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Haecceitism and Symmetry-Breaking: Things, Time, and Powers

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According to anti-haecceitism, facts about particular things are modally fixed by qualitative matters. According to qualitativism, such facts are metaphysically second-rate, perhaps because grounded in qualitative matters. Qualitativism seems to imply anti-haecceitism, so objections to the latter threaten the former. The most powerful sort of apparent counterexample to anti-haecceitism, I think, consists in a pair of situations that seem the same, and qualitatively symmetric, for a stretch of time, but that differ in how that symmetry breaks. I examine this sort of candidate counterexample in depth, and argue that the prospects for resisting it are heavily sensitive to broader metaphysical considerations, specifically ones about ontology, time, and causation. So, anti-haecceitism's and qualitativism's prospects are heavily sensitive to such considerations.

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1. Qualitativism and Anti-Haecceitism

In his "Primitive Thisness and Primitive Identity," Robert Adams asks: "Is the world…constituted by purely qualitative facts, or does thisness hold a place beside suchness as a fundamental feature of reality?" (1979: 5). The denial of thisness's fundamentality has lately been called 'qualitativism' or 'generalism'.[1] We might also gloss it as the view that non-qualitative matters are metaphysically second-rate (Russell 2016: 321). What this amounts to depends on our

1. For discussion, see e.g. Adams (1979), Kment (2012: 578–584), Dasgupta (2017), and Sider (2020: ch. 3).

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understanding of 'non-qualitative' (or 'thisness'), and of the relevant second-rate-ness (or non-fundamentality). Let's take non-qualitative matters to directly involve particular concrete particulars.[2] For example: [Plato is conscious] (i.e., the fact that Plato is conscious), the property of being this spatial region. [someone is conscious] and the relation of occurring earlier than, by contrast, are qualitative. And for now, take the second-rate-ness to consist in being constitutively determined, or grounded (cf. Dasgupta 2014; 2017):

(Qual-G) All non-qualitative facts are grounded in qualitative ones.

(Think '**qual**itative matters **g**round.')

I assume that **g**rounds modally **fix** (see e.g. Bennett 2017: 47–55):

(G-Fix) If some facts ground another, then the former modally fix the latter.[3]

And to simplify things, I assume that some facts are fundamental (not grounded in further facts), and that every non-fundamental fact is grounded in (and so, by G-Fix, fixed by) fundamental ones. (Qual-G then implies that all fundamental facts are qualitative.) I also take displayed labeled theses (Qual-G, G-Fix, and others to follow) to be true necessarily if at all.

In this paper I assess a powerful objection to qualitativism. To motivate this endeavor and set the stage for the objection, I'll say a bit about why qualitativism deserves consideration. Following Adams (1979: 6), let a concrete particular's thisness be the property of being that particular (e.g., the property of being Plato). One reason to take thisnesses to be metaphysically second-rate is that doing so delivers a more parsimonious metaphysic.[4] Another reason turns on the fact that thisnesses seem "undetectable" and "physically redundant."[5]

A third potential reason concerns *de re* modal judgments. You might find it counterintuitive, or even unintelligible, that reality could have been exactly as it actually is qualitatively, but different in that Socrates and Plato have swapped "qualitative roles," or in that an actually non-existent individual plays Plato's role. If so, you have reason to accept qualitativism, since it would seem to explain the impossibility of such swaps and substitutions: Thisnesses are fixed by the

2. Cf. e.g. Skow (2007), Kment (2012), Dasgupta (2017), and Werner (2022).

3. Such fixing might amount to metaphysical entailment or necessitation (see e.g. Trogdon 2013; Fine 2015; Wilsch 2015; Dasgupta 2017), or to supervenience (see Bricker 2006; Leuenberger 2014).

4. See Kment (2012: 581), Werner (2022: 921), and Murphy (forthcoming).

5. For debate see Dasgupta (2009; 2017), Turner (2017), Dasgupta & Turner (2017), and Sider (2020: 56–58, 106–114).

qualitative because constituted by it. The broader point here is that qualitativism seems to imply, and if true explain, the modal doctrine of *anti-haecceitism*:

(Anti-haecceitism) All facts are modally fixed by qualitative ones.

Haecceitism, by contrast, says that it's possible for there to be facts that aren't so fixed (cf. Skow 2007). Given G-Fix, Qual-G indeed implies[6] and if true explains anti-haecceitism. And I think anti-haecceitism's truth would call for explanation, and that there's no comparably plausible competing explanation. So anyone inclined to reject *haecceitist judgments* (haecceitism-implying modal judgments, such as 'Socrates and Plato could have swapped roles') gets a reason to be a qualitativist.[7]

However, qualitativism's connection to anti-haecceitism can also be seen as a liability, and this takes us to the objection on which I'll focus. It isn't surprising that philosophers generally prone to haecceitist judgments will see this connection as a liability instead of an asset. Qualitativism isn't for them (unless they're relieved of such modal intuitions or persuaded to distrust them). What's more worrisome is that qualitativism's connection to anti-haecceitism may be seen as a liability even by those of us not generally prone to haecceitist judgments. For as long as *some* such judgments are true, anti-haecceitism is false. In §2 I present what I take to be the strongest sort of potential counterexample to anti-haecceitism, and my primary aim is to consider whether would-be qualitativists can reasonably resist it. I won't argue for a simple "yes" or "no" answer. Rather, I'll canvass various lines of resistance and argue that they all have significant costs. We'll see that the prospects for resistance are heavily sensitive to broader metaphysical considerations, in particular ones about things,[8] time, and causation. So whether resistance is, in the end, reasonable may depend on both the strength of the case for qualitativism (which I won't assess) and whether one is prepared to take certain stances (which I won't assess) about things or time and causation. Though qualitativism's relation to ontology has received attention,

6. Cf. e.g. Dasgupta (2014: 7–8; 2017: 9), Russell (2016: 310), and Kment (2012: 580–582).

7. Dasgupta floats two other reasons one might accept anti-haecceitism (2014: 7–8; 2017: 9; see also his 2011). First, non-qualitativists might accept it because of "independent views about the workings of de re modality"; he says Lewis (1986) is arguably an example. But 'anti-haecceitism' (as Dasgupta acknowledges) is used for more than one thesis, and Lewisian "anti-haecceitism" (1986: 221) permits haecceitist judgments (230–235), and so doesn't imply our anti-haecceitism (for elaboration see Skow 2007: §4; Russell 2015: §§1–2). Second, non-qualitativists might accept anti-haecceitism because they accept necessitarianism (all truths are necessary). But necessitarianism as such doesn't compete with qualitativism, and I doubt that non-qualitativist necessitarianism is comparably plausible.

8. I.e., substances. More precisely, concrete particulars generally. But I'll tend to just talk about things.

the relation to time and causation hasn't. This paper seeks to begin filling this gap—my secondary aim.

2. A Candidate Counterexample to Anti-Haecceitism

It will be helpful to talk about "worlds," by which I mean maximally specific ways for reality to be across all time. Anti-haecceitism implies that there are no worlds w and v that are duplicates (i.e., have identical qualitative facts), distinct (i.e., have non-identical facts), and both metaphysically possible. For suppose there were such a w and v, and that their shared qualitative facts were to hold. Some facts aren't fixed by qualitative ones. Discharging the second supposition, it's possible that some facts aren't so fixed, i.e., haecceitism.

So worlds w and v constitute a *genuine counterexample* to anti-haecceitism, or as I'll also say, a "**g**enuine **c**ounterexample **p**air" ('GCP'), iff they're duplicates, distinct, and both possible. And if we're considering whether w and v meet all three conditions: a ***c**andidate* **c**ounterexample (**p**air) ('CCP'). Anti-haecceitism is false if there's so much as one genuine counterexample. But were it false, we could ask what kind of haecceitism is true, where kinds differ over the extent of GCPs.

Some modal matters, by which I mean ones expressed with 'possibly,' 'necessarily,' or 'would' (or cognates), are qualitative (on §1's account). For example, [something that's human is possibly canine], unlike [Plato is possibly canine]. Or let Q_1 and Q_2 be properties constituting two (non-modal) qualitative roles, and consider [$\exists x \exists y$(x has Q_1 and y Q_2 & possibly (x has Q_2 and y Q_1))] (cf. Stalnaker 2012: 65). I'll use the prefix 'nm-' when talking about **n**on-**m**odal matters in particular. So "nm-qualitative facts" are non-modal qualitative facts, and two worlds are "nm-duplicates" iff they have identical nm-qualitative facts. It seems plausible, and we'll usually assume, that qualitative **fact**s **s**uper**v**ene on nm-qualitative ones:

(Fact-SV) Qualitative facts are fixed by nm-qualitative facts.

If this is right, two worlds are a GCP iff they're nm-duplicates, distinct, and both possible.

Let's turn to our candidate counterexample to anti-haecceitism.[9] To properly introduce this CCP and lay groundwork for examining it, we start with a third world. Let Alef be a spatially symmetric world containing two spheres, Castor and Pollux (hereafter 'Cas' and 'Pol') (cf. e.g. Black 1952; Adams 1979). They have identical nm-qualitative properties (intrinsic and extrinsic), and any

9. It comes from Adams (1979: 22), and has been highlighted in recent work on qualitativism: Kment (2012), Russell (2016), Sider (2020: 203), Diehl (2022: 13), and Werner (2022: 922).

nm-qualitative relation one bears to the other is borne by the other to the one. And let's assume for now that qualitative **feature**s **s**uper**v**ene on nm-qualitative ones:

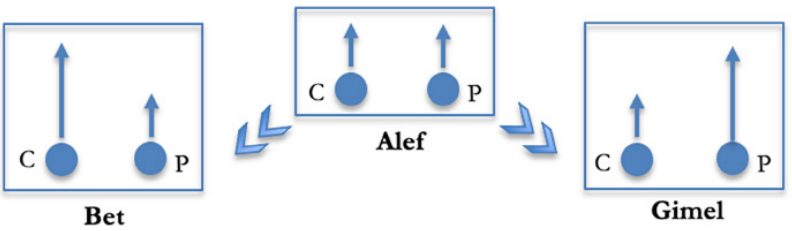
(Feature-SV) Qualitative features are fixed by nm-qualitative features.

Accordingly, Cas and Pol have identical qualitative features. And yet the spheres are distinct, and have distinct non-qualitative features. For example, only Cas has its particular thisness.

According to the "Principle of the Identity of Indiscernibles" ('PII'), (qualitative) indiscernibility between things in a possible world suffices for identity. On stronger readings of 'indiscernible' (see e.g. Ladyman 2007: 30) Cas and Pol are indiscernible. So were Alef possible as described, stronger versions of PII would be false. But Alef's possibility, in and of itself, would be consistent with anti-haecceitism, which just says that indiscernibility between possible worlds suffices for identity. While a single world may fell PII, it takes two to take down anti-haecceitism.

