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The Distinctness of Objects Near and Far

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ABSTRACT

Philosophers working on the metaphysics of persistence typically do not extend their views to the distinctness of objects at a single time. I argue that we can provide criteria to distinguish objects across time if and only if we can provide criteria to distinguish objects at a time. Furthermore, I endorse a stronger claim. If either diachronic or synchronic distinctness facts have an analysis, then they have a common analysis. In other words, we should analyze diachronic and synchronic distinctness facts in the same way.

1 | Introduction

Your husband is a great guy, but he fell in with the wrong crowd. Now he is being framed for stealing a car. Luckily, you can prove his innocence. When the car was stolen on the West Side of town, your husband was on the East Side of town eating a sandwich. You have his time-stamped sandwich receipt. You present this exonerating evidence to his attorney.

From a metaphysician's perspective, I suggest, you have discovered potential ways to explain or account for the distinctness of your husband and the thief both at a time and across times. You seemingly can determine that they were distinct at the time of the crime based on the distinct properties they possessed: your husband was eating a sandwich while the thief stole the car. This helps explain their cross-temporal distinctness; they are not linked by the appropriate psychological, causal, or spatiotemporal pathways.¹

This paper concerns the relationship between distinctness over time and distinctness at a time, or the relationship between diachronic distinctness facts and synchronic distinctness facts. I

argue that the explanations or analyses of these distinctness facts come in a package. I call this view “Parallelism.”

Parallelism: Diachronic and synchronic distinctness facts share a common analysis.²

Parallelism is satisfied if diachronic and synchronic distinctness facts share a common analysis or if they are both unanalyzable—in the latter case, diachronic and synchronic distinctness facts still share the same analysis (none). I define “analysis” in the next section.

Parallelism is significant because it shows that our discussions of persistence and synchronic distinctness should be unified when they typically are not. Accounts of persistence are not often intended to generalize to the identity and distinctness of objects at a single time. Furthermore, philosophers discussing the identity and distinctness of objects at a time do not automatically advance their proposals to account for the persistence of objects.

¹ We will revisit examples where objects have conflicting properties in Section 6.

² I clarify the distinction between “diachronic” and “synchronic” distinctness facts in Section 4.

While Parallelism is not often discussed or endorsed, there are notable exceptions. The first exception is Merricks (1998), who articulates a thesis in the vicinity of Parallelism. He believes there are identity criteria for objects over time only if there are identity criteria for objects at a time. He states: “Identity over time will yield a criteria-generating analysis only if such criteria can be found by analyzing either identity or existence at a time”³ (110). However, he does not argue for the claim. Parallelism differs from Merricks’ claim in certain respects. Merricks articulates a necessary condition on identity criteria over time, whereas Parallelism states necessary and sufficient conditions.

The second exception is Della Rocca (2011), who also expresses sympathy with ideas related to Parallelism. He maintains: “There is considerable pressure on one who rejects primitive persistence to reject primitive identity at a time as well ... such a person would need to give a principled reason for treating identity at a time as primitive while holding that identity over time (or across worlds) is not primitive” (612). The aim of my paper is to further investigate the source of this “considerable pressure.” Unlike Merricks’ and Della Rocca’s claims, Parallelism is explicitly concerned only with distinctness facts—as opposed to identity facts. I will discuss the reasons for emphasizing distinctness in Section 4.

A third exception: Some contemporary approaches to the metaphysics of identity and distinctness appear to involve a commitment to Parallelism. It has recently become popular to metaphysically explain the numerical distinctness of objects in a “timeless” way where distinctness facts involve a binary distinctness predicate or relation, and there is no mention of time at all. For example, some argue that we should explain the distinctness of objects *a* and *b* by the fact that *a* and *b* exist (Rubenstein 2024). Others will maintain that such distinctness facts are zero-grounded (Litland 2023) or that they are grounded in the fact that *a* and *b* are necessarily indiscernible (Thornton, forthcoming).⁴ Philosophers engaged in these projects typically provide general identity criteria for objects that do not refer to when the objects exist. One may interpret their projects as involving an implicit commitment to Parallelism in the following sense: They offer a single analysis of distinctness facts regardless of when the objects exist. The temporal location of objects makes no difference to their analyses. But the proponents of these views do not argue that distinctness should be approached in this timeless way—instead, they offer various proposals for *how* to approach distinctness criteria in a timeless way. My argument for Parallelism will show that, at least for the grounding theorist who accepts three-dimensionalism, such approaches to distinctness are on a firm footing: Criteria of distinctness should apply to objects regardless of when and where the objects exist.

My argument for Parallelism, as we will see in Section 4, relies on considerations from the Special Theory of Relativity (STR). I argue that we should not expect separate analyses for synchronic and diachronic distinctness facts in relativistic worlds because, in relativistic worlds, there are no *properly* synchronic distinctness facts involving non-colocated objects.⁵ My reliance on relativistic physics limits the force of the argument and the conception of Parallelism in certain respects. First, Parallelism is restricted to the distinctness of physical, spatiotemporally separated objects. Second, the argument for Parallelism is limited in modal force. I will argue that synchronic and diachronic distinctness facts share a common analysis in relativistic worlds. My argument does not extend automatically to nonrelativistic worlds. Third, relativistic considerations are often used against tensed theories in the philosophy of time, and tensed theorists have a variety of responses.⁶ So, a qualification is needed. My thesis is that if relativistic objections are persuasive against tensed theories of time, the objections support Parallelism too. The reader can resist the argument for Parallelism if they adopt similar strategies to those available to tensed theorists, but the qualified thesis is still noteworthy. It is surprising that one must adopt a special metaphysical position to analyze synchronic and diachronic distinctness facts differently.

In Section 2, I say more about how to understand Parallelism, including how to extend the view so that it does not only include discussion of *numerical* distinctness but other types of “disunity” relations that are of interest to philosophers of persistence. In Section 3, I explain Parallelism’s significance. In Section 4, I argue for Parallelism. Section 5 addresses ways to resist the argument for Parallelism. In Section 6, I elaborate on the consequences of the argument.

2 | Unpacking Parallelism

To understand Parallelism, we contrast it with its negation, Separatism:

Separatism: It is not the case that diachronic and synchronic distinctness share a common analysis.

