming again that sets are abstract and thus an infinity of them does not pose a problem for the subtraction argument. Finally, we could modify the first premise along the lines suggested by Cameron (2006: 198) to read:

- (1\*) There might be a finite number of concrete objects each of which is not ontologically dependent on some other concrete object and that there be no infinite chain of concrete things such that there is no member which does not depend for its existence on some other concrete thing.

This first clause prevents the existence of concrete sets dependent for their concreteness on a concrete member, because concrete sets would depend on concrete members for their



existence. The second reinforces the fact that there cannot be an infinity of non-dependant things in this world with a finite domain of concrete objects. There are pros and cons to each of the four options I have suggested (rejecting the idea that sets and objects will have similar intrinsic properties, modifying the definition of concreteness, taking it to be basic, or replacing (1) with (1\*)). By replacing (1) with (1\*), the defender of the subtraction argument can remain open about which definition of concreteness is to be employed, and so this may be the most prudent strategy. In this way the truth of Baldwin's first premise is preserved without replacing his definition of what it is for an object to be concrete. This is important as his definition plays a further role in supporting the later premises of his argument. The problem with this modification is that the additional stipulations appear somewhat ad hoc. Nevertheless, there are a number of options that the defender of the subtraction argument may take at this stage to avoid the objections to the first premise.

### **3. The Second Premise**

The second premise of the subtraction argument says that each of the concrete objects in  $w_1$ , the world with a finite domain of concrete objects, might not have existed. This seems intuitively true given that we generally take concrete objects to be contingent things, things that might not have existed. However, we must question whether it is possible for there to be a necessary concrete being, which if in existence would render the second premise of the subtraction argument false. In this section I consider Baldwin's argument for his second premise, claiming that it is unsuccessful. However, I do not think that the failure of this argument is sufficient to prevent the subtraction argument from going through.

Baldwin constructs an argument to establish the conclusion that it is not possible for there to exist a necessary concrete being, and it runs as follows (Baldwin, 1996: 234):

- (2.1) Concrete objects do not satisfy the identity of indiscernibles, and so the identity of a concrete object is not determined by the intrinsic properties that determine what kind of thing it is.
- (2.2) In the case of a necessary being, that its existence is necessary is determined by its intrinsic properties.
- (2.3) For a necessary being, the intrinsic properties that determine its existence also determine its identity.
- (2.4) There cannot be a concrete object whose existence is necessary.

(2.1) says that the identity of concrete objects cannot be determined by their intrinsic properties, which is just a restatement of Baldwin's criterion of concreteness. Given that he thinks that two concrete objects can have the same intrinsic properties and still be discernable, the identity of a concrete object cannot be determined just by its intrinsic properties. (2.2) says that for any necessary being, the necessity of its existence is determined by its intrinsic properties. If a being is necessary, it is intrinsically necessary. Baldwin takes this to be uncontentious, and so does not argue for it. (2.3) says that the identity of a necessary being is determined by the intrinsic properties that determine its existence. There cannot be a concrete object whose existence is necessary, because the identity of concrete objects is not determined by their intrinsic properties, and the identity of necessary objects *is* determined by their intrinsic properties. No object could be both concrete and necessary because that would require that its intrinsic properties both did and did not determine its identity.

The argument seems to turn on whether the intrinsic properties that determine the existence of a necessary being also determines its identity. Baldwin's argument in support of this premise is that the ontological argument for the existence of God invokes the property 'perfection', which implies uniqueness if it implies existence. Similarly, claims Baldwin, a

God whose essence does not determine her identity is less perfect than a God whose identity is determined by her intrinsic properties (Baldwin, 1996: 234-5). His strategy here is to look at one of the best candidates for a necessary concrete being, and show that it is not, in fact, concrete. Baldwin seems unsure that (2.3) is justified by the above reasoning, and so appeals to the ‘familiar deep connections between existence and identity’ (1996: 235). In order to undermine (2.3), we would need to find an example of a necessary being whose identity is not determined by its intrinsic properties.

I think there is an argument we can appeal to establish the above. Omniscience is one of the key attributes the God of classical theism is taken to possess. However, omniscience, if non-vacuous, requires there to be something to be known, and hence requires a relation to something external to God (providing we are not pantheists). If there is something to be known, omniscience requires that God must know it. Omniscience is a non-dispositional property<sup>2</sup> that is instantiated in every instance where there is something to know.

Omniscience is a relational property, because it is a relation to the thing that God knows, something external to him. If God’s identity is determined in part by the fact that he is all-knowing, and being all-knowing is a relational property, then God’s identity is not determined entirely by his intrinsic properties. Part of God’s identity is his omniscience, and omniscience is not a purely intrinsic property. God’s identity is not then determined entirely by his intrinsic properties, and it is possible that God fails to satisfy the identity of indiscernibles. There could be, for example, two Gods that know different things. Perhaps, for example, one exists in time and is able to know tensed facts, and the other exists outside

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<sup>2</sup> It is important that omniscience is taken to be a non-dispositional property here, as if merely dispositional God could be taken to be omniscient without instantiating his omniscience through engagement with something external to him, and thus omniscience could be a purely intrinsic property.

of time and is unable to do so. Both are (arguably) omniscient in the relevant sense, but the two are nevertheless discernable.

In much of the theological literature, the likelihood of anything that allows for the possibility of polytheism being considered acceptable is extremely low! Nevertheless, God is often taken to be a necessary concrete object. Mawson (2008: 36) argues that our intuitive grasp of the concrete/abstract distinction places any person on the concrete side. Given that God, if he exists, is perfectly free, omniscient, morally perfect and has performed actions (such as creation), he is a person, and thus is unquestionably concrete. Mawson (2008) in fact thinks that if God can be shown to satisfy the identity of indiscernibles, then this cannot be the essence of concreteness. It is important to note that for Baldwin's subtraction argument to succeed, it must be impossible for a necessary concrete object to exist. It seems at least possible that God could exist and be a concrete object, and thus premise (2) of the subtraction argument is false. There might be a concrete object which, if it exists in world  $w$ , could not not exist in any world accessible from that world.

In sum, the argument for the impossibility of a necessary concrete object designed to verify the second premise fails at premise (2.3) of that argument. This premise holds that for a necessarily existing being, the intrinsic properties that determine its existence also determine its identity. I claimed that this is not the case, as some of the essential properties of God are not intrinsic but relational properties. Furthermore, theological literature often makes reference to God as a necessarily existing concrete object, and if it is possible that God exists and is such an object, then premise (2) of the subtraction argument appears to fail.

Nevertheless, the subtraction argument is compatible with the mere possibility that there is no necessarily existing concrete object, and so the argument might still be saved for its proponent. So long as we accept (2) as contingent, the argument still goes through. What is

required for this is acceptance of the E axiom (Cameron, 2006: 209):  $\Diamond p \rightarrow \Box \Diamond p$ . This states that if p is possible then it is necessarily possible. It is then necessarily possible that each concrete object might not exist, and thus the subtraction argument can go through.

To deny premise (2) one would have to understand (2) as saying that *necessarily* each concrete object might not have existed, and then prove the possibility of a necessarily existing concrete object. Alternatively, one might argue that it is necessary that there exists a necessarily existing concrete object, and this might be a line many theists would take. Such an argument, however, would take be beyond my purposes here. In the absence of either of these arguments, the second premise should be accepted.

#### **4. The Third Premise**

The third premise of the subtraction argument is the subject of considerable dispute. As Baldwin (1996: 232) formulates it, it reads ‘the nonexistence of any one of these [concrete] things does not necessitate the existence of any other such [concrete] thing’. This is the crucial premise that allows the subtraction to go through. In the first part of this section I introduce E. J. Lowe’s rejection of the third premise. I also briefly discuss his views on the empty set and their relevance to the possibility of the empty world, particularly with regards to the third premise of the subtraction argument. Whilst I cannot discuss my reasons in detail here, I do not adhere to Lowe’s rejection of metaphysical nihilism as it requires accepting controversial theses about the nature of numbers and the existence of universals and sets. In the latter parts of this section I develop a further rejection of the third premise of the subtraction argument.

I first consider some different interpretations of the third premise, discussing what is needed in order to render the subtraction argument valid. In order to avoid ambiguity about the meaning of the premises, I then consider a formalised version of the argument offered by

Efird and Stoneham (2005). I argue that whilst their formulation is valid, it relies on a stronger, and less obviously acceptable intuition than the one that Efird and Stoneham cite in support of their argument. This intuition, I claim, is both too detailed to be considered readily acceptable, and too close to the conclusion of the subtraction argument to render this form of the argument dialectically effective. The same objection can be laid against informal versions of the argument.

#### **a. The Empty World and the Empty Set**

Lowe (1998; 2002) argues against the third premise of the subtraction argument and against the metaphysical nihilist conclusion. His contention is, very briefly, that there are some abstract objects that exist necessarily, and that abstract objects depend for their existence on there being concrete entities. It is thus necessary that there are concrete entities, and metaphysical nihilism is to be rejected. Whilst the world containing only one concrete object ( $w_{\min}$ ) might be possible, the empty world ( $w_{\text{nil}}$ ) is not. This is a rejection of the third premise because it means that at  $w_{\min}$ , it cannot be the case that the nonexistence of the last remaining concrete object or objects (such that the nonexistence of one implies the nonexistence of all) *must* necessitate the existence of some other concrete object or objects. It cannot be the case that these objects be removed and there still be a world, as all worlds contain abstract objects and abstract objects depend for their existence on concrete objects.

Part of Lowe's argument against metaphysical nihilism involves a discussion of the empty set, given that it appears to provide an exception to the claim that sets can only exist at worlds in which their members exist, a claim which is crucial in supporting one of his premises.