You might think, with Adams (1979), that qualitativism would be directly refuted by Alef's possibility. I disagree.[10] In any case, whether qualitativism depends on PII is a topic unto itself; this paper focuses on how PII's falsity may threaten qualitativism indirectly, by being leveraged to motivate counterexamples to anti-haecceitism.

So let's say that, in Alef, Cas and Pol exist for one second. Now consider an "expanded" world, Bet, in which Cas exists for two, and another, Gimel, in which Pol does instead.



Bet and Gimel are nm-duplicates (in both, we have the same two nm-qualitative roles), and seem distinct (apparently differing over which sphere plays which role).[11] So if Alef is possible and possibility is preserved through the

10. As do Kment (2012: 579–580), Dasgupta (e.g., 2014: 7, 25–26; 2017: 12–15), and Russell (2015: 412–414). Though see Glazier (2024) for a recent argument that Alef's possibility would refute Qual-G.

11. I'm assuming Alef's spheres endure, hence Bet and Gimel differ over how long each does. If they perdure, Bet and Gimel differ over which of Alef's temporally extended sphere-worms is supplemented with another second's worth of sphere-material. ("Stage theorists" may say something similar.) See e.g. Haslanger (2003) on persistence.

expansion operations, as it were, we seem to have a genuine counterexample to anti-haecceitism. Bet and Gimel are just one example of a *symmetry-breaking* CCP: two worlds that seem the same, and qualitatively symmetric, for a stretch of time, differing only in how that symmetry breaks. (For other examples, see Melia 1999.)

Symmetry-breaking CCPs strike me as the strongest ones, in the sense of having the best chance of moving someone antecedently drawn to anti-haecceitism. Bet's and Gimel's shared nm-qualitative character certainly seems possible. And since its two roles seem the same for a stretch of time, it's especially intuitive that they could be distributed across the spheres in two different ways. This appeal to intuition might also be fortified by argument. Here are two:

> (Time) The histories of Alef, Bet, and Gimel are identical for the first half of a second, differing only as to how that shared initial segment is extended. And since the segment could, supposing Alef is possible, be extended in a way resulting in Alef's actuality, surely it could be extended so as to actualize Bet instead, and likewise with Gimel.

> (Powers) Supposing Alef is possible, surely there's a possible world, Alef+, meeting this further specification (cf. Kment 2012: 586–587): Each sphere has a local, chancy causal power to cease to exist (hereafter 'die'), and the spheres die after one second because both powers happen to activate then. Since the powers are chancy, each sphere could have lasted longer. And since they're local, what happens with one is independent of what happens with the other. So there are two possible expansions on Alef+ in which one of Alef+'s spheres exists for two seconds and that differ as to which sphere that is.

While it's conceivable that Alef is impossible and yet Bet and Gimel are still a GCP, I see no good reason for such a stance, and all three of the above lines of thought (Powers, Time, and the "possibility-is-preserved-through-the-expansions" line) appeal to Alef's possibility. So *is* it possible? I think so, if this background metaphysical framework holds:

> (Things)
> (T_1) It's (metaphysically) possible that material things exist;
> (T_2) it's possible that such things begin to exist and die; and
> (T_3) spatial separation between such things suffices for distinctness.

If you're uneasy with composites, let Cas and Pol be simples. Granting Things, Alef's possibility is compelling, supported by simple patchwork reasoning

(Lewis 1986: 87–89). And it also seems that Alef, Bet, and Gimel are possible (as described) only if something close to Things is true.[12]

In what follows I examine various ways of trying to resist our CCP. Some reject Things (§3). Others reject Fact- and/or Feature-SV (§4). And one grants all three (§5).

3. No Factual Difference?

The line of resistance that most naturally (to me) comes to mind is this: Bet and Gimel are impossible, since their shared qualitative facts would ground the existence of spheres other than Cas and Pol (more in §5). But recent work on qualitativism has proposed two alternative lines of resistance.[13] I address the first here, the second in §4.

3.1. The Line of Resistance

The first turns on understanding the second-rate status of non-qualitative matters in terms other than ground. Consider (think 'only **qual**itative matters are **d**eterminate'):

(Qual-D) All non-qualitative facts are indeterminate.

Russell (2015; 2016; 2018) articulates the distinction between "determinate" (or "factual") and "indeterminate" ("non-factual") matters, and his 2015 (409) and 2018 (564–565) understand qualitativism in terms similar to Qual-D. And he seems to think CCPs give qualitativists a reason to prefer Qual-D over -G. At any rate, in (2015) he offers them a Qual-D-based line of resistance, and in (2016) he frames Bet and Gimel as posing a special challenge for Qual-G (as does Sider in [2020: 203]).

12. They're possible only if T1 and T2 are true. By 'begin to exist' ('die') I just mean 'have a first (last) moment (or finite interval) of existence.' T3 streamlines things but isn't necessary: We just need the spatial separation to be compossible with distinctness. T2 is also dispensable, in that we could consider variants on Alef, Bet, and Gimel in which Cas and Pol are eternal in the past and/or future. I've made Cas and Pol begin to exist to make the worlds easier to discuss and to avoid controversy over whether an infinite past is possible (see e.g. Koons 2014).

13. According to a third recently proposed defense of qualitativism from our CCP, qualitativists needn't resist it. Werner (2022) develops a notion of "arbitrary grounding" for which G-Fix fails, and explains (922) how this lets Qual-G-ers accept Bet and Gimel as a GCP. Adjudicating this proposal would be a topic unto itself; since I find G-Fix compelling and commitment to it is pervasive (§1), it's worth exploring alternatives.

Following Russell, determinate or factual matters correspond to how the world is in itself, to its objective structure. Indeterminate or non-factual matters, by contrast, fall short. Even if aptly uttered and true in some "thin" sense, non-factual claims ascribe structure to the world that isn't really there. Being indeterminate doesn't seem to imply being grounded (cf. Sider 2011: 126; Dasgupta 2020: 141–143). Suppose, for example, that a person, P, undergoes a physically or psychologically disruptive procedure (cf. Russell 2015: 400, fn 13), that we think it's indeterminate whether P survives, and that we arbitrarily grant the (non-factual) truth of 'P survives.' Because of this (thin) truth's arbitrariness, we may deny that it's grounded in further truths. Nor does being grounded seem to imply being indeterminate. For example, conjunctions and disjunctions of determinate facts are determinate, but presumably grounded (Russell 2015: §6; 2018: 566). So, Qual-G and -D provide different accounts of metaphysical second-rate-ness. It's one thing to ground the non-qualitative, another to erase its objective reality.

(In §1 I glossed "fundamental" facts as facts not grounded in further facts, and assumed that every non-fundamental fact is grounded in fundamental ones. But having distinguished determinate and indeterminate matters: By "fundamental" facts I mean determinate facts not grounded in further facts, and I assume that every determinate non-fundamental fact is grounded in fundamental facts.)

How does Qual-D lend itself to a response to CCPs? As Russell (2015) explains, Qual-D-ers may say that the differences between the relevant worlds are non-factual. When we put on our factualist glasses (that filter out indeterminate facts) (403), the differences vanish. If we apply this line of thought to Bet and Gimel, they turn out to be the same possibility, differently conceived. In the same vein, we can note that Qual-D doesn't imply §1's anti-haecceitism, if the latter implies that any fact whatever—determinate or indeterminate—must be fixed by qualitative facts. The key modal claim is that qualitative matters fix how the world is in determinate respects.

My problem with Qual-D and the accompanying "no-factual-difference" response to our CCP is that they simply aren't credible unless we reject Things. (Having distinguished determinate and indeterminate matters, I understand Things as saying that it's possible, not simply that material things exist, but that they determinately exist, and similarly with the other clauses.) I defend the judgment that Qual-D is credible only if Things is false in §3.2. It won't follow that the no-factual-difference response is credible only if Things is false, since Qual-D is just one possible basis for denying that Bet and Gimel factually differ. But I think that other ways of denying that they do also require tampering with Things; I give two examples in §3.3.

3.2. Qual-D and Things

Suppose that Alef were actual, that we're speaking from that world, as it were. Given §2's description of this world, it's natural to take these facts to determinately hold:

(N) Cas and Pol are material spheres a foot apart for one second.

(Q) $\exists x \exists y$(x and y are material spheres a foot apart for one second).

Non-qualitative fact N is an instance, or witnessing fact, for Q, a **q**ualitative existentially quantified fact. 'Cas' and 'Pol' are simply our names for the particular spheres that determinately exist, if any do; hence 'N' simply picks out the particular instance of Q that determinately holds, if any does.

Now according to Qual-D, determinate non-qualitative facts are impossible. So assuming the world before us is possible, we must re-describe it. (And I assume there is a possibility in the vicinity to be described. If Qual-D can't accommodate this, it's a non-starter.) At a minimum, we must strike N from determinate reality: There *are no* particular spheres such that *they* determinately exist. But what about Q? Can we keep it, or must we strike it from determinate reality as well?

I think striking N would require us to strike Q too. Let '**Det**' be a determinacy sentence operator ('determinately'), and consider this **c**onditional:

(C_1) If **Det**, $\exists x \exists y$(x and y are material spheres a foot apart for one second), then $\exists x \exists y$(**Det**, x and y are material spheres a foot apart for one second).

This says, in effect, that if Q determinately holds, there's a Q-instance such that it determinately holds too. I find C_1 compelling. If it's determinately the case that there's a material sphere over there for a stretch of time, then surely there's a particular sphere such that the sphere over there is determinately *it*. Despite its seeming obvious, I'll say a bit more in C_1's defense.

Let's introduce a fictional observer, O, into the world before us. Now suppose that C_1's antecedent holds, that O is attending to (e.g., looking at, or touching) a sphere, and consider:

(C_2) If **Det**, $\exists x$(x is a material sphere that exists for one second & O perceives x), then $\exists x$(x is a material sphere & **Det**, O perceives x).

Intuitively: If it's determinately the case that O perceives an enduring material sphere, then there's a particular one O determinately perceives. I find C_2

compelling. If O determinately perceives such a sphere, he could name *it* and express apparently determinate facts about *it*. He might call it 'Ursula' and say 'Ursula is spherical,' thereby apparently expressing a determinate non-qualitative fact.

Now I can think of circumstances in which, despite appearances, no particular sphere is determinately perceived, but they are circumstances in which C_2's antecedent fails. Perhaps the world before us doesn't really have any "sphere structure." Perhaps all we (determinately) have are particles arranged sphere-wise, or universals stitched together sphere-wise, or a cosmos with a "sphere-over-there" property, or a mind with a "sphere-over-there" experience. In any such case, I can understand how there's no *particular* sphere that's determinately perceived. But that's because there isn't, determinately, any *sphere* there at all, contra C_2's antecedent.

Alternatively, suppose we really have sphere structure before us, but that it's in flux. Suppose that O attends to what appears to be a single sphere for one second, but that halfway through this interval a demon annihilates the initial sphere and seamlessly replaces it with another. This doesn't yet cast doubt on C_2's consequent; indeed there now seem to be two spheres each of which is such that O determinately perceives it. But if we ramp up the demonic activity by adding more acts of replacement, you might start to doubt that any particular sphere is determinately perceived. But these demon cases falsify C_2's antecedent, which concerns a sphere that exists for a whole second.