For example, a Separatist can claim that diachronic distinctness facts are analyzable while synchronic distinctness facts are unanalyzable. Alternatively, a Separatist may deploy one set of criteria to distinguish objects across time and another set to distinguish objects at a time.

To analyze distinctness facts is to provide a criterion for distinguishing objects.⁷ The literature both on persistence and

³ Merricks (2022), when discussing what matters to a person’s survival further, also presses parallels between what identity and distinctness facts across time can explain and what identity and distinctness facts over time can explain.

⁴ Burgess (2012), Shumener (2020, 2022), Wilhelm (2020), and Elgin (2024) discuss additional proposals. See Section 3 for further discussion.

⁵ A “properly synchronic distinctness fact” is a distinctness fact of the form: object *a* at *t* is distinct from object *b* at *t*’, where events taking place at *t* and *t*’ are simultaneous in every reference frame. We will look at other ways to define “synchronic” distinctness facts below.

⁶ See Baron (2018) for an overview. For a small sampling of discussion, see Craig (2000), Hinchliff (2000), Markosian (2004), Zimmerman (1996, 2011), Emery (2019), Balashov (2010), Skow (2015), and many others.

⁷ I remain neutral as to whether identity criteria should be sortal-relative. See Mooney (2023) for recent discussion.

on synchronic identity and distinctness facts features multiple conceptions of identity (and distinctness) criteria. Sometimes, an identity criterion takes the form of noncircular, informative necessary and sufficient conditions for object identity and distinctness.⁸ Other times, philosophers attempt to describe *in virtue of what* identity and distinctness facts obtain. We can understand “in virtue of” in a variety of ways, but one popular interpretation is in terms of metaphysical explanation and ground.⁹ I remain neutral as to what form an analysis of distinctness facts should take; thus, to analyze identity and distinctness facts is to provide informative necessary and sufficient conditions for distinctness facts or to provide grounds or metaphysical explanations of distinctness facts.

We must also clarify what it is for diachronic and synchronic distinctness facts to have a common analysis.¹⁰ Our characterization of a common analysis should rule out the possibility that diachronic and synchronic distinctness facts share a common analysis merely in virtue of having distinct analyses that fall under the same, general, determinable analysis (see footnote 11- for examples). I attempt to rule out such a scenario by appealing to a notion of a specification. The proposal is that diachronic and synchronic facts (that have at least one analysis) share a common analysis just in case: Diachronic and synchronic distinctness facts share at least one distinctness criterion *C* such that it is not the case that there are two other distinctness criteria, *S** and *D** where *S** and *D** are specifications of *C*, and *S** and *D** are such that *S** is a criterion for analyzing synchronic distinctness facts but not diachronic ones, and *D** is a criterion for analyzing diachronic distinctness facts but not synchronic ones.

While it is difficult to precisely define what it is for one analysis to specify another, two notable ways for one analysis to specify another is if the former analysis involves properties that stand in the determinate relation to determinable properties in the latter analysis or if the former analysis involves properties that stand in the species–genus relation to the properties of the latter theory.¹¹ I adopt the above characterization of a common analysis throughout the discussion of Parallelism and Separatism below.

2.1 | Three-Dimensionalism and Four-Dimensionalism

I also want to remain neutral as to whether three-dimensionalism or four-dimensionalism obtains,¹² but framing the discussion is tricky because the two camps understand debates about identity and distinctness over time differently. Three-dimensionalists take objects to wholly exist at multiple times. Four-dimensionalists take objects to persist over time in virtue of having temporal parts or stages at various times.

Four-dimensionalists are not primarily interested in the numerical distinctness of objects over time—at least they are not interested in the numerical distinctness of temporal parts over time. Temporal parts exist only for an instant (or a very short duration), and perhaps it is unnecessary to look for an analysis of the numerical distinctness of temporal parts at different times. Four-dimensionalists are more often concerned with other relationships between temporal parts (like whether the temporal parts are I-related [in the sense of Lewis (1976)] or whether they are temporal counterparts) rather than whether the parts are numerically identical or distinct. Thus, some four-dimensionalists may already accept Parallelism but consider it to be an uninteresting thesis—perhaps the numerical distinctness of temporal parts (at a time and across times) is trivial and in no need of analysis.

To avoid this triviality concern, we can reformulate Parallelism and Separatism to avoid numerical distinctness. For example, a potentially analyzable “distinctness” fact can have the form “*x* at *t* and *y* at *t'* are not parts of a single worm,”¹³ rather than “*x* at *t* is numerically distinct from *y* at *t'*.” If *x* and *y* are person temporal parts existing at different times, we can understand the diachronic fact as “*x* and *y* are not temporal parts of a single person,”¹⁴ or, if we are stage theorists, “*x* and *y* are not personal temporal counterparts.” Four-dimensionalists typically take such facts to be substantive (at least in the diachronic case). Parallelism would then state that diachronic facts and synchronic facts involving the *is not part of the same worm as* or *is not a temporal counterpart of* relation share a common analysis. Let us

⁸ Olson (2009, 6). Also see Ameriks (1977), Rovane (1997), Duncan (2015), and Conee and Sider (2005) for a small selection of philosophers discussing noncircular necessary and sufficient conditions of personal identity.

⁹ See Wasserman (2016), Torroño and Buonomo (2022), Fine (2016), Burgess (2012), Donaldson (2017), Litland (2023), Mehta (2023), Rubenstein (2024), Shumener (2020), and Wilhelm (2020), among others.

¹⁰ I would like to thank an anonymous reviewer for raising this point.

¹¹ Here, I provide two examples to test this characterization of a common analysis.

Example 1: Suppose we maintain that objects *x* and *y* are distinct in virtue of the fact that *x* and *y* do not stand in the counterpart relation to each other. Suppose further that *x* is synchronically distinct from *y* iff *x* and *y* are not *spatial* counterparts. Suppose that *x* is diachronically distinct from *y* iff *x* and *y* are not *temporal* counterparts. (and suppose there are no other distinctness criteria). If we think spatial counterpart of and temporal counterpart of pick out distinct relations that are both species of a more general counterpart relation, then we do not yet have a common analysis for synchronic and diachronic distinctness facts. This fails to be a Parallelist proposal.