Sorensen (2009) claims that most philosophers have been trained to model the empty world on the empty set. Whilst in mathematics the empty set is a widely accepted and much used concept, its existence is interesting and questionable in arguably much the same way as that

of the empty world. I wish to provide an outline here of Lowe's argument against the existence of the empty set, because if his arguments are persuasive to the metaphysical nihilist, he or she must either abandon that doctrine or reject the analogy between the empty set and the empty world.

The empty set is the set with no members, like the empty world is a world with no concrete objects. Lowe (1996: 116) argues that the empty set must be a purely fictional entity since a set only has well defined identity conditions to the extent that its members do. The empty set by definition has no members, and thus cannot be defined or distinguished from 'other' empty sets. Lowe (1998: 254 fn.) says '*many* things have *no* members: what makes just *one* of these qualify as 'the empty set'?' (Italics his). Presumably Lowe's thought is that the set of, for example, flowering plants in my bedroom, males who are prepared to clean our shared toilet, or alcoholic drinks I consumed yesterday, each have no members, and as such are indistinguishable. Which of these, if any, qualifies as 'the empty set'? The answer appears to be that since none of these have any members, none of them can properly be called sets.

Lowe explains that *Mars* cannot be the empty set because it is not a set, and we know it is not a set because it has no members. If something with no members cannot be a set, then there can be no such thing as the empty set; the very idea seems incoherent.

Lowe's argument about sets is particularly interesting because it translates well on to Lewis' rejection of the possibility of an empty world (see appendix). Lewis takes a world to be the maximal mereological sum of things connected in spacetime (Lewis, 1986: 73). If there are no 'things', there can be no world according to Lewis. On such a conception of modality, the third premise of the subtraction argument is to be rejected because it cannot be the case that subtraction takes place relative to  $w_{\min}$ , because the result of such a subtraction could not be a world.

Baldwin (1996: 237) objects to Lowe's claim about the nonexistence of the empty set on the grounds that on an Aristotelian conception of number theory (which Lowe himself adheres to), the existence of the number zero demands that there must be at least one zero-membered set. Lowe bites the bullet here, but claims that the acceptance of the necessity of arithmetical truths (key in Lowe's argument for the impossibility of metaphysical nihilism) is not contingent on acceptance of the existence of 'the number 0'. He explains that intuitive sense can still be made of arithmetical propositions such as ' $1 - 1 = 0$ ', and that 'the thought that 'nothing' denotes a special kind of something is one fit only for the humorous works of a Lewis Carroll' (Lowe, 1998: 254 fn.). Lowe's claim here is controversial, given that the vast majority of number systems today do include a term for zero and take it to be more than merely a placeholder.<sup>3</sup> Whilst I am sympathetic to Lowe's rejection of the need for a number zero and his rejection of the empty set, I think both require stronger arguments than I can provide here. In what follows, I first discuss issues to do with the formulation of Baldwin's third premise before offering an alternative reason for rejecting it.

### **b. Formulating the Third Premise**

Paseau (2002) argues that the wording of Baldwin's (3) is ambiguous as to its meaning, and offers two possible readings of that premise. He then claims that acceptance of either of these readings renders the argument invalid. Here I explain Paseau's contention before considering a response from Rodriguez-Pereyra (2002). Recall Baldwin's formulation of (3), 'the nonexistence of any one of these [concrete] things does not necessitate the existence of any other such [concrete] thing' (Baldwin, 1996: 232).

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<sup>3</sup> The number Zero was first introduced in ancient Babylonian and Mayan civilizations as a placeholder to complete a positional counting system. Before this it was not needed, as nobody ever needed to count zero of anything. It was in India that zero first took on a role as a number in its own right, and was used in calculations and to signify absence. The early Greeks had no symbol for zero in their number system (see Barrow, 2000).



Imagine each of the concrete objects in the finite domain of  $w_1$  is numbered from  $x_1$  all the way up to the last object,  $x_n$ . On the first of Paseau's readings, call it (A), the nonexistence of any one of these numbered objects ( $x_i$ ) does not necessitate the existence of any other of the  $x_i$ . Paseau (2002: 74) argues that this reading is not strong enough to validate the subtraction argument, because all three premises can be true whilst the conclusion is false. It can be true that for any two of the  $x_i$  there is a possible world containing neither one of them without it being true that there is a possible world containing no concrete objects. Imagine that  $w_1$  contains only two objects,  $x_1$  and  $x_2$ . By Baldwin's (2) each of these objects are things which might not exist. By (A) the nonexistence of  $x_1$  does not necessitate the existence of  $x_2$  and vice versa, and so it is possible that neither  $x_1$  nor  $x_2$  exist in some possible world. However, it is possible that in this and every possible world in which this is the case, some other object  $o$ , which was not in the domain of  $w_1$ , does exist, and hence there is no world containing no concrete objects. This counterexample to the subtraction argument renders it invalid on interpretation (A).

If we understand (3) to mean that the nonexistence of any of the  $x_i$  does not necessitate the existence of any other of the  $x_i$  *or any other concrete object whatsoever*, Paseau still thinks there is a problem. It is perfectly consistent with the premises that any one of the  $x_i$  and any other concrete object jointly fail to exist at some world, and there is nevertheless no world containing no concrete objects. The point is that on this reading, the nonexistence of any one of the  $x_i$  does not necessitate the existence of any other particular one of the  $x_i$ , but this does not exclude the possibility that some concrete object, that may or may not be one of the  $x_i$ , comes in to existence preventing the process of subtraction from ever arriving at an empty world.

On the second of Paseau's readings (B), (3) is taken to mean that the nonexistence of any one of the  $x_i$  does not necessitate the existence of *any* of the  $x_i$ . In other words, there is at least

one world in which none of the  $x_i$  exists (Paseau, 2002: 74). However, given that the nonexistence of all of the  $x_i$  is compatible with the existence of our other concrete object,  $o$ , we have a counterexample to the subtraction argument using reading (B) too. It is possible, even on this stronger reading, that all of the premises can be true but the conclusion false because there might be no possible world at which no concrete objects *whatsoever* exist, only worlds at which none of the  $x_i$  exist. Reading (B) fails to exclude the possibility that when none of the  $x_i$  exist, some other object exists in their place. On either reading of (3), there is a counterexample to the subtraction argument and the argument is thus invalid.

It is clear that Baldwin and Rodriguez-Pereyra expect us to interpret the argument more charitably than Paseau allows. After each subtraction we are meant to end up with a smaller domain of objects because taking away one object does not bring any other object in to existence. Eventually we reach a world at which only one object remains, and this too can be subtracted without any other concrete object springing in to existence, because of the conjunction of (2) and (3). Nevertheless, given that Paseau's interpretations are valid, if uncharitable, the ambiguity must be removed from the third premise for the subtraction argument to be successful.

Rodriguez-Pereyra (2002) offers a clarification of (3) with a reformulation of the premise in terms of possible worlds. His reformulation (2002: 172) is as follows:

The nonexistence of any of the  $x_i$  that exist in  $w_1$  does not necessitate the existence of any other concrete object, whether or not these exist in  $w_1$ . That is: for all worlds  $w$  and for all the concreta  $x_i$  in  $w_1$ , if  $x_i$  exists in  $w$  then if there is a world  $w^*$  where  $x_i$  does not exist, then there is a world  $w^{**}$  where the only existing concreta are those of  $w$  except  $x_i$  (i.e.  $w^{**}$  is such that for every concrete object  $y$ ,  $y$  exists in  $w^{**}$  if and only if  $y \neq x_i$  and  $y$  exists in  $w$ ).

Call the above (3\*). It clarifies the intention that no concrete object is necessitated by the nonexistence of one of the  $x_i$ , whether or not that object was present at  $w_1$ . Reading (B) is incorrect, though Rodriguez-Pereyra is rejecting (A) too. The key point is that in  $w^{**}$  the *only* existing concreta are those that exist in  $w^*$ , but the domain of  $w^{**}$  is smaller than that of  $w^*$  because the later includes  $x_i$  whilst the former does not. There therefore must be a possible world at which there exists only one concrete object, and then by (2) and (3\*) this object too can be subtracted without necessitating the existence of any other concrete object, and then we reach a possible world at which there are no concrete objects. It cannot be the case that there is no empty world because by (2) and (3\*) there is always a possible world where the domain of concrete objects is smaller (apart from when we reach the world containing no concrete objects).

Significantly, the claim in (3\*) is much stronger than that in (3); it requires that for *all* worlds at which  $x_i$  exists there is a world at which  $x_i$  does not exist, and no other concrete object is necessitated by its nonexistence. It cannot be that there is any world at which subtraction cannot operate. This stronger claim is necessary in order for the subtraction argument to run its course; to take us from a world containing a finite number of concrete objects to  $w_{nil}$ , the world containing no concrete objects whatsoever. Using (3\*) instead of (3), the subtraction argument is valid. We must now consider whether (3\*) can be supported.

The intuitive point at which (3\*) might fail is in the subtraction of the final concrete object (and any dependents) in  $w_{min}$  in order to arrive at the empty world,  $w_{nil}$ . When applied to  $w_{min}$ , the subtraction argument appears far more controversial than it does as applied to worlds with a greater number of subtractable objects. As Paseau (2006: 154) argues, the debate now shifts to whether  $w_{min}$  is relevantly similar to worlds with more than one concrete objects (or collection of objects such that the nonexistence of one implies the nonexistence of all) with regards to subtraction. If there is no relevant difference, we should draw support

from the plausibility of the argument as applied to worlds with many concrete objects in their domain, and accept that it applies to  $w_{\min}$  in the same way. If the two are relevantly different, then one who is agnostic or rejects the empty world will not be persuaded by the fact that the argument seems plausible at worlds with many concrete objects in their domain.