C_2 will take us to C_1 if we add a premise to this effect: Whether determinate existentially quantified facts about material spheres have determinate instances doesn't depend on whether the spheres quantified over are observed. This also seems compelling. If the world before us determinately contains material spheres, then the fiction about O teaches us something about what this world is like sans O. There are determinate non-qualitative facts there to be discovered.

Here's my best attempt to cast doubt on C_1. Consider a world, Rep, in which an initial sphere, *a*, is **rep**laced with another, *b*, and suppose that, for some instant, *t*, it's metaphysically unsettled[14] whether the sphere at *t* is *a* or *b*. This seems to falsify C_3:

> (C_3) If **Det**, $\exists x$(*x* is a material sphere at *t*), then $\exists x$(**Det**, *x* is a material sphere at *t*).

The idea is that the antecedent holds, but not the consequent, since neither **Det**, *a* is a material sphere at *t*, nor **Det**, *b* is a material sphere at *t*. Granting C_3's falsity,

14. Another word for 'unsettled' would be 'indeterminate,' but we're using the latter in §3.1's sense, which I don't think is synonymous with 'unsettled.' Surely there are connections, though, such as: If it's not settled that P, it's false that **Det**, P.

you might think this casts doubt on C_1 (and C_2). If a sphere can lack a determinate thisness at an instant, why not over an interval?

However, I see no reason to think that the state of affairs at *t* in Rep could obtain over Alef's entire history. We've seen no reason to doubt that Rep has two spheres, each with a determinate thisness. It's just that, at *t*, it's indeterminate which thisness (*a*'s or *b*'s) is instantiated. So: The then-existing sphere's thisness is "poised between"[15] (a.) determinately instantiated alternatives; we have a basis for determining (b.) how many (two) and (c.) which ones (*a*'s and *b*'s); and we (d.) can explain why the thisness is so poised (in terms of details about the sphere-replacement process). Now if we try to transpose the *t*-Rep state of affairs to Alef, the idea is that each sphere's thisness is, for the entire second, poised between alternatives. But in this transmogrification, (a.)–(d.) all seem to fail.

Further, suppose we grant that the *t*-Rep state of affairs obtains in Alef, and so reject C_1. Since the thisness of Rep's *t*-sphere is poised between *a*'s and *b*'s, we still get a determinate, albeit disjunctive, non-qualitative fact about this sphere: **Det**, *a* is a material sphere at *t* or *b* is a material sphere at *t*. So turning to the Alef transposition, there will still be determinate, albeit disjunctive, non-qualitative facts. And Qual-D-ers can't accept this.[16] They think reality lacks non-qualitative structure, not that it has such structure but that it's indeterminate which bits of it obtain. (It's the former idea that facilitates the no-factual-difference line of resistance. In §4 we'll consider a different line, which seems to trade on the latter idea.) So on the present attempt to cast doubt on C_1, it would turn out false (if at all) for a reason Qual-D-ers can't accept. So *they* aren't in a position to object to C_1, or to affirm Q's determinacy while denying N's, on this basis.

Now if the world before us, i.e., Alef, indeed contains a determinate Q-instance (N), it needn't be fundamental; determinate facts may be grounded (§3.1). According to what Dasgupta (2017) calls 'quantifier generalism,' we may say that Q is fundamental and grounds N.[17] According to Dasgupta's (2009; 2017) "algebraic generalism," the fundamental facts exclusively concern universals. So algebraic generalists may say that Q and N are both grounded. There are other, more exotic

15. I take this phrase from Cameron (2015: 180).

16. On both §3.1's formulation and Russell's in his (2018: 564–565).

17. So quantifier generalism conflicts with the (alleged) principle that any existentially quantified fact is non-fundamental because grounded in any instance. It also arguably conflicts with weaker (safer) formulations of the principle. Let D be a disjunction of threatening principles in the vicinity. For endorsement or at least friendliness, see e.g. Rosen (2010), Fine (2010; 2012), Dasgupta (2009: 50; 2011: 131–132; 2017: 13–14), Shumener (2020), and Sider (2020: 37–43, 98). Dasgupta and Sider deploy D against quantifier generalism. For skepticism about this objection, see Kment (2012: 579, fn 13), Donaldson (2015: 1068–1070), Melamedoff (2018), Russell (2018: 568–569), and McSweeney (2020). I myself don't see why anyone drawn to qualitativism should find D plausible. It does, however, seem plausible that any determinate existentially quantified fact at least has a determinate instance, which implies C1.

proposals as well for what the fundamental facts are like.[18] My point here is just that C_1's consequent is perfectly consistent with qualitativism, because consistent with Qual-G. Indeed, C_1 itself is perfectly consistent with Qual-D, since Qual-D-ers may deny the antecedent. This is precisely what I've argued: not that Qual-D is false per se, but that Qual-D-ers must strike Q from determinate reality.

Let's return to Things. Clause T_1 says that it's possible that material things determinately exist. If this is true, we may stipulate that Alef really has "material-thing structure," and Qual-D looks doomed. For a determinate fact will presumably capture thing structure by either "naming" particular things (cf. N) or quantifying over things, as Q does. Qual-D-ers can't accept determinate non-qualitative facts, and I've argued that they can't accept Q's determinacy either. And while would-be T_1-affirming Qual-D-ers might propose an alternative quantified fact (for example, by eschewing composite spheres in favor of simples), it seems that any alternative that could plausibly capture Alef's thing structure will be susceptible to the same sort of argument I've made about Q. I conclude that Qual-D is credible only if T_1 is false. Qual-D-ers may accept algebraic generalism about determinate reality (sans any grounded facts of Q's or N's forms), or some other things-purging proposal. I also note that Russell (2018) argues that Qual-D-ers should deny that quantification over things is "metaphysically perspicuous" (cf. 2015: 414). Though this isn't the same as maintaining that they should deny that facts like Q are determinate, it seems quite close.

3.3. Other Things-Rejecting Lines of Resistance

Here are three Things-rejecting lines of resistance to our CCP that don't depend on Qual-D.

First: Reject T_1 by affirming the necessity of idealism, and take Alef to consist in a mind's having a visual experience of two spheres for one second. Now Bet and Gimel are no longer nm-duplicates. For only in one will it be true that a mind sees a sphere on the left of its visual field for two seconds and a sphere on the right for one. However, we can get two nm-duplicates by adding a mind. Consider a world in which one mind sees a left-side sphere outlive a right-side one and another sees a right-side sphere outlive a left-side one, and a world in which the experiences are distributed the other way round. And I think that the prospects for resisting this CCP depend on the same sorts of considerations that I discuss in §§4–7 in connection with our CCP.

Second: Affirm PII and the possibility of bi-location, and take Alef to contain a single bi-locating sphere. This precludes T_3. Now Bet and Gimel are no longer

18. See e.g. Bacon (2019) and Diehl (2022), and cf. Turner (2011; 2016).

distinct: In both there's a sphere that bi-locates for one second and "uni-locates" for an additional second. However, this line of resistance's prospects are abysmal. The *possibility* of multi-location (by things, across space) is controversial enough as it is,[19] and this line says that qualitatively identical things are *necessarily* single, multi-locating things. Further, we still get two nm-duplicates if substantival space is possible. For then we take Bet and Gimel to differ over which region enjoys two (one) second(s) of occupation.

Third: Affirm the necessity of existence monism,[20] and that fundamental properties must be qualitative. (This precludes T_1 if we insist on the plural 'things' therein.) Now Bet and Gimel are no longer distinct (Sider 2007: 4–5). However, committing to existence monism's necessity would be quite a steep price to pay to resist our CCP.

3.4. Taking Stock

I said (§3.0) that recent work on qualitativism has proposed two lines of resistance for our CCP. The first embraces Qual-D and denies that Bet and Gimel factually differ (§3.1), and I've argued that this is credible only if you reject Things (§3.2). I've also noted two other ways of denying Bet's and Gimel's distinctness that reject or at least qualify Things (§3.3). I haven't argued for Things, and so if you find it implausible, perhaps one of these lines of resistance is for you. But it's certainly worth looking for Things-consistent lines, as vast swaths of the metaphysical landscape rest on this framework. I emphasize that rejecting T_1 doesn't just require striking material things from your fundamental ontology; they can't determinately exist at all.

From now on, we grant Things. Accordingly, from now on we understand qualitativism via Qual-G. So qualitativists accept determinate non-qualitative facts; they just insist that they're grounded in and so (by G-Fix) fixed by qualitative ones. And from now on we take Alef to determinately contain two particular material spheres, assume that it's possible, and take Bet and Gimel to be distinct nm-duplicates (differing over which of those spheres outlives the other).

4. Modal Asymmetry?

Since Bet and Gimel are distinct nm-duplicates, Fact-SV (§2) implies that, if they're both possible, they're possible distinct duplicates. In which case, our

19. See e.g. B. Russell (1912), Quinton (1958: 44), Adams (1979: 14), and Schaffer (2009: 141).

20. On which there's only one thing: the cosmos. See Schaffer (2010: 65) for the label, and cf. Hawley (2009: 106).

candidate counterexample to anti-haecceitism is a genuine counterexample. So Qual-G-ers must either deny the possibility of at least one of Bet and Gimel or reject Fact-SV. Here I cover two lines of resistance that posit a modal asymmetry between Cas and Pol in Alef, thereby rejecting Feature-SV. One denies the possibility of exactly one of Bet and Gimel (§4.1–4.2). The other denies that they're duplicates, thereby rejecting Fact-SV (§4.3). We start with the second line of resistance proposed in recent work on qualitativism.

4.1. Russell's Offer to Qual-G-ers

Russell (2016) discusses Bet and Gimel, specifically as a threat to Qual-G. Or rather, he discusses Adams's version of the CCP (1979: 22). Adams raises three worlds, w_1–w_3, corresponding to Alef, Bet, and Gimel. But w_1's spheres "have always existed and always will exist," hence the CCP-worlds each disrupt w_1's symmetry by shortening a (different) sphere's life. Our CCP-worlds, by contrast, disrupt Alef's symmetry by lengthening (a different) one. Having acknowledged that Russell doesn't discuss our world trio, I'll adapt his discussion of Adams's to ours.

Suppose Alef were actual, let Q be a proposition capturing Bet's and Gimel's nm-qualitative character, and assume Q is possible. So in fact there are two spheres, Cas and Pol, that exist for one second. But it could have been the case that Q held, in which case there would have been two spheres, one of which exists for an additional second.

Russell seems to think Qual-G-ers must also say that, were Q to have held, the spheres would necessarily (hereafter just 'would') have been *Cas and Pol*, such that one of *them* would have existed for an extra second (2016: 316, 330). Let's call this 'Disjunction':

> (Disjunction) Q would have fixed that either Bet or Gimel is actual.

