

THE PRESUMPTION OF NOTHINGNESS

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Abstract

Several distinguished philosophers have argued that since the state of affairs where nothing exists is the simplest and least arbitrary of all cosmological possibilities, we have reason to be surprised that there is in fact a non-empty universe. We review this traditional argument, and defend it against two recent criticisms put forward by Peter van Inwagen and Derek Parfit. Finally, we argue that the traditional argument nevertheless needs reformulation, and that the cogency of the reformulated argument depends partly on whether there are certain conceptual limitations to what a person can hypothetically doubt.

1. Introduction

Why is there something rather than nothing? This has been claimed to be the most profound of all questions. Many of us, we suspect, occasionally have a vague feeling of wonder or mystery that there is anything at all. The question which shall occupy us in this paper is whether there is a sense in which we, as rational beings, *ought* to be puzzled by the fact that something exists.¹

Let a *Universe*, with a capital ‘U’, include every existing concrete object, whether or not these objects are causally or spatio-temporally related to each other. Hence, although there are (presumably) many possible Universes, it is a conceptual truth that exactly one Universe obtains, or is real. In contrast, let a *world* be a maximal spatio-temporally and causally connected whole, like the cosmos studied by present-day science, which is believed to have been created in the Big Bang 10 to 20 billion years ago, is governed by certain natural laws, contains all known galaxies, and

¹ That the philosophically important question is what we ought to think has been observed by J. J. C. Smart: ‘That anything should exist at all does seem to me a matter for the deepest awe. But whether other people feel this sort of awe, and whether they or I ought to is another question’ (Smart 1955, p. 46).

so on.² There are, we shall assume, logically possible Universes which contain more than one world. In fact, for each subset *S* of the set of logically possible worlds, including the empty set, there seems to be a possible Universe that consists of the members of *S*. One possible Universe, then, contains every logically possible world. Let us call this maximally inclusive Universe the 'Maximal Universe'.³ The diametrically opposite possibility is that no world exists. We may call this possibility the 'Minimal Universe'.⁴

It has been argued that since the Minimal Universe appears to be the simplest and least arbitrary Universe, it is also in some sense the *prima facie* most plausible one, and that it is therefore mysterious or at least surprising that it is not realised. We shall first, in section 2, consider the case for the unique simplicity and non-arbitrariness of the Minimal Universe. Basically, we will review and try to improve arguments found in the literature. We then consider, in sections 3 and 4, two recent attempts to reduce the feeling of mystery. The first approach is due to Peter van Inwagen, who maintains that it is intrinsically extremely improbable that the Minimal Universe should be realised. Derek Parfit, representing the second attempt, argues that even if reality were ultimately governed by simplicity and non-arbitrariness, this would not necessarily imply the realisation of the Minimal Universe. We find neither of these attempts convincing. In the final section of the paper, we argue that the traditional argument, discussed in section 2, nevertheless needs substantial reformulation. Whether the reformulated argument is, in the end, cogent is left an open question.

² This concept of a world, as well as the individuation criteria for worlds, are somewhat imprecise. For a useful discussion, see Leslie (1989), ch. 4. Although we have no intention to propose our notion of a world as a tool for analysing modal concepts, one may note its similarity to David Lewis's 'concrete' conception of a possible world, as well as its dissimilarity to the 'abstract' conception espoused by many philosophers. (See Lewis 1986, and van Inwagen 1986.)

³ As will be noted in the next section, it seems possible that there should be several 'instances', or qualitatively identical replicas, of a particular 'world-type'. If there is no limit to how many instances of a world-type could possibly exist, there will in one sense be no 'Maximal' Universe. For now, let us ignore this complication. Another worry about the Maximal Universe is that it might be thought to contain contradictions. For example, are there not possible worlds in which Napoleon was not born on Corsica, as well as worlds in which he was born on Corsica? And would not the coexistence of worlds of both types absurdly imply that Napoleon both was and was not born on Corsica? What we should claim, following David Lewis without committing ourselves to his particular 'counterpart theory', is that the Napoleon of one world is not strictly identical to the Napoleon of another world. (Of course, the same goes for the Corsicas of the different worlds.)

⁴ The Minimal Universe does not consist of an empty space, or anything like that. Rather, it contains, quite literally, nothing.

2. On the Virtues of the Minimal Universe

In this section we shall consider and improve a traditional argument for the *prima facie* plausibility of the Minimal Universe. The Minimal Universe is the intrinsically simplest of all possibilities. This view goes back at least to Leibniz,⁵ and we have not seen it questioned. The reason for the unique simplicity of the Minimal Universe is obvious enough; as John Leslie notes '[s]implicity is fairly powerfully advanced the fewer the [worlds] we believe in'.⁶ Clearly, the Minimal Universe is the simplest, containing, as it does, zero worlds. One could object that simplicity is strictly speaking not a matter of the sheer number of worlds, but rather a matter of the number of *kinds* of worlds. A Universe containing, say, both deterministic and indeterministic worlds would, on this view, be less simple than one containing only one of these kinds of worlds. But also on this alternative account of simplicity the Minimal Universe scores the highest; unlike any other possibility the number of kinds of worlds it contains is zero.