The way in which we can decide whether  $w_{\min}$  is relevantly similar is by considering the possibility of the empty world. There seems to be no other way in which we might evaluate such a question. The difference that makes the move from  $w_{\min}$  to  $w_{\text{nil}}$  interesting is nothing other than the question of the possibility of metaphysical nihilism, and thus our intuitions about this cannot help but inform our intuitions about whether  $w_{\min}$  is similar enough to worlds with greater numbers of concrete objects in their domain for the subtraction argument to proceed.

It is question begging for the defender of the subtraction argument to appeal to the possibility of an empty world in order to support his argument, as this is the thing he is trying to prove. Similarly, it is question begging for his opponent to claim that as the empty possible world is impossible, the subtraction argument cannot go through. The argument must be evaluated independently from its conclusion. If, however, intuitions about the plausibility of the third premise are actually intuitions about the empty possible world, then the subtraction argument cannot be considered persuasive. If the only way to rebut the potential challenge to the third premise that comes from taking  $w_{\min}$  to be relevantly different from other worlds is to argue that this is not the case because it is possible to arrive at an empty world and thus the third premise must be true, then the subtraction argument is clearly flawed.

There is obviously a delicate balance here, with both sides at risk of begging the question. The anti metaphysical nihilist requires independent motivation for questioning the application of the subtraction argument at  $w_{\min}$  in the first place. This motivation comes from the worry

that one cannot remove the final concrete object from a world and still have a world, and thus it may not be the case that no concrete object is ever necessitated by the nonexistence of a given object. That this is a legitimate worry is apparent from the examples of theories of modality in accordance with which the above is the case (see appendix).

Those who embrace the possibility of the empty world will accept the subtraction argument as supportive of their claim, and those who reject the possibility of such a world will reject the argument with it. It then seems relevant to consider what the reaction will be of one agnostic with regards to the possibility of the empty world. The agnostic, it seems, will have cause to question the subtraction process at the controversial stage of  $w_{\min}$ , being unsure whether it is possible to remove all the concrete objects and still have a world. Given that the only way to motivate the subtraction at this stage is by appeal to the possibility of an empty world, the agnostic will be unable to complete the subtraction process and will not arrive at the metaphysical nihilist conclusion.

As Paseau claims, the subtraction argument (with all its modifications) will be ‘unpersuasive for the agnostic and redundant for anyone who might find its third premise acceptable’ (Paseau, 2006: 154). The subtraction premise seems to have no source of plausibility other than the existence of the empty world, and this, of course, is the thing we are trying to prove. The third premise can only be supported if the conclusion is accepted.

In the next part of this section I consider a revised and formalised version of the subtraction argument, designed to avoid any ambiguity surrounding interpretation of the premises. This revised argument is, I claim, subject to the same problem as presented above, and this version too must be deemed unpersuasive and thus a failure in its aim of substantiating the claim of the metaphysical nihilist.

### c. The Formalised Argument

In order to avoid the problems that I have noted with the first and third premises, Efir and Stoneham (2005) formalise the subtraction argument and claim that it is supported by two basic modal intuitions. They believe their formal version to be valid, sound and persuasive. Their version of the argument has only two premises, the first of which is equivalent to Baldwin's first premise and supported by the intuition that there could be a finite number of concrete objects. Efir and Stoneham have an alternative definition of what a concrete object is at play here, but since it is largely a reaction to the problem of infinite divisibility, which I thought could be adequately solved with appeal to metaphysical simples (see section 2(b) of this chapter) I do not discuss it here. Their second premise appeals to the intuition that 'necessarily, if there are some concrete objects, there could have been fewer of these concrete objects (and no other concrete objects)' (Efir and Stoneham, 2005: 14). This premise replaces Baldwin's (2) and (3). The resulting argument is as follows, where  $E!xw$  is to be read 'x exists at world w':

$$(A) \exists w \exists x \exists y ((E!xw \wedge E!yw) \wedge \forall z (E!zw \rightarrow z = x \vee z = y))$$

$$(B) \forall w_1 \forall x (\exists!xw_1 \rightarrow \exists w_2 (\neg E!xw_2 \wedge \forall y (E!yw_2 \rightarrow E!yw_1)))$$

$$(C) \exists w \forall x \neg E!xw$$

(B) above states that for any world  $w_1$  and for any  $x$  existing at that world, there is some world  $w_2$  such that  $x$  does not exist at  $w_2$ , and for any  $y$  existing at  $w_2$   $y$  also exists at  $w_1$ . (C) is an expression of the metaphysical nihilist conclusion, there is some world at which no concrete objects exist. The key question for Efir and Stoneham is whether or not their formalisation of premise (B) is supported by the above modal intuition.

The intuition that concrete objects are subtractable is, of course, not sufficient in getting us to (B). In the same way as (3) was shown to be insufficient for the validity of the subtraction

argument, the above intuition is compatible with some other object coming in to existence to replace the subtracted object. The modal intuition Efid and Stoneham appeals to tells us that every concrete object is subtractable at some world, but not that every concrete object is subtractable at every world. The intuition offered by Efid and Stoneham in support of their second premise is compatible with there being some worlds at which some concrete objects are not subtractable, so long as those concrete objects are subtractable from some other world.

The second, stronger claim (that every concrete object is subtractable from every world) is firstly not the kind of thing I have an intuition about, secondly and once again depends on intuitions about the empty world. The defender of this formalised version of the argument requires the supporting intuition that every concrete object can be subtracted from every possible world. If this is the case, there is no reason why all the concrete objects cannot be subtracted from any given possible world at once. An intuition this strong and this close to the conclusion of the subtraction argument has no need for that argument, and thus the argument is superfluous.

In section 2(b) of this chapter I rejected Rodriguez-Pereyra's attempt to avoid the problem of the infinite divisibility of concrete objects by stipulating that we can ignore the parts of maximal occupants of connected spacetime regions, subtracting them all together as one object. My claim there was that such a method is too close to the conclusion of the argument to be dialectically effective, as we could just get to the empty world in one step by subtracting all the occupants of spacetime. Similarly, claiming that every object is subtractable at every world is too close to the conclusion of the argument to render it persuasive. If I held such an intuition, I could not fail to think that all of the objects could be subtracted from a world at once, leaving us with an empty world. The subtraction argument is rendered invalid for one who does not hold this intuition, and superfluous for one who does. The agnostic must once

again remain unpersuaded. This formal version of the argument thus does no better than less formal versions in warding off the challenge from dialectical effectiveness.

## **5. Conclusion**

I have argued that Baldwin's version of the subtraction argument requires certain revisions in order to render it valid and sound, most significantly to the third premise. Looking again at the formulation of the argument, I suggested that the versions that are to be considered valid are unpersuasive to anyone not already convinced of the conclusion, because the views needed to support the premises are too close to the conclusion to be held by one who is unconvinced. The subtraction argument thus fails to establish the possibility of metaphysical nihilism.



## CHAPTER 2: THE IMPOSSIBILITY OF THE EMPTY WORLD

### 1. Introduction

In the previous chapter we considered the only major metaphysical argument for the possibility of the empty world. The argument was originally developed as a reaction to papers by Van Inwagen (1996) and Lowe (1996). In the first part of this chapter, I consider the argument of the first of these papers, seeking to establish the extreme improbability of the empty world. I highlight the problems with this paper, and then attempt to find an alternative strategy for establishing the impossibility of the empty world. I consider the conceivability of nothingness, taking inconceivability to be a guide to impossibility. I argue that nothingness cannot be imagined, and that as imagination is as the core of conceivability, the empty possible world cannot be conceived. Given that I am taking inconceivability to be a *prima facie* suggestion of impossibility, we are to claim that it is not possible for there to be world with a finite domain of concrete objects.

### 2. The Improbability of the Empty World

Here I first outline and explain Van Inwagen's argument for the improbability of the empty world and his defences of his premises, considering possible problems with the third and fourth premises in some detail. I then briefly discuss the implications of the metametaphysics Van Inwagen must adopt for his argument to be successful. I conclude by arguing that whilst Van Inwagen's argument might be both valid and sound, its conclusion fails to provide the sort of answer we seek to the question 'why is there something rather than nothing?'

Peter Van Inwagen (1996) makes the following argument for his claim that the probability of there being nothing is 0. He notes that whilst the probability of any impossible event is 0, not all events with a probability of 0 are impossible, given that he rejects the assumption that

there can be infinitesimal probabilities (Van Inwagen, 1996: 99 fn.). Van Inwagen does not defend this assumption, and whilst I think it could be questioned (especially given Van Inwagen's willingness to embrace the concept of infinity), I will follow him in setting this issue aside for the purposes of the argument. The probability of an extremely unlikely event occurring is 'rounded down' to 0, allowing Van Inwagen to speak of it as if the probability were actually 0.

The premises of the argument run as follows (Van Inwagen, 1996: 99):

- (1) There are some beings.
- (2) If there is more than one possible world, there are infinitely many [possible worlds].
- (3) There is at most one possible world in which there are no beings.
- (4) For any two possible worlds, the probability of their being actual is equal.

Spinozism is defined as the view that there is only one possible world (Van Inwagen, 1996: 100).

- (5) If Spinozism is true, then by (1) the probability of there being no beings is 0.
- (6) If Spinozism is false, then by (2) there are infinitely many possible worlds, and by (4) (and the assumption against infinitesimal probabilities) the probability of each possible world is 0.
- (7) The probability of there being no beings is 0.

The first premise is intuitively true; I consider myself to be a being, and I believe that there are many other beings besides me. The second premise assumes that so long as things can vary, logical space contains infinitely many possible worlds, because there are infinite ways in which things can vary. Assuming that there are indeed *infinite* ways in which things can

vary between possible worlds, a view with which I do not wish to argue here, this premise too can be considered supported.

The third premise says that there could only be one possible world containing no (concrete) objects. This was also the assumption shared by the proponents of the subtraction argument. It is hard to imagine how we could distinguish two possible worlds containing no objects. Sorensen (2009) suggests that this is due to modelling the empty world on the empty set. As we saw Lowe arguing in the previous chapter, sets are defined purely in terms of their members, and thus there is no way of distinguishing two sets each with no members; if there is an empty set, there can only be one such thing.