If this is right, it also seems that Qual-G-ers must affirm:

> (Disjunct) Either Bet or Gimel is such that Q would have fixed that it is actual.

For if Q would have left open which sphere gets the extra second, some non-qualitative facts wouldn't have been qualitatively grounded. But Russell finds Disjunct problematic. The idea that one of these spheres is such that *it* must be the one whose life would be lengthened amounts to an "odd" and "surprising" "de re determinism" (316). He then proposes that Qual-G-ers can "put a better

[and brave] face" on Disjunct by adding some indeterminacy (in §3.1's sense): While Bet or Gimel is such that Q would have fixed its actuality, it's indeterminate which (316–319, 330).

So on this proposed line of resistance, from Alef's perspective exactly one of Bet and Gimel is possible, with the added twist that it's indeterminate which. Now though Russell thinks this indeterminacy makes the proposal's core more palatable, it leads to a problem: Indeterminacy in modal matters is "infectious," liable to spread to non-modal ones (2016: 319–327). Let Dup (think '**dup**licate of Bet and Gimel') be the world that would be actual were Q to hold. If it's indeterminate in Alef which of [Cas outlives Pol] or [Pol outlives Cas] Q would fix, then if we hop over to Dup and speak as if it were actual, it seems that reality is poised between Bet and Gimel:

(Indet) It's indeterminate whether Cas outlives Pol or Pol outlives Cas.

And Qual-G-ers shouldn't like this.[21] To stop the spread, Russell advises taking the modal indeterminacy to be contingent (327–328): Though it's indeterminate *in Alef* whether Q would fix [Cas outlives Pol] or [Pol outlives Cas], if we hop over to Dup one of them is such that Q determinately fixes it (contra Indet). In the end, he takes this proposal, along with the advised method for containing the indeterminacy, to be Qual-G's "best hope" (330).

I think Qual-G-ers can do better; I present one alternative line of resistance in §4.3, and another in §5. On the latter, we say that Q would have grounded the existence of different spheres, such that Bet and Gimel are both impossible and Disjunction and Disjunct both false.[22] In the rest of this section, I argue that Russell's offered line and the §4.3-line face serious problems.

21. See (2016: 320–321). Actually, he seems to have something more like this in mind:

Indet*: It's indeterminate whether Cas outlives Pol, and whether Pol outlives Cas.

And the idea (roughly) is that if we accept Indet*, Qual-D beckons and Qual-G is out of a job. However, while Indet* is compatible with Qual-D, it's also compatible with Indet, which precludes Qual-D. For Indet implies that **Det**, Cas outlives Pol or Pol outlives Cas. And it's Indet in particular whose truth in Dup seems to follow from the relevant modal indeterminacy in Alef. Nevertheless, I would agree that Qual-G-ers shouldn't like Indet.

22. Here I identify the slip that seems to lead Russell to think Qual-G-ers must accept Disjunction, or rather, the analogous claim concerning Adams's world trio. Let x be one of w_1's spheres, and Q+ a proposition capturing w_2's and w_3's qualitative character, and consider [x survives] and [x is destroyed]. (If Q+ holds along with [x survives], x is the eternal sphere; if along with [x is destroyed], the one whose life is cut short.) Russell maintains that Qual-G-ers must say that Q+ would fix either [x survives] or its negation (2016: 315–316). Granted, but then he slides from [x survives]'s negation to [x is destroyed] (316), and so seems to think Qual-G-ers must say that Q+ would fix either [x survives] or [x is destroyed]. But Q+ could fix [x survives]'s negation by fixing that x doesn't exist at all.

4.2. Exactly One is Possible?

Instead of tempering Disjunct with some modal indeterminacy and then containing the latter (as Russell advises), we might take Disjunct straight (no indeterminacy), or let the indeterminacy spread (more indeterminacy). But all three lines of thought accept Disjunct, which Russell admits is odd and is what leads to the view that exactly one of Bet and Gimel is possible. I'll now argue that Disjunct-based lines of resistance face serious problems.

Since Cas and Pol are in fact (i.e., in Alef, which we're taking to be actual) exactly alike in nm-qualitative respects, it follows by Feature-SV (§2) that they're exactly alike in all qualitative respects. But consider these qualitative modal relations:

> x bears R_1 to y iff necessarily, if Q holds then x outlives y.
>
> x bears R_2 to y iff possibly, Q holds and x outlives y.

If Q would have fixed Bet's actuality, then Cas bears R_1 and R_2 to Pol while Pol bears neither to Cas. And if Q would have fixed Gimel's actuality, Pol unrequitedly bears them to Cas. So, Disjunct-ers reject Feature-SV: Cas and Pol break symmetry in modal qualitative respects despite their perfect symmetry in nm-qualitative respects. But Feature-SV seems very plausible. Even philosophers who affirm distinct material coincidents (e.g., statues and constituting masses) will typically identify nm-qualitative differences (e.g., differences in kind) to accompany the modal ones.

Further, Disjunct-ers can't accept perhaps the most principled position on which Feature-SV would be false. You might reject Feature-SV because you think as a general matter that nm-qualitative matters fail to fix modal qualitative ones. So for example, you think there are multiple possible nm-duplicates of Alef that differ over the distribution of modal qualitative features. In one, neither sphere bears R_2 to the other; in a second, just one bears R_2; in a third, both bear R_2. But Disjunct-ers can't accept a possible nm-duplicate of Alef whose spheres both bear R_2. For were there such a world, we could stipulate that 'Alef' refers to *it* and that "Bet" and "Gimel" concern *its* spheres, falsifying Disjunct. So Disjunct-ers affirm that Alef's nm-qualitative character fixes its complete qualitative character; they just say that the fixed distribution of modal features is one on which exactly one sphere bears R_2 to the other.

Further problems loom when we ask Disjunct-ers to say more about Cas's and Pol's modal profiles. Letting Bet be the possible member of our CCP (so Cas unrequitedly bears R_2 to Pol), Alef's and Bet's possibility and Gimel's impossibility imply that Cas can exist for one second if Pol does too, that Cas can exist for

two seconds if Pol exists for one, and that Pol can't exist for two seconds if Cas exists for one. But this leaves a lot open. Does our Disjunct-er think Cas can only exist for either exactly one or exactly two seconds? Does he think Cas's ability to exist for any duration depends on Pol's existing for exactly one? Here's one natural way of filling out the view: (a.) Cas and Pol can exist together for any amount of time (not just one second, as in Alef), (b.) Cas can outlive Pol by any amount (not just one second, as in Bet), but (c.) Pol can't outlive Cas (to avoid GCPs).

However, this way of filling out profiles commits Disjunct-ers to mysterious non-local dependencies. At any time at which Cas and Pol exist, each is capable of dying and of persisting (by (a.)). However, Cas can't actualize the first capacity unless Pol does too ((c.)). If Pol doesn't, Cas must actualize the second capacity. And Pol can't persist unless Cas does too ((c.)). If Cas dies, Pol must too. Such dependencies are mysterious.[23] How could Pol's persisting, over here, force Cas, over there, to actualize its capacity to persist and prevent Cas from actualizing its capacity to die? How could Cas's dying force Pol to die and prevent Pol from persisting?

Suppose, on the other hand, that our Disjunct-er denies this way of filling out profiles. Suppose he says that Pol must exist (if at all) for exactly one second (contra (a.)). So at the one-second-mark, Pol no longer has the capacity to persist, and so Cas can't do anything that would non-locally thwart Pol from actualizing such a capacity. But if he says this to avoid non-local dependencies, it looks ad hoc. And in any case, it seems arbitrary and unprincipled. Why should Pol be capable of existing for only exactly one second, given that Cas can exist for multiple intervals? To be sure, by virtue of accepting Disjunct our Disjunct-er is committed to some sort of asymmetry between Cas's and Pol's modal profiles. But we're presently considering how to fill out this asymmetry, and the worry is that ways of doing so that avoid non-local dependencies will be arbitrary and unprincipled.

Thus far we've considered only modal asymmetries concerning duration. But applying the present line of resistance to other CCPs will lead to more asymmetries. Consider a world like Alef except in that Cas turns blue (or is replaced with a blue sphere) after half a second, or in which a cube appears above Cas (i.e., next to it in a direction orthogonal to the one in which Pol lies) after half a second. Each world is one member of a CCP, the other being a world in which *Pol* turns blue, or acquires a hovering cube. And to apply the line to these CCPs, we posit more modal relations borne by just one sphere. To illustrate, let W_1 be a world in which Cas turns blue and Pol yellow, W_2 be an nm-duplicate in which it's the other way round, and consider:

x bears R_3 to *y* iff possibly, after half a second *x* turns blue and *y* yellow.

23. Cf. e.g. Ballarin (2013: 358) and deRosset (2009).

To resist this CCP in the same way as the Bet-Gimel one, our Disjunct-er will say that just one of Cas and Pol bears R_3 to the other in Alef, such that just one of W_1 and W_2 is possible.

Now, our Disjunct-er doesn't have to resist the W_1-W_2 CCP in the same way as the Bet-Gimel one. He might say that W_1 and W_2 are both possible, but not duplicates. For if Cas and Pol break symmetry over R_2, we get a qualitative difference between W_1 and W_2. In only one world will it be true that a sphere *that could have outlived the other* turns blue. The general point here is that, as long as Cas and Pol break symmetry over *one* qualitative modal relation, we get qualitative differences between *any* two nm-duplicates that differ over which nm-qualitative roles Cas and Pol get. If our Disjunct-er resists the W_1-W_2 CCP in this way, then he rejects not just Feature-SV but Fact-SV (§2) too.

However, if our Disjunct-er wants to deal with various CCPs concerning Cas and Pol by positing just one symmetry-breaking modal relation, why should it be R_2, instead of R_3 or some other one? If R_2 is the symmetry-breaker, one of Bet and Gimel is possible and W_1 and W_2 are both possible. If R_3 is, one of W_1 and W_2 is possible and Bet and Gimel are both possible. It's hard to see how there could be a principled basis for singling out one of these relations to be the privileged symmetry-breaker. To avoid this problem, our Disjunct-er can say that Cas and Pol break symmetry over all of them. So just one of Bet and Gimel is possible, as is just one of W_1 and W_2, and so on. But this is also problematic. Even if you're open to Feature-SV's falsity, you might find it implausible that Cas and Pol differ in *so many* modal respects. Further, adding asymmetries raises uncomfortable questions about how to pair them. Supposing that just one of Cas and Pol bears R_2 to the other, and likewise with R_3, are R_2 and R_3 borne by the same sphere, or by opposite spheres? We can't say that one sphere is always "the bearer," since both spheres are always bearers. For instance, if just Cas bears R_3 to Pol, then just Pol bears a converse relation to Cas.

