Maximal Possibilities[*]

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1 Introduction

Possible worlds are complete or maximal possibilities.[1] But what kind of thing *is* a maximal possibility? A quick survey of the literature on the metaphysics of possible worlds turns up two prominent candidates:

Cosmoi A possible world is a maximal individual or *cosmos*;[2]

Cosmic Properties A possible world is a maximal property that a cosmos could have.[3]

But both seem wrong. There are maximal possibilities that are not identical to any maximal individual, because each maximal individual could have any one of several maximal properties. And there are maximal possibilities that are not identical to any maximal property, because each maximal property could be had by any one of many possible maximal individuals.

So if you like your worlds concrete, don't endorse *Cosmoi*, but

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[1]You might doubt that there are maximal possibilities. First, you might doubt that there are possibilities: maybe the move from *possibly, pigs fly* to *there is (or could be) a possibility that pigs fly* is a mistake. Second, you might accept that there are (or could be) possibilities, but doubt that there are (or could be) maximal possibilities. I am sympathetic to both doubts, but here I put them aside.

[2]See, for example, Lewis (1968, p. 39), Lewis (1986, pp. 1–3), Bricker (1996). Actualists might want to qualify *Cosmoi* (and the other proposals) to avoid the apparent commitment to merely *possible* maximal individuals. I discuss this briefly in section 2 below.

[3]See, for example, Stalnaker (1976, p. 68), Kripke (1980, pp. 15—20), Soames (2007, pp. 256—257), King (2007, pp. 446–447).

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Cosmic Facts A possible world is a fact consisting in a maximal individual's having a maximal property.[4]

And if you like your worlds abstract, don't endorse *Cosmic Properties*, but

Cosmic Propositions A possible world is a proposition that represents a maximal individual as having a maximal property.

To be maximal, for a fact or proposition, is to be comprehensive—to decide all the contingent facts or truths one way or the other. A proposition or fact can be comprehensive, in this sense, without being about some maximal individual. And it is not obvious that all maximal possibilities involve the existence of some maximal individual.[5] So perhaps the focus on maximal individuals that is common to *Cosmoi*, *Cosmic Properties*, *Cosmic Facts*, and *Cosmic Propositions* is a mistake.

If so, replace *Cosmic Facts* and *Cosmic Propositions* with

Facts A possible world is a maximal fact,[6]

and

Propositions A possible world is a maximal proposition.[7]

And if, contrary to my advice, you wish to retain the spirit of *Cosmoi* or *Cosmic Properties*, replace them with

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[4]'Fact' is ambiguous. In some uses, it is synonymous with 'true proposition'. As I use it here, facts are the bits of reality that make true propositions true. Whether there are facts in this sense, and, if so, what kinds of facts there are, is a controversy that need not detain us.

[5]The putative possibility that things are junky—that something exists and every thing is a proper part—is an example of a maximal possibility without a maximal individual. On whether this is a genuine possibility, see Schaffer (2010, p. 65), Bohn (2009a, pp. 199–200), Bohn (2009b). On ways to accommodate such possibilities within a broadly Lewisian framework, see Sanson (2011).

[6]The most famous statement of *Facts*—at least as a claim about the *actual* world—comes from Wittgenstein (1922):

> 1.1 The world is the totality of facts, not of things.

Here I slide over an important detail: is the totality of facts itself a fact? Also, note that the basic view—that worlds are maximal facts rather than things or properties or propositions—can be divorced from any of the other assumptions characteristic of Logical Atomism. For a contemporary defense of *Facts*, see Armstrong 1997.

[7]See, for example Prior (1977, p. 54), Fine (1977), Salmon (1989, p. 6). Plantinga (1974, p. 44ff) makes a distinction between abstract states of affairs, which can exist without obtaining, and propositions, which can exist without being true, and holds that a possible world is a maximal state of affairs. Adams (1974, pp. 225ff) holds that a world is a set of propositions, not a single maximal proposition. I take it that both of these views are, for our purposes, close allies of *Propositions*.

Individuals A possible world is a maximal plurality of individuals,[8]

and

Collective Properties A possible world is maximal property that a maximal plurality of individuals could have collectively.