Conversely, Carroll (1994: 64 fn.) claims that there are multiple empty worlds with different laws, for example, an empty world with Aristotelian physics, and an empty world with Newtonian physics. On this line of reasoning, there are presumably infinitely many variations on the empty world, for the same reasons that Van Inwagen thinks that there are infinitely many variations on the non-empty world. Van Inwagen (1996: 101) argues that for there to be two distinct worlds with no beings, there must be a proposition such that both the proposition and its denial are consistent with there being no concrete beings, and that it is very difficult to come up with such a thing. Carroll takes his claim about worlds being distinguishable in accordance with their different laws to hold in worlds where no actual or possible objects actually ever exist, thus providing such an example. The proposition <all bodies move towards their natural place> could be true in the empty Aristotelian world, and false in the empty Newtonian world, even though there are no bodies in either.

The possibility of a scenario such as that outlined above is dependent on the acceptance of Carroll's antireductionism about the laws of nature, whereby laws are non-accidental generalisations made true by nature (Carroll, 1994). Carroll seems to take laws to be some

kind of initial condition in which the world finds itself, and this condition can vary between possible worlds. However, one who holds that laws of nature are merely generalisations from the behaviour of objects would have a good reason for rejecting the possibility of multiple empty worlds. I would consider a world with at which there are no concrete objects but that is governed by a particular system of laws to be further away from nothing than a world devoid of both concrete objects and laws. I think it is thus legitimate to argue that there is at most one world devoid of physical objects *and* laws, and so the third premise of Van Inwagen's argument can be granted, with slight modification along the above lines if necessary. The modified premise would read something like:

- (3\*) There is at most one possible world in which there are neither any beings nor laws of nature.

The fourth premise is considered by Van Inwagen to be the most controversial, and as such I discuss it in some more detail. Van Inwagen defines Reality (for his purposes here) as a fictitious object, and possible worlds as maximally specific and hence mutually inconsistent states of this Reality (Van Inwagen, 1996: 102). A thought experiment involving a computer spontaneously generated by a black hole provides Van Inwagen with an argument for the principle that if a system is isolated, any two of its maximal states are of equal probability. The computer is as likely to come out with a novel written in Urdu on the hard drive as it is to come out with a novel written in French. Given that Reality is an isolated system, and possible worlds are maximal states of Reality, any two possible worlds are of equal probability (premise (4)). In what follows, I consider Van Inwagen's defence of (4) and highlight some problems it raises.

Van Inwagen (1996: 106) quotes Leibniz as an example of one who holds the intuition that nothing is more simple and thus more probable than something, but Van Inwagen combats it

with the conflicting intuition that in a universe containing only two possible worlds, the empty world and our world, the probability of each being actual is 0.5. Van Inwagen's contention is that the simplicity of a world containing no concrete objects should have no bearing on its likelihood. Nonetheless, he questions the suitability of the application of his argument to the relevant cases, suggesting that it may perhaps only apply in so-called 'Tractarian' systems; those in which the same fundamental objects are present whatever state the system is in. The empty world may not be such a system.

We could imagine an empty world as a kind of collection of existential propositions about entities, all of which are false. For example, in that world, the propositions <there are kettles>, <there are dogs>, <there are planets> and <there are unicorns> are all false, whereas in our world, the first three propositions are true, and the last is false. Alternatively, we can picture the empty world as that containing no propositions whatsoever. I think I have an intuition that the latter should be more likely than the former, although admittedly the possibilities are so abstract that my intuition does not seem at all reliable. Van Inwagen himself (1996: 110) questions whether his view is something like the idea that each possible world is composed of the same number of points in spacetime, which can either be occupied or unoccupied. The empty world is that where each point is unoccupied, and this seems no more likely than that at which any given number of points are occupied. A more suitable picture seems to be a world with some spacetime points versus a world with no spacetime points, and there perhaps the latter is more probable. This will of course depend on our view of possible worlds. Van Inwagen is right to question the application of his principle to non-Tractarian systems, and my intuition tells against him; there is a significant difference between the probability of things being arranged in a certain way in an isolated system, and that of there being any things at all. If the empty world is possible at all, it might well be more likely than any given non-empty world.

If we choose to accept Van Inwagen's claim that the probability of the empty world being actual is the same as the probability of any other world being actual, there will be far reaching implications for the practice of metaontology. Parsimony is generally considered a highly prized ontological virtue. Ockham's razor warns us not to posit entities beyond necessity, and as such it is generally assumed in ontology that, all other things being equal, one should prefer a theory that posits less entities, or types of entities, than its rivals. The merits of simplicity are often taken to be an obvious theoretical virtue; the more parsimonious theory is more likely to be true (see Baker, 2010). This sort of common assumption seems to go against Van Inwagen's claim that the most simple possible world, containing no entities and no types of entities, is no more likely to be actual than any other world. If metaontology teaches us to expect things to be simple, why should we abandon this principle at the level of possible worlds?

I turn now to my third and final objection to Van Inwagen's argument. Given that there are infinitely many possible worlds, and only one empty world, Van Inwagen concludes that the probability of the empty world being actual is 0. The probability of the actual world being non-empty is presumably 1, assuming Van Inwagen's rejection of infinitesimal probabilities. However, the probability of our world, the actual world, being actual, is 0. On Van Inwagen's account, our world is just one of the infinite number of possible worlds, as is the empty world. As such our world has no more chance of being actual than the empty world does, they are both 'as improbable as anything can be' (Van Inwagen, 1996: 99). Nonetheless, our world is actual. Van Inwagen's argument might succeed in showing that the empty world being actual is extremely unlikely, and thus it is overwhelmingly probable that there would be something rather than nothing. However, it is also overwhelmingly probable that our world not be the actual world, and thus the force of the argument is somewhat undercut. It is unsatisfactory to answer the question of why there is something rather than nothing in appeal

to the extremely low probability of there being nothing, when the actual world is equally unlikely. Nothing turns out to be just as likely as the actual world is.

If we choose to look at the probability of a world that contains no concrete objects, we find that it is overwhelmingly likely that such a world is not actualised. We might, instead, choose to consider the probability of a world at which there is nothing but one elephant, or there are only three things, each of which is green, or a world at which everything is exactly as we find it in our world. Each of these worlds has a unique feature with which we could run Van Inwagen's argument, concluding that because it is the only one in an infinite number of possible worlds to have that feature, the probability of our world being actualised is 0. Every one of these worlds is as unlikely as the empty world to be actualised. One of these worlds, however, was actualised.

When we ask 'why is there something rather than nothing?' we are looking for an answer that relates directly to the distinguishing feature of the empty world; the fact that it contains no concrete objects. Such an answer goes deeper than mere probability, and thus I find Van Inwagen's probabilistic answer to the question unsatisfactory. Whilst it is true that the empty world is extremely improbable, it is no more improbable than any other world. We find that there is no special reason for the non-actuality of that world over and above the non-actuality of any other world, and thus we have not received a satisfactory answer to the question with which we started.

One might seek to explain the actuality of our world with appeal to something like God, an agent who has reasons for making this extremely improbable world actual. Such a path, however, is closed to Van Inwagen, whose argument for premise (4) required that his 'Reality' be a closed system. On Van Inwagen's model, there appears to be no determining which world is actualised; it is purely an exercise of luck or chance. Our world and the empty

world and all other worlds thus remain on equal footing with regards to their probability of being actual, and thus the question ‘why is there something rather than nothing?’ is given the same status as ‘why is our world the actual world?’, but neither are adequately answered.

Van Inwagen’s third premise needs modification to avoid the objection from the possibility of multiple worlds with no beings, and ensure that the argument appeals only to the ‘emptiest’ of these worlds. The fourth premise of his argument is questionable in that it appears to apply only to Tractarian systems. Furthermore, it is in conflict with the standard practice in ontology of favouring the more parsimonious theory and thinking it more likely to be true. Even setting these objections aside, the conclusion of Van Inwagen’s argument fails to adequately answer the question that was his starting point; ‘why is there something rather than nothing?’ In the next section, I develop an argument designed to answer that question by establishing the impossibility of the empty world.

### **3. The (In)conceivability of Nothingness**

Van Inwagen’s argument purports to show that the empty possible world is near enough impossible, that we should expect that there should be something rather than nothing. Lowe’s argument, which I have mentioned but not discussed in detail, argues that the empty world is impossible because there are necessarily existing abstract objects (i.e. abstract objects that exist in every possible world) that depend for their existence on the existence of concrete objects. Here I present a third strategy for arguing against the possibility of metaphysical nihilism, by claiming that an empty world is, in fact, inconceivable, and that as inconceivability is the best guide we have to impossibility, we should think that the doctrine of metaphysical nihilism is false; as the empty world is inconceivable, it cannot be possible. In this section, I first consider the relationship between conceivability and possibility, before looking in some detail at what would be required to imagine the empty possible world. If



propositional imagining is taken to be at the core of conceivability, then what is imaginable will carry a lot of weight in considering what is possible. I argue that the empty world cannot be imagined, and nor can it be conceived of. This should lead us to conclude that the empty world is impossible. I then consider some of the implications of suggesting that the empty world is in fact inconceivable.

### **a. Conceivability and Possibility**

Conceivability accounts of modality take conceivability and/or inconceivability to be our central source of modal knowledge. My argument here makes use of this account of modality. Whilst some theorists take conceiving and imagining to be very similar, others have considered conceivability to be wider than imagination (Vaidya, 2010). In what follows I consider both possibilities, though I am more sympathetic to the former account. I draw mostly on the work of Yablo (1993) as he offers a thorough and clear epistemic account of conceivability. For the sake of argument I largely accept Yablo's account, as to provide a detailed defence would take me beyond the scope of this dissertation.

