



11

Mountains and Their Boundaries

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Amie Thomasson has made groundbreaking contributions to the ontology of human kinds, both abstract and concrete: literary works and fictional characters (1999), social objects (2003a, 2009b, 2019a), material artifacts (2003b, 2007), and artworks (2010b). My interest here will be on her discussion (2001) of a type of object that arguably straddles the line between human kind and natural kind, namely geographic objects like mountains. In §1, I lay out a puzzle about mountains that generates some pressure towards accepting that we are somehow responsible for their having the boundaries that they do. As a foil for Thomasson's own account, I present two competing theories of geographic objects—one on which they are thoroughly mind-dependent (§2), and one on which they are thoroughly mind-independent (§3)—neither of which yields a fully satisfying solution to the puzzle. I then turn to Thomasson's intriguing suggestion that, although the geographic objects themselves are mind-independent, the boundaries of those objects are not (§4). Finally, I

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examine whether Thomasson's account is equipped to solve the puzzle (§5), and I explore how the account interacts with Thomasson's plenitudinous ontology (§6).

The Puzzle

Some objects have “joint-carving” boundaries, that is, boundaries that run along a site of intrinsic qualitative differentiation. A pebble, for instance, has a joint-carving boundary: there's stone on one side of the boundary and air on the other. This is not to say that the boundary is precise. It may well be indeterminate, at the microscopic level, where exactly the pebble ends and the air begins. But the site of intrinsic qualitative differentiation is likewise imprecise. So long as the gray area of the pebble's boundary matches the gray area of where stone ends and air begins, the boundary will count as joint-carving in the intended sense.

Other objects have “non-carving” boundaries, that is, boundaries that at least in part do not run along the site of any intrinsic qualitative differentiation—boundaries that, as Barry Smith puts it, “lie skew to the physical joints of reality” (2001: 134). Mountains are often like this. As one walks from the center of town towards the mountain, one at some point reaches a slight, imperceptible incline. But one is not yet on the mountain. The incline gradually becomes steeper and steeper, and at some point, one is on the mountain. Coming down from the mountain, one is definitely off the mountain well before one reaches perfectly level ground, just as one is definitely bald well before one reaches complete hairlessness.

Such mountains—let's suppose Mount Kinabalu (Thomasson's go-to example) is one of them—have non-carving boundaries.¹ It is not just that their boundaries are imprecise, which of course they are. Unlike a pebble, or even a cloud, Kinabalu's imprecise boundaries do not run along even an imprecise site of intrinsic qualitative differentiation.

¹ If not Kinabalu, Canberra's Mount Ainslie (though technically a hill, not a mountain) has the sort of dimensions I have in mind here.

Given the seeming arbitrariness of Kinabalu's boundaries, one naturally wonders whether there are objects answering to other ways of drawing the boundaries—and if not, why not. Let R_K be the (imprecise) region that Kinabalu occupies. Now consider a somewhat larger region, R_K^+ , extending well beyond the point at which the incline becomes noticeably steep, and encompassing portions of the surrounding terrain that we definitely wouldn't regard as part of Kinabalu, for instance the areas of negligible incline that one encounters *en route* to Kinabalu. Let's call the object occupying R_K^+ , if there is one, 'Kinabalu⁺'.

A puzzle arises for those who, like me, are inclined to agree that there is such an object as Kinabalu, but deny that there is also such an object as Kinabalu⁺. The puzzle can be framed as an inconsistent tetrad:

THE PUZZLE

- (i) There is no ontologically significant difference between Kinabalu and Kinabalu⁺
- (ii) If so, then: if Kinabalu exists, then so does Kinabalu⁺
- (iii) Kinabalu⁺ does not exist
- (iv) Kinabalu does exist

Regarding (i): An *ontologically significant difference* between two putative objects is a difference that could explain why the one but not the other exists. Put another way, an ontologically significant difference is the sort of difference that can make a difference with respect to which things exist. And it's plausible, at least on the face of it, that there is no such difference between Kinabalu and Kinabalu⁺.²

This is not to say that there is *no* interesting difference between them. One difference between Kinabalu and Kinabalu⁺ is that Kinabalu's outer boundaries correspond to a point at which there begins to be a notable incline—that is, an incline sufficiently steep to be noticed by and have a discernible effect on beings like us. And whereas that's a difference that is of some importance to us, it seems far too anthropocentric to be the sort

² Carmichael's (2020: §2) strategy for resisting arbitrary undetached parts may be adapted as a strategy for resisting (i). The strategy ultimately turns on the idea that distinct objects cannot be exactly co-located. Since I—like Thomasson (2006: §4, 2007: ch.4)—have no objection to co-located objects, I won't pursue this strategy here.

of difference that could make an ontological difference. True, one starts to break a sweat and can really feel it getting steeper as one crosses the threshold of R_K , whereas one hardly notices anything changing as one crosses the threshold of R_K^+ . But that surely can't be *why* there's an object in R_K but not in R_K^+ . The fact that the outer edge of R_K (unlike R_K^+) runs along the site where a notable incline begins plausibly explains why we *think* of R_K (but not R_K^+) as the boundary of an object, but it cannot plausibly explain why R_K (but not R_K^+) *is* the boundary of an object.