Let's review. Resisting the Bet-Gimel CCP by affirming Disjunct requires rejecting Feature-SV (a plausible principle), and without being able to integrate that rejection within a more general position on which nm-qualitative matters fail to fix modal ones. Further, when we try to fill out what Disjunct-ers should say about Cas's and Pol's modal profiles, further problems arise. On some ways of doing so, we get mysterious non-local dependencies; on others, seemingly arbitrary and unprincipled gaps in Cas's or Pol's capacities. Moreover, when we try to fill out profiles so as to deal with other CCPs, we face a choice between a problematic explosion of symmetry-breaking modal relations and an unprincipled selection of just a few (e.g., R_2 and its converse, or R_3 and its converse, etc.).

Would adding the indeterminacy discussed in §4.1 alleviate any of these problems? It lets Disjunct-ers say that though Cas and Pol break symmetry in some modal qualitative respects, it's indeterminate which sphere is the bearer of

any given symmetry-breaking relation. Relatedly, it lets them say that, though Feature-SV is false, this principle isn't:

> (**D**-Feature-SV) **Determinate** qualitative features are fixed by **determinate** nm-qualitative features.

However, it's not clear whether the above problems' force depends on there being determinate facts about which thing bears any given relation. Even if D-Feature-SV is salvaged, it's still determinately the case that Cas and Pol break symmetry in modal qualitative respects. Further, even if adding the indeterminacy helps with some of the above problems, it doesn't follow that it delivers a better line of resistance. For adding it may raise problems of its own. I think it would, though won't elaborate. I think it's clear that DISJUNCT-based lines face serious problems.

4.3. Not Duplicates?

According to the line of resistance I'll now sketch, we say that Bet and Gimel, though possible nm-duplicates, aren't duplicates (thereby rejecting Fact-SV). We've just seen how this would work: Qual-G-ers may say that Cas and Pol bear R_2 to each other, such that Bet and Gimel are both possible, as long as they also say that Cas and Pol differ over some other qualitative modal relation (e.g., R_3), such that Bet and Gimel aren't total duplicates. The problem was that there seemed to be no principled basis for taking Cas and Pol to bear R_2 to each other while breaking symmetry over other relations.

However, thus far we've only considered diachronic modal relations: ones concerning what can happen over time (e.g., R_2, R_3). Perhaps we can identify a principled symmetry-breaker by turning to synchronic modal relations. If Cas and Pol differ over a qualitative relation concerning their origins, Qual-G-ers can resist *all* CCPs whose worlds begin the same as Alef (Bet and Gimel, W_1 and W_2, etc.) in the *same* way (denying that the worlds are duplicates).

Here's one proposal: Only one of Cas and Pol could have originated by itself. Imagine God's creating the first time in Alef by unrolling a map from left to right. (So the whole map concerns a single time.) If he unrolls it just a bit, only Cas (say) appears; if he unrolls it further, Pol does too. So letting R_4 be a qualitative modal relation that one thing bears to another iff, possibly, the former comes to exist without the latter, suppose that Cas (say) unrequitedly bears R_4 to Pol. And suppose that Cas and Pol bear R_2 to each other. Now Bet and Gimel are both possible, but not duplicates. Only in Bet does a sphere that could have originated by itself outlive another sphere.

This line of resistance seems more plausible than the preceding one, which turned on at least some diachronic modal asymmetries between Cas and Pol in Alef. I find it more credible that Cas and Pol differ over R_4 than that they differ over R_2 or R_3. Further, differing over R_4 wouldn't seem to give rise to mysterious non-local dependencies. Moreover, as just explained this line seems to have a principled basis for resisting a vast array of CCPs by appealing to just one symmetry-breaker in Alef.

Still, this line of resistance seems implausible. Like the prior line, this one rejects Feature-SV, and without being able to integrate that stance within a more general position on which nm-qualitative matters fail to fix modal ones. (Just as with the prior line, on this one Alef's nm-qualitative character fixes the distribution of modal features.) And even if this line's symmetry-breaking modal relation isn't as objectionable, there nevertheless seems to be no (non-ad-hoc) reason to think that our spheres would break symmetry in this way.

Further, even if the present line can handle CCPs whose worlds begin the same as Alef, problems arise when we seek to apply the line to others. Consider a world, W, in which four spheres exist in a line for one second, and a W-based CCP whose worlds differ over which half of the line gets an extra second. How would R_4 be instantiated in W? Should we start on one end of the line, and say that that sphere bears R_4 to the next, which bears it to the next, and so on down the line? Should we take one of the middle spheres to be the prime R_4-bearer? It's hard to see how there could be any principled stance about this.

5. New Spheres? (And the Nature of Time)

We've covered a lot of ground, so I'll quickly say a bit about where we are and where we're going. I said (§§1–2) I'd canvass various lines of resistance to our candidate counterexample to anti-haecceitism, and so far have examined three: *no-factual-difference* (§3), which denies Bet's and Gimel's distinctness; *diachronic-modal-asymmetry* (§4.1–4.2), which denies the possibility of exactly one of them; and *synchronic-modal-asymmetry* (§4.3), which denies that they're duplicates. I argued that the first is credible only if you reject Things, and that the second and third face serious problems. There's one more line of resistance to our CCP to examine (§§5–6) before wrapping up (§7).

Since diachronic- and synchronic-modal-asymmetry face serious problems, it would be nice to have another option. And we do: Deny the possibility of both Bet and Gimel. We could do this by denying the possibility of their nm-qualitative character (Q). But that seems desperate; given Things, Q's possibility is supported by patchwork thinking just as Alef's was. Instead, we can deny

both worlds' possibility by saying that the spheres in Dup (the world that would be actual were Q to hold) aren't Cas and Pol. Call this *new-spheres*.[24] This line of resistance is consistent with Things, Feature-SV, and Fact-SV. To be sure, it has significant costs as well, one being that it's available only on certain theories about time (§5.2–5.3). Further, diachronic-modal-asymmetry's prospects are also sensitive to considerations about time (§5.4).

5.1. Theories about Time

Suppose there was war yesterday but peace today. How should we understand the temporal variation? We might think the facts themselves *change*. It was the case that there's war, but is now the case that there's peace. Or we might locate the variation in the *content* of the facts. For example, there's a fact to the effect that a particular war-like worldly state is earlier than a peace-like one. On the "dynamic" or "A-theory" of time, the facts may change,[25] which I'll understand in terms of accepting tense operators (e.g., 'it was the case that') in one's fundamental ideology.[26] On the "static" or "B-theory," all temporal variation is ultimately understood via content-variation.[27]

Some A-theories differ over temporal ontology. On presentism, (always) only present goings-on exist; on the growing-block view, (always) only past and present ones do; and on the (moving-)spotlight view, (always) past, present, and future ones do. So some A-theories invoke change- and content-variation. If we have a temporally extended block, we get content-variation; and if the block changes (e.g., by growing, or a part's becoming present), change-variation.

I said (§2) that by 'world' I mean a maximally specific way for reality to be across all time. On the B-theory, such may be represented via a set of propositions; for instance:

$\{t_1$ is earlier than t_2, there is war at t_1, there is peace at $t_2\}$.

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24. Sometimes Russell (2016) seems to entertain a nearby view, on which it's indeterminate whether Dup's spheres are new. (Recall Indet* in fn 21. Here's one basis for affirming it: You think Dup's spheres are Alef's, but that it's indeterminate which plays which role; i.e., Indet. But here's another: You think it's indeterminate whether Dup's spheres are Alef's.) I won't discuss this view, nor the view that exactly one Dup-sphere is new.

25. See e.g. Sider (2011: ch. 11), Zimmerman (2011: 172), Cameron (2015: 5), and Deasy (2018: 271–272).

26. This is common (see e.g. Sider 2011: ch. 11; Markosian 2004: 47; Skow 2009: 668; Lipman 2018: 96), though there are alternatives (see Cameron 2015: ch. 3, 168–169; Sullivan 2016).

27. I'm assuming reality is constituted by a single set of facts, that cohere, which Fine (2005: 271) calls 'Absolutism' and 'Coherence.' Accordingly, I think the A- and B-theories (on my glosses) are exclusive and exhaustive. I won't consider views that reject one of these (common) assumptions.

Since A-theorists think the facts may change, they may represent a world via a sequence of sets; for instance:

<{there is war}, {there is peace, it was the case that there is war}>.

B-theoretic worlds are duplicates if the relevant sets have the same qualitative facts, A-theoretic ones are if they have the same sequences of such facts, and B- and A-theoretic worlds are never duplicates. In fact it's probably misleading to use the same word for what B- and A-theorists represent. Though I'll still use 'world' in this way, I'll also say that an A-theorist's sequence represents a "(world) progression." So the above sequence (an abstract item) represents a progression (a worldly matter). And I'll call the worldly correlates of individual sets 'times.'[28]

Since earlier formulations of key theses (Qual-G, G-Fix, etc.) lack tense operators, those formulations fit well with the B-theory. If there was war yesterday but peace today, the B-theorist will say that there are, tenselessly, some fundamental facts that ground, tenselessly—and so fix—yesterday's and today's goings-on. And if he's a Qual-G-er, he'll say the fundamental facts are all qualitative. The A-theorist will presumably say that there *were* fundamental facts that grounded (*then*) the war, but that there *are* (*now*) fundamental facts that ground (*now*) peace. And if he's a Qual-G-er, he'll presumably say the fundamental facts are *always* all qualitative. So A-theorists should presumably add 'always' operators to our formulations. For instance:

(Fact-SV) **Always**, qualitative facts are fixed by nm-qualitative facts.

(Qual-G) **Always**, all non-qualitative facts are grounded in qualitative ones.

(G-Fix) **Always**, if some facts ground another, then the former modally fix the latter.

(Anti-haecceitism) **Always**, all facts are fixed by qualitative ones.

If we consider a toy progression with just two times (represented by a sequence with just two sets), then the above theses, so formulated, imply that the first time's nm-qualitative facts fix all qualitative facts therein, which ground and so fix all other facts therein; and likewise with the second time.

28. Others use (in A-theoretic contexts) 'world' and 'time' differently than I am. For example, 'world' may be used for the totality of reality at a time (see Markosian 2004: 79) instead of a progression of such realities. If you wish, think of a "world progression" as a progression of worlds (= times) instead of a progression (of times) in a world.

We might call anti-haecceitism so transposed *time anti-haecceitism*, since it implies that, for every time within a possible world progression, that time's facts are fixed by its qualitative facts. *Progression anti-haecceitism*, by contrast, just says that, for every possible world progression, the progression of facts is fixed by the progression of qualitative facts. Time anti-haecceitism certainly implies progression (and similarly with other theses, for instance time vs. progression Qual-G); whether the converse holds isn't as clear. On the one hand, we can imagine scenarios that threaten time theses alone.[29] On the other, it isn't clear that bare progression theses (progression theses plus the negation of time ones) are ultimately intelligible. Progression Qual-G, for instance, is the view that any possible progression of non-qualitative facts would be grounded in a qualitative progression. But progressions aren't real things (it's always the case that only part of one is real), and reality seems necessary for entering into grounding relations.

When key theses come up in A-theoretic contexts in what follows, I have time ('always') versions in mind unless otherwise noted.