Much of the literature on conceivability accounts of modality is focused on the connection between conceivability and possibility. What is needed in my account is a link between inconceivability and impossibility, which is not necessarily uncovered in uncovering a connection between conceivability and possibility.<sup>4</sup> Nevertheless, many philosophers do hold that inconceivability at least provides evidence of impossibility (Vaidya, 2007). To claim that what is inconceivable is *always* impossible would be a very strong statement. I do not wish to claim here that inconceivability *entails* impossibility. I cannot here defend a link between inconceivability and impossibility, and thus I adopt the weaker and more plausible evidential

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<sup>4</sup> See, for example, Murphy (2006), who argues that whilst the reliability of inconceivability as a guide to impossibility implies the reliability of conceivability to possibility, the converse is not the case.

version of this thesis; that inconceivability provides evidence of impossibility. Given that I do not endorse an entailment relation, my argument, if successful, does not prove the falsity of metaphysical nihilism. It does, however, provide evidence against that position.

Yablo (1993: 4-5) claims that Hume had an analysis of conceivability in terms of possibility, demonstrated in the famous passage ‘whatever the mind clearly conceives, includes the idea of possible existence’ (Hume, 1968: 32, cited in Yablo, 1993: 5). Yablo uses conceive and imagine interchangeably here, stating that ‘to conceive or imagine p is ipso facto to have it seem or appear to you that possibly, p’ (1993: 5). Nichols (2006: 238 fn.) understands standard accounts of conceivability as taking propositional imagining to be at the core of conceiving, and indeed this seems to be the view of the majority of people in this field. As mentioned previously, conceivability is sometimes taken to be wider than imagination, and whilst in most cases what can be conceived of can also be imagined, there are some cases where we can fail to imagine some proposition, but can nevertheless conceive of it. Such propositions seem possible even though they are unimaginable. I consider the possibility of imagining the empty world in such a way later in this section.

Yablo (1993: 5) employs the slogan ‘conceiving involves the appearance of possibility’. He continues to exploit the analogy with perception, but holds that whilst the truth conditions for perceiving that p include the condition that p, the truth conditions for conceiving that p include that possibly p. To find p conceivable is to be in a state that is veridical only if p is possible, and moves one to believe that p is possible (Yablo, 1993: 7). Conceiving of p is propositional imagining that p; imagining a world at which p is said to be a true description. Conversely, we can state that p is inconceivable if we cannot imagine any world that we do not take to falsify p (Yablo, 1993: 29). If for every world we can imagine, none of those worlds can be taken to verify p, then p is inconceivable. In other words then, nothingness can

be said to be inconceivable iff we cannot imagine any world at which it is true that there is nothing. It is clear here how close we have come to the arguments of the previous chapter. Much of that debate centred on whether or not the empty world was conceivable, and ultimately I rejected the subtraction argument on the grounds that it would fail to convince anybody not already persuaded that the empty world was conceivable. Similarly, we need to have shown that the empty world is inconceivable in order to provide a positive argument for its impossibility.

Given that propositional imagining is taken to be the core of conceivability, I begin with an account of imagination, and the implications of the standard theories for imagining nothingness. I argue that we cannot imagine an empty possible world because attempts to imagine nothing are doomed to failure. I consider an argument from Henri Bergson that highlights the importance of the agent in perception, thus precluding the possibility of properly imagining nothing. I then argue later that the way in which conception may on some accounts be thought to go beyond imagination does not legitimise the claim that we can conceive of an empty possible world, because it makes appeal to the subtraction argument in an unacceptable way.

## **b. Imagination**

Unhappily, many of us will have experienced an empty fridge, a room with ‘nothing’ in it, perhaps even been in a desert where there is ‘nothing’ for miles. But there is still sand and sun, air, space, time and ourselves. As a simple thought experiment, try now to remove all these things from your imagination. I am left imagining a black empty space, and this seems to be the closest I can get to imagining nothingness, though it is far from that target. I cannot imagine even a pocket of nothingness, let alone an entire empty world. On most conceptions, something that exists in space and time cannot rightly be considered to count as nothingness.

Even the absolutist about spacetime surely cannot consider something with colour to be nothing. Attempting to remove this black space from my imagination is futile. The best I can do is to focus it to a single dot, but I cannot imagine a point without extension, and as Lewis (1986: 74) points out, hardly anything is still something. We can understand that true nothingness cannot be a ‘thing’ in the same way that chairs and tables are things, but we are unable to imagine this lack of all things, especially when we try to also imagine away the space within which the ‘things’ are usually contained.

A number of similar arguments were made in the early 20<sup>th</sup> century by Henri Bergson. Bergson was interested in the question of why there is something rather than nothing, and the ‘mysterious grasp’ that he took nothingness to hold over existence.<sup>5</sup> He set out to prove that the idea of nothingness is merely a pseudo-idea, and the problems associated with it pseudo-problems. One of his arguments is for the impossibility of imagining nothingness.<sup>6</sup> To imagine nothingness, claims Bergson, is to have a sensory representation of it (1911: 293). This is in line with contemporary accounts of the imagination, and it follows that to be imagining nothing, we must be having no sensory representations at all. This, Bergson thinks, is impossible, as we are always aware of our own existence.

We cannot imagine nothing because in order to be imagining, we must be existing. Bergson claims that even if we succeed in extinguishing all conscious sensation, we will become conscious of the fact that we have succeeded in our attempt. We are aware that we have successfully imagined away our own consciousness, and are now perceiving ourselves ‘from without’. We cannot prevent this perception and have thus failed to imagine nothing

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<sup>5</sup> Bergson feels the pull of thinking of existence as a conquest over nothingness, that ‘the full is an embroidery on the canvas of the void’ (1911: 291). Nevertheless, he feels that being cannot hang on non-being, and seeks to resolve the tension in his thoughts in his discussion of nothingness.

<sup>6</sup> Bergson’s arguments are not framed in terms of possible worlds. In this section I mostly follow his terminology and tend not to talk explicitly about possible worlds, though what I say can be thought about in those terms.

(Bergson, 1911: 294). Whilst I do not adhere to Bergson's distinction between perceiving from within and from without, I think his general point is correct. It seems to me that one's self perception is necessarily from within, and that self-consciously perceiving one's attempt to annihilate oneself is simply a failure to do the later. However, if imagination is having a sensory representation then it requires an agent to do the imagining, and as the agent cannot be removed by the exercise of his or her own imagination, nothingness cannot be truly imagined.

In a similar vein, Carlson and Olsson cite Keith Lehrer in his claim that with regards to one's belief in one's own existence, 'it is plausible to affirm that I cannot possibly fail to believe it' (Lehrer, 1990: 48, cited in Carlson and Olsson, 2001: 220). In order to doubt the existence of all concrete objects, one must also doubt the existence of oneself. Lehrer's irresistible beliefs are those where it is logically necessary that if p, then the subject S believes that p (Carlson and Olsson, 2001: 219). If I exist, then it is logically necessary that I believe that I exist. Carlson and Olsson (2001: 220) suggest that the above means that I cannot even *hypothetically* doubt my existence, as to do so would mean imagining myself to be in a belief state other than the actual one, which I possess necessarily given that I must exist in order to hold any belief states. If this view is correct, then imagining nothingness is impossible as I cannot even imagine myself to be in a different belief state to the one that I necessarily possess. Metaphysical nihilism is thus inconceivable and the question of why there is something rather than nothing does not arise (Carlson and Olsson, 2001: 220).

One might respond to such a view by pointing out that it has the consequence that nobody can imagine a possible world at which they do not exist. In fact, this is not such a bullet to bite. Though I can talk about possible worlds at which I do not exist, when I actually try and imagine them I find I cannot. In imagining such worlds it is as if I am perceiving them; I 'see' in my mind's eye my friends, family etc., but not myself. In doing so, however, it is as if I am

in a sense present in order to perceive these things. It is as if I am invisible, rather than absent. Restrictions on space prevent me from developing these ideas here, but I think Carlson and Olsson's suggestion that hypothetical doubt concerning one's existence is impossible is at least plausible.

In order to elucidate more clearly the role of imagination in conceivability, I will briefly consider theories of imagination in the current philosophical and psychological literature.

Broadly, there are two such theories. The first view, in the tradition of Hobbes, Berkeley, and Descartes takes imagination to be mental imagery. Imagination is like a weaker kind of sense perception (see Kind, 2005). This seems to be the account to which Bergson adheres.

Proponents of the second view deny that mental imagery plays an essential role in imagination. The most common type of such a view is the experiential theory (Kind, 2005).

Vendler (1984, see Kind, 2005) takes imagination to be a type of vicarious experience, either objective or subjective. Subjective imagination is, for example, imagining swimming in cold water. In this case one imagines feeling cold, the movement of the water, its taste and its smell. Objective imagination is imagining oneself swimming in cold water; imagining seeing oneself try to stay afloat. Similarly, we can objectively imagine somebody else doing the swimming.

The above seems to map well on to Bergson's distinction between perception from within and from without. We can subjectively imagine away each of the things in the world, but if we succeed in imagining away even our own conscious experience, we are left objectively imagining ourselves in such a position. Kind (2005) explains that Vendler argues that objective imagining is actually a special breed of subjective imagining, because in the former case we imagine ourselves to be having the experience of, for example, watching somebody swim in cold water. Whilst subjective imagining is experiential because we need to be able to envisage what it is like to be cold etc, objective imagining is also experiential because we

need to know what it is like to watch somebody swim. Such an argument accounts for why I expressed discomfort with Bergson's internal/external distinction; the latter is just a special breed of the former.