Claim (ii) is a plausible anti-arbitrariness constraint: it cannot simply be a brute fact that the matter in R_K constitutes an object but the matter in R_K^+ doesn't.³ As for (iii) and (iv), while sensible and intuitive, they are not uncontroversial. Plenty of metaphysicians are eliminativists, and will deny that there are mountains, and plenty of others embrace permissive ontologies that include Kinabalu⁺, along with bazillions of other objects we fail to notice. But the puzzle is pressing for conservatives like myself, according to whom, when it comes to highly visible material objects, things are more or less the way they seem to be, perceptually and intuitively.⁴

The puzzle straightforwardly generalizes to a broad range of geographic entities, including hills, dunes, seas, and oceans. By contrast, the puzzle doesn't arise (with any force) for objects with joint-carving boundaries. For instance, take a pebble, and consider a region somewhat larger than the pebble, encompassing both the pebble and some of the surrounding air. The fact that the boundaries of the pebble are joint-carving, whereas the boundaries of this larger region aren't, seems poised to explain why the contents of the one but not the other constitute an object; it's plausibly an ontologically significant difference.⁵

³Proponents of the "brutality of compositional facts" (e.g., Markosian 1998: 215) will likely reject (ii). Certain sorts of deflationists (e.g., Putnam 1987, Hirsch 2002b, and Fine 2007: 163-165) are also well-positioned to reject (ii), since on their view, when one accepts that Kinabalu but not Kinabalu⁺ exists, one does not thereby *privilege* Kinabalu over Kinabalu⁺. But this is not the sort of deflationism that Thomasson herself defends; more on Thomassonian deflationism in §6.

⁴See Thomasson (2006, 2007, 2010a) for discussion of permissivist and eliminativist ontologies. See Korman (2015) for a defense of conservatism.

⁵Though see Varzi (2011: 140) and Fairchild and Hawthorne (2018: 69-71) for skepticism about treating such boundaries as ontologically privileged.

Before turning to Thomasson's account of geographic objects, and how it might help with the puzzle, let's consider two competing accounts.

Robust Creationism

The fact that Kinabalu's boundaries, but not those of Kinabalu⁺, mark the start of a notable(-to-humans) incline seems not to be an ontologically significant difference. But there is another, closely related difference that might do the trick, namely that—perhaps as a result of noticing the incline at R_K but not at R_K^+ —we “draw lines” around R_K (but not around R_K^+) and take there to be an object circumscribed by those lines.

The idea that line-drawing has the power to bring things into existence draws support from reflection on geopolitical entities.⁶ Wyoming and Colorado, for instance, plausibly came into existence as a result of line-drawing. Moreover, there is a straightforward explanation for why there are states occupying those rectangular regions and yet no state in some arbitrary rectangular region that cross-cuts Wyoming and Colorado. The ontologically significant difference is that actual people actually drew the former lines whereas no one drew the latter lines.

“Line-drawing”, as I intend it here, covers not just the literal drawing of lines on maps, but also conceptual activity like focusing on some region and regarding it as the boundary of an object. To be sure, not all acts of line-drawing suffice to bring objects into existence. Your fleeting conceptualization (just now) of a rectangular region cross-cutting Wyoming and Colorado doesn't bring a new object into existence that has that region as its boundaries. Perhaps that's due to a lack of collective buy-in, or a lack of sustained attention to this newly (conceptually) drawn line, or your lack of relevant authority, or the lack of a robust set of norms or practices accompanying the line-drawing. What exactly it is that's missing is beyond the scope of this paper (though see Passinsky 2020: §2 for an insightful discussion). The takeaway here is just that line-drawing is *at least sometimes* ontologically significant.

⁶ See Smith (2001), Thomasson (2001: 150-151), Korman (2020: §5.1), and Passinsky (2020) for a defense of robust creationism about geopolitical entities, and see Heller (1990: 36-37) for resistance.

One might try to apply the same sort of account to non-geopolitical geographic objects like mountains. At some point in the distant past, people encountered the granite in and surrounding R_K and drew lines around R_K . As a result of the line-drawing, the idea goes, a new object came into existence—Mount Kinabalu—constituted by the granite in R_K . Let's call this sort of account *robust creationism*, understood as the thesis that mountains and other such geographic objects are created by acts of line-drawing. The view is “creationist” insofar as it takes geographic items to be created by people. It is “robust” in comparison to Thomasson's more modest view—which we'll discuss in §4—on which line-drawing creates the boundaries of the mountain, but not the mountain itself.