Let us see an example that features a common analysis.

Example 2: Suppose we analyze synchronic and diachronic distinctness facts (concerning persons) in the following way: *x* is distinct from *y* as long as *x* and *y* are psychologically continuous. This criterion does not give way to two specifications, one that applies to synchronic distinctness facts and one that applies to diachronic distinctness facts. So, it would serve as a common analysis for diachronic and synchronic distinctness facts (involving persons).

There are ways to transform this criterion into one that would not satisfy the characterization of having a common analysis: maybe you think that *x* and *y* are *synchronically* distinct when *x*'s experiences are psychologically continuous with *y*'s *absolutely simultaneous* experiences (i.e., experiences that occur absolutely simultaneously in *x* and *y*). We can understand absolute simultaneity in different ways: perhaps events are absolutely simultaneous when they are simultaneous according to a metaphysically privileged frame). And *x* and *y* are *diachronically* distinct when *x*'s experiences are psychologically continuous with *y*'s *absolutely nonsimultaneous* experiences. But we are not forced to adopt these specifications as separate analyses unless we think it is important to distinguish absolutely simultaneous and absolutely nonsimultaneous events—which I doubt the Parallelist will want to do for reasons we will see in Section 4 of the paper. Unless we are forced to uphold such specifications (or similar ones) as separate analyses, the diachronic and synchronic distinctness facts share a common analysis.

¹² If three-dimensionalism is incompatible with the STR, then I must commit to four-dimensionalism. See Balashov (2000a, 2000b), Gilmore (2002), and Miller (2004) for discussion.

¹³ Or perhaps we would focus on more specific relations, such as *is not part of the same person worm* or *is not part of the same ship worm*, and so on.

¹⁴ Lewis (1976) communicates this idea when claiming that what matters to personal identity is whether earlier stages of a person are I-related to later stages. The “I-relation” holds between the several stages of a single, continuant person (5), and it reduces to the “R-relation” which denotes the continuity relation (such as psychological continuity) found in our best theory of personal identity.

call relations such as *is not part of the same worm as* or *is not a temporal counterpart of* “disunity” relations and define a new “distinctness*” relation.

X at t is **distinct*** from y at t' iff x at t is numerically distinct from y at t' or x at t is disunified from y at t'.

We now generalize Parallelism and Separatism:

Generalized Parallelism: Diachronic and synchronic distinctness* facts share a common analysis.

Generalized Separatism: It is not the case that diachronic and synchronic distinctness* facts share a common analysis.

By arguing for Generalized Parallelism, we can establish a thesis that is consequential both to four-dimensionalists and to three-dimensionalists.

3 | The Significance of Generalized Parallelism

Generalized Parallelism is not explicitly formulated or discussed, but it is significant for three reasons:

1. Generalized Parallelism can support the (three-dimensionalist) grounding theorist's project of not distinguishing between numerical distinctness at a time and numerical distinctness over time.
2. Generalized Parallelism shows that existing discussions of the distinctness* of objects across time should be integrated with discussions of synchronic distinctness*.
3. Generalized Parallelism shows that we should be cautious about which distinctness* facts we claim are primitive.

First, as mentioned in Section 1, some contemporary grounding theorists attempt to provide the metaphysical grounds for identity and distinctness facts without distinguishing the times at which the entities in question exist. These authors are concerned with the numerical distinctness relation not with disunity relations.

For example, Thornton (forthcoming, 1) believes that “for each distinctness fact—that is, each fact of the form $a \neq b$ —that fact is metaphysically explained by the fact that it is possible for the entities involved to be discernible.” Litland (2023, 1) maintains that numerical distinctness facts are of the form $a \neq b$ are “uniquely zero-grounded.” Rubenstein (2024) takes distinctness facts like [Wayne Rooney $\neq$ David Beckham] to be fully grounded in the plurality [Wayne Rooney exists], [David Beckham exists]. And there are a variety of other interesting and exciting proposals to consider for explaining distinctness facts.¹⁵

The distinctness facts these philosophers discuss have no temporal parameters built into them. So, we can think of these distinct-

ness facts as counting neither as diachronic nor synchronic. This is what I call a “timeless” approach to distinctness facts. These authors do not argue for why we should approach numerical distinctness in this timeless way (this is not a criticism—they are engaged in a different task: that of showing how to explain timeless distinctness facts), but Generalized Parallelism can motivate their approach.

Generalized Parallelism maintains that diachronic and synchronic distinctness facts have the same analysis. If we believe that diachronic and synchronic distinctness facts share a common analysis, then that would support the above grounding theorists' project of finding a single analysis of the timeless distinctness facts—at least under three-dimensionalism. For instance, if we believe that both diachronic and synchronic distinctness facts are primitive, then presumably, we would take timeless distinctness facts to be primitive as well. Or, if we believe that both synchronic and diachronic distinctness facts can be explained by citing the spatiotemporal discontinuity of the objects involved, then presumably we could explain the distinctness of (spatially located) objects in timeless facts in the same way. To illustrate: If Mohammad Ali in 1965 $\neq$ Mariah Carey in 1989 because they do not travel on the same spatiotemporal path, and Mohammad Ali in 1999 $\neq$ Mariah Carey in 1999 because they do not travel on the same spatiotemporal path, then Mohammad Ali $\neq$ Mariah Carey because they do not travel on the same spatiotemporal path. Generalized Parallelism harmonizes nicely with the timeless approach.

But if Generalized Parallelism is false—if diachronic and synchronic distinctness facts have different analyses—then it would be mysterious why we should search for single analysis of timeless distinctness facts and how that proposed analysis for timeless distinctness facts relates to the explanations for diachronic and synchronic distinctness facts.

Of course, proponents of the above grounding accounts may adopt four-dimensionalism and deny that there is a substantive account of numerical distinctness across time. They may believe that we should instead search for a substantive account of disunity over time. In that case, it is not clear that a having a single analysis of the disunity of objects across time and the disunity of objects at a time is directly relevant to their grounding projects concerning timeless *numerical distinctness*.¹⁶ That's no problem: while the above consideration may only motivate three-dimensionalist grounding theorists, Generalized Parallelism concerns both numerical distinctness and disunity. We turn now to the other motivations for Generalized Parallelism, which highlight the significance of having a common analysis of diachronic and synchronic disunity facts.