Most features of our world, even quite basic ones, may strike us as highly *arbitrary*. For example, the upper limit on velocities for physical objects is 299,729,458 meters per second. Why just *this* limit, rather than some other, or none at all? And why are there *four* basic forces of nature, rather than one, two, or ten?⁷ For a third example, why does the force of gravity between two objects recede by the inverse *square* of the distance between them, rather than, say, the inverse *cube*?

Not only is the Minimal Universe the simplest, it also seems to lack arbitrary features. Nothingness raises no question of the form 'Why this rather than that?' But the same could be said about the Maximal Universe. If every possibility is realised somewhere in the Universe, the obtaining of a particular possibility, such as there being four forces of nature in our world, no longer appears arbitrary. Of course, if all possibilities are realised, the question why some possibility is realised rather than another no longer arises. Thus, the Minimal and the Maximal Universe appear to fare equally well in this respect.⁸

⁵ Leibniz (1714), p. 639.

⁶ Leslie (1989), p. 98.

⁷ These two examples are taken from Unger (1984), p. 29f.

⁸ Some philosophers, among them Peter Unger (1984) and George Schlesinger (1984), have indeed regarded the non-arbitrariness of the Maximal Universe as a reason for believing that this Universe obtains.

There is, however, a fairly strong argument to the effect that the Minimal Universe is the least arbitrary. Suppose, *per impossibile*, that you could realise any Universe you wished, including the Minimal Universe. For every possible world you are free either to realise it or not. How many of the possible worlds would you bring into existence? As we have noted, the alternatives 'all' and 'none' stand out as more reasonable than any other alternative. If there are no reasons for including any particular world rather than some other, it would be arbitrary to treat them differently with respect to their existence.⁹

Suppose that you decide to include all the worlds, and thus to realise the Maximal Universe. Before carrying out your decision, however, you learn that you are also free to choose how many qualitatively identical instances there will be, of any kind of world.¹⁰ In other words, you may choose any number of 'world-tokens' for each 'world-type'. You now face a new decision. How many instances (i.e., tokens) of each world-type should you include? It would seem quite arbitrary to include *different* numbers of instances of different world-types. But even if you decide to include the same number of instances of every world-type, the question still remains how many instances to include.

There are clearly two levels here, and we can formulate a principle of non-arbitrariness for each level:

- (A) Treat all world-types on a par with respect to their existence, i.e., include an equal number of instances of each type in the actualised Universe.¹¹
- (B) Treat all instances of any given world-type on a par with respect to their existence, i.e., include either all or none.¹²

⁹ Admittedly, there could be reasons for realising only some world(s), which would make a choice other than 'all' or 'none' rational. For example, if there were a uniquely *best* world it might be rational to include only that world. (On the other hand, the problem of how many instances of this world-type to include, which we discuss in the next paragraph, would still remain.)

¹⁰ If it is possible that there exist several instances of each world-type, the Universe which contains only one instance of each type is in one sense not 'Maximal'. Cf. note 3.

¹¹ Unger defends the following principle: 'Either each world is without qualitative duplicate or else if any world does have at least one duplicate, then each world has as many duplicates as does any other world'. (1984, p. 45.) Unger's principle is stronger than (A), excluding as it does the Minimal Universe, i.e., the Universe consisting of zero instances of each world-type. The difference is explained by Unger's different purposes; his main concern is the question what cosmic possibility would be least arbitrary, *given the fact that our world exists*. Cf. also his footnote 16.

¹² Unger asks how many worlds there are of each character given that the actual world exists, and gives the following answer: 'The rationalist aspects of my mind find two answers

A least arbitrary cosmic possibility would be one for which both (A) and (B) are satisfied. One apparent strategy to satisfy both would be to realise *all* instances of every world-type. But how many possible instances are there to realise? Any effort to restrict this number to a finite number would seem arbitrary. So there must be an infinite number of instances to choose from. But the same problem arises for infinite numbers. Contemporary set theory, representing our best efforts to understand infinity, tells us that for any cardinal number there is a greater one.¹³ We could realise all instances in a non-arbitrary fashion only if there were a greatest cardinal. But, as just noted, there is not.

The only remaining alternative, if both (A) and (B) are to be satisfied, is to include zero instances of all world-types. The Universe thus realised is, of course, the Minimal Universe.