Robust creationism fully vindicates the idea that it was up to us where Kinabalu's boundaries are: had we drawn the lines differently, Kinabalu would have occupied a different region and would have been constituted by a different portion of granite. Accordingly, robust creationism has the resources to deny (i) of the puzzle. The ontologically significant difference between Kinabalu and Kinabalu⁺, the idea goes, is that people drew lines around the region occupied by Kinabalu, whereas no one drew lines around the region putatively occupied by Kinabalu⁺.

Smith (2001), as I read him, is a robust creationist.⁷ He couches his account in the language of *fiat boundaries* and *fiat objects*, which I understand as follows. A *fiat boundary* is a boundary that is mind-dependent and (partially or entirely) non-carving. A *fiat object* is an object whose boundaries are fiat boundaries. While it's not true *by definition* that fiat objects are mind-dependent (only that their boundaries are), it's natural to think that they would have to be. And Smith does indeed take geographic objects like the North Sea to be fiat objects that we brought into existence with our conceptual activity:

It seems to have been a complex medley of considerations relating to shipping, trade, harbors, climate, markets, and so on, which led our ancestors to **create** the fiat object “North Sea” Fiat objects in general **owe their existence** not merely **to human fiat** but also to associated real properties of the relevant factual material (2001: 142).

⁷As is Varzi (2011: §3).

Thomasson (2001: 150) interprets Smith differently, as endorsing her more modest form of creationism on which it is only the boundaries of geographic objects, not the geographic objects themselves, that are mind-dependent. Smith does say (and Thomasson quotes him as saying):

[T]he interiors of fiat objects are ... autonomous portions of autonomous reality. **Only** the respective external boundaries are created by us (2001: 143).

However, what I read him as saying here is not “only the boundaries *and not the fiat object itself*”—which would contradict what he said in the earlier passage—but rather “only the boundaries *and not the material stuff that constitutes the fiat object.*” I likewise take his references to “relevant factual material” and “the interiors of fiat objects” to be referring, not to the fiat objects themselves, but to the stuff (e.g. water or granite) that constitutes the objects.

The obvious problem with robust creationism is that Kinabalu and other mountains long pre-dated our line-drawing. Kinabalu is millions of years old, and therefore existed long before there were any humans around to draw lines around the contents of R_K . If that's right, then the line-drawing cannot be what brought Kinabalu into existence.

Robust creationists may bite the bullet, conceding that, although the mind-independent stuff (the granite) that presently constitutes Kinabalu has been around for millions of years, Kinabalu itself (the mountain) does not pre-date the arrival of humans in Borneo. They may however insist that, when we find it plausible that mountains long pre-dated our line-drawing, we are confusing the mountain with the stuff that constitutes the mountain. And it's true that we sometimes run these things together. For instance, we say things like ‘dinosaurs once roamed Wyoming’, meaning of course that dinosaurs once roamed *the land* now occupied by Wyoming, and knowing full well that the state of Wyoming didn't exist in the time of the dinosaurs. The robust creationist may suggest that we are likewise speaking loosely when we say things like ‘mountains have existed for millions of years’, meaning only that the stuff that now constitutes them has existed (and has been mountain-shaped) for millions of years. And when we report finding ‘mountains have existed

for millions of years' to be obviously true, the idea goes, what is actually striking us as obvious is the creationist-friendly truth that such a claim would ordinarily be loosely used to express—namely, a claim about the stuff that constitutes mountains.

In reply: There is good evidence that we speak loosely in saying 'dinosaurs once roamed Wyoming'. The good evidence is that when pressed ("there weren't any states back then!"), we immediately retract ("okay, but there used to be dinosaurs on *that land*"). We easily recognize, upon minimal reflection, that we were, perhaps without realizing it, speaking loosely. In stark contrast, 'mountains have existed for millions of years', even on reflection, seems no less strictly and literally true than 'mountains are steep', and there is no felt need to retract or rephrase what one said.⁸ Given the lack of any temptation to retract, there is no reason to think that we are merely speaking loosely when we say such things. And given that we *do* see the need to retract or rephrase talk of dinosaurs in Wyoming, there is no reason to think that we are prone to confusing a thing and its matter—or, at any rate, prone to a confusion that isn't cured by minimal reflection.

Selectionism

Let's turn now to a competing account of geographic objects, one on which mountains and other such geographic objects are mind-independent objects with mind-independent boundaries. Call this sort of account *selectionism*. By selectionist lights, when we draw lines, we are not thereby bringing mountains into existence; we are merely selecting pre-existing objects for attention and reference.