In what follows, I focus on the "cosmic" views, but this is only for the sake of simplicity. Nothing in what follows hangs on the assumption that maximal possibilities must be understood in terms of maximal individuals.

Facts and propositions, like possibilities, involve a unity of individual and property. This is clear when we consider small-scale possibilities: the possibility that Hazel yells involves both Hazel and the property *yelling*; so too the proposition that Hazel yells; so too the fact that Hazel yells. We should not allow the shift from small-scale to large-scale to cloud our judgment. Maximal possibilities involve a unity of individual and property (or individuals and properties) too; *Facts* and *Propositions* respect this; *Individuals* and *Properties* do not.

Possibilities also exhibit the same sort of sensitivity to asymmetric structure that we find in propositions and facts. The possibility that Ruby hit Hazel is distinct from the possibility that Hazel hit Ruby, for example, in much the same way that the proposition that Ruby hit Hazel is distinct from the proposition that Hazel hit Ruby, and, in turn, the fact that Ruby hit Hazel, from the fact that Hazel hit Ruby.

Finally, facts and propositions have modal profiles that make them well-suited to be possibilities. The fact that Hazel is yelling essentially consists in Hazel's yelling: it is contingent, so it might fail to exist, but necessarily, if it exists, it consists in Hazel's yelling. It—the very same fact—could not instead consist in Hazel's being quiet. Likewise with propositions: it is not essential to the proposition that Hazel is yelling that it be true, but it is essential to it that it represents Hazel as having the property *yelling*. It—the very same proposition—could not instead represent Hazel's being quiet, for example.

This suggests that propositions, facts, and possibilities are all species of a common genus: each involves some kind of unity of individual and property that respects asymmetric structure, and each involves this unity essentially. Call such things *complexes*. My real goal in this paper is not to defend *Propositions* or *Facts*, but

Complexes A possible world is some kind of maximal complex.

I see no reason to assume that propositions and facts are the only species of complex, so perhaps *Propositions* and *Facts* are just two of many ways to reduce

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[8]Bohn (2009a, pp. 199–200) endorses *Individuals*.

possible worlds to some other species of complex.[9] And perhaps possible worlds are their own *sui generis* species of complex. These are not questions I aim to decide here.

In the next section, I argue that maximal possibilities are not individuals. Or rather, I argue that if they are individuals, they will have to be individuals that behave a lot like complexes and not very much like ordinary individuals. In Section 3, I argue that maximal possibilities are not properties. Or rather, I argue that if they are properties, they will have to be properties that behave a lot like complexes and not very much like ordinary properties. In Section 4, I consider a counterpart-theoretic approach to maximal possibilities, and point out that, on such an approach, the maximal possibilities are complexes, too.

2 Maximal Individuals

The most prominent defender of *Cosmoi* is David Lewis. Here is an early statement of his view,

> A world is a large possible individual; it has smaller possible individuals as parts. A galaxy, a planet, a man, an electron—these things inhabit their world simply by being parts of it. Just as the electron is part of the man, and the man in turn is part of his planet which is part of its galaxy, so the galaxy in turn is part of its world. (Lewis 1968, p. 39)[10]

Notoriously, Lewis is also a Modal Realist: he holds that all the possible cosmoi exist, so that ours is just one among many. Those who reject Modal Realism often write as though the rejection of Modal Realism and the rejection of *Cosmoi* go hand in hand. Hence Stalnaker (1976, p. 68, *original emphasis*),

> *The way things are* is a property or a state of the world, not the world itself. [...] This is important, since if properties can exist uninstantiated, then *the way the world is* could exist even if a world

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[9]Other complexes might include sets, Plantinga's states of affairs (if they aren't identical to propositions), and Kit Fine's "rigid embodiments" (1999, p. 65) (if they aren't identical to facts).

[10]See also Bricker (2006a). McDaniel (2004, p. 147) defends a version of Modal Realism that involves neither *Cosmoi* nor *Cosmic Facts*:

Spacetime Regions A possible world is a maximal (spatiotemporally isolated) *region* of spacetime.

Yagisawa (2009) defends an allied view,

Points in Modal Space A possible world is a point in modal space.

Both views suggest a rejection of the identification of a possible world with what happens at it. Consideration of such views is beyond the scope of this paper.