5.2. The B-theory and New-Spheres

B-theorists take facts about the sweep of history to hold tenselessly. Accordingly, they can say that, were Alef's nm-qualitative character to hold, Cas's and Pol's existence would be grounded, but that, were Dup's to hold, the existence of different spheres would be. They also might not say this; I'm not claiming that they must run new-spheres (or resist our CCP at all), just that they can.

Now this line requires saying that the qualitative grounds in Alef for Cas's and Pol's existence don't hold in Dup. For if they did, then by G-Fix Cas and Pol would exist there too. But Qual-G-ers are well-positioned to say this for reasons that are independent of any desire to resist CCPs.

Dasgupta (2017: 15–16; cf. 2009: 55–56) argues that Qual-G-ers should accept a sort of holism, to the effect that the fundamental qualitative grounds for the existence and features of interrelated things are encapsulated in a single fact. I'll illustrate with quantifier generalism (§3.2). Let S_1 be a situation in which an *F* thing *R*s a distinct *G* thing, and S_2 one in which the relation is different (*R**-ness). On non-qualitativism, S_2's fundamental facts might overlap S_1's:

Fa *Gb* *Rab* *Fa* *Gb* *R*ab*

29. Let W be a world with an infinite past and future in which a sphere appears for a second and dies, then a distinct sphere appears for a second and dies, etc. Whenever a sphere exists, qualitative facts don't fix which one does, since those same facts (including tensed ones) will hold when the next sphere exists. So if W is possible, time anti-haecceitism is false. But perhaps not progression anti-haecceitism: Perhaps the qualitative progression fixes the world progression.

But on qualitativism, such facts aren't fundamental. And quantifier generalists shouldn't simply substitute Ramsified variants. Note that [$\exists x(Fx)$], [$\exists x(Gx)$], and [$\exists x \exists y(Rxy)$] are consistent with, for example, there being one F and G thing that Rs itself. So instead of positing multiple facts each containing one predication, we posit one fact containing multiple predications:

$$\exists x \exists y(Fx \,\&\, Gy \,\&\, Rxy \,\&\, \sim(x{=}y)) \qquad\qquad \exists x \exists y(Fx \,\&\, Gy \,\&\, R^*xy \,\&\, \sim(x{=}y))$$

As a result, S_2's fundamental facts won't overlap S_1's; we exchange S_1's for a new one.

As applied to Alef and Dup: We can say that, in Alef, there's a single fundamental fact to the effect that two spheres exist for one second, and that, in Dup, there's instead one to the effect that two spheres exist for one and two seconds respectively. In which case, the grounds for [Cas and Pol exist] in Alef won't hold in Dup. Perhaps this sort of holism isn't necessary for denying that the grounds hold in Dup; but it seems sufficient, and independently motivated for Qual-G-ers.

So, the B-theorist can deny that possibility is preserved through the "expansion operations" on Alef whereby Bet and Gimel were introduced (§2). To suppose that one sphere outlives another is to change the world's fundamental tenseless character, which (he can say) changes which things exist. Let's also now revisit §2's Time argument for our CCP's genuineness:

> (Time) The histories of Alef, Bet, and Gimel are identical for the first half of a second, differing only as to how that shared initial segment is extended. And since the segment could, supposing Alef is possible, be extended in a way resulting in Alef's actuality, surely it could be extended so as to actualize Bet instead, and likewise with Gimel.

And call the premise in the first line 'SS' ('**s**hared **s**egment'). On the B-theory, we take SS to mean that the fundamental facts that constitute the first half-second of the "Alef-block" are the same as those constituting the first half-second of the Bet- and Gimel-blocks. So understood, the inference to Bet's and Gimel's possibility is natural. For it follows from SS and Alef's possibility that there's a possible collection of fundamental facts F_1, F_2, etc. such that (a.) F_1, etc. constitute the first half-second of Alef's, Bet's, and Gimel's histories, and (b.) F_1, etc., are compossible with an additional collection G_1, etc. that together with F_1, etc. constitute the entirety of Alef's history. And why should F_1, etc., be compossible only with G_1, etc., and not also with a different collection that together with F_1, etc. would constitute Bet's history, and similarly with Gimel? However, on this reading of SS, B-theorists can deny it. They can say that the fundamental facts

constituting the first half-second of Alef span Alef's entirety (and include totality information about the spheres' duration), and so at least partly differ from the fundamental facts that would constitute the first half-second of any possible nm-duplicate of Bet and Gimel. On the qualitativist holism sketched above, there may be no overlap at all. And while there may be other, metaphysically shallow readings of SS on which B-theorists must affirm it (e.g., the worlds "look the same" for the first half-second), such readings won't sustain an inference to Bet's and Gimel's possibility.

5.3. A-theories and New-Spheres

I've explained how B-theorists can resist our CCP by saying that Dup's spheres aren't Cas and Pol. I now explain how some A-theorists can too, and argue that others can't.

On A-theories, the facts don't hold tenselessly, but rather unfold over time. So we think of Alef and Dup as world progressions (§5.1). Now consider (1) and (2):

> (1) Alef and Dup begin with the same nm-qualitative facts. (That is, the Alef-progression's first time and the Dup-progression's first time have the same nm-qualitative facts.)
>
> (2) Alef begins with [Cas and Pol exist].

They seem plausible. Alef and Dup prima facie appear to begin the same, qualitatively, and (2) seems to follow from Alef's description (§2) on an endurantist view of persistence.[30] But if they're true, we can infer that Dup's spheres are Cas and Pol, as follows:

> (3) Alef and Dup begin with the same facts. ((1), Fact-SV, Qual-G, G-Fix)
>
> (4) Dup begins with [Cas and Pol exist]. ((2), (3))

Assuming (1), it follows by Fact-SV that Alef and Dup begin with the same qualitative facts, and then by Qual-G and G-Fix that they begin with the same facts

30. If Cas and Pol don't endure, replace [Cas and Pol exist] in (2) and (4) with [c_1 and p_1 exist], where c_1 and p_1 are short-lived things that will turn out to have been Cas's and Pol's first temporal parts (cf. Sider 2001: 71). If Alef's spheres perdure, Bet and Gimel differ over whether c_1 or p_1 initiates the longer sphere-worm (cf. fn 11). So to deny both worlds' possibility via new-spheres, we say that Dup contains two completely new worms, contra (4).

((3)). The inference to (4) is straightforward. And (4) precludes new-spheres. So if the A-theorist wishes to take this line, he must reject (1), or (2), or the time version of a thesis on which the inference to (3) depends.

Say that on *open-future* A-theories, it sometimes isn't settled what the future will be like in some respects, whereas on *closed-future* A-theories, it's always settled what it will be like in every respect (i.e., every time in the world progression fixes every subsequent time).[31] So if there's peace now, closed-future-ers say that it was the case earlier that it will be the case that there's peace. And if there's now a time block a peace-part of which is present, they say that it was the case earlier that this will be the case. Now, closed-future-ers reject (1). They say that Alef begins with qualitative facts to the effect that two spheres exist and will persist for one second, while Dup begins with ones to the effect that two spheres exist, one of which will persist for one second, the other for two.

This doesn't mean that closed-future-ers must reject (4), or must resist our CCP at all. But since they reject (1), they can avoid (4) and run new-spheres if they wish. They can say that, were reality to begin with qualitative facts implicating Alef's qualitative progression, [Cas and Pol exist] would be grounded, but that were qualitative facts implicating Dup's to hold, the existence of different spheres would be. And closed-future-ers can resist the Time argument in the same sort of way as B-theorists can. On A-theories, we take SS to mean that the initial stretch of fundamental facts in the Alef-progression that would take half a second to elapse is the same as the corresponding stretch in the Bet- and Gimel-progressions. And while the inference to Bet's and Gimel's possibility is then natural, closed-future-ers can deny SS. They can say that Alef's first fundamental facts at least partly (on qualitativist holism, perhaps wholly) differ from the first fundamental facts in any possible nm-duplicate of Bet and Gimel, by foretelling a different future.

Open-future A-theorists, however, can't avoid (4) by rejecting (1).[32] And I'll now argue that they can't credibly salvage new-spheres by rejecting (2) or the inference to (3) either. The upshot will be that this line of resistance isn't open to open-future-ers.

I've noted (fn 30) that, though you might reject (2) in virtue of rejecting endurantism, the argument against new-spheres can be sustained with a non-endurantist variant. But suppose our open-future-er rejects (2) in virtue of the thought that, at the Alef-progression's first time, T, it isn't (yet) settled which particular spheres exist. Here are two views about the **u**nsettledness:

31. On what such unsettledness might consist in, see Cameron (2015: ch. 5) and Barnes & Cameron (2009).

32. Admittedly, an open-future-er might claim that the futures at Alef's and Dup's beginnings are open in some respects but closed in enough to falsify (1). But I see no good reason to think the futures are so closed but not fully closed. If you disagree, replace 'open-future-ers' in what follows with '(1)-affirming open-future-ers.'

(Ua) The spheres that exist at T lack thisnesses then.

(Ub) The thisnesses at T are poised between alternatives.

On Ua, T has no determinate non-qualitative facts; on Ub, only disjunctive ones (the difference came up in §3.2). And here are three views about if or **w**hen the unsettledness resolves:

(Wa) It doesn't.

(Wb) At some later time in the Alef-progression.

(Wc) Only from some sort of "timeless" vantage point "external" to the progression.

UaWa is a tantamount to Qual-D (there are no determinate non-qualitative facts), and yields no-factual-difference. UbWa perhaps yields this too if Alef's spheres' thisnesses are poised between the same alternatives (cf. §3.3's bi-location variation). But our open-future-er could try to run new-spheres via Wb or Wc. The idea would be that, if reality progresses after T so as to actualize Alef's nm-qualitative character, the spheres' thisnesses resolve into Cas's and Pol's, but that if matters progress so as to actualize Dup's, a different pair of thisnesses.

It's not clear that Wb can accommodate this idea, since the Alef-progression seems to nm-qualitatively diverge from the Dup-one, not by virtue of any times in the former, but by ending when it does. At which point, it's too late for the thisnesses to resolve *in* the progression.[33] This takes us to Wc; perhaps the thisnesses could resolve from an *ex*ternal perspective comprehending the entire progression. But since progressions aren't real (§5.1), it isn't clear that progression-external facts (a fortiori, their being qualitatively grounded) are ultimately intelligible. And regardless of the "W" view, I think Ua and Ub founder on the reasoning in §3.2. Suppose T were actual. Given Things, we may say that **Det**, $\exists x \exists y$(x and y are material spheres a foot apart). In which case, I think it's compelling that $\exists x \exists y$(**Det**, x and y are material spheres a foot apart)—contra Ua and Ub.