Second, Generalized Parallelism is significant because it encourages a shared discussion of persistence and synchronic distinctness* (remember that “distinctness*” includes both numerical distinctness and disunity). This is surprising because philosophers working on synchronic and diachronic distinctness* confront different problems. Philosophers of persistence confront questions like, “Can the ship of Theseus survive the replacement

¹⁵ See footnote 4.

¹⁶ Thanks to Jon Litland for pressing this point.

of all its planks?” and “Is a person with total, long-term memory loss the same person as the one prior to the memory loss?” In discussing persistence, philosophers are interested in what types of changes a person or object can survive.

Philosophers addressing synchronic distinctness* facts, on the other hand, are often concerned with whether distinctness* facts obtain in virtue of qualitative facts, facts involving only qualitative properties and relations.¹⁷ For instance, some philosophers working on synchronic distinctness* facts focus on confounding scenarios concerning qualitatively indiscernible objects, such as Black’s (1952) numerically distinct yet qualitatively identical iron spheres “Castor” and “Pollux.” These cases emerge in the discussion of Leibniz’s principle of the identity of indiscernibles. When discussing the identity of indiscernibles, the temporal parameter is not always made explicit, but it sometimes is.¹⁸ The objective is to determine whether and how Castor is numerically distinct from Pollux at a time even though they possess the same qualitative features, such as mass, density, temperature, color, and so on. It is especially difficult to distinguish Castor and Pollux in possible worlds containing only the two spheres.

When defending or attacking the principle of the identity of indiscernibles, philosophers do not appeal to theories of persistence. In one response to the case of Castor and Pollux, philosophers attempt to show how the spheres are discernible by pointing out their differing properties, such as that of *being 5 m from Castor* and *being 5 m from Pollux*.¹⁹ In another response, philosophers argue that there is only one sphere: Castor is identical with Pollux after all.²⁰ A third alternative suggests that we reject the identity of indiscernibles altogether.²¹ None of these options appeals to theories of persistence nor is it clear how to extend these views to views of persistence. If Generalized Parallelism is true, we should encourage a unified account of distinctness* for objects both across time and at a time. In other words, our account of the distinctness* of objects across time should apply to Castor and Pollux as well. The hope is that our account of the distinctness* of objects over time could explain why Castor and Pollux are distinct* at a time.

This is a significant result for four-dimensionalists as well as three-dimensionalists. Even if we are only concerned with disunity across time rather than numerical distinctness, Generalized Parallelism predicts that our account of the disunity of spheres across time (our account of why two sphere stages are not parts of the same worm) should apply to the disunity of spheres at a time as well. In other words, we should extend our account of the disunity of spheres in persistence contexts to account for why Castor and Pollux are not the same sphere (why their sphere stages at a time are not parts of the same worm). I will explore one application of Generalized Parallelism to the case of Castor and Pollux in Section 6.

Third and relatedly, an argument for Generalized Parallelism is also significant because one version of Generalized Separatism is especially appealing. It is easy to become frustrated with discussions of Castor and Pollux. The reader may wonder whether we need an account of synchronic distinctness* facts. Perhaps it is just brute that everything is distinct* from every other thing at a time. In contrast, it is important to analyze diachronic distinctness* facts because we must account for the possibility of change. This combination of views renders attractive the version of Generalized Separatism that treats diachronic facts as analyzable and synchronic ones as unanalyzable. Because it is an intuitively plausible version of Generalized Separatism, I focus my criticism on this version below.

4 | The Argument for Generalized Parallelism

The strategy of the argument for Generalized Parallelism is to suggest that there is no metaphysically privileged distinction between synchronic and diachronic distinctness* facts and then argue, on that basis, that Generalized Parallelism is true. The argument is structurally similar to arguments against tensed views in the philosophy of time. Just as the relativity of simultaneity causes trouble for upholding a privileged present, the relativity of simultaneity also threatens positing disjoint, comprehensive sets of synchronic distinctness* facts and diachronic distinctness* facts.

Having a more specific characterization of diachronic and synchronic distinctness* facts will help us going forward: A synchronic distinctness* fact involves the distinctness* of objects located simultaneously in at least one reference frame.²² And a diachronic distinctness* fact involves the distinctness* of objects at nonsimultaneous temporal locations in at least one reference frame.

The Argument for Generalized Parallelism

- P1. All synchronic distinctness* facts (concerning non-colocated objects) are also diachronic.
- P2. If all synchronic distinctness* facts (concerning non-colocated objects) are also diachronic, then synchronic and diachronic distinctness* facts share a common analysis.
- C. Synchronic and diachronic distinctness* facts share a common analysis (Generalized Parallelism is true).

Premise 1 follows from the STR. A distinctness* fact is synchronic when the objects involved are located simultaneously in at least one reference frame. But the STR tells us that non-colocated events that occur simultaneously in one reference frame will occur nonsimultaneously in other reference frames. Because a

¹⁷ Many significant discussions of synchronic numerical distinctness concern material constitution and whether objects like Statue and Lump are distinct. Because my discussion is restricted to objects that are not colocated, I do not discuss material constitution here.

¹⁸ For instance, Leibniz states, “Hence it cannot happen in nature that two bodies are at the same time perfectly equal and similar.” (G II 250/cf. DV) 259 as cited in Rodriguez-Pereyra (2014, 129).

¹⁹ See Rodriguez-Pereyra (2014, 2022) for discussion.

²⁰ See O’Leary Hawthorne (1995) for example.

²¹ See Shumener (2022) for an overview of alternatives to the principle of the identity of indiscernibles. For a very small sampling of philosophers discussing the Max Black-style examples, see Dasgupta (2009), Della Rocca (2005), French and Redhead (1988), French (1989), and Rodriguez-Pereyra (2006, 2014, 2022).

²² Because I only appeal to resources from the Special, not the General, Theory of Relativity, I continue to discuss reference frames. But we can also reformulate the discussion in terms of spacetime foliations.

diachronic distinctness* fact is one that involves objects located nonsimultaneously in at least one reference frame, it follows that all synchronic distinctness* facts are also diachronic.