> that is that way did not. One could accept thesis one—that there really are many ways that things could have been—while denying that there exists anything else that is like the actual world.

An Actualist can accept the existence of various abstract objects—uninstantiated properties, false propositions, and so on—but cannot accept the existence of concrete alternative cosmoi. And so an Actualist should endorse something like *Properties* or *Propositions* rather than *Cosmoi.*

But it is not obvious that *Cosmoi* entails Modal Realism. First, one might hold that possible concrete individuals, and so possible cosmoi, actually exist, but are not concrete (Linsky and Zalta 1994, , ,). Whatever one thinks of such a view, it does not involve a commitment to a plurality of real concrete cosmoi.

Second, and perhaps more fundamentally, Actualists have a budget of strategies for dealing with apparent quantification over merely possible individuals. Fine (2003) offers a strategy for paraphrasing possibilist quantification—including quantification over possible cosmoi—using Actualist quantifiers and modal operators;[11] Rosen (1990) offers fictionalist paraphrases; Plantinga (1974, ch. 7) argues that we can express singular propositions about merely possible individuals—and so, presumably, about merely possible cosmoi—so long as their haecceities exist. An Actualist who wishes to endorse *Cosmoi* will need to make some such move, but she probably needs to make some such move regardless, so this is not a good reason for her to reject *Cosmoi.*

A good reason to reject *Cosmoi* is that there are maximal possibilities that cannot be identified with maximal individuals. Hazel could have been different than she is: there are many distinct possibilities that involve her. Likewise, the cosmos could have been different than it is: there are many distinct maximal possibilities that involve it. And so too for other possible cosmoi. So if you gather up all the possible cosmoi, you will not yet have gathered up all the maximal possibilities.

2.1 Superessentialism

One could reject the premise, and hold that each cosmos has all of its properties essentially. If that were so, then each cosmos would correspond to exactly one maximal possibility, and it would be plausible to identify each maximal possibility with its corresponding cosmos.

Superessentialism for cosmoi—the doctrine that each cosmos has all of its properties essentially—is no more plausible than it is for ordinary individuals. A cosmos, after all, just is a very big possible individual. Our cosmos is, to be sure, quite a bit bigger than me: it is the biggest actually existing thing. Perhaps this limits its possibilities in some ways. It cannot fit through my office

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[11]See also Fine (1977[pp. 130–139]; Fine (1985)].

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door like I can. But even this is unclear: it could have been smaller, and my door could have been bigger. In any case, it seems silly to infer that the cosmos has all of its properties essentially from the fact that it is big.

Our cosmos is not just bigger than me; it is also more comprehensive. I am the mereological sum of some actual things; it is the mereological sum of all actual things. Some philosophers are mereological essentialists, holding that every whole essentially has the parts it does.[12] But this is not an especially plausible view: the hairs on my head are parts of me, but they are not essential parts of me. I could have been bald, and if I were, I would still be me, but without those hairs as parts. Likewise, then, I am a part of our cosmos, but it seems likely that I am no more an essential part of our cosmos than my hairs are essential parts of me; to suppose otherwise would seem a strange sort of hubris. Again, it seems silly to infer that the cosmos has all of its properties (or even all of its parts) essentially from the fact that it is comprehensive.[13]

Notice that, while a cosmos must be the biggest and most comprehensive thing, it need not be all that big or comprehensive, in absolute terms. The marble in my pocket is a sphere of glass, 5/8ths of an inch in diameter. It seems possible that the universe might have consisted of nothing more than that very marble; so that very marble, with more or less the same intrinsic properties as it now has, could have been the entire cosmos.[14]

So if superessentialism for cosmoi is false, let a be our cosmos, and let F and G be two distinct maximal cosmic properties that a could have. It follows that there are two distinct maximal possibilities: the possibility that a is F and the possibility that a is G. These possibilities are distinct because the properties involved—*being F* and *being G*—are distinct, not because the cosmoi involved—a and a—are distinct. So maximal possibilities—possible worlds—are not cosmoi.

2.2   Cheap Superessentialism

Some philosophers think that modal profiles are cheap.[15] This might be because they think that modality *de re* is sensitive to context, so that, relative to one context, Hazel is essentially human, but relative to another, she could have

[12]For example Chisholm (1973).