Selectionism easily accommodates the longevity of mountains: since Kinabalu doesn't (on this view) depend for its existence on our conceptual activity, there is no barrier to its pre-dating our arrival by millions of years. Selectionists will likely regard any temptation to say that it is up to

⁸Cf. Hirsch (2002a: 109-111). Of course, those who already accept robust creationism will feel a need to retract after saying such things, but *their* felt need to retract is no evidence that the rest of us are speaking loosely when we say such things. Cf. Merricks (2001: ch. 7.4) on philosophers speaking loosely.

us where Kinabalu's boundaries are as resting on a sort of use/mention confusion. All that is up to us is whether to use the name 'Kinabalu' to pick out an object with those boundaries. Our line-drawing doesn't determine which objects there are but only which objects we refer to.

As for the puzzle, rejecting (i) seems like a non-starter for the selectionist. After all, the only plausible candidate we've found for an ontologically significant difference between Kinabalu and Kinabalu⁺ requires taking mountains to have mind-dependent boundaries, generated by acts of line-drawing. Selectionism, rather, is most naturally paired with a rejection of (iii), affirming the existence of Kinabalu⁺. More generally, it is naturally paired with one or another form of *permissivism*, on which there are wide swathes of material objects right before our eyes but that routinely escape our notice. Mereological universalism, for instance, delivers objects exactly filling R_K , R_K^+ , and any other matter-filled region we may wish to draw lines around. (Though, as we shall see, selectionists likely need a form of permissivism far more potent than universalism.) In permissive ontologies, there are objects answering to any of the myriad ways we could have conceptualized geographic boundaries, and had we drawn different lines we would simply have selected different objects for attention and reference.⁹

Frege, as I read him, endorses a permissive form of selectionism:

The objectivity of the North Sea is not affected by the fact that it is a matter of our arbitrary choice which part of all the water on the earth's surface we mark off and elect to call the 'North Sea'... If we say 'The North Sea is 10,000 square miles in extent' ... we assert something quite objective, which is independent of our ideas and everything of the sort. If we should happen to wish, on another occasion, to draw the boundaries of the North Sea differently... that would not make false the same content that was previously true: what we should perhaps rather say is, that a false content had now taken the place of a true, without in any way depriving its predecessor of truth. (1884/1980: 34)¹⁰

⁹Cf. Heller (1990: 36) on selectionism as applied to geopolitical entities. Selectionism is a natural extension of Lewis's (1986: 212) remarks about the Australian outback.

¹⁰Smith (2001: 134) quotes from this passage as well, but may be reading Frege as a robust creationist.

Here is what I understand Frege to be saying. Our line-drawing demarcates the mind-independent boundaries of a mind-independent body of water, which let's say (following Frege) is 10,000 square miles. We selected that body of water for attention, and named it 'The North Sea'. Lying within its perimeter is a somewhat smaller body of water, which currently has no name but exists nonetheless. If at some future time we select the smaller body of water for attention and decide to apply 'The North Sea' to it, 'The North Sea' will at that point refer to something else. The North Sea will still be 10,000 square miles, but 'The North Sea is 10,000 square miles' will say something false about something other than the North Sea.

Selectionism, if it is to serve as a principled solution to the puzzle, evidently must be paired with a permissivist ontology on which there are countless mountain-like things—Kinabalu⁺ among them—massively overlapping Kinabalu, but either extending past the outer boundaries of Kinabalu, or stopping short of its outer boundaries. Can permissive selectionists somehow show that this explosion of mountain-like things is not quite as bad as it seems?

One strategy would be to remind us that permissivism is downright intuitive when it comes to portions of matter.¹¹ No one denies that there's some granite in (and exactly filling) the region R_K^+ . In other words, there is something in that region that we all already recognize: some granite. Yet, 'Kinabalu⁺' was stipulated to name the object (if any) exactly filling R_K^+ . Thus, the idea goes, to recognize Kinabalu⁺ is just to recognize something that's already present in a commonsense ontology.

There are, however, important respects—specifically, modal respects—in which the granite in R_K is unlike a mountain. That granite could survive being flattened to the ground, or even being blown to bits. A mountain, by contrast, couldn't survive either of these things. A selectionist who cannot deliver a modally mountain-like Kinabalu⁺ would then face a new version of the arbitrariness puzzle.¹² For, just as it appears intolerably arbitrary to privilege R_K by taking it to be the sole occupied

¹¹ Cf. Markosian (2015: 678) on "PUF for Stuff".