Generalized Parallelism concerns the distinctness* of objects. But in the last paragraph, I shifted to discussing the simultaneity of events. I now establish the link between events and objects. In the current context, an event is a physical property instantiation at a specific point or region in spacetime. I follow Kim (1976) in taking events to be instantiations of properties or relations by an individual or individuals at a time instant or over a time interval. We can represent an event as an ordered triple $\langle I_1, I_n, P, t_1-t_n \rangle$, where I_1, I_n are individuals, P is a property or polyadic relation, and t_1-t_n is a time-instant or interval. We can also replace time intervals with spacetime points or regions.

Events can be dramatic (lightning strikes or cymbals clashing) or comparatively boring (an object's having a certain rest mass or a certain temperature). Presumably, whenever a physical object resides at a spacetime region, it is involved in some physical event or other. A lightning strike on a tree is an event involving a tree, for example. A ball's having a certain temperature at a region involves the ball, and so on.

If a distinctness* fact involves objects x and y at two regions of spacetime R and S , x and y are associated with events at those regions; "associated with" means that x and y appear in the individuals-slot in the ordered triple of an event, and R and S , respectively, appear in the region-slot in the ordered triples of an event.

Distinctness* facts involve objects at certain regions of spacetime. If a distinctness* fact involving object x at region R and object y at region S is diachronic, then events associated with object x at R do not occur simultaneously with events associated with object y at S in at least one reference frame. And if a distinctness* fact involving objects x at R and y at S is synchronic, then events associated with object x at R occur simultaneously with events associated with object y at S in at least one reference frame. Now we can straightforwardly apply the familiar lesson from the STR.²³ Pairs of events that occur simultaneously in certain reference frames do not occur simultaneously in other reference frames. So, all synchronic distinctness* facts involving non-colocated objects are also diachronic distinctness* facts.

Premise 2. Premise 2 is supposed to be straightforward. If synchronic distinctness* facts just are diachronic distinctness* facts, then any analysis of a synchronic distinctness* fact will be an analysis of a diachronic one automatically. The idea behind Generalized Separatism is that distinctness* facts involving objects located at a time are analyzed differently than distinctness* facts involving objects across times. But if all distinctness* facts invol-

ing objects located at a time in at least one reference frame are also distinctness* facts involving objects located across times in at least one reference frame, then we have no reason to expect synchronic distinctness* facts to have their own analyses that are not shared by diachronic distinctness* facts. You may suspect that P2 is too strong. In Section 5, I articulate the challenges of resisting P2.

One way to frame the lesson of this argument is as follows: Relativistic physics forces us to recognize that distinctness facts involving non-colocated objects are never "synchronic" in the way we used to think about synchronicity before relativity. Separated events that are simultaneous in one frame will be nonsimultaneous in other physically respectable frames. Since there is no absolute simultaneity in our physical theories, we should not rely on the division between the simultaneous and nonsimultaneous to dictate independent distinct criteria for physical objects.²⁴

My discussion has focused on distinctness* facts, but, usually, we do not analyze distinctness* facts on our own. Perhaps Generalized Parallelism should render us more amenable to unified criteria for distinctness (or disunity) and identity (or unity) of objects regardless of their spatiotemporal locations,²⁵ but there is not enough room to explore this issue here.

The argument for Generalized Parallelism also invites further questions about the modal scope of the thesis. If the argument is persuasive, we should expect Generalized Parallelism to hold in the actual world as long as the theories of relativistic physics are true in the actual world. But should we accept a stronger version of Generalized Parallelism, one that asserts it is *metaphysically necessary* that diachronic and synchronic distinctness* facts share an analysis? My argument above does not directly support the stronger thesis. I do not argue that Generalized Parallelism is necessarily true if true. Further work is needed to settle the modal strength of Generalized Parallelism. But even though the argument is limited in modal scope, it still provides, if successful, a reason to think that Generalized Parallelism is *physically necessary* in the sense that it is true in all the worlds consistent with the (relativistic) laws of physics.

5 | Resisting the Argument

5.1 | The First Approach

The Generalized Separatist may resist P2. They can claim that even if all synchronic distinctness* facts are diachronic, there is still a way to distinguish two kinds of distinctness* facts and to show that they do not share a common analysis. To see why this response from the Generalized Separatist* is initially plausible, let us take a closer look at the STR.

²³ See Einstein (1923) and Geroch (1981) for introductions to the theory.

²⁴ The appeal to special relativity also explains why my thesis is restricted to spatiotemporally separated objects. Relativistic physics tells us that only non-colocated events can occur simultaneously in some reference frames but not others. Thus, my position still allows for a different type of separatism, one maintaining that distinctness facts involving spatiotemporally separated objects and distinctness facts involving colocated objects do not share a common analysis. Thank you to an anonymous reviewer for bringing this to my attention.

²⁵ If an analysis of distinctness* facts offers necessary and sufficient conditions for object distinctness*, then any analysis of distinctness* facts will also analyze identity (or unity) facts (because distinctness* facts are just negations of identity or unity facts). But if an analysis of distinctness* facts provides the metaphysical grounds of distinctness* facts, then an analysis of distinctness* facts will not automatically generate an analysis of identity or unity facts because we have not yet specified the grounds of identity or unity facts.