[13]Note that here there is a difference between *Cosmoi* and *Individuals*, for something analogous to mereological essentialism is plausible for pluralities: if x is among the *yy*s, then necessarily, x is among the *yy*s (see Uzquiano (2011)). But superessentialism remains just as implausible, if not more so. For, in the context of *Individuals*, there is no special object, our cosmos; there are just all of us actual things. And so the claim would have to be that each of us actual things has all of its properties essentially.

[14]The case is considerably more complicated if we assume that the marble in my pocket has its material origin essentially, but the basic point remains: among the possiblities are possibilities for which the associated cosmos will be quite small and ordinary.

[15]For a helpful discussion of the sorts of views I have in mind, see Bennett (2004).

been a poached egg.[16]   Or it might be because every possible modal profile corresponds to an actual object co-located with Hazel: $Hazel_1$, who is essentially human; $Hazel_2$, who could have been a poached egg, and so on.[17]

If you think modal profiles are cheap, then you should also think that superessentialism is cheap. Relative to one context, Hazel is essentially human; relative to another, she could have been a poached egg; and relative to another, she is essentially exactly the way she is. Or, in addition to $Hazel_1$, who is essentially human, and $Hazel_2$, who could have been a poached egg, there is $Hazel_s$, who is essentially exactly the way she is.

So too with our cosmos: in the context of thinking about it as a possible world, it is essentially the way it is, even if, relative to other contexts, it could be different.[18] Or there are many colocated maximal individuals, and one of them—call it our *cosmos*—is essentially the way it is.

Against this metaphysical backdrop, the arguments of the previous section are unconvincing, for they invite us to suppose that there is only one set of real modal profiles for ordinary objects, and then invite us to extend that thought to include cosmoi. But if we are happy to allow cheap superessentialism for ordinary objects, then we can happily extend that favor to cosmoi as well.

I don't think modal profiles are cheap, but I don't want to press that here. Step back and consider *how* superessentialism—cheap or expensive—allows us to save *Cosmoi*. To save the claim that possible worlds are individuals, the superessentialist says unexpected things about what individuals are like. She in effect builds the properties the individual has into the individual itself.[19] And so I suspect that a superessentialist cosmos just is a complex masquerading as an individual. Second, even if this first charge is wrong—even the superessentialist can show that she has not tacitly built the properties into the individual—the view is strained. At best, the defender of *Cosmoi* has squeezed a genuine individual into the shape of a complex.[20] I don't deny the ability of metaphysicians

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[16]See, for example, Lewis (1986, sec. 4.5). In conversation, Hazel says she could not be a poached egg, but allows that she could be a leopard, since she was one for Halloween.

[17]See, for example Hawthorne (2006a; 2006b, p. viii).

[18]Rosen and Lewis (2003, p. 40) consider but do not endorse the use of a cosmos taken to have this modal profile in the context of supplying truthmakers for contingent truths. An alternative Lewisian response—to understand possibilities for cosmoi counterpart-theoretically—is discussed in section 4 below.

[19]You might think that Bricker (1996, p. 225) does just this when he claims that worlds are "fully determinate in all qualitative respects." But there the claim is just that the worlds *have* the properties (as opposed to Meinongian "incomplete" objects), not that they have those properties essentially.

[20]Perhaps there is no real distinction between a complex masquerading as an individual and an individual squeezed into the shape of a complex. Suppose you need a stiff drink and Hazel offers you a bottle of water that, as it happens, goes down just like a stiff drink. Perhaps what you drank was really a stiff drink mislabeled as water. This corresponds to the idea that the superessentialist cosmos is really a complex masquerading as an individual. Or perhaps what you drank was a special kind of water (fire water?) that behaves just like a stiff drink, even though it is not alcoholic. This corresponds to the idea that the superessentialist cosmos really is an individual, even though it has been squeezed into the shape of a complex.

to squeeze square pegs into round holes—we are, by and large, quite good at that—but I think it is important to recognize when that is what is being done.

3   Cosmic Properties

Cosmoi is a well-known view, but it is a not a view that many hold. *Cosmic Properties*, on the other hand, is a widely held view. In *Counterfactuals*, Lewis argued that it is uncontroversial that there are "ways things could have been", that these just are possible worlds, so possible worlds exist (1973, p. 84). Stalnaker then criticized this argument (1976, p. 68, *original emphasis*):

> If possible worlds are ways things might have been, then the actual world ought to be *the way things are* rather than *I and all my surroundings. The way things are* is a property or a state of the world, not the world itself.