On the image based account of imagination, we should expect to be able to imagine looking at, for example, an empty room, because this is the type of 'nothing' we can have an image of. Given that I cannot think what actual nothing would look like, I don't see how I could have an image of it. We saw previously that attempts to form an image of nothing are unsuccessful. Similarly on the experiential account, we can experience nothingness only in the context of there being nothing on the shelves, or nobody in the room. We are blocked by ever experiencing nothingness proper, in the sense of the empty world, by the fact that we must exist in order to have the experience, and so on an experiential account we should not be able to imagine nothing. Where nothing is, we cannot be. We cannot have a sensory representation of nothing, as we cannot imagine ourselves out of the sensory impressions that come with existence. Unlike cases where we can maintain our sensory impressions and at the same time imagine something else, nothing can never be imagined because we can never reach the stage of experience that would then allow us to imagine it. It seems then that Bergson's argument about imagining nothing is essentially correct, and we are fundamentally unable to do so.

The options above do not exhaust philosophical accounts of the imagination. Yablo, for example argues that imagination is either 'propositional' or 'objectual', rejecting image-based accounts (1993: 27). Propositional imagining, he says, is imagining that there is a tiger behind the curtain, whereas objectual imagining is imagining the tiger. The latter, he argues, has representational content, whereas the former has alethic content (can be evaluated in terms of truth or falsity). Propositional imagination is imagining a situation in which a certain proposition holds, a situation in which there could be nothing, for example. It is imagining a

situation at which the proposition <there are no concrete objects> is true. Objectual imagining would be imagining 'nothing' itself; having some sort of representational experience of nothing. The latter case seems more like the type that Bergson addresses, and more related to the image based accounts and thus subject to the arguments I have presented.

Yablo takes propositional imagination to be the core of conceivability, but order to imagine an empty world in the propositional sense, we must be able to be able to imagine an empty world in the objectual sense. Whether we can imagine a situation at which the proposition <there are no concrete objects> is true depends on whether we can imagine a world at which there are no concrete objects. We have no other means of evaluating the alethic content of the proposition (if we had experienced no concrete objects, we would be able to imagine it).

Yablo (2003: 27) makes a similar point with reference to his tiger. Imagining the tiger behind the curtain (propositional) requires us to imagine the tiger (objectual) and imagine it as behind the curtain.

This also relates back to the theories of subjective and objective imagining. In the same way as objective imagining seems to require some subjective experience, propositional imagining requires objectual imagining. Whilst the different names for the terms are confusing, objectual imagining on Yablo's account seems to operate in a similar way to Vendler's subjective imagining, and both require the agent to have some sort of representational experience of the thing to be imagined. This experience does not have to be direct; it can be constructed out of representational experiences via mechanisms such as association. I can, for example, imagine pink elephants because I have experience of the colour pink, and I have perceived an elephant. By combining these two elements I can imagine a pink elephant. Given that nothingness cannot offer any such an experience, to imagine nothing is impossible.



One might respond that this account of conceivability proves too much, and has the unwelcome consequence that objects that we typically think of as conceivable turn out to be inconceivable. Take numbers as an example. If it is true that in order to be able to conceive of numbers we must be able to have some representational experience of them, then it seems we should not be able to conceive of numbers. In the same way as I can have representational experience of there being ‘nothing’ in the fridge, in the sense of there not being any food in there, I can experience ‘five’ in the sense of five apples. In neither case do I have direct representational experience of the thing to be conceived, and so on the account I have offered, numbers are inconceivable.

In fact, the above is only a problem if we think of numbers as abstract entities.

Constructivists, empiricists and fictionalists about numbers will not be affected by the above argument. Given that there are deep metaphysical and epistemological problems with understanding numbers as abstract entities, and many ways in which we can understand and make use of numbers without considering them to be abstract, I am happy to reject an abstract conception of numbers and hence assume that my analysis of conceivability is unaffected by this challenge. In fact, it is unclear even that the analogy with numbers is sustainable. The proponent of such a challenge must claim both that numbers and nothingness are relevantly similar, and that numbers are conceivable in order to claim that nothingness is conceivable. The burden of proof is then on him or her to explain both how numbers parallel nothingness, and how numbers are conceivable.

There are a number of reasons why we are unable to imagine nothingness. Firstly, when we attempt to imagine nothing we find it to be far more difficult than we might first suppose, finding ourselves imagining something very small, or a space that whilst it contains none of the usual objects, still has colour and extension. Secondly, In order to be imagining something we require perceptual experience of that thing, whether we adhere to an image

based, experiential or propositional account of imagination. In the case of nothing, we require *no* perceptual experience. Given that our nature is such that we are always undergoing some sort of perceptual experience, we can never be in the necessary state. This prevents us from having the propositional imagining of nothing that is at the core of the conceivability of nothingness, because we can only have propositional imagining of something if we have had some sort of subjective experience of it that allows us to imagine a situation in which we can evaluate the relevant proposition in terms of truth or falsity. Additionally, if it is the case that belief in one's own existence is an irresistible belief then it is impossible, even hypothetically, to hold an alternative belief. If we cannot even hypothetically doubt our own existence, then we cannot ever imagine a world in which there are no concrete objects as we will always believe ourselves to be existing.

### **c. Conceivability and the Subtraction Argument**

I suggested earlier that on some accounts of conceivability, conceivability is taken to be wider than imagination. In cases where we can conceive of something without being able to imagine it directly, we require some sort of rule or procedure for constructing it (Gale, 1976: 106). I argue here that the only procedure we have for constructing a concept of the empty possible world goes via the subtraction argument, rendering this attempt to conceive of nothingness viciously circular. The only way that we could conceive of things that we have not experienced and thus cannot imagine, is to construct them out of things that we have experienced. This is in line with the standard empiricist model of concept acquisition, whereby all concepts are copies of sensory representations assembled via simple cognitive mechanisms, such as association (Margolis and Laurence, 2006). By associating things that we have perceived and thus can imagine, we can conceive of things beyond our experience, but only things that can be analyzed in terms of their basis in experience.

A classic example is Descartes' 1000-sided shape. Whilst we cannot directly imagine a shape with 1000 sides because we are unable to hold such a thing in our imagination at one time, we can conceive of this shape, and we seem to know that such a shape is possible. Having never directly experienced any shape that recognisably has 1000 sides, we need some rule or procedure for constructing the possibility of such a shape out of things that we have experienced. We know that adding an extra line (with certain other conditions) to the perimeter of four-sided shape makes it a five-sided shape. Adding another in the same way makes it 6-sided. There is nothing in our experience to suggest that this process cannot be repeated to create a 1000-sided shape, and shapes with an even greater number of sides.

Similarly, in order to conceive of nothingness (granting that it cannot be directly imagined) we need a rule or a procedure for constructing it. Given that we cannot imagine an empty world directly, we need to be able to build a conception of it out of things we can imagine. If we were able to imagine a local pocket of nothingness, we could extend this to the completeness of a possible world. It seems, however, that we cannot properly imagine nothing. We can imagine, for example, an empty fridge, but we noted earlier that this is not the right kind of nothing, and doesn't seem able to get us to the right kind of nothing. It is not just attempts to imagine a whole empty world that fail, but attempts to imagine any pocket of nothing at all.<sup>7</sup> The right kind of rule for arriving at the empty possible world seems to be the

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<sup>7</sup> We should note here that space, vacuums and other 'voids' in nature are never perfectly empty. Whilst the vacuum of space comes extremely close to a perfect vacuum, it is not completely devoid of particles. The most sophisticated attempts to create a vacuum continue to fail because at the quantum level, there are constant fluctuations of 'virtual particles'. Quantum mechanics implies that the kinetic and potential energies in a vacuum cannot simultaneously be zero. It takes time to measure the energy within the vacuum, and thus the energy of the vacuum cannot be determined over short timescales, and pairs of virtual particles can exist briefly before annihilating. The minimum sum of the kinetic and potential energies in a vacuum is known as the 'zero point energy' of the vacuum, and it is not zero (Close, 2009: 102). In fact, the zero point energy of a vacuum is infinite. A truly perfect vacuum

subtraction argument; for each concrete thing, imagine that it does not exist. This we seem able to do. I can easily imagine an apple, and then imagine a situation in which the apple is no longer there. What I cannot seem to imagine is a situation where the space that the apple previously occupied no longer existing.

In the case of the subtraction argument, perhaps we can conceive of worlds with smaller and smaller domains of concrete objects. At least, it seems possible that there could be worlds with smaller domains of concrete objects, this much was granted in the previous chapter. The problem was that we were unsure whether the rule for getting to conceive of smaller domains was applicable at  $w_{\min}$ . We don't have consistent intuitions about the possibility of the empty world. There is a circularity here. In the subtraction argument there is implicit appeal to the conceivability of nothingness in order to support the argument. This appeal is unjustified, because it is unclear that nothingness is in fact conceivable. Given that we cannot clearly imagine an empty possible world, we might attempt to construct one in appeal to the subtraction argument. This strategy is doomed to failure and circularity, because the failure of the subtraction argument was due to the agnosticism about the conceivability of nothingness. Nothingness is inconceivable whether we collapse the distinction between propositional imagining and conceivability or not.

The proponent of the subtraction argument will reject the above line of argument, claiming that they can conceive of an empty world via the subtraction argument. My claim in the previous chapter was that the intuition that allows for the continuous process of subtraction is, in part, an intuition about the possibility of the empty world. If this is the case then one

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would be completely empty of energy and particles, with a zero-point energy of zero. Such a thing does not, and so far as our current physics tells us, cannot exist in the actual world.

who is agnostic about or resistant towards the possibility of the empty world will be unable to complete the process of subtraction, and thus the subtraction argument will be unable to aid them in conceiving of that world. At this point we may seem to have a tie, with the proponents of the subtraction argument claiming to have a procedure for constructing the empty world and their opponents rejecting that procedure.

If it is true that the intuitions supporting the subtraction argument rely on intuitions about the empty world, we should reject the claim from the arguments proponents that they are able to complete the process of subtraction. If the subtraction argument is unsuccessful without an intuition in favour of the conceivability of the empty world, it is viciously circular to attempt to construct the conceivability of the empty world via the subtraction argument. For anyone agnostic about the conceivability of the empty world, the subtraction argument can provide no help.