¹² Additionally, one might worry that the granite doesn't even satisfy the description used to fix the reference of 'Kinabalu⁺', since the granite is *some stuff*, whereas it was stipulated that 'Kinabalu⁺' names an *object*. See Kleinschmidt (2007) and Markosian (2015) on the distinction between stuff and objects.

region in its vicinity, it likewise appears intolerably arbitrary to privilege R_K by taking it to be the sole region in its vicinity occupied by something modally mountainlike. To address the concern about arbitrariness, the selectionist must embrace a more plenitudinous permissivism, on which R_K^+ is likewise occupied by something modally mountainlike. The observation that common sense recognizes arbitrary portions of matter is not enough to take the sting out of the full permissive ontology needed by the selectionist.¹³

Opinions will differ on just how problematic it is for selectionists (if at all) that they are committed to a modally mountain-like occupant of R_K^+ . However, it's clear enough that this sort of selectionism is unavailable to those who favor a conservative (non-permissive) ontology. So let's turn to Thomasson's account of geographic objects, to see whether it can serve as a viable option for conservatives.

The Modest Creationist Compromise

What conservatives evidently need—if they are to solve the puzzle—is a view on which geographic objects are sufficiently mind-independent to pre-date the arrival of humans, and yet sufficiently mind-dependent that our line-drawing can play a role in explaining why there's a mountain exactly filling R_K but no mountain exactly filling R_K^+ . Robust creationism cannot deliver the former, and selectionism cannot deliver the latter.

In her 2001 article, “Geographic Objects and the Science of Geography,” Thomasson advances an account of geographic objects that's poised to deliver all the goods. Recall (from §2) Smith's distinction between fiat *boundaries*, that is, mind-dependent non-carving boundaries, and fiat *objects*, that is, objects with partly or entirely fiat boundaries. As Thomasson rightly points out, “the fact that an object is a fiat object does not entail that the object itself is mind-dependent, but only that some of its boundaries are” (2001: 150). Strictly speaking, there is no

¹³ See Thomasson (2007: 183-185) for a different attempt to take the sting out of permissivism, and see Korman (2015: 47-48) for critical discussion.

contradiction in affirming that a mind-independent object has mind-dependent boundaries.

This opens the door to a modest alternative to robust creationism—call it *modest creationism*—according to which the boundaries of mountains and other such geographic objects are created by acts of line-drawing, but the objects themselves are mind-independent. In Thomasson's own words:

Such fiat objects as Mount Kinabalu provide excellent examples of fiat objects whose mere existence (as physical objects) is mind-independent, though the existence of certain of their boundaries depends on human cognition. (2001: 150)

[T]here is some sense in which such apparently fiat objects as bays and mountains (but not nations and property) could exist in the absence of all linguistic and cultural habits. (2001: 151)

[T]he boundaries of Mount Kinabalu are not established through any formal declaration, but rather through the informal collective practices of people of Borneo regarding what pieces of land and rock do and do not 'count as' part of Mount Kinabalu. (2001: 151)

Modest creationism promises to give us everything that we want. Since Kinabalu is mind-independent on this view, we can accommodate the historical fact that Kinabalu long pre-dated the arrival of humans in Borneo. At the same time, modest creationism tells us that it's up to us where Kinabalu begins and ends, which yields a conservative-friendly solution to the puzzle: the fact that we drew lines around R_K and not R_K^+ serves as an ontologically significant difference between Kinabalu on the one hand, and $Kinabalu^+$ on the other. In other words, the modest creationist can help herself to the robust creationist's solution to the puzzle without inheriting robust creationism's revisionism about the age of Kinabalu.

To my mind, the main allure of modest creationism, and its primary advantage over selectionism, is precisely that it provides a conservative-friendly solution to the puzzle. But Thomasson herself is no conservative. Indeed, she endorses a highly permissive ontology, one on which R_K and R_K^+ each contain bazillions of objects with (virtually) every imaginable

modal profile. So it is somewhat curious that she doesn't go in for a selectionist account, even though the availability of such an account is clearly on her radar (see 2001: 158 n.6). More on this in §6.

Boundaries in the Distant Past

There is a crucial question that modest creationism leaves unanswered, and that I fear has no satisfactory answer: what was Kinabalu like prior to the line-drawing that determined its current boundaries?

Let t be some time in the distant past—100,000 years ago, let's say—prior to the arrival of humans in Borneo, but not before R_K was filled with matter arranged mountainwise. Here is a revised version of the puzzle:

THE REVISED PUZZLE

(i*) There is no ontologically significant difference *at t* between Kinabalu and Kinabalu⁺

(ii*) If so, then: if Kinabalu exists *at t*, then so does Kinabalu⁺

(iii*) Kinabalu⁺ does not exist *at t*

(iv*) Kinabalu does exist *at t*

The rationale behind (ii*) and (iii*) is exactly the same as the rationale for (ii) and (iii)—so rejecting either of those would remove the need for modest creationism to solve even the original puzzle. As for (iv*), modest creationism doesn't strictly *commit* one to accepting it. It is (strictly) open to modest creationists to say that, although Kinabalu is mind-independent, it so happens that it came into existence only once (but not *because*) lines were drawn around R_K . But to deny (iv*) would be to sacrifice the main advantage of modest creationism over robust creationism—namely, that it avoids revisionism about the age of Kinabalu. Furthermore, if Kinabalu is mind-independent, then there must be some world w in which Kinabalu exists but in which there are no minds whatsoever. So we could always (re-)reinstate the puzzle in terms of w rather than t .