You might defend Ub's possibility by appealing to §3.2's Rep, in which sphere *b* replaces sphere *a*, and (I granted) there's an instant at which the sphere's

33. If Alef's last time, L, includes totality information to the effect that L's facts are the last, Alef qualitatively diverges from Dup at L, and so the thisnesses could resolve at L. But such totality information doesn't fit well with open-future-ism. If reality can "know" at L that nothing more will happen, why couldn't it have earlier known L's contents, etc.?

thisness is poised between *a*'s and *b*'s. Doesn't this suggest that there could be A-theoretic times whose things' thisnesses are poised between alternatives? Well, in A-theoretic Rep we get a progression almost every time in which has a sphere with a determinate thisness; there's just a fuzzy blip in the middle in which the sphere's thisness is poised between *a*'s and *b*'s. But to run no-factual-difference or new-spheres, Ub-ers say that such fuzziness *suffuses* the Alef-progression, either totally (on Wa and Wc) or until the tail end (Wb). It's not clear that we can squeeze the credibility of this out of Rep. And even if such indeterminacy could be made credible, running new-spheres requires Ub-ers to address the two challenges raised above for Wb and Wc respectively.

I conclude that open-future-ers can't credibly salvage new-spheres by rejecting (2). As for the inference to (3), it turned on §5.1's time versions of Fact-SV, Qual-G, and G-Fix. So suppose our open-future-er claims that a fact in one time can be grounded in or fixed by facts some of which are from (or about)[34] another. Specifically, suppose T were actual, that Cas and Pol now exist ((2)), and that he claims that their existence is partly fixed by nm-qualitative facts from or about times in the Alef-progression that differentiate it from the Dup-one. Further, their present existence depends on those partial fixers, in that if matters were to progress so as to actualize Dup's nm-qualitative character, Cas and Pol wouldn't exist now. This is new-spheres.

Since progressions aren't real, it isn't clear that this sort of diachronic grounding or fixing (in which a fact from one time is partly grounded in or fixed by facts from or about another) is ultimately intelligible.[35] But for present purposes, I need only note that the above proposal isn't open to open-future-ers. Grant that Cas and Pol wouldn't exist now if matters were to progress so as to actualize Dup's nm-qualitative character. Since they do exist now, it's now settled that matters won't progress in that way, which contradicts our open-future-er's open-future-ism. If it's already settled that Dup's nm-qualitative character won't actualize, he can avoid (4) by rejecting (1).

Presentists may accept a closed or open future; I won't get into which they should accept, but just note that new-spheres isn't open to open-future-ers. While growing-block-ism is consistent with closed-future-ism, open-future-ism has been critical to its motivation,[36] and so this line presumably isn't for growing-block-ers. It seems natural for spotlight-ers to accept closed-future-ism, and hence that they can take this line. However, spotlight-ism is arguably consistent

34. Suppose the Alef-progression's last time, L, doesn't "say" that its facts are the last. Still, from an external perspective we might note that, were Alef actual, L's facts would be the last—a fact about, rather than from, L.

35. I think the "diachronic grounding" in Baron (2015) and Kajimoto, Miller, & Norton (2019) is different.

36. See Sider (2011: 264) and Cameron (2015: 194–195, 203).

with open-future-ism too.[37] Note also that, for new-spheres to be effective, it isn't enough for B-theorists or closed-future A-theorists to say that their theory is contingently true.[38] If there's a possible open-future variant of Alef, we can base our CCP on it and close off new-spheres.

5.4. Time and Diachronic-Modal-Asymmetry

So open-future A-theorists can't resist our CCP via new-spheres. Further, I don't think they can credibly run diachronic-modal-asymmetry either.

On B-theory Qual-G, imagine Alef's actualizing via the actualizing of a qualitative temporal spread, which then grounds the distribution of particular thisnesses across the spread's things. Turning now to Dup, we "wipe" this *entire* spread and "start over" (recall §5.2's holism): We get a new qualitative spread, which grounds the distribution of particular thisnesses. On new-spheres, we get new thisnesses. On diachronic-modal-asymmetry, the same ones as before. I already criticized this line in §4.2; what I want to add now is that it's even harder to accept on open-future-ism.

So suppose now that our (would-be) Qual-G-er is an open-future-er. Because possible worlds are progressions, they're actualized progressively, by adding new times to already actualized ones. And because of the open-future-ism, some progressions—such as Alef and Dup—literally overlap, being numerically the same for some stretch. So suppose their shared beginning (T) were actual: Cas and Pol exist, a foot apart. To run diachronic-modal-asymmetry, our open-future-er says that one of them is such that, were matters to progress so as to actualize Dup's nm-qualitative character, the longer-lasting sphere would necessarily be *it*.

This is hard to accept. Let Cas be the possibly-longer-lasting one, and imagine God's seeing Cas and Pol in T. Because Cas's and Pol's thisnesses are *already* instantiated, it's hard to believe that he couldn't add to T by smiting Cas and making Pol the longer-lasting sphere.[39] The B-theorist Qual-G-er isn't in the same position. Consider a short B-theoretic world, W, corresponding to our open-future-er's T, and suppose W's qualitative spread tenselessly grounds the

37. First, Cameron (2015: ch. 5) defends a version of spotlight-ism and account of open-future-ism that (he argues) are consistent. Second, even if the first time in a world progression contains an exhaustively determinate time block, closed-future-ism doesn't follow. What if that time fails to fix the future behavior of the spotlight (cf. Spolaore & Torrengo 2021) or future shape of the block (cf. Cameron 2015: 160–162)?

38. See Cusbert and Miller (2018) on the modal status of theories of time.

39. The thought about God's seeing certain matters is just meant as a vivid way of bringing out settled facts, and the thought about his powers is meant as a vivid way of bringing out intuitions about what's possible.

distribution of Cas's and Pol's thisnesses. Had God wanted to make one sphere outlive the other, he couldn't have done so by adding to W. Rather, he would have made a different qualitative spread (intuitively, we wipe the W-spread), which would have grounded the distribution of thisnesses. And God wouldn't even see Cas (qua being Cas) until "*after*" the spread is there and Cas's thisness has gone to the longer-lasting sphere.

No doubt more could be said to elucidate why diachronic-modal-asymmetry is less credible on open-future-ism, but I think I've said enough to conclude that it is. I also think §4.1's added indeterminacy is less credible on open-future-ism, but won't elaborate.

6. Bringing in Causation

So the prospects for the "new-spheres" and "diachronic-modal-asymmetry" lines of resistance are crucially sensitive to time's nature. They're also sensitive to causation's. I'll again illustrate with quantifier generalism, though the points should carry over to other theories about fundamental qualitative facts. I assume the B-theory; the points carry over to closed-future A-theories.

I suggested in §3.2 (fn 17) that we shouldn't dismiss quantifier generalism on the basis of some *sweeping* principle to the effect that existentially quantified facts can't be fundamental. But might there be *specific* qualitative ingredients that quantifier generalists can't let into their fundamental facts? I'll argue that they can't let in spatially scattered local chancy causal powers—at least, not unless they take a modal-asymmetry line. This, I think, is the moral of §2's Powers argument.

Let Q be a fact capturing Bet's and Gimel's qualitative spread, and let's specify it as follows:

(Q) $\exists x \exists y$(x and y are spheres initially a foot apart & x dies after one second).

This is rather simplistic, but harmlessly so I think. We may now imagine Q's fixing reality (i.e., the actuality of a particular world) via the grounding of facts witnessing its conjuncts:

a and b are spheres initially a foot apart. a dies after one second.

On diachronic-modal-asymmetry, a and b are Alef's spheres; on new-spheres, new ones. Either way, at least one of Bet and Gimel is impossible. Though you might find one or both lines implausible (more in §7), I think they're coherent.

But let's now grant the possibility of a world whose spheres have fundamental powers of the sort Powers describes. Suppose Q+ captures the qualitative spread (differences from Q bolded):

> (Q+) $\exists x \exists y$(x and y are ***D*** spheres initially a foot apart & x ***D*-activates** after one second).

D-ness is a dispositional property constituting the power, and for a thing to "*D*-activate" is for its disposition to activate. The details shouldn't matter. We could bring in *D*-tropes, or replace *D*-ness with a power-conferring categorical property *C*-ness. Or we could understand the powers, not as intrinsic to the spheres, but in terms of a separate fundamental law fact. For instance:

> $\exists x \exists y$(x and y are ***C*** spheres initially a foot apart & x **dies** after one second).

> $\forall x$(if x is *C* then there's a 1% chance that it dies after one second).

To continue with Q+, suppose Qual-G-ers say that it fixes reality. This, I think, is incoherent.

Intuitively, we have a qualitative spread in which *D*-ness is instantiated over here, and a foot away over there. Given *D*-ness's stipulated nature, each (token) power is chancy (can activate at any time) and local (operates independently of the other). So I think we must accept:

> (Two Patterns) Q+ is compossible with two patterns of *D*-ness-activation.

(Intuitively: a pattern in which the power over here activates after one second and the one over there after two, and a pattern in which it's the other way round.) Next, consider this compelling thesis:

> (Powers-SV) Differences between patterns of powers-activation supervene on differences in facts.

You might think, more specifically, that patterns of *D*-ness-activation will differ over facts about *which things D*-activate when. But I think the present argument could be made even with a bi-locating sphere. All that Powers-SV requires is that pattern-differences manifest in *some or other* fact-differences. Now it follows from Two Patterns by Powers-SV that Q+ is compossible with two different sets of facts, contradicting the idea that Q+ fixes reality.

Granting Q+'s possibility, Two Patterns is surely true. If you say that Q+ is compossible with just one pattern of *D*-ness-activation, then I think you just

aren't talking about the sort of power I have in mind. And Powers-SV is surely true. Qual-G-ers now have two options. They might get off the boat right away and reject Q+'s possibility. Or they might accept it, acknowledge that Q+ underdetermines reality, and identify some other qualitative reality-fixer.

They can do the latter by positing a modal asymmetry between the empowered spheres. Letting R be some qualitative modal relation that just one sphere bears to the other, they may say that Q+ is compossible with these two reality-fixers (which differ only in the final conjunct):

> ($Q+_1$) $\exists x \exists y$(x and y are D spheres initially a foot apart & x unrequitedly bears R to y & x D-activates after one second).

> ($Q+_2$) $\exists x \exists y$(x and y are D spheres initially a foot apart & x unrequitedly bears R to y & y D-activates after one second).

The most natural proposal, I think, is §4.3's, on which R is R_4. On this view, $Q+_1$ and $Q+_2$ differ over whether the sphere that D-activates first is the one that could have originated by itself. A diachronic modal asymmetry is admittedly conceivable. For instance, we might say that though each sphere can die *due to its power's activating* at any time, only one can die *as a brute fact* before the other. But this (I submit) strains credulity.

So Qual-G-ers can accept Q+'s possibility if they posit a modal asymmetry between the spheres. But modal-asymmetry lines face serious problems (§4.2–4.3), and the diachronic one is even less credible in the present context. So let's turn to Qual-G-ers' other option: Reject Q+'s possibility. The idea here is that this sort of fundamental power (chancy, local) can't be distributed in this sort of way (across spatially separated things). Three options come to mind.