Parfit argues, too, that the Maximal Universe is more arbitrary than the Minimal Universe, but his reasons are different from ours. His first reason is that '[t]here may be no sharp distinction between worlds that are and are not possible'.¹⁴ True, the Maximal Universe is by definition the Universe in which all possible worlds are realised, and thus it inherits the vagueness and obscurity pertaining to the notion of a world. But the same could be said of the Minimal Universe. Being the Universe in which no world is realised, it is also defined in terms of the problematic notion of a world. Hence, the Maximal Universe is no more dubious in this respect than the Minimal Universe. Parfit claims, moreover, that '[i]t is unclear what to count as a kind of world'.¹⁵ Again, if this makes the Maximal Universe more arbitrary, it should make the Minimal Universe more arbitrary, too.

Finally, Parfit raises a problem of infinity: 'if there are infinitely many kinds [of worlds], there is a choice between different kinds of infinity'.¹⁶ What he suggests is that such a choice could not be made in a non-arbitrary fashion. In this he may well be correct. Still, regardless of how we understand 'kind of world', the question

that seem at least somewhat more appealing than any others: one and, at the other extreme, an *infinite* number of each character' (ibid., p. 45). He does not give any strong reason for why 'one' should be a satisfying answer. If there is exactly one instance of each world, the question remains why there are not, say, two instances instead.

¹³ For any set, the set of all subsets of that set has a higher cardinality than the set itself.

¹⁴ Parfit (1998a), p. 26.

¹⁵ Ibid.

¹⁶ Ibid.

remains how many instances of each kind there are. In *this* case it is clear that there is no non-arbitrary number, be it finite or infinite. Hence, the ‘multiple instantiation’ problem we have discussed reveals a more characteristic and fundamental arbitrary feature of the Maximal Universe.

The Minimal Universe is the simplest and least arbitrary of all possible Universes, and yet a world does somehow exist – ‘[t]hat is what can take one’s breath away’, as Parfit puts it.¹⁷ Our Universe seems unnecessarily complex and arbitrary, and we may wonder why reality does not take its simplest and least arbitrary form: that in which nothing exists.¹⁸ As noted, Parfit is far from being the first philosopher to express astonishment about the fact that anything exists. According to Leibniz, ‘the first question which we have a right to ask will be, “Why is there something rather than nothing?” For nothing is simpler and easier than something’.¹⁹ Wittgenstein wrote that ‘not how the world is, is the mystical, but that it is’.²⁰ J. J. C. Smart expressed a similar reaction when he said: ‘That anything should exist at all does seem to me a matter for the deepest awe’.²¹

Next, we are going to consider two attempts to reduce, or even eliminate entirely, this sense of mystery about the fact that there is something rather than nothing.

3. On the Intrinsic Probability of the Minimal Universe

Peter van Inwagen argues that, although not impossible, the Minimal Universe is maximally improbable; i.e., it has probability 0.²² In a slightly simplified form, his argument is as follows:

- | | |
|---|---------|
| (1) There are infinitely many possible Universes. | Premiss |
| (2) There is at most one Minimal Universe. | Premiss |
| (3) Every possible Universe has the same probability of being actual. | Premiss |

¹⁷ Ibid., p. 25.

¹⁸ Parfit (1998b), p. 25.

¹⁹ Leibniz (1714), p. 639.

²⁰ Quoted in Parfit (1998a), p. 25.

²¹ Smart (1955), p. 46. See also note 1, above.

²² Actually, van Inwagen does not speak of ‘possible Universes’, but of ‘possible worlds’, which he regards as abstract entities. (Van Inwagen 1996, p. 95, n. 1.) Concerning the questions we will discuss, however, his ‘worlds’ can without too much distortion be equated with our ‘Universes’. (Cf. van Inwagen 1986, p. 199.)

- (4) The probability that the Minimal Universe is actual equals 0.²⁵ From (1)–(3)

It should be noted that this argument does not attempt to answer the question why *the actual* Universe exists, rather than the Minimal Universe. These two Universes are equally (im)probable, according to premiss (3). However, van Inwagen's argument gives at least a probabilistic explanation of why there is *something*, rather than nothing. If the argument is sound it is infinitely more plausible that there should be something than that there should be nothing.

Is the argument sound, then? As van Inwagen acknowledges, the most disputable premiss is (3). Accordingly, he constructs a rather elaborate defence of this premiss. The essence of this defence is as follows. Consider any 'system' of objects, to which is associated different 'states'. These states can be conjoined, disjoined, negated, and so on. For each state, the system is either 'in' or not 'in' this state. A state *x* of a system is *maximal* if and only if, for any other state *y* of the system, either *y* is a conjunct of *x*, or the conjunction of *x* and *y* is not a possible state. Further, a system is *isolated* if no facts about objects external to the system can influence which states the system is in. Van Inwagen now (tentatively) makes the following claim:

- (EP) For any isolated system of objects (which has maximal states) the maximal states of the system should be regarded as equally probable.