Whilst we may appear to merely have a clash of intuitions here, I claim that the intuition that defenders of the subtraction argument claim to have about the possibility of an empty world is unwarranted, and have tried to show why this should be the case. Even if this is rejected, and defenders of the argument insist that they do have defensible intuitions about the possibility of an empty world, the fact that the argument cannot persuade the agnostic means that the onus is still of the metaphysical nihilist to support their claim. The agnostic has good reason to think that the empty world is inconceivable, and to accept that inconceivability is evidence of impossibility.<sup>8</sup> Imagining an empty world is impossible; we cannot imagine nothing. If conceiving of the empty world means having a rule or procedure for constructing it, and that rule is the subtraction process then this too is doomed to failure. The link between

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<sup>8</sup> There is a distinction to be made between finding something inconceivable, and merely failing to conceive of it. I hope to have provided arguments that will persuade the agnostic that the empty world is an example of the former case.

inconceivability and impossibility is not one of entailment, but the fact that something is inconceivable is at least evidence suggestive of its impossibility.

#### **d. Accounting for the Inconceivability of Nothingness**

In this part, I discuss a perceived problem for my claim about the inconceivability of nothingness. At this point in my argument, I am claiming that nothingness, and with it the empty possible world that is my focus here, is inconceivable. This very claim raises an interesting paradox. Throughout my work here I have been referring to nothingness and to the empty world as if any reader would understand what I am referring to, but now I am claiming that not only is there no nothing to which one can refer, but that the very idea is beyond conceivability. Given that we take concepts to be the constituents of thought, how can we truly claim that something is inconceivable?

Drawing a parallel between actual and potential infinity, and metaphysical nihilism and our everyday encounters with absences, I seek to substantiate my claim that nothingness is inconceivable without rendering my own discussion meaningless. I begin with a very brief discussion of some of the similarities between nothing and infinity before explaining the distinction between actual and potential infinity and how I take that distinction to be relevant in a discussion of nothingness. I suggest that our everyday understanding of ‘nothing’ is different, though related, to the sense of nothing under discussion here. It is this difference that allows us to speak meaningfully about nothingness, even though in the sense of the empty possible world nothingness is inconceivable.

Nothingness and infinity are intimately related. Both are riddled with paradox, yet large parts of mathematics and physics are seemingly built on their acceptance. Neither has a concrete referent in the world; we can’t point at a completed infinite series, and modern physics tells us that there is no such thing as a perfect vacuum, a true void (Close, 2009:4). From the time

of the Greeks, thought about nothingness has affected thought about infinity, and vice versa. It will be helpful here to introduce a distinction first made in Aristotle, between what we can call actual and potential infinity. Aristotle found powerful arguments both for and against the infinite, and was troubled by the observation that ‘neither alternative seems possible...clearly there is a sense in which the infinite exists and another in which it does not’ (Aristotle, no date: book 3, chapter 6).

An actual infinity is a completed infinite series, perhaps best understood in appeal to sets. The set of the natural numbers, for example, can be understood as an actual infinity. If, however, we try to count to infinity, we know that we will fail. Even if our lives were without limit, we could never finish our counting because we can always add one to whatever number we come to; an infinite series cannot be traversed. When we are counting it seems that numbers are potentially infinite. The numbers tend towards infinity, but will never arrive there. An easy way to make the distinction is to say that an actual infinity exists all at the same time, whereas a potential infinity exists over time. According to Aristotle, something can be infinite providing it is not infinite all at once. A non-expanding space, for example, if it were infinite would be *actually* infinite because it exists all at one time. Time however, does not exist all at once; it is *potentially* infinite (see Moore 2001: 39). It is not possible for something potentially infinite to be actually infinite. Aristotle rejected the idea that an actual infinity could exist in reality.

In what follows, I argue that we can use the distinction between actual and potential infinity to help suggest an explanation for how we talk and think freely about something I have argued is inconceivable. There are examples of inconceivable things that we can and do speak easily about, especially when doing philosophy. Square circles, for example, are inconceivable and yet understandable. We know that something cannot at the same time be

both circular and square; the two are mutually inconsistent. Nothingness, however, seems to be of a different breed of inconceivability. The square circle is defined as having two incompatible properties, whilst nothingness appears to have no internal contradictions. Whilst we still understand what nothing must be, it is inconceivable in a deeper and less obvious sense than the inconceivability of the square circle. The same sense of inconceivability is present in the notion of actual infinity, and my problem here similar to that encountered by A.W. Moore in his book *The Infinite*.

Moore identifies an important paradox, arising from our seeming ability to have grasped the notion of infinity as that which is ungraspable, to define it as that which is by definition beyond definition (Moore, 2001: 12). We know that infinity is boundless and endless, necessarily beyond our finite experience and riddled with paradoxes that cannot be overcome. Nevertheless, we know that this is the case, and it is odd that we should be able to know anything about something so incomprehensible. Our urge to acknowledge the infinite comes about, according to Moore (2001: 225) as a reaction to the metaphysical finitude to which we as human beings are subject. The solution as Moore perceives it is to deny that there is anything to be grasped, 'it is just that self-conscious introspection leads me to an insight which I have an urge to express by applying my Idea of the infinite directly to reality. But I must not do this. The insight is in fact inexpressible' (Moore, 2001: 225). According to Moore then, we have a concept of the metaphysically infinite (where the metaphysically infinite is to be understood as relevantly similar to what I have termed actual infinity) but it has no possible direct application to reality (Moore, 2001: 222).

Moore holds that the truly infinite does not and cannot exist as a unitary object of thought (2001: xv). This is much the same point as I seek to make about nothingness. Nothing cannot truly exist in thought or in reality. In making this claim, I am faced with a serious problem; how can I affirm that nothing cannot exist in thought if nothing cannot exist in thought? What



I am attempting to say must surely be meaningless. I maintain that a solution to this problem may be found by making a distinction similar in some ways to the distinction made between actual and potential infinity. In the same way in which we know in some limited sense what is meant when we talk about the infinite, we know what is meant when we talk about the empty world. The distinction between potential and actual infinity marks out the difference between what we can and cannot conceive of. We have a rule for constructing potential infinity; you can always add one more. We cannot have a rule for constructing actual infinity; it cannot be traversed. We can have propositional imagining of always adding one more to a series of things. Not so for a completed infinite set, and the case of nothingness strikes me as similar. The fact that we can understand what absolute nothingness must be suggests that it is a problem of conceivability rather than understanding; it seems not that our cognitive powers are insufficient for appreciating the complexities of nothing, but that it is inconceivable due to its very nature.

In everyday use, the word 'nothing' almost always appears in a given context. 'There is nothing in the fridge' generally means 'we need to go shopping', and not 'there is a vacuum in the fridge'. 'Oh, nothing really' is a common answer to the question 'what did you do at the weekend?' It means 'I didn't do anything interesting'. In the way it is usually used, 'nothing' seems to be understood as the lack of something that we expected to find. In the fridge we expected food, at the weekend we expected something interesting to have happened.

We have a concept of what it is to lack something, so perhaps we can explain our appearance of having a concept of nothingness as universal lack of what we expected to find. The idea of total absence could perhaps be formed from individual instances of the absence of a particular thing, but this does not seem a promising strategy for conceiving of the empty world. The view I have outlined is a version of the attitudinal theory of negation, which holds that rather

than perceiving absence, we perceive some positive reality that logically precludes what we expected to find (Gale, 1976: 107). The idea is that we only really perceive the positive existence of something, and cannot perceive the lack of anything. When we perceive an absence, what we actually perceive is some positive reality in place of what we expected to find. Instead of finding food in the fridge, I find air. Instead of an exciting weekend, it was filled with mundane chores.

Gale (1976: 60-61) claims that the above thesis proves too much. If negative events exist only due to unfulfilled attitudes then the same should be true of positive events; I should only be able to see you if I expect to see you. It seems to me that there is an obvious difference in the negative case, namely that nothing (significant) actually happens. It is reasonable to differentiate negative events from merely no happenings in order to speak in the usual way about such events. In order to say something meaningful about the fact that you did not come and meet me when you said you would, there seems to need to be some sort of positive proposition, an expectation that you would meet me, and an understanding of what that means. In the case of positive events no such expectation is necessary. It is perfectly plausible for me to comment that I saw you unexpectedly, not so to exclaim that I didn't see you, when such an exclamation is not in response to a proposed expectation that I should have done.

As I have noted, the everyday concept 'nothing' is unproblematic as it is almost always employed in a given context. Understanding this in terms of the perception of some positive reality that prevents the existence of what we expected seems as though it could be a promising strategy for conceiving of an absence. As also noted, on the prominent empiricist view of concept acquisition, concepts are acquired from sensations, and assembled via a number of simple cognitive mechanisms. Simple concepts are acquired directly from experience of their object, and complex concepts are constructed from simple concepts via certain operations of reason (Cowie, 1999: 28-9). We have noted that one cannot have

experience of total nothingness because nothingness precludes experience and is causally inert, it cannot be perceived. Perhaps instead we could have a complex concept of nothingness, and conceive of the empty world through some application of reason and the presence of simple concepts from which we could construct the concept of nothingness.

If we take an empiricist view, the same rules apply to all concepts. In the same way as we can abstract from a number of perceptual experiences of men to form the concept man, we think we can abstract from a number of perceptual of experiences of not perceiving what we expected in a given situation (nothing in the fridge, nothing in the room etc.) to a concept of nothing. This unrestricted nothing is, on reflection, not a concept we can account for. The reason for our inability to account for it is the fact that in context, the 'nothing' is defined by the presence of an alternative positive reality. Unconstrained nothingness is impossible because there can be no positive reality taking the place of the thing we expected. The notion of an empty world sounds meaningful, but when we think carefully about what it means, we see it is in fact an impossible notion.