The uncontroversial commitment, Stalnaker claims, is to *ways*, and ways are properties, not individuals. So, accepting the identification of possible worlds with *ways*, Stalnaker infers that possible worlds are cosmic properties, not cosmoi.

Kripke doesn't say that possible worlds are *properties* of the world, but he does say that they are *states* of the world, which would seem to come to the same thing (1980, p. 18 original emphasis):

> 'Possible worlds' are 'total ways the world might have been', or states or histories of the *entire* world.

Soames says much the same (2007, p. 256–257):

> World-states are not Lewisian alternative concrete worlds (universes), spatially and temporally disconnected from ours. Rather, they are properties specifying ways the world could be, or be coherently conceived to be. [...] The actual world-state is the maximal, world-constituting property that the world really instantiates. Metaphysically possible world-states are maximal, world-constituting properties that could have been instantiated.

But it seems to me that *Cosmic Properties* is just as one-sided as *Cosmoi.*

3.1 Properties of Our Cosmos

As I defined it above, *Cosmic Properties* allows that there might be many possible cosmoi, and says that possible worlds are maximal properties that those cosmoi could have. But some of the quotes above suggest something stronger, namely,

Cosmic Properties of Our Cosmos A possible world is a maximal property that the actual cosmos could have.

Cosmic Properties of Our Cosmos says that all possibilities are possibilities for the actual cosmos. So it implies that the actual cosmos necessarily exists. But this seems wrong. Why think that the only cosmos that could exist is our cosmos?

One could imagine accepting *Cosmic Properties of Our Cosmos* because one was in the grip of a quasi-theistic view of the cosmos. Just as, according to many theists, the very same creator shows up in every possible world, and all that varies is what he decides to create, one might imagine that the very same all-encompassing individual shows up in every possible world, and all that varies is what it manages to encompass. But this is the sort of view that loses its plausibility once exposed daylight.

Cosmic Properties of Our Cosmos might seems like an innocent generalization of our intuitions about non-maximal possibilities for non-maximal things. In *Naming and Necessity*, Kripke considers the possibilities *for* a pair of dice (as he puts it, "the possible states of the pair"), and then invites us to generalize from that, and consider the possibilities *for* the cosmos: those, he says, are the possible worlds. He notes in passing, when introducing the possibilities for the dice, that we must "ignore the fact that one or both dice might not have existed" (1980, p. 16). He does not say whether or not, when considering the possibilities for the cosmos, we are also supposed to ignore the fact that the cosmos might not have existed.

If we don't ignore the fact that the dice might not have existed, we have to consider whether or not the possibility that neither exists is properly thought of as a state or property *of* the pair. We might be tempted to say that this is not a possibility for the pair, but a possibility for some more encompassing thing, like the cosmos.[21] But no analogous move is available for the cosmos itself, since it is the all-encompassing thing. Does it therefore follow that the cosmos necessarily exists? It seems not: all that follows is that not all possibilities are possibilities for the actual cosmos.

We have good reason to think that the cosmos might not have existed, once we recognize that it is just a very large and comprehensive individual. Being bigger and more comprehensive doesn't turn the properties one has into essential

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[21]Compare this with Rosen and Lewis (2003, p. 39) on finding a truthmaker for 'there are no unicorns in this room.'

properties; nor does it render one's existence necessary. Hazel is more comprehensive than Hazel's left foot, but they are both equally contingent. If there is an individual that contains us all, we should expect it to be contingent, just as we are.

If mereological essentialism were true, the contingent existence of our cosmos would follow immediately from the contingent existence of Hazel. And a parallel argument goes through against the non-cosmic analogue of *Cosmic Properties of Our Cosmos*, namely

Collective Properties of Us A possible world is a maximal property that all the actual things could have collectively.

Given that Hazel, who is one of us, might not have existed, it follows that *we*—the plurality of all actual things—might not have existed.