Reality, van Inwagen maintains, is an isolated system that has possible Universes as maximal states. (The states may be identified with propositions.) Hence, each possible Universe is an equally probable way for reality to be.

It is easy, however, to give examples of Universes that can hardly be regarded as equiprobable. Consider a set of possible one-world Universes, containing only a simple coin-tossing mechanism and

²⁵ Van Inwagen (1996), p. 99. (A similar argument can be found in Nozick 1981, p. 127f.) Our simplification of van Inwagen's argument does not affect the issues we shall discuss. The conclusion that the probability of the Minimal Universe is literally 0 follows from his three premisses only under the presupposition that all probabilities are real-numbered. If we allow infinitesimal probabilities, it is consistent with these premisses that the probability of the Minimal Universe equals an infinitesimal number, greater than 0 but smaller than any real number greater than 0. Adopting this idea would have the advantage of avoiding the somewhat odd consequence that outcomes that are clearly possible (or even actual) have zero probability, but it would not substantially affect van Inwagen's argument (as he himself points out), or our criticism.

a fair coin. This mechanism starts tossing the coin at a certain time, and keeps tossing it until tails comes up. Once this happens the mechanism stops forever. There are thus infinitely many Universes containing only such a mechanism and a coin. In one of these Universes tails comes up already in the first toss, in another Universe tails comes up in the second toss, and so on. In other words, there is (at least) one Universe for each of the sequences T, HT, HHT, HHHT, . . . If the equiprobability thesis were true, a Universe where tails does not come up until the 1,000,000,000,000,000-th toss would be equally probable as a Universe where tails comes up in the first toss. This seems clearly false.²⁴

Can these Universes be described as maximal states of a system, in van Inwagen's sense? Perhaps not, since it is hard to see how the workings of a randomising mechanism, such as the coin-tossing device, can be described in terms of binary states, which the system is either 'in' or not 'in'. But so much the worse, in that case, for van Inwagen's claim that reality is such a system. It cannot reasonably be doubted that some Universes (including the actual one) contain randomising mechanisms of this kind. If, on the other hand, these Universes can indeed be seen as maximal states of a system, then (EP) cannot be correct. Suppose that the outcome of each particular toss of the coin is determined by whether or not the coin-tossing device is in a certain state x . If the device is in state x , the coin lands heads, and if the device is in state $\neg x$ (i.e., not in state x) the coin lands tails. Since the coin is fair, and so on, x and $\neg x$ are equally probable states of the device, for any toss of the coin. Now consider a Universe where the coin lands tails in the first toss. According to our present assumptions it seems that this Universe can be identified by the maximal state $\neg x \& T$. What about a Universe where the coin lands tails in the second toss? To describe this Universe as a maximal state of reality we must, it appears, take into account the whole 'history' of the coin and the tossing device. Letting x_n ($\neg x_n$) represent that the device is in state x ($\neg x$) at the time of the n -th toss, and letting H_n (T_n) symbolise that the coin lands heads (tails) in the n -th toss, this Universe can be identified by the state $x_1 \& H_1 \& \neg x_2 \& T_2$. Likewise, a Universe where the coin lands tails in the third toss corre-

²⁴ Perhaps it is, for some reason, impossible that there should be a world containing *only* a coin and a coin-tossing mechanism. In that case, our argument could be restated in terms of maximally similar worlds, which differ only with respect to the outcome of the imagined coin-tossing experiment.

sponds to the state $x_1 \& H_1 \& x_2 \& H_2 \& \neg x_3 \& T_3$, and so on. Clearly, $\neg x \& T$ is more probable than any other of these states. Hence, (EP) is false.²⁵

If van Inwagen's argument for the equiprobability thesis is fallacious, as we have tried to show, it is possible to claim that the simplicity of the Minimal Universe makes it more probable than any other Universe. Van Inwagen tries to throw doubt on this claim by means of a purported analogy:

Recall . . . those political rallies in China . . . when thousands of people would produce an enormous portrait of Chairman Mao by holding up big sheets of cardboard. At some signal, everyone on one side of an arena would hold up either a red or a white sheet, and instantly a portrait of the Great Helmsman would appear, in red against a white background. We can look upon the participants in and paraphernalia of this system of portraiture . . . as constituting a system of objects, a system each maximal state of which corresponds to an assignment of either 'red' or 'white' to the position of each participant. . . . Now suppose that on one of these occasions, counter-revolutionary saboteurs had garbled the assigned seat numbers – totally randomized them, in fact. What should we expect those present to see when the signal was given and they looked at the area in which a portrait was supposed to appear? No doubt what they would observe would be a pink expanse of pretty close to uniform saturation. The following argument has no force at all: pure white (or pure red) is the *simplest* of the maximal states of the system, so it's more probable that we'd see pure white (red) than pink or a portrait of Mao . . . It is, in fact, false that 'pure white' is more probable than any other particular maximal state of the system: all are of exactly equal probability . . .²⁶

It is true that 'pure white' and 'pure red' are in an intuitive sense the simplest maximal states of this system, and it is also true that they are no more probable than any other maximal state. But the analogy with the Minimal Universe, considered as a maximal state of reality, is dubious. The simplicity of the Minimal Universe seems to be of a quite different kind than the simplicity of 'pure

²⁵ It does not matter for our argument if the x - and $\neg x$ -states are really conjunctions of simpler states of the device, since states like $\neg x \& T$, etc., will still be maximal.