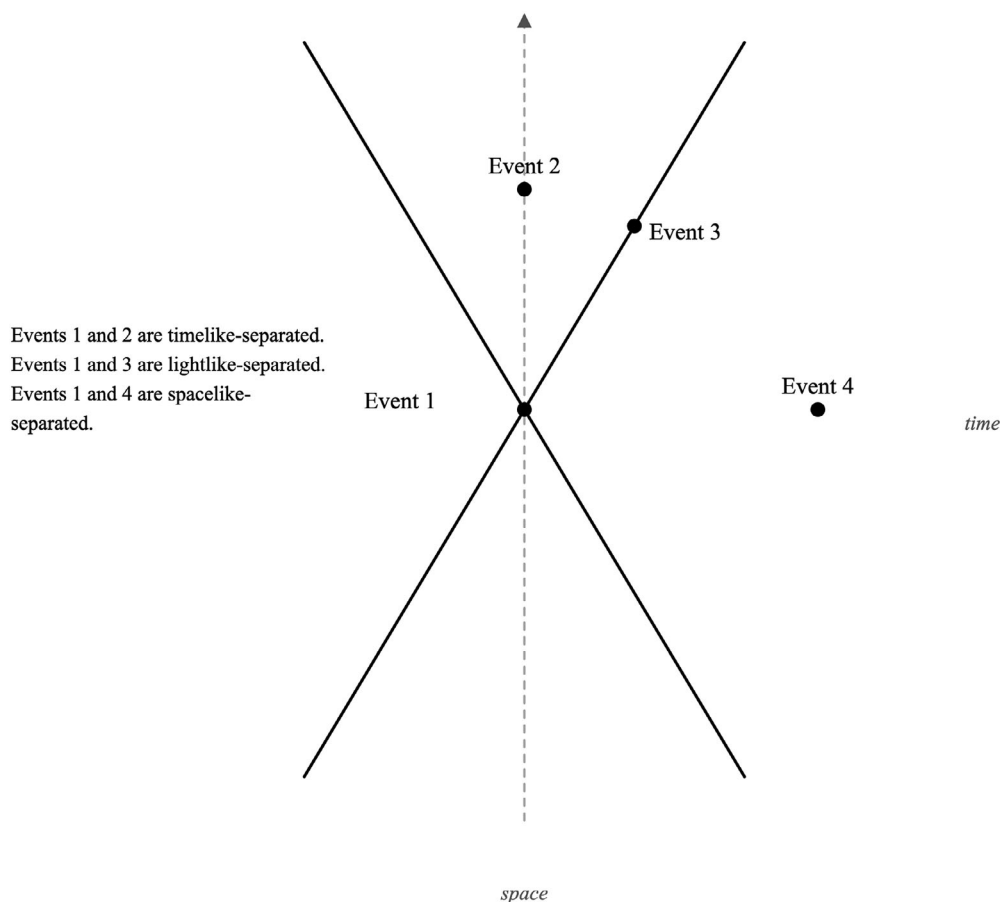


Figure 1 | A lightcone diagram illustrating timelike-, lightlike-, and spacelike-separated events.

The STR tells us that there is no privileged fact of the matter as to whether every pair of events occur simultaneously; however, the STR allows that some events occur nonsimultaneously in all reference frames. In other words, even if all synchronic distinctness* facts are diachronic, not all diachronic distinctness* facts are synchronic. If this is so, the proponent of Generalized Separatism can now respond that distinctness* facts concerning invariably nonsimultaneous events differ with respect to their analyzability from distinctness* facts that do not concern invariably nonsimultaneous events.²⁶

The question for Generalized Separatism becomes this: How do we identify the classes of distinctness* facts that are treated differently with respect to their analyzability? And what is it for certain distinctness* facts to concern “invariably nonsimultaneous” events? Once we answer these questions, we can reformulate Generalized Separatism to avoid the challenge posed by the argument above.

According to the STR, while the spatial distance and temporal distance between events varies across reference frames, there is a spatiotemporal distance interval between events (called the

“spacetime interval” or “Lorentz interval”) that remains invariant in every reference frame. Here is the formula to calculate the spacetime interval:

$$S = c^2 \Delta t^2 - \Delta x^2 - \Delta y^2 - \Delta z^2.$$

Consider Event 1 at spacetime location x_1, y_1, z_1, t_1 and Event 2 at spacetime location x_2, y_2, z_2, t_2 (where x, y , and z are spatial coordinates and t is the temporal coordinate). We use the formula above to find the invariant interval (S) between the events. S remains the same no matter which reference frame we consider. If S is a positive number, then Events 1 and 2 are timelike-separated. If S is negative, then Events 1 and 2 are spacelike-separated. And if $S = 0$, Events 1 and 2 are lightlike-separated. We can represent timelike-, spacelike-, and lightlike-separation with a lightcone diagram (Figure 1).

Spacelike-separated events are simultaneous in some reference frames and nonsimultaneous in others. For spacelike-separated Events 1 and 4 in Figure 1, a signal from Event 1 would need to move faster than the speed of light to reach Event 4. This implies that spacelike-separated events cannot causally influence

²⁶ The distinctness* facts we consider typically do not involve point-sized objects but instead involve spatiotemporally extended objects, such as persons, tables, or spheres. When discussing both diachronic and synchronic distinctness* facts, we need to specify how to understand an extended object “at a time” or how to understand a temporal stage of an extended object in a relativistic framework. See Gilmore (2008) for one way of carving up temporal parts in a 4D relativistic framework. See Lee (2007) for difficulties in specifying “momentary” stages of conscious persons in a relativistic framework. In what follows, I take for granted that we can specify the object (or stage of the object) under discussion, but I do not take a stand on how to do so here.

one another without violating one of the postulates of the STR. In contrast, signals moving at speeds slower than the speed of light can connect timelike-separated events. Timelike-separated events (like Events 1 and 2) can in principle stand in causal relations to each other. If two events have nonzero timelike-separation, they will not be simultaneous in any reference frame, and similarly for lightlike-separated events. When events (like 1 and 3) are lightlike-separated, a signal from Event 1 can only reach Event 3 by moving at the speed of light. Events that are timelike- or lightlike-separated are such that if they are nonsimultaneous according to some reference frames, they are nonsimultaneous according to all reference frames. Only spacelike-separated events are simultaneous in some reference frames and nonsimultaneous in others. (We can now see why the argument for Generalized Parallelism is concerned with distinctness* rather than identity: the relativity of simultaneity only concerns spacelike-separated events. Given that no object is spacelike-separated from itself,²⁷ no identity facts are simultaneous in some reference frames and nonsimultaneous in others.)

Once we replace our pretheoretic synchronic/diachronic distinction with the preferable tripartite distinction between timelike-, lightlike-, and spacelike-separation, we have no reason to accept Generalized Parallelism, the Generalized Separatist claims. I introduce the following abbreviations: A timelike distinctness* fact posits the distinctness* of objects that are constituents of timelike-separated events. Lightlike and spacelike distinctness* facts posit the distinctness* of objects that are constituents of lightlike- and spacelike-separated events, respectively. We can now reformulate Generalized Parallelism and Separatism as follows:

Generalized Parallelism 2.0: Timelike, lightlike, and spacelike distinctness* facts share a common analysis.