But assuming mereological essentialism is false, and returning to *Cosmic Properties of Cosmos*, the point to make here is not that the cosmos might not have existed because one of its parts might not have existed. The point instead is that being big and comprehensive is not a necessity-making property, so a really big and comprehensive ordinary object, like our cosmos, should be contingent in much the same way that smaller and less comprehensive ordinary objects, like Hazel, are contingent. And that contingency does not depend on any assumption of mereological essentialism.

It is perhaps useful to contrast our position here with the position we were in when considering *Cosmoi*. There we found ourselves driven to suppose that a cosmos has all of its properties essentially: it could not exist were it in any way different. Here we find ourselves driven to suppose that our cosmos has unlimited modal flexibility: every possibility is a possibility for it. Ordinary individuals, like Hazel, do not have this kind of modal flexibility: she could not exist as a poached egg, and so the possibility that something is a poached egg is not a possibility for her. And being bigger and more comprehensive doesn't make one more necessary in part because it doesn't make one any more modally flexible.

But a further problem lurks. Even if we did suppose that our cosmos had unlimited modal flexibility (perhaps because we think modal profiles are cheap), we *still* shouldn't suppose that it exists necessarily. Suppose that everything possible for Hazel is also possible for Ruby: Ruby matches Hazel when it comes to modal flexibility. Even so, the possibility that Hazel does something is distinct from the possibility that Ruby does it. Likewise, even if our cosmos has unlimited modal flexibility, there remains the possibility that some other cosmos could exist in its place. And so there remain maximal possibilities that are not possibilities for our cosmos.

3.2 Properties of a Cosmos

Rejecting *Cosmic Properties of Our Cosmos* brings us back to *Cosmic Properties*. According to *Cosmic Properties*, a possible world is a maximal property that could be instantiated by some maximal individual or other. This fits with the quote from Soames (2007, p. 257),

> Metaphysically possible world-states are maximal, world-constituting properties that could have been instantiated.

To say that they could have been instantiated is not to say *what* could have instantiated them: perhaps our cosmos, perhaps some other, merely possible cosmos. This is an improvement on *Cosmic Properties for Our Cosmos*, but it still does not capture all the maximal possibilities.

Consider two distinct cosmoi, *a* and *b*. Suppose *a* could be a bit sad and *b* could also be a bit sad. It follows that there are two distinct possibilities: the possibility that *a* is a bit sad and the possibility that *b* is a bit sad. These possibilities are distinct because the individuals involved—*a* and *b*—are distinct, not because the properties involved—*being a bit sad* and *being a bit sad*—are distinct.

Being a bit sad is not a maximal property (unless the sadness is *very* profound or the possibility in view is *very* bleak). But the same point applies when we consider maximal properties. Suppose there is some maximal cosmic property, *F*; that *a* could have *F*; and *b* could have *F*. If there is such a property, then the view that possible worlds are maximal properties will mistakenly identify two distinct maximal possibilities—the possibility that *a* has *F* and the possibility that *b* has *F*.

To avoid this problem, a defender of cosmic properties needs to argue that cosmic properties have their cosmoi essentially.[22] If that were so, there could not be a single cosmic property that both *a* and *b* could have.

To say that cosmic properties have their cosmoi essentially is to say that cosmic properties are haecceities, in at least one sense of that word.[23] Some sorts of

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[22]This is a bit a loose. Suppose a given cosmic property *F* has a given cosmos *a* essentially. The claim is not that *F*, if it exists, must be instantiated by *a*, since someone might hold that *F* can exist and not be instantiated at all. The claim is that, necessarily, if *F* is instantiated at all, it is only instantiated by *a*.

An alternative here would be to defend

Anti-Haecceitism Distinct maximal possibilities must be qualitatively distinct.

Suppose *F* is a maximal qualitiative property. Given *Anti-Haecceitism*, it cannot both be possible that *a* is *F* and that *b* is *F*. But how can this be, given that *a* and *b* are distinct cosmoi? Presumably some sort of deep metaphysical skepticism about the status of individuals lurks.