²⁶ Van Inwagen (1996), p. 108.

white' in van Inwagen's Maoistic system. The simplicity of 'pure white' depends on a great number of objects each being in a particular, contingent state. The 'base' that this simplicity 'supervenies' on is thus rather complex. The simplicity of the Minimal Universe, on the other hand, supervenes on what appears to be the simplest possible base, viz. no objects at all. It is, therefore, risky to draw conclusions from the relative probability of 'pure white' to the relative probability of the Minimal Universe.

Van Inwagen might retort that the base of the simplicity of the Minimal Universe is really quite complex. Just as 'pure white' requires that each cardboard sheet is in the state 'white' rather than 'red', he might say, the Minimal Universe requires that every possible object is in the 'state' of non-existence rather than existence. This would indeed make the Minimal Universe very improbable, given two assumptions. The first assumption is that for each possible object, its existence is not much less probable than its non-existence. The second assumption is that any object's existence is, to a large extent, probabilistically independent of the existence of any other object. The first assumption is doubtful, and the second one can hardly be correct (even if we disregard overlapping objects, etc.). It is not reasonable to claim, for example, that the probability of there being protons is largely independent of whether there are electrons, that the probability of there being ostrich eggs is independent of whether there are ostriches, or that the probability of there being flagpoles is independent of whether there are flags.

Since it is overwhelmingly likely that at least one of the two assumptions in question is false, there is no reason to believe that the question of the probability of the Minimal Universe, as compared to other Universes, is analogous to the question of the probability of 'pure white', as compared to other maximal states of the Maoistic system. If these questions are not analogous, the Minimal Universe may well be intrinsically more probable than other Universes.²⁷

4. Parfit on Simplicity and Selectors

The claim that simplicity would favour the Minimal Universe has recently been challenged by Parfit. Although he admits that the

²⁷ For a (brief) discussion of some other problems with van Inwagen's equiprobability thesis, see Lowe (1996), p. 113ff.

Minimal Universe is the simplest possible one, there is, he maintains, more to reality than what Universe obtains. Apart from the Universe there is also the explanatory fact of *why* it obtains. That is to say, reality contains an explanatory level as well as a factual level.²⁸

In Parfit's terminology, 'if some cosmic possibility obtains because it has some special feature, we can call this feature the *Selector*'.²⁹ For instance, if the simplest possible Universe obtained, it would be plausible to claim that this Universe obtains because it is the simplest. If this claim were true, simplicity would be the selector. It might also be the case that there is no selector. If so, the Universe 'has no explanation of any kind'.³⁰

Actually, Parfit distinguishes between 'probabilistic' and 'effective' selectors:

Probabilistic Selectors make some cosmic possibility more likely to obtain, but leave it open whether it does obtain. On any plausible view, there are some Selectors of this kind, since some ways for reality to be are intrinsically more likely than others. Thus, of . . . two imagined Universes, . . . one consisting of spherical stars is intrinsically more likely than . . . one with stars that are shaped like Queen Victoria or Cary Grant. Besides Probabilistic Selectors, there may also be one or more *Effective Selectors*. If some possibility has a certain feature, this fact may make this possibility, not merely intrinsically more likely, but the one that obtains. Thus, if simplicity had been the Effective Selector, that would have made it true that nothing ever existed.³¹

As we understand it, the difference between effective and probabilistic selectors is simply that an effective selector makes a certain Universe *maximally* probable (i.e., gives it probability 1), while a probabilistic selector makes a certain Universe probable, but less than maximally so. Parfit's statements, that an effective selector is a feature such that a certain Universe obtains *because* it has this feature, and that an effective selector *makes* a certain Universe obtain, are, we think, slightly misleading. On the most plausible interpretation, a selector is not a factor which in some mysterious,

²⁸ Parfit (1998b), p. 25; see also Parfit (1998c), p. 424. Actually, Parfit thinks that there might also be a meta-explanatory level, a meta-meta-explanatory level, and so on.

²⁹ Parfit (1998b), p. 22.