Now for (i*). The key to the creationist strategy for resisting (i) of the original puzzle was to insist that the fact that people drew lines around R_K whereas no one drew lines around R_K^+ is an ontologically significant difference between Kinabalu and Kinabalu⁺. However, since lines had not yet been drawn at t , the appeal to line-drawing may seem like a

nonstarter for resisting (i^*). But perhaps there is some way to adapt the line-drawing response to solve even this puzzle.

The modest creationist might insist that mountains needn't have their boundaries determined case-by-case, but rather by what Thomasson calls "direct creation by type" (2001: 152). Here, the idea would be that mountains have their boundaries determined by a more generic type of line-drawing, for instance by early humans conceptualizing mountains—as a kind—as having boundaries beginning at the point of notable incline. In that case, early human encounters with mountains in Africa could have generated boundaries for mountains around the globe that hadn't yet been encountered—Kinabalu among them. This response, however, is unavailable if we place t further in the past, say a million years ago, before *any* line-drawing was happening, but not before there was matter arranged mountainwise in R_K .

Alternatively, modest creationists might insist that Kinabalu had the boundaries that it did at t as a result of line-drawing that occurred *after* t . This sort of maneuver is not entirely without precedent. Lynne Rudder Baker (2007: 130-132), for instance, defends a view of vague composition on which whether x and y are a borderline case of composition—as when a hammer head is in the middle of being affixed to a hammer handle—depends in part on whether they later definitely do compose something. If the assembly is later completed, then they are a borderline case of composing something in the intuitive grey area; but if the assembly is never completed, the idea goes, then they definitely compose nothing in the intuitive grey area. Similarly, the modest creationist might hold that Kinabalu occupied R_K at t , but would not have occupied that region at t had it not been for cognitive acts that occurred long after t .

The problem with this strategy—even setting aside the curious sort of backwards causation it involves—is that it can't accommodate the aforementioned world w , in which there are mountains but no minds. In such a world, Kinabalu exists and yet there are no minds, and thus no acts of line-drawing—before, during, or after t —to serve as the ontologically significant difference between Kinabalu and Kinabalu⁺.

Reflection on w reveals an even more fundamental problem with modest creationism: supporters evidently must concede that Mount Kinabalu can exist (and perhaps once did exist) without any boundaries at all, even

imprecise boundaries. But it is hard to make any sense of this suggestion. If at some time Kinabalu has no boundaries, then there is nowhere that it begins and ends at that time. In that case, there is nothing that lies outside of its boundaries at that time, including the coastline of Borneo, the South China Sea, or even the sun. Moreover, if it had no boundaries at that time, then nothing was within its boundaries at that time either, including its peak—from which it would seem to follow that it had no parts at that time, since plausibly x is a part of y only if x lies within the boundaries of y .

Perhaps I have been unfair to Thomasson. I have thus far been operating under the assumption that, in calling the boundaries of Kinabalu “mind-dependent”, Thomasson means that it’s impossible for Kinabalu to have boundaries in the absence of minds. But perhaps there is a weaker, more charitable understanding of the view, on which Kinabalu and other geographic objects are merely being said to have “mind-malleable” boundaries, that is, boundaries whose location can be changed by mere mental acts. That would then be compatible with Kinabalu having boundaries in w and at t —boundaries that weren’t created by line-drawing, but which can be affected by line-drawing.

So understood, modest creationism would avoid commitment to the possibility of boundaryless objects. But it remains unclear how this modification helps with the revised puzzle. There are no joint-carving boundaries anywhere in the vicinity of Kinabalu’s boundaries. So, supposing that Kinabalu’s boundaries at t were at least *roughly* where they are now, neither joint-carving boundaries nor line-drawing can serve as the needed ontologically significant difference at t between Kinabalu and Kinabalu⁺. So conservatives are still left without any way of resisting (i*).

Perhaps conservatives could challenge the supposition that Kinabalu’s boundaries at t were roughly where they are now. At t , the idea goes, Kinabalu had boundaries extending all the way to the nearest site of intrinsic qualitative differentiation, be it the nearest coastline, the lowest point of the nearest valley, or the nearest point at which flat terrain begins. By drawing lines, the idea goes, we stripped Kinabalu of its joint-carving boundaries and imbued it with its present non-carving boundaries. This would then underwrite a two-pronged strategy for resisting the puzzles: resist (i*) by pointing to the fact that Kinabalu but not Kinabalu⁺ had

joint-carving boundaries at t , and resist (i) by pointing to the fact that we draw lines around R_K but not R_K^+ .