[23]Note that I am using 'haecceity' here in a broad sense. Primitive thisnesses, if there are such things, count as haecceities, but so do non-primitive properties like *being identical to Socrates*. For a defense of primitive thisnesses, see Adams (1979).

haecceity are controversial, but others are not.[24]

One easy way to construct a relatively uncontroversial haecceity is to take an ordinary property and conjoin it with the property of being identical to some specific individual. Suppose *H* is an uncontroversial property. Then let *F* be the property *being identical to a and being H*. Then it is easy to see why *a* can be *F*, but *b* cannot. It is also easy to see that *b* can have a property much like the property *F*, namely, the property *being identical to b and being H*. In this way, we can build the identity of the instance directly into the property.

Haecceities can be put to use in various ways. Plantinga uses them as surrogates for non-existent individuals: Socrates doesn't exist, but his haecceity does, so his haecceity can stand surrogate for him in various contexts.[25] This use of haecceities raises difficult issues about the ontological priority of haecceity and instance.[26]

But we do not need to worry about such issues here. Our goal here is to use haecceities to forge necessary connections between properties and individuals, so that we can then identify those properties with possible worlds. The defender of *Cosmic Properties* need not claim that haecceitistic cosmic properties are deep or natural or fundamental properties that do real metaphysical work, because she need not claim that possible worlds are deep or natural or fundamental features of reality: they might be derivative entities, abstractions, useful markers or signposts we use to navigate through modal space.

So I think we should admit that a dedicated defender of *Cosmic Properties* can posit maximal properties that have their instances essentially, and thereby guarantee that each maximal property is bound to a single maximal possibility. We've already seen that a dedicated defender of *Cosmoi* can assert that cosmoi are maximal individuals that have their properties essentially, and thereby guarantee that each maximal individual is bound to a single maximal possibility. And the complaints issued against that defense of *Cosmoi* apply to this defense of *Cosmic Properties* as well: first, haecceitistic cosmic properties are properties with their instances built in, and so appear to be complexes masquerading as properties; second, even if they are not complexes masquerading as properties, they are properties that have been squeezed into the shape of complexes.

The first complaint applies directly the haecceitistic cosmic properties constructed in the easy way described above. The second complaint applies to views that employ other more controversial sorts of haecceity instead.

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[24]Primitive or natural or fundamental haecceities—like primitive thisnesses—are controversial. It seems likely that an appropriately sparse conception of properties will leave them out. But non-fundamental non-natural non-primitive haecceities—like *being identical to Hazel*—are less controversial: if you have Hazel and you have the relation *being identical to*, it is hard to see why you can't also have the property *being identical to Hazel*.

[25]The locus classicus of this sort of use haecceities is Plantinga (1974). He argues that possible worlds contain the haecceities of merely possible individuals, even though there are no merely possible individuals.

[26]See Fine (1985; 2003). Of course someone who holds that haecceities are fundamental properties might deny this. But see Adams (1981).

If you are not antecedently committed to *Cosmoi* or *Cosmic Properties*, then I think that the view that possible worlds are complexes is by far the most natural view. It is clear enough that maximal possibilities *want* to be complexes, so that those who say they are individuals or properties must admit that they are individuals or properties dressed up to look like complexes.

4   Cosmic Counterparts

I have argued that there are maximal possibilities that cannot be identified with any maximal individuals. Lewis would, as far as I can tell, agree. He thinks that his possible worlds *represent* all the possibilities, but he does not think that they *are* all the possibilities.[27]

Our cosmos could have been different than it is. For Lewis, all the other cosmoi represent other possibilities for it. Each of those other cosmoi could have been different than it is, too. So consider some other cosmos, *w*. All the other cosmoi (including our own) represent other possibilities for *w*, too. So each cosmos represents as many distinct maximal possibilities as there are cosmoi (since each cosmos represents, among other things, a possibility for itself).[28]

The cosmoi that represent possibilities for a given cosmos are the cosmoi that are accessible to it. Accessibility relations between cosmoi just are counterpart relations writ large. Consider the work that a counterpart does, for Lewis: it represents a way a thing could be. And what about the counterpart is relevant to the way that it does this work? Not that it is the individual that it is, but that it has the qualitative properties that it has. (Perhaps one of Hazel's counterparts is Heloise: the possibility represented is not the possibility that she be *identical to* Heloise, but that she be just like Heloise was.) So, in effect, a counterpart, in its role as a counterpart, is a peg upon which to hang a maximal property that an individual could have.[29]

What, then, are maximal possibilities, given this account? A maximal possibility involves two cosmoi: one playing itself, the other playing the role of counterpart. Distinct maximal possibilities are distinct because distinct cosmoi are involved, or because the cosmoi involved have swapped roles. Metaphysical niceties aside, the cosmos playing the counterpart role is, in this account, a

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[27]See Lewis (1986, p.8 and pp. 230ff.), Rosen and Lewis (2003, p. 40), Bricker (2006b). But note that Lewis also speaks as though quantification over worlds is quantification over possibilities (1986, p. vii).