³⁰ *Ibid.*

³¹ *Ibid.*

non-causal way *produces* a certain Universe, without itself being embedded in the substances existing in that Universe.³² Rather, a selector is just a property that influences the intrinsic probability of a Universe where it is instantiated. Thus interpreted, the term ‘selector’ may also be potentially misleading. We could speak, instead, of ‘probability increasing properties’. For the sake of continuity, however, we shall stick to Parfit’s terminology.

After drawing the distinction between probabilistic and effective selectors, Parfit states that by ‘selector’, he shall mean ‘effective selector’.³³ As already noted, he agrees that the Minimal Universe is the simplest cosmic possibility, and he also believes that simplicity is a plausible (effective) selector. But, he adds,

just as the simplest cosmic possibility is that nothing ever exists, the simplest explanatory possibility is that there is no Selector. So we should not expect simplicity at both the factual and explanatory levels. If there is no Selector, we should not expect that there would also be no Universe [i.e., that the Minimal Universe would obtain]. That would be an extreme coincidence.³⁴

If we understand this passage correctly, Parfit’s claim is that, although simplicity is a plausible selector, we have no grounds for expecting it to select among Universes, rather than among *explanations* of Universes. (Let us call a selector that selects among such explanations a ‘meta-selector’.) Therefore, we have no reason to think that simplicity would uniquely favour the Minimal Universe, and hence the feeling of mystery associated with its non-actuality would be at least reduced.

This argument is flawed. If ‘selector’ is understood as ‘effective selector’, as Parfit intends, his claim that it would be an ‘extreme coincidence’ if the Minimal Universe obtained, in the absence of a selector, is unwarranted. The absence of effective selectors is compatible with simplicity being a *probabilistic* selector, making the Minimal Universe more likely to obtain than any other Universe. If simplicity were a probabilistic selector, it would not be an extreme coincidence if the Minimal Universe obtained, even if there were no *effective* selector.

³² The implausibility of there being such factors is pointed out in van Inwagen (1996), p. 100, and in Swinburne (1998), p. 428.

³³ Parfit (1998b), p. 22.

³⁴ *Ibid.*, p. 25.

Moreover, the absence of an effective selector does not guarantee maximal simplicity on the explanatory level, since there may still be one or more probabilistic selectors. A probabilistic selector seems to bring just as much complexity to the explanatory level as an effective selector. After all, the only difference between the two types of selectors is the degree of probability they confer on a certain Universe.

To be sound, therefore, Parfit's argument must be understood in such a way that 'the simplest explanatory possibility' excludes probabilistic as well as effective selectors. As can be gathered from the quotation on p. 213, however, Parfit regards it as very implausible that there would be no probabilistic selectors. On the other hand, he does not seem to regard the possibility that simplicity were the (effective) selector and the Minimal Universe obtained as inherently implausible. To hold that the latter possibility is much more probable than the former is to hold that if simplicity were the selector, it would probably select among Universes, rather than, as a meta-selector, among explanations of Universes. The claim that simplicity would, in all probability, favour the Minimal Universe thus seems to follow from Parfit's own assumptions, his argument to the contrary notwithstanding.

This *ad hominem* argument against Parfit need not, of course, trouble those who disagree with Parfit's claim that 'any plausible view' includes probabilistic selectors. Denying the existence of probabilistic as well as effective selectors is equivalent to claiming that all possible Universes are intrinsically equiprobable. (As we saw in the last section, van Inwagen, for one, believes that this is the case.) Hence, the equiprobability thesis seems to entail maximum simplicity on the explanatory level, although not, of course, on the Universe level. According to Parfit's line of reasoning, then, the intuition that reality should be as simple as possible may, after all, be compatible with the equiprobability thesis, and hence with the existence of a complex Universe.

On the other hand, we can reasonably claim that the difference in simplicity between the Minimal Universe and a very complex Universe, such as ours, is of a wholly different kind and magnitude than the difference in simplicity between an explanatory level including (probabilistic or effective) selectors and an explanatory level without selectors. The former comparison evokes our simplicity-favouring intuitions to a much greater extent than the latter. Hence, learning that a very complex Universe is what we should expect, given maximum simplicity on

the explanatory level (i.e., in the absence of selectors), may not do much to reduce the feeling of mystery surrounding the existence of such a Universe.

Furthermore, if the defender of the equiprobability thesis claims that the absence of any selector is a likely explanatory possibility *because* it makes the explanatory level maximally simple, he maintains, in effect, that simplicity is a meta-selector. To postulate the existence of a meta-selector is to increase the assumed complexity of reality. This conflicts with the intuitions favouring simplicity.³⁵

Regardless of what we have said in the last three paragraphs, however, the equiprobability thesis is implausible, as we argued in section 3. The claim that simplicity would favour the Minimal Universe therefore remains unaffected by Parfit's attack.