In reply: One would have to study the actual terrain (and its geological history) to establish what, according to this response, Kinabalu's dimensions were at t . But it is an open (epistemic) possibility that the nearest site of intrinsic qualitative differentiation, in all directions, is hundreds of miles beyond Kinabalu's present boundaries. Perhaps the nearest site is the coastline of Borneo, in which case this view would imply that Kinabalu once spanned the entire island, and then—once lines were drawn—it shrunk down to a tiny fraction of its original size, occupying only a small portion of the island. Perhaps some conservatives will be able to stomach this possibility. But that this is even an open possibility strikes me as a *reductio* of the envisaged strategy.

Modest Creationism for Permissivists

In thinking about Kinabalu at t , I have been focusing somewhat narrowly on modest creationism's shortcomings *as* a conservative-friendly solution to the puzzles. But Thomasson is no conservative: she embraces a plenitudinous ontology, which straightforwardly delivers the result that (iii) is false. So, let me close the paper with an examination of Thomasson's plenitudinous ontology (§6.1), followed by a discussion of whether plenitudinists ought to accept modest creationism (§6.2).

Thomasson's Plenitude

Very roughly put, a plenitudinous ontology is one that includes objects answering to any conceivable way of dividing up matter into objects and attributing modal profiles to those objects. As an illustration, a plenitudinous ontology will include something right where my car is—an "incar"—that's constituted by the matter of my car, but that unlike my car is necessarily inside the garage. It will also include objects (co-located with my car) that are necessarily dented, objects that can survive the replacement of their front tires but not their back tires, and objects that

are only contingently made of metal and could have been made entirely of ice.

Formulating plenitudinism as a general thesis that delivers the bloated ontology envisaged by its various proponents is no small feat. Typical formulations will have something like the following form:

For any matter-filled region R, and for any modal profile M, there is an object in R constituted by the matter in R and that has M as its modal profile.¹⁴

Thomasson herself will regard such theses as ill-formed or meaningless, on account of their employment of bare quantifiers and associated neutral uses of ‘object’.¹⁵ Still, Thomasson does accept what she herself describes as a “plenitudinous ontology” (2015: 214), containing all the kinds recognized by defenders of such theses.¹⁶

Since it may be surprising to some readers that the author of *Ordinary Objects* is neck-deep in extraordinary objects, let me say a few words about how Thomasson winds up with a plenitudinous ontology. On Thomasson’s deflationary metaontology, to tell whether a kind K has any instances, one need only check whether the application conditions we associate with the associated kind term are satisfied. If they are, then (as long as the application conditions meet certain minimal constraints¹⁷), there are guaranteed to be things of kind K, with exactly the modal profile that we associate with Ks.

To illustrate: ‘tree’ is associated with something like the following application conditions: trees exist if there are atoms arranged treewise.¹⁸ Since there *are* atoms arranged treewise, the application conditions are satisfied, guaranteeing that there are trees—that is, objects with the sort

¹⁴ See Fairchild (2019) and Spencer (2020) on the difficulties facing existing formulations of plenitudinism. This flat-footed formulation is modeled on—and is even more naive than—what Fairchild calls ‘Naive Plenitude’ (2019: 150).

¹⁵ See her (2007: §6.3, 2009a, 2015: 108–111, 219, and 292–293). See Korman (2015: §4.4.2, 2019: §§3–5) for criticism and her (2019b: §2) for a response.

¹⁶ See her (2007: §9.6 and §10.3) and her (2015: §6.1).

¹⁷ See her (2015: ch. 8) on the constraints needed to ensure that objects aren’t overgenerated in a way that leads to contradiction.

¹⁸ Cf. her (2015: 107).

of modal profile we associate with the kind *tree*. Emphatically, it's not that we bring trees into existence by using terms with such application conditions. Rather, they were already there, waiting to be picked out.

As Thomasson herself observes, this sort of deflationary approach will also deliver objects answering to countless application conditions that we haven't yet introduced:

[I]f you accept (as I have) that you are committed to Ks as long as you accept the truth of claims that (given the application conditions for 'K' and permitted redundant transformations) analytically entail the existence of Ks, then you must also accept **more than** stones, artifacts, and other 'common sense' objects. For other sorts of terms may be introduced with minimal existence conditions that are guaranteed to be met provided that other claims we accept are true. (2007: 172)

As an illustration of what more one must also accept, Thomasson invokes van Inwagen's gollyswoggles:

[S]uppose ... we introduce the term 'gollyswoggle' to refer to [something constituted by] a lump of clay with a particular very complicated shape, where it is taken to have that shape essentially. Given a lump of clay of that shape, the term 'gollyswoggle' is guaranteed to apply (and since it has its shape essentially, the gollyswoggle can be identical neither with the lump nor with any statue the lump may constitute). (2007: 172)

She goes on affirm her commitment to arbitrary mereological sums (2007: 173) and, in later work, incars as well (2015: 214).