[28]For the sake of simplicity I here assume, quite implausibly, that maximal individuals are essentially maximal and non-maximal individuals are essentially non-maximal. If these assumptions are dropped, then there will be additional maximal possibilities, counterpart-theoretically represented by relations between cosmoi and proper parts of cosmoi.

[29]I owe this way of expressing it to Ben Caplan, though he takes no responsibility for the view hereby expressed. The metaphor of hanging properties on pegs comes from (Turner 2010).

stand-in for a cosmic property. So, metaphysical niceties aside, a maximal possibility is a complex involving a cosmos and a cosmic property. So, metaphysical niceties aside, the Lewisian position is *Cosmic Facts*, not *Cosmoi.*

Putting metaphysical niceties aside can be helpful: it is a way of ignoring nice distinctions and seeing important commonalities. But sometimes nice distinctions matter. If we don't put metaphysical niceties aside, Lewis's view is importantly different from *Cosmic Facts*: the possibility that a given cosmos have a given cosmic property is not taken to be a possible fact involving an individual and a property, but a relation between two individuals. But note that the view remains a species of *Complexes.* For what is a maximal possibility, on this view? It cannot be individuated just in terms of the maximal property involved (i.e., the cosmos playing the role of counterpart). Nor can it be individuated just in terms of the individual involved (i.e., the cosmos for which the possiblity is a possibility). It must be individuated in terms of an asymmetric relation the cosmoi stand in: the one representing a possibility for the other. So a maximal possibility is a complex.

Lewis maintains that possible worlds are maximal individuals, but this is only because, for Lewis, possible worlds are not maximal possibilities. So the Lewisian pluriverse—the mereological sum of all the possible worlds—is *not* the space of maximal possibilities. Applying counterpart theory to the pluriverse gives us a way of *representing* the space of maximal possibilities by using the Lewisian pluriverse: a point in that space can be represented as an ordered pair of cosmoi, $<a, b>$, where a plays the role of maximal individual and b plays the role of maximal property.

I am happy to give Lewis the word 'possible world', so long as we all recognize that possible worlds, in Lewis's sense, are not maximal possibilities. This suggests that certain debates—like the well-worn debate over whether or not the same individual can exist in two distinct worlds, and the debate over whether or not there can be two distinct but qualitatively identical worlds—are liable to be confused. We should all agree that the same individual can exist in two distinct maximal possibilities, for example. Disagreement arises because some of us are using 'possible world' as a synonym for 'maximal possibility', and others are not.

5   Conclusion

I have argued that maximal possibilities are complexes—more like facts or propositions than individuals or properties. The argument is not a knockdown argument, for, as I admit, one might hold that there are individuals or properties that behave more like propositions or facts than one might have thought.

It is common practice in ontology to seek parsimony by reducing or replacing entities of one kind with entities of another. Perhaps, given a liberal ontology

of individuals, facts and possibilities just are individuals of a certain kind; perhaps, given a liberal ontology of properties, propositions and possibilities just are properties of a certain kind. Whether this counts as genuine parsimony depends in part on how we individuate kinds. For my part, I suspect that superessentialist individuals are concrete complexes, and so are more of a kind with facts than ordinary individuals; and I suspect that hacceitistic properties are abstract complexes, and so are more a kind with propositions than ordinary properties. But no doubt there is room to resist these suspicions in pursuit of one's own sense of ontological purity.

What I hope to have shown is that the default position—the position we should start from—is that maximal possibilities are complexes. Those of us who are antecedently comfortable with an ontology that includes propositions or facts should, I think, be equally comfortable with this default position. And the plausibility of the sort of reductionist move implicit in *Cosmoi* and *Cosmic Properties* should be measured against this default.

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