First: Deny that fundamental chancy powers can be had by spatially separated things, accepting the necessity of a sort of **m**onism on which only one (comparatively) big thing has such powers. Consider this sort of candidate reality-fixer:

> (Q_M) $\exists x$(x is a D sphere-assemblage initially two-sphere-shaped & x D-activates after one second).

'sphere-assemblage' expresses a fundamental sortal (that we'd ordinarily describe in terms of being composed of spheres), and D-ness is a chancy qualitative power to lose a sphere-part. I don't think we are forced to accept an analogue of Two Patterns for Q_M and this power. You might object that Q_M must be compossible with two activation-patterns: one in which one sphere-part dies

and the other persists, and one in which the roles are swapped.[40] But our monist can say that the parts' thisnesses are grounded in the qualitative spread. The spheres couldn't have swapped roles, as each's playing the role it does constitutes it as the very sphere it is.

Second: Deny fundamental chancy powers, accepting the necessity of physical determinism. On Melia's (1999: §4) analysis of determinism, if determinism is true and two things are qualitatively identical up to some time, they remain qualitatively identical. If that's right, this option seems to require denying the possibility of Bet's and Gimel's nm-qualitative character. I said that it seems desperate to deny this (§5.0), but **d**eterminism's necessity would (if motivated) provide a principled reason to do so. But I don't think Melia is right. Consider this sort of candidate reality-fixer:

> (Q_D) $\exists x \exists y$(x and y are D spheres initially a foot apart & x dies after one second).

Here D-ness is a power of the following sort: If two things have it and are a foot apart, that determines that one dies a second later. So, no indeterminism vis-à-vis qualitative matters: The initial qualitative state determines the next one. Nor must there be any vis-à-vis non-qualitative matters: If the spheres' thisnesses are grounded in the qualitative spread, they couldn't have swapped roles.

Third: Deny fundamental powers, accepting Humeanism's necessity—illustrated by Q. So we have three views about causation that let Qual-G-ers avoid the sort of GCP advanced by Powers (without relying on a modal asymmetry). And time's role is important. For the open-future-er, the spheres' thisnesses are settled before their futures. So he can't appeal to the information in Q, Q_M, or Q_D to ground the thisnesses, and so can't block the possibility of role swaps in the ways noted.

I also note that some sort of monism might alleviate some of diachronic-modal-asymmetry's problems (§4.2). I said that, on a natural way of filling out Cas's and Pol's modal profiles, this line leads to mysterious non-local dependencies. But monism might help demystify them. Further, while this line rejects Feature-SV, on monism a version concerning fundamental things may still hold. However, even if adding monism helps with some of §4.2's problems, it doesn't necessarily deliver a better line of resistance, since it may raise problems of its own.

40. One way to avoid this is to accept existence monism: There are no sphere-parts (noted in §3.3 and so ignored here).

7. Taking Stock

The strongest candidate counterexamples to anti-haecceitism and (thereby) qualitativism, I think, are symmetry-breaking CCPs, for instance Bet and Gimel (§2). Though I've mentioned many lines of resistance, I've highlighted four: no-factual-difference (§3), diachronic-modal-asymmetry (§4.1–4.2), synchronic-modal-asymmetry (§4.3), and new-spheres (§5).

7.1. Costs

I said (§1) I'd argue that various lines all have significant costs, and that we'd see that the prospects for resistance are heavily sensitive to broader metaphysical considerations. We've indeed seen that many costs take the form "line L is credible only if you ϕ," where ϕ-ing is accepting or rejecting some view about ontology, time, or causation. Since these areas partly constitute our metaphysical framework, we may think of ϕ costs as **f**ramework costs.

No-factual-difference's prospects heavily depend on considerations of ontology (§3). For this line is credible only if you reject Things, and the best version (I think), the Qual-D-based one, is credible only if you reject clause T_1 in particular, i.e., deny that material things determinately exist. Assuming Things, would-be Qual-G-ers have new-spheres and the two modal-asymmetry lines to consider. And we've seen that the prospects for resistance are heavily sensitive to considerations about time and causation (§§5–6). For new-spheres and diachronic-modal-asymmetry are each credible only if you reject both the open-future A-theory and fundamental spatially scattered local chancy powers. At any rate, I've argued that, on either view, new-spheres isn't available and diachronic-modal-asymmetry strains credulity. Further, these lines' prospects are also sensitive to considerations of ontology, since some sort of monism might be advanced either to undergird an amenable view about causation or to alleviate some of diachronic-modal-asymmetry's problems.

ϕ costs aren't necessarily objections, but will be for anyone who objects to ϕ-ing, and can be extended into objections by arguing against ϕ-ing. For example, the fact that new-spheres is credible only if you reject fundamental spatially scattered local chancy powers will constitute an objection to that line for anyone drawn to such powers, and can be extended into an objection by arguing for them. Other "costs" are simply direct objections: To accept that the cost is real just is to accept that the relevant line's plausibility is diminished, though we might haggle over how much. This was my main complaint about the modal-asymmetry lines (§4); there are various respects in which they seem unprincipled, ad hoc, or bizarre. And we've yet to consider direct objections to new-spheres.

The most serious direct objection, I think, is that it saddles us with a lot of essentialism about qualitative features. On this line, Alef's spheres couldn't exist in Bet's and Gimel's qualitative spread, since it would ground the existence of different spheres. This might seem objectionable in itself, and may augur additional essentialism. For on perhaps the most natural (or dialectically stable) way of filling out Cas's and Pol's modal profiles, Cas and Pol couldn't exist in any other qualitative spread. And if we generalize to other things, we get a putatively Leibnizian outlook on which all possible things have particular qualitative roles essentially.[41] Can we really accept, for example, that if the cup in front of you had been a bit to the left, then the person in your chair wouldn't have been you?

7.2. What's Most Reasonable?

Having surveyed costs for our lines of resistance, here are two salient **q**uestions:

(Q_1) Which line(s) is (are) most reasonable?

(Q_2) Is it reasonable to resist our CCP?

(The most reasonable line(s) could still be less reasonable than accepting haecceitism.) I can't (straightforwardly) answer either here, since much depends on the reasonableness of the "ϕs" in the ϕ costs—which I haven't assessed. For example, since no-factual-difference is credible only if we reject Things (the line's ϕ price), this line is reasonable only if it's reasonable to pay this price. Now suppose we also think that this line is reasonable iff it's reasonable to pay this price, and that we can reasonably resist our CCP, if at all, only via this line. Then we can't answer Q_1 or Q_2 without assessing Things. Another reason I can't answer Q_2 here is that much depends on the strength of the case for qualitativism—which I haven't assessed. If strong enough, resistance could be all-things-considered reasonable even if the line taken faces serious problems. But by identifying ϕ costs and direct objections, my argument can help you answer Q_1 and Q_2.

Let me briefly discuss the above direct objection to new-spheres, and then (even more briefly) how it compares to the modal-asymmetry lines' direct objections. This objection seems to turn on *de re* modal intuitions: It seems to many of us that material things have many of their qualitative features accidentally. For instance, when we consider Alef, it **s**eems that (S_1) *those very* spheres (not merely similar ones) could have originated an extra foot apart, or that (S_2) each of *them*

41. This is often associated with Leibniz. I make no claim about his actual views; see Cover & Hawthorne (1999).

could have existed for an extra second. Now recall (§1) that I've been trying, not to persuade sanguine haecceitists to reject haecceitism, but to ascertain whether would-be qualitativists can reasonably do so. And of the three routes to qualitativism noted in §1 (which I don't claim are exhaustive), the first two are informed by scientific virtues or practice, and those drawn to these routes may not give much weight to *de re* modal intuition. And while those drawn to the third may give weight to this sort of intuition, they'll either lack the specific ones undergirding the objection or have competing, anti-haecceitist intuitions to consider.

Further, considerations about time and causation may affect what intuitions you have, or how strongly you have them, or their epistemic force. Suppose you feel S_2 strongly. And suppose you accept a time-causation package that permits new-spheres; for instance, B-theory Humeanism. It's often said that the A-theory, or a specific A-theory (such as presentism), is the common sense view.[42] Fundamental local cross-time causation (the bit of reality over there produces the next bit over there) also seems part of common sense. And it's plausible that intuitions about cross-time matters are shaped by common sense views about time or causation. So, your intuitions about cross-time matters (e.g., S_2) may be shaped by a perspective about time or causation that you reject, which compromises their epistemic force. And self-consciously thinking about modal reality from a B-theoretic Humean perspective may diminish their psychological force. S_1 may provide a helpful diagnostic. If you feel it just as strongly as S_2, then S_2's force (psychological or epistemic) may trace to that of a more general conviction in accidental qualitative features, and so not be shaken by time-causation considerations in particular.

I tend to find the modal-asymmetry lines' direct objections more damaging than new-spheres's. First, I think any version of qualitativism must swallow a hefty dose of qualitative essentialism, and so must bite bullets vis-à-vis anti-essentialist intuitions. (I'm talking about our account of sober metaphysical truth. No doubt qualitativists may adopt conventions that let them *say* that things have all sorts of properties accidentally.) On Qual-D, there are no determinate facts about particular things at all, a fortiori none to the effect that any particular thing could have existed with different features. And even synchronic-modal-asymmetry induces some essentialism about spatially extrinsic matters. Presumably the modal-asymmetry lines induce less essentialism than new-spheres. But because of the former lines' oddities, it's hard to know how much. This leads to my second point. For reasons already noted, would-be qualitativists should already be prepared to withstand anti-essentialist intuitions. The modal-asymmetry lines' problems, by contrast, don't seem to be ones would-be qualitativists should have expected to confront.

42. See e.g. Bigelow (1996), Markosian (2004), Zimmerman (2008), and Baron (2015).

7.3. Must Qualitativists Resist?

Since I suspect that many who are sympathetic to the case for qualitativism will nevertheless find it unreasonable to resist our CCP, it's worth briefly revisiting whether qualitativists must resist it. We've been assuming that qualitativism is to be understood via Qual-G or -D, the accounts on offer in the literature. In which case, qualitativists must resist.[43] But I think there should be another possible account of qualitativism, or at least a thesis close to it, that's consistent with haecceitism.

I noted (§2) that we can distinguish kinds of haecceitism, that differ over the extent of GCPs. So we can consider more rampant haecceitisms, on which pretty much any thing in any possible world can be ripped from its qualitative role without compromising possibility, and more reserved haecceitisms, such as kinds on which the only GCPs are symmetry-breaking ones. And I think, first, that there should be a principled stance that accepts only symmetry-breaking GCPs. For I agree with Melia (1999) that these CCPs differ from others in threatening physical determinism, which suggests that the underlying metaphysical mechanics differ between these CCPs and others. And since modal stances are plausibly underpinned by non-modal ones (e.g., ones about grounding, essence, etc.), I think, second, that there should be a non-modal thesis in the vicinity of qualitativism that underpins such a reserved haecceitism. But that's a matter for another time.

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43. In Qual-G's case, this judgment depended on G-Fix (§1), which has admittedly been disputed (fn 13).

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