Generalized Parallelism 2.0 states that timelike and lightlike distinctness* facts are analyzable in the same way as spacelike distinctness* facts. Generalized Separatism 2.0 claims that spacelike distinctness* facts are not analyzable in the same way that timelike and lightlike distinctness* facts are analyzable.

Generalized Separatism 2.0: It is not the case that timelike and lightlike distinctness* facts share a common analysis with spacelike distinctness* facts.

The proponent of Generalized Separatism 2.0 can claim (for example) that spacelike distinctness* facts are unanalyzable while claiming that timelike and lightlike distinctness* facts are analyzable.²⁸

My argument for Generalized Parallelism does not establish Generalized Parallelism 2.0. But Generalized Separatism 2.0 is objectionable because it leads to metaphysical arbitrariness. To see this, let us return to the case of your husband and that car thief from the introduction.²⁹

Figure 2 depicts two scenarios. In both, your husband's eating a sandwich is Event 1. The thief's hotwiring the car is Event 2. Events 1 and 2 are spacelike-separated. Suppose the proponent of Generalized Separatism 2.0 claims that only timelike and lightlike distinctness* facts are analyzable. Because Events 1 and 2 are spacelike-separated, the distinctness* of your husband (while eating the sandwich) and the car thief (while hotwiring the car) is unanalyzable. Now imagine that the car thief has multiple options concerning where and how fast to travel in spacetime. This may involve adding science fiction elements to the example, but they will not violate the postulates of the STR.

Scenario 1: After hotwiring the car, the thief takes the car on a joyride through San Bernardino. Event 3 depicts the car thief cruising down Foothill Blvd. Events 1 and 3 are timelike-separated. Event 3 is within your husband's (at Event 1) lightcone. Thus, the distinctness* of your husband at Event 1 and the car thief at Event 3 is analyzable according to Generalized Separatism.

Scenario 2: The car thief takes the hotwired car in a spaceship (moving at three-fourth the speed of light, let us say) and zooms away. Event 3' depicts the car thief mid-flight. Event 3' is still spacelike-separated from Event 1; so, the distinctness* of the car thief mid-flight and your husband at Event 1 is unanalyzable according to Generalized Separatism.

These hypothetical examples exploit the fact that neither timelike-separation nor spacelike-separation is a transitive relation. In Scenario 1, Events 1 and 3 are timelike-separated, Events 2 and 3 are timelike-separated, and Events 1 and 2 are spacelike-separated. In Scenario 2, Events 1 and 2 are spacelike-separated, Events 1 and 3' are spacelike-separated and Events 2 and 3' are timelike-separated.

These alternative scenarios imply that the analyzability of the distinctness* of your husband and the car thief depends on where they travel and how quickly.³⁰ If the car thief is at Event 3, the distinctness* of the thief and your husband is analyzable. If the car thief is at Event 3', the distinctness* of the car thief and your husband at the region of Event 1 is unanalyzable. Generalized Separatism 2.0 leads to unacceptable arbitrariness: Whether the distinctness* of your husband and the car thief is analyzable depends on the direction and speed the car thief and husband travel. But whether distinctness* facts are analyzable

²⁷ Pace time travel scenarios (to be discussed in Section 6).

²⁸ Generalized Separatism 2.0 does not entirely recapture the synchronic/diachronic distinction. While there are some distinctness* facts that are diachronic in all reference frames (timelike and lightlike distinctness* facts), there are no distinctness* facts involving spatiotemporally separated objects that are synchronic in all reference frames because such distinctness* facts involve spacelike separated events. To see this, notice the lightcone structure in Figure 1. There are no simultaneous yet spatiotemporally separated events from Event 1 within Event 1's lightcone.

²⁹ I would like to thank an anonymous reviewer for helping me clarify this example.

³⁰ We can also construct variants of Scenarios 1 and 2 that do not involve any spaceships. In the new version of Scenario 1, imagine that the hotwiring and the sandwich-eating are not very far apart in space: they take place across town. And while those two events are spacelike-separated, later events on the thief's worldline (such as taking a joyride) are not spacelike-separated from the sandwich-eating. In the new version of Scenario 2, the hotwiring and the sandwich-eating take place take place very far apart in space (say, across the universe from each other). In this case, later events on the thief's worldline (such as taking a joyride) will remain spacelike-separated from the sandwich-eating. This example shows that how far apart in the universe objects are can make a difference to whether distinctness facts involving them are analyzable.

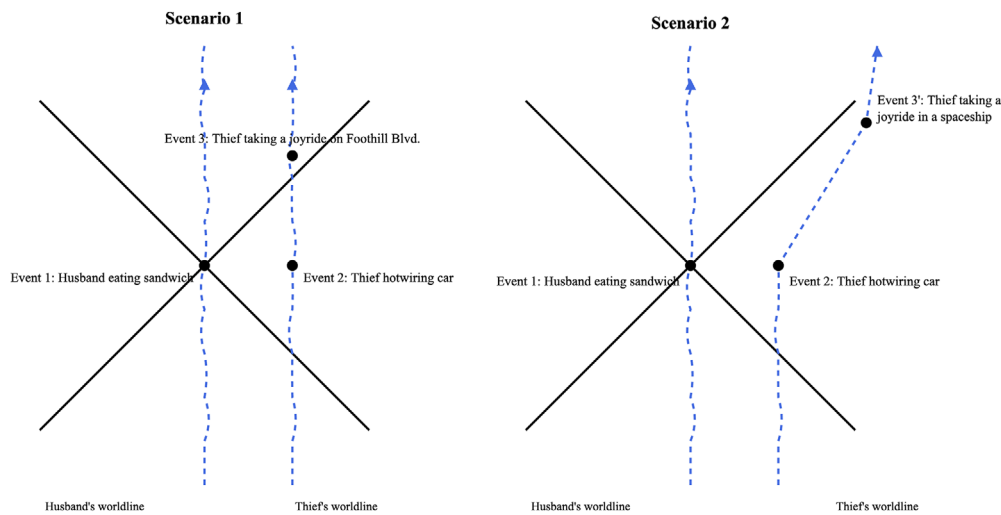


Figure 2 | This figure represents two scenarios that Generalized Separatism 2.0 will treat differently due to the thief's (and husband's) speed and direction of travel in each scenario.

or not should not depend on such arbitrary factors as which direction in spacetime the object travels and how fast it is going.³¹

One caveat: There are some examples where the speed and direction an object travels may determine the analyzability of distinctness* facts. For instance, if the car thief were to travel directly into a nuclear explosion, then we perhaps could not analyze the distinctness* of the car thief and your husband because the car thief no longer exists. But the speed and direction the car thief traveled did not in and of themselves make a difference here. Instead, the destruction of the car thief is directly relevant to the obtaining and analyzability of the distinctness* fact.