5. The Traditional Argument Reconsidered

We have defended the traditional argument against van Inwagen's and Parfit's criticism. But is this argument really sound? As we said right at the beginning, the problem is whether we, as rational beings, *ought* to find it mysterious or surprising that something exists, rather than nothing. That is to say, do the scientific or commonsensical epistemic standards we actually subscribe to single out the Minimal Universe as the, in some sense, most plausible cosmological alternative?

Consider again the claim that the Minimal Universe is ontologically the simplest and least arbitrary of all Universes, and therefore *prima facie* plausible. There are good reasons to think that the Minimal Universe is, in this sense, indeed the simplest and least arbitrary – and uniquely so. But there are, as we shall see, reasons to take great care when pondering the implications of these facts for the problem of existence.

Let us focus first on simplicity. In what sense is the simplicity of an object an admirable quality? Simplicity is a desideratum primarily as predicated of a theory or hypothesis, rather than as predicated of an object in itself. This does not mean that we cannot meaningfully speak of the simplicity of objects. But it means that simplicity as applied to objects in themselves is not the kind of simplicity that counts in the end; what we value, in the

³⁵ Of course, the equiprobability thesis could be defended on quite different grounds, having nothing to do with simplicity. (Van Inwagen's argument is one example.)

final analysis, is the simplicity of a theory or hypothesis. To be sure, ontological simplicity may contribute to the overall simplicity of a theory, but so does the simplicity of the theory's system of laws. As is often noted, these two kinds of simplicity may even compete: a simpler system of laws is sometimes obtained only at the expense of admitting a more complex ontology. Similarly, ontological parsimony often leads to a less transparent system of laws. Letting 'the Minimal Hypothesis' denote the hypothesis that the Minimal Universe obtains, the part of the traditional argument that concerns simplicity should therefore be reconstructed as claiming that the Minimal Hypothesis is the simplest and therefore *prima facie* the most plausible hypothesis.

The meaning of this reconstructed claim needs further illumination before we can assess its truth value. On an influential Quinean picture, simplicity is ultimately holistic; we should choose theories and hypotheses 'in obedience to the demands of maximum simplicity in our total world-picture'.³⁶ The simplicity of a hypothesis is reducible to its effect on the simplicity of the overall belief system, or (on a moderately holistic view) at least a large part of it. Thus, a hypothesis, H , is simpler than another, H' , relative to a state of belief, B , just in case accepting H in B leads to a simpler state of belief than accepting H' in B . What, then, is the state of belief relative to which the Minimal Hypothesis is the simplest? It cannot be our present state of belief, with which it is inconsistent. The defender of the traditional argument may reply that he is not talking about simplicity with respect to our *present* state of belief, but about *prima facie* simplicity, the claim being that the Minimal Hypothesis is *prima facie* the simplest. This leaves him with the task of explaining what the 'prima facie'-part of this claim means.

Let us first look at the situation quite generally. Suppose that H_1, H_2, \dots, H_n constitute a set of competing hypotheses about some phenomenon. Even if one of the hypotheses, H_b , is believed to be true, one may wonder which of the hypotheses *would have been* most likely to be true. It would be question-begging to consider this question relative to our *present* beliefs, since H_i is believed to be true and hence for trivial reasons more likely to be true than the other hypotheses, which are incompatible with our present beliefs. Instead, we should give the other hypotheses a fair hearing and consider a hypothetical belief system corresponding

³⁶ Quine (1948), p. 36.

to what our beliefs would have looked like if we did not know, or have any belief about, which of the hypotheses is true. This hypothetical system represents our *prima facie* belief system relative to the issue. From the point of view of this system we could then compare the different hypotheses regarding their *prima facie* plausibility. We might do this by considering their relative *prima facie* simplicity, i.e., the simplicity they would, if accepted, confer on the *prima facie* belief system.

Exactly how such *prima facie* systems are formed is far from obvious, but it seems clear that the *prima facie* system should differ as little as possible from the actual belief system, while satisfying the condition that none of the hypotheses at stake is included. Being formed by deleting things, the *prima facie* belief system will normally be smaller (i.e., contain fewer beliefs) than the actual system. This means that forming the *prima facie* belief system amounts to performing a theory contraction.³⁷

It follows that in order to evaluate the claim that the Minimal Hypothesis is *prima facie* more plausible than any other hypothesis regarding what Universe exists, we must hypothetically retract any belief we have regarding the existence of concrete objects. We thus obtain the relevant *prima facie* system. What the reformulated traditional argument claims is that, relative to this *prima facie* system, the Minimal Hypothesis is more likely to be true than any other hypothesis, due to the simplicity it bestows on that system.