So, while Thomasson is unlikely to accept any existing formulations of plenitudinist theses (owing to her aforementioned aversion to bare quantifiers and neutral uses of 'object'), she does nevertheless believe in all of the mereologically and modally extraordinary objects that those theses are designed to deliver. So I will take the liberty of referring to Thomasson as a "plenitudinist".

Locating Mountains in the Plenitude

Plenitudinists like Thomasson will affirm that there is an object composed of the matter in R_K , as well as one composed of the matter in R_K^+ . Indeed, by plenitudinist lights, there are countless objects in R_K , with varying modal and temporal profiles. There's one (indeed many) that ceases to exist whenever a cloud passes directly over R_K and that comes back into existence once the cloud is gone, and one that exists *only* at those times that there is a cloud directly above R_K . There's one that cannot survive Bruno Mars setting foot in R_K , and one that not only tolerates Bruno Mars but whose boundaries would expand by a hundred feet in all directions should he ever set foot in R_K .

Crucially, plenitudinous ontologies will also include an object in R_K with mind-malleable boundaries (i.e., boundaries whose location can be changed by mere mental acts). Indeed, it will deliver countless such objects, some of which came into existence millions of years ago, when the matter in and around R_K first came to be mountain-shaped, and which are modally mountainlike insofar as they would cease to exist should the granite in R_K be flattened or blown to bits.¹⁹

We have thus found within the plenitude precisely the sort of object the modest creationist is after: a ten-million-year old modally mountainlike occupant of R_K , which did have boundaries before we came along but whose boundaries are now up to us. The modest creationist who takes 'Kinabalu' to refer to such an object could say that Kinabalu did have boundaries at t , roughly (but maybe not exactly) where we presently take them to be. But, the idea goes, cognitive acts of line-drawing have the power to change those boundaries. By re-drawing the lines, we can extend or diminish its boundaries, and we can make them more or less precise.

Modest creationism could then be developed as a sort of hybrid of selectionism and creationism. *Initial* acts of line-drawing merely select specific objects with mind-malleable boundaries from among the plenitude to serve as referents for names like 'Kinabalu' and general terms like

¹⁹ One may be tempted to ask whether there are *any* limits to the malleability of the boundaries. Can a mere mental act cause its boundaries to encompass the whole planet? To which the plenitudinist will reply: for any conceivable limits on malleability, there are some objects (and candidate referents) in the region that are so limited and others that aren't.

‘mountain’. Then, having selected the relevant objects for attention, *subsequent* shifts in where the lines are drawn change the boundaries of those objects.

Contrast this with the sort of Fregean, “shifting-reference” selectionism sketched in §3. According to the shifting-reference selectionist, ‘Kinabalu’ refers to a modally mountain-like object with entirely mind-independent (non-mind-malleable) boundaries, and when we deliberately or unwittingly re-draw a geographic object’s boundaries, we select a *different* object for attention and a new referent for ‘Kinabalu’. But on the alternative, “fixed-reference” selectionism now under discussion, the self-same object that was originally selected for attention and reference comes to have new boundaries. It is, on this view, quite literally up to us where a geographic object’s boundaries are.

Against the backdrop of a plenitudinous ontology, the disagreement between shifting-reference selectionism and fixed-reference selectionism looks to be merely verbal. Both sides can agree that, both now and at t , there are mountain-like objects in R_K with mind-malleable boundaries, as well as mountain-like objects whose boundaries aren’t mind-malleable. Both sides can agree that there are objects in R_K whose boundaries will be changed when lines are re-drawn, and others whose boundaries will remain unchanged. The disagreement concerns only which sort of object is picked out by a name like ‘Kinabalu’.

In the end, I don’t see any reason for a plenitudinist to prefer the fixed-reference selectionism that Thomasson’s modest creationism seems to require, to the more straightforward shifting-reference selectionism. Perhaps intuitions to the effect that mountains literally shrink and grow as we (deliberately or unwittingly) re-draw their boundaries could serve as a reason to prefer fixed-reference selectionism. However, I for one have no such intuition. To my mind, the only attraction of a view on which ‘Kinabalu’ picks out something with mind-malleable boundaries is that it has the resources to solve the puzzle without having to reject (iii). But, since plenitudinists already deny (iii), I see no reason for them to prefer the modest-creationist-friendly, fixed-reference selectionism.

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