Recall that one of the intuitions on which Efid and Stoneham base their version of the subtraction argument is that concrete things are subtractable. We can have propositional imagining that each concrete thing might not have existed. We *cannot*, I have argued, imagine a completely empty world in such a way; we cannot complete the set. Moore thinks that part of grasping what infinity is is seeing that it is ungraspable, and I think we can say a similar thing about nothingness. When we really try to think about what nothingness actually is, we find that we cannot conceive of it. It is impossible to grasp nonexistence; there is quite literally nothing to grasp.

In conceiving of the empty world we are trying to positively think about the possibility of nothing. How can we think about something that consists of nothing to think about? We

cannot possibly represent the possibility of nothing in our minds, in the same way as we cannot possibly represent the possibility of infinity in our finite minds. The case is all the more striking with the possibility of nothing; it is not that any feature of our minds (such as finitism) prevents us from grasping it, it is a feature of what we are trying to grasp itself.

Think again about the square circle. It is obvious that such a thing is impossible because we know that something cannot be both square and circle at the same time. However, if I rename square circles ‘squircles’, then it is no longer immediately obvious. If we know what a squircle really is, we see that it is inconceivable. In making this point I have not contradicted myself. When we think about what nothingness would have to be, we realise that this too is inconceivable, it is just a far more complicated case. Like the potentially infinite tending towards actual infinity, absences tend towards nothingness, but they never arrive there. Nothingness in the sense of the empty world is inconceivable, but we can nevertheless understand what it would consist in by extrapolation from everyday experience. We can therefore know that we cannot conceive of an empty world.

#### **4. Conclusion**

In this chapter I have suggested a positive argument for the conclusion that an empty world is impossible. I rejected Van Inwagen’s argument seeking to establish the extreme improbability of the empty world because I did not think his conclusion strong enough to reject metaphysical nihilism; it left open the possibility of the empty world. Instead, I have argued for the link between imagination and conceivability, and drawn on the idea that inconceivability is evidence of impossibility. The fact that we can have no experience of nothingness prevents us from being able to imagine it in the propositional sense. Given that propositional imagining is at the core of conceivability, and that there is no legitimate procedure for constructing a conception of the empty world, the empty world is

inconceivable. We thus have reason to reject, or at the very least cause to seek alternative justification (other than the subtraction argument) for the metaphysical nihilist hypothesis. The seeming plausibility of the truth of metaphysical nihilism arises from an everyday concept of 'nothing' that does not transfer to the possibility of a world in which there are no concrete objects.

## CONCLUSION

I set out here to investigate the possibility of nothingness. At the outset, I identified the question ‘why is there something rather than nothing?’ as a reason we might want to investigate that possibility. If nothingness is impossible, we have an answer to that question. In order to get a firm grasp on what was to be considered, I decided to evaluate nothingness in terms of the empty possible world. Such an evaluation requires adopting a particular view of possible worlds, to the exclusion of a number of well supported theories that are incompatible with the doctrine of metaphysical nihilism.

My investigation centred around the subtraction argument for metaphysical nihilism, and as the only prominent argument in support of that doctrine I considered it in detail. Whilst there were problems with each of the premises in their original form as employed by Baldwin (1996), there were modifications available in most cases to remedy these issues. However, it became apparent in my consideration of the argument that it relied on the intuition that all concrete objects are subtractable from every possible world. Such an intuition is not only complex and not particularly intuitive, but it is also too close to the conclusion of the subtraction argument to render the argument dialectically effective. If all concrete objects are subtractable from every possible world, then all the objects can be removed at once from a world, taking us immediately to the empty world and removing the element of successive subtraction that comprises the argument. The argument would thus be unconvincing for anybody initially agnostic towards the possibility of an empty world. The subtraction argument for metaphysical nihilism therefore fails.

Having established the failure of the subtraction argument, in the next chapter I sought to make a positive argument for the impossibility of metaphysical nihilism. I first considered Van Inwagen’s argument to a similar conclusion, which he thought was sufficient in

answering the question ‘why is there something rather than nothing?’ I rejected the conclusion of his argument as an answer to that question, and set out to provide an independent route to the conclusion that there could not have been an empty possible world. In appeal to the links between conceivability and possibility and inconceivability and impossibility, I claimed that what we take to be inconceivable we should *prima facie* consider to be impossible.

I highlighted the core of conceivability as propositional imagination, and argued that as propositional imagining has an experiential element, we are unable to imagine nothingness because we can have no experience of it. We are unable to construct a conception of nothingness via the subtraction argument because that argument is itself dependent on the ability to conceive of an empty possible world in order to support the intuition that allows the subtraction to proceed. Aware of the difficulties in claiming that something is inconceivable, especially when it is a concept in common use, I appealed to the distinction between actual and potential infinity and highlighted the important differences between the everyday use of ‘nothingness’ and the nothingness of the subtraction argument.

I am aware that the argument I have presented for the rejection of metaphysical nihilism is largely dependent on the claim that what is inconceivable is (at least likely to be) impossible. I have been unable to argue adequately for this claim due to constraints on space, and thus do not claim to have provided a watertight argument against metaphysical nihilism.

Nevertheless, the link between inconceivability and impossibility is widely accepted in much of the philosophical literature, and thus there is at least *prima facie* cause to think that the argument I have presented is damaging to the metaphysical nihilist. Given this, and my rejection of the only prominent argument for that position, the onus is on the metaphysical nihilist to provide a convincing argument for the possibility of the empty world. I conclude that, for now, the question ‘why is there something rather than nothing?’ can be answered in

appeal to the impossibility of an empty world. There is something because there could not have been nothing.



## APPENDIX: POSSIBLE WORLDS

David Lewis (1986: 73) develops a famous ‘compositional’ view of possible worlds where each is ‘a maximal mereological sum of spatiotemporally interrelated things’. Every possible world is composed by, or made up of, all of the things within it, and none of the worlds overlap. Lewis (1986: 73) considers as a possible objection to this thesis the fact that it makes no provision for the possibility of an empty world. If a world is the totality of all of the things it contains, and there are no things, then there is no world. Lewis accepts that this is indeed a consequence of his view of worlds, and simply states that it is a necessary truth that at all worlds there is something. As Baldwin (1996: 231) states Lewis’ position, ‘mereology does not permit “empty sums”’. A world may be comprised of nothing more than a single spacetime point and still be a world, but as soon as that point is removed there is nothing to quantify over where the point was, and we are back in the domain of logical space containing all of the possible worlds. To borrow Armstrong’s analogy as presented in Coggins (2003: 355), ‘an army will continue to exist if any given soldier leaves but that does not mean that the army can exist without any soldiers at all’. A world with no objects is simply no longer a world, and thus the empty world is impossible.

On Armstrong’s combinatorial view of possible worlds (e.g. 1989), it also appears to come out as necessary that there is something rather than nothing. On this view, worlds are combinations of elements of this world, such as elementary particulars and universals (Lewis 1986: 74 fn.). Since there is no way to combine elements and produce nothingness, this view does not permit the possibility that there be nothing at all. However, it seems that this view sits uncomfortably with Armstrong. Sorensen (2009) explains that Armstrong has recently relaxed his account of truthmakers in order to allow for the possibility of an empty world.

Very roughly, truthmaking theory claims that true propositions are made true by entities (truthmakers) in the mind-independently existing external world (Cameron, 2008a: 410). Armstrong is a well known defender of truthmaker maximalism; the view that all true propositions have truthmakers (Rodriguez-Pereyra, 2006: 190). On Armstrong's view then, the empty world should be impossible because at that world there can be nothing that makes the proposition <there is nothing at all> true. Armstrong (2004: 91) reclaims the possibility of the empty world with his claim that 'the truthmaker for a contingent truth is also truthmaker for the modal truth that it is possible that the contingent truth is not true'. In other words, truthmakers for contingent propositions also make it true that those propositions are not necessary, and thus there are some worlds at which they are false. If necessary beings are to be rejected, we have the possibility of the empty world from the contingency of the existence of the truthmaker for each existential proposition in the actual world.

A discussion of truthmaker theory takes me beyond the scope of this argument, but Armstrong's stipulation here is dubious. Armstrong's combinatorial conception of possible worlds does not admit of the possibility of the empty world, unless coupled with the questionable assumption that an entity in one world can serve as truthmaker for a proposition in another world, in virtue of that entity's modal status. Interestingly, Armstrong does not employ this stipulation in order to deal with the problem of negative existentials.<sup>9</sup> Were he to do so, it would not seem ad hoc to apply it again in the case of the empty world. However, given that Armstrong only employs this assumption only in the special case of the empty

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<sup>9</sup> The problem of negative existentials is the difficulty in accounting for truths about nonexistent objects. It is particularly pressing for truthmaker maximalists who require every true proposition to have a truthmaker, as an inability to account for propositions about nonexistent objects means we cannot admit of propositions such as <unicorns have one horn>. In fact, it seems that even the claim that something does not exist requires the presupposition that the thing in question *does* exist, in order to make a true claim (see Reicher, 2010). Armstrong himself appeals to totality states of affairs to deal with propositions about nonexistent objects. Claims such as <there are no arctic penguins> are made true by the relevant totality facts, such as the fact that the totality of arctic animals does not include penguins (Dodd, 2007: 388).

world, it appears an ad hoc way to account for an intuition that tells against his theory of modality; the intuition that there is such a thing as the empty possible world.

On these two examples of prominent views of modality, the possibility of metaphysical nihilism is excluded. One who is committed to the doctrine of metaphysical nihilism thus cannot also embrace either of these views, and one who accepts either of these views must reject the possibility of metaphysical nihilism. Incompatibility with multiple prominent conceptions of modality is an immediate drawback for the defender of the empty world.

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