Is this claim true? Is the Minimal Hypothesis the simplest hypothesis relative to the *prima facie* system in question? We note that in this system no concrete objects are posited as existing. Except for the Minimal Hypothesis all possible hypotheses regarding what Universe exists introduce the new ontological category of a concrete object. So, clearly, the Minimal Hypothesis is at least ontologically the simplest from the '*prima facie*' position. How the different hypotheses would compare as regards other aspects of simplicity (such as the simplicity of laws) is difficult to assess (see below, for non-arbitrariness as an aspect of simplicity). We can, however, think of no reason why the Minimal Hypothesis should fare any worse than the others. From the point of view of the relevant *prima facie* system, then, the Minimal Hypothesis is,

³⁷ There is a rich formal literature on theory contraction following the seminal paper by Alchourrón, Gärdenfors and Makinson (1985). Contraction for the purpose of opening up for alternative hypotheses is discussed in detail in Levi (1991), section 4.9. See also Levi (1996).

as far as we can tell, not only ontologically the simplest but the simplest overall. From this point of view, the 'law of least action'³⁸ would favour the hypothesis that there are no concrete things.

Following Quine in subsuming non-arbitrariness under simplicity,³⁹ we can similarly conclude that non-arbitrariness, in the relevant sense, is primarily a property of theories or hypotheses, that we should hence shift our attention from the Minimal *Universe* to the prima facie acceptability of the Minimal *Hypothesis* and, finally, by reconstructing our argument from section 2, that the Minimal Hypothesis is indeed the least arbitrary from the point of view of the relevant prima facie system. From the latter standpoint, 'the scientist's shunning of gratuitous singularities',⁴⁰ as well as the law of least action, require the adoption of the hypothesis that there are no concrete things.

What we have presented up to now looks like a defence of the traditional argument for the presumption of nothingness. There are, however, at least two factors which seriously reduce the force of this defence. First, even if a certain hypothesis is found to be the simplest, this does not necessarily mean that we should be surprised by the fact that another hypothesis turns out to be true. While simplicity is clearly a scientific desideratum, the reason why it is so may have little to do with plausibility. For instance, if simplicity is valuable mainly because it 'engenders good working conditions for the continued activity of the creative imagination'⁴¹ ('the simpler the theory, the more easily we can keep relevant considerations in mind'⁴²), then there seems to be no reason to think that a simpler hypothesis is also more likely to be true, and, hence, no reason to be surprised if it turns out to be false.

Second, is it really possible and meaningful to pretend radical ignorance concerning all concrete existence? Is there a possible belief system corresponding to radical existential doubt? In order to be in a state of belief in which I do not believe that there is anything, I must not believe that I exist myself. Can I seriously (and rationally) doubt that I exist? Keith Lehrer defines the belief that *p* to be *irresistible* for a subject *S* if and only if it is logically necessary that if *p*, then *S* believes that *p*.⁴³ He goes on to say,

³⁸ Quine (1960), p. 19.

³⁹ *Ibid.*, p. 21.

⁴⁰ *Ibid.*

⁴¹ *Ibid.*, p. 20.

⁴² *Ibid.*

⁴³ Lehrer (1990), p. 47f.

regarding my belief that I exist, that 'it is plausible to affirm that I cannot possibly fail to believe it',⁴⁴ and concludes that this belief is a plausible candidate for being an irresistible belief. On this view, it is logically impossible for me not to believe that I exist, and hence logically impossible for me not to believe that anything exists. If this is correct, it appears that I cannot even *hypothetically* entertain such radical doubt. For doubting something hypothetically is, presumably, imagining oneself in some other *belief state* than the actual one. If there is no possible belief state in which I do not believe that anything exists, it seems impossible for me to pretend radical ignorance regarding existence. If so, the question whether Nothing would be more plausible than Something, from the *prima facie* point of view, does not arise. Obviously, this question presupposes that there *is* such a point of view.

The extent to which simplicity raises probability is a much debated issue in the philosophy of science, to which we cannot hope to do justice here. Similarly, the irresistibility of my belief in my own existence might be questioned.⁴⁵ A convincing argument for either position on this issue would require an extended discussion of problems in epistemology and the philosophy of mind, such as the nature of indexical belief. Let us therefore only conclude that whether you have reason to be surprised that something exists depends, first, on whether simplicity as predicated of a theory is really plausibility-raising and, second and less expectedly, on whether or not you can engage in hypothetical doubt regarding your own existence.⁴⁶

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⁴⁴ *Ibid.*, p. 48.

⁴⁵ There is at least one restriction that must be added to Lehrer's claim. The belief that I exist can be irresistible for me only if I am in a state compatible with having beliefs at all. If I were in an irrevocable coma, I would presumably not believe that I exist. In the present context, however, this restriction is clearly irrelevant.

⁴⁶ Earlier versions of this paper were presented at seminars in Konstanz and Uppsala. We would like to thank the participants for their helpful comments. Thanks also to an anonymous referee for *Ratio*, who gave very valuable comments on the penultimate draft.

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