The proponent of Generalized Separatism 2.0 may respond that while it seems arbitrary for the analyzability of distinctness* facts to directly depend on the speed and direction of travel, once we understand special relativity, we should embrace this result. After all, the STR led to a radical overhaul of how we think of simultaneity, distance, and causality. The STR taught us that the simultaneity of events depends on the speed and direction of travel—so why should not the analyzability of distinctness* facts depend on these factors as well?

The strangeness of this response becomes apparent when we seek to explain why we should treat spacelike distinctness* facts differently from timelike ones. Perhaps timelike distinctness* facts are analyzable because they intuitively concern the dis-

tinctness* of objects “over time.” Timelike distinctness* facts are then analyzable by appealing to our theories of persistence because our accounts of persistence analyze the distinctness* of objects across time. But remember that spacelike distinctness* facts concern the distinctness* of objects over time too—at least in reference frames where the events occur nonsimultaneously. And these reference frames are just as legitimate as any of the others. Given that spacelike distinctness* facts concern nonsimultaneous events in some reference frames, what stops our theories of persistence from analyzing those distinctness* facts? The distinctness* facts should share a common analysis.³²

5.2 | The Second Approach

The second approach to resist Generalized Parallelism is more promising but requires controversial metaphysical resources. We can resist the argument, and P2 again, by claiming that Generalized Separatism can accept that all synchronic distinctness* facts are diachronic. Nevertheless, Generalized Separatism can still distinguish diachronic and synchronic distinctness* facts *from the perspective of a reference frame*. Generalized Separatism can uphold that distinctness* facts that are synchronic in a reference frame are unanalyzable in that reference frame and analyzable in other frames where the objects' distinctness* is diachronic. This is perfectly compatible with the STR and allows us to retain our familiar synchronic/diachronic distinction. I call this the *frame-relative analyzability* proposal:

³¹ What about a version of Generalized Separatism 2.0 maintaining that spacelike- and timelike-distinctness* facts are both analyzable but in different ways? The same arbitrariness results. Suppose the proponent of such a view takes timelike-distinctness* facts to be analyzable in terms of the discontinuity (causal, spatiotemporal, qualitative, psychological, or some other variety) of the objects involved. But the speed and direction of objects will not make a difference to whether the objects are discontinuous in the above ways. The objects in spacelike distinctness* facts will be discontinuous in just the same ways. So, it is unclear why the speed and direction of objects should impact the analyzability of distinctness*.

³² One complication: Perhaps there remain reasons to treat spacelike- and timelike-distinctness* facts differently. We may analyze spacelike distinctness* facts by appealing to certain modal constraints. When x and y are spacelike separated, not only *do they not* stand in the appropriate causal relationships to each other for identity or persistence, but they *cannot* stand in those causal relationships at their respective locations (due to their spacelike separation). When timelike-distinct* objects x and y are distinct, they also do not stand in the appropriate causal relationships, but perhaps they could have in the sense that it is physically possible that objects at those regions are causally connected. The modal difference may generate an analysis of spacelike distinctness* facts that does not apply to timelike (and lightlike) distinctness* facts. The formulations of Generalized Parallelism and Generalized Parallelism 2.0 already accommodate this hypothesis; they state that spacelike, timelike, and lightlike distinctness* facts share *an* analysis. In the context above, I argue that we have no reason to resist extending whatever analysis we have for timelike-distinctness* facts to spacelike-distinctness* facts as well. Generalized Parallelism and Generalized Parallelism 2.0 still allow that spacelike distinctness* facts can be analyzed in an additional way that timelike and lightlike ones cannot.

The Frame-Relative Analyzability Proposal: There are facts of the form “x at region R is distinct* from y at region S in frame F” that are analyzable on some substitutions for frame F and unanalyzable on other substitutions for frame F.³³

For example, returning to Figure 2, call one frame in which Events 1 and 2 are simultaneous “Frame A.” Call another frame where Events 1 and 2 are nonsimultaneous “Frame B.” The fact “The husband (at Event 1) is distinct* from the thief (at Event 2) in Frame A” will be unanalyzable while the fact “The husband (at Event 1) is distinct* from the thief (at Event 2) in Frame B” will be analyzable. We no longer analyze objects standing in the distinctness* relation to each other; rather, we analyze objects standing in the distinctness* relation to each other *in a frame*.

The Frame-Relative Analyzability Proposal has appeal when we remember that there is no privileged way to designate objects (or their temporal parts) and their properties at a time. Lee (2007, 346) nicely formulates this point:

[T]he important point is that from the space-time perspective there is no privileged way of slicing an object into instantaneous parts. An instantaneous slice is a mereological sum of simultaneous events belonging to the life of the object but, since simultaneity is frame-relative, we will get a different slicing of the object into instantaneous parts in every frame. And just as if we cut a sausage into parallel slices using different orientations for our sausage-cleaver we will get different sequences of slices with different properties (for example, the shape of each slice depends on the orientation of the cleaver), we will get different sequences of temporal slices with different properties, depending on which frame-relative slicing of an object we choose.³⁴

If the properties of an object at a region (or a temporal part of an object) already differ across reference frames, then perhaps the analyzability of distinctness* facts involving such objects (or their temporal parts) can also differ across reference frames.

Still, The Frame-Relative Analyzability Proposal needs additional motivation. While we can see how objects can differ in certain physical properties (such as shape) across reference frames, it is more difficult to understand how and why a switch in reference frames impacts the unanalyzability or primitiveness of objects standing in the distinctness* relation.

The proponent of this proposal should explain why, given that frames agree that objects are distinct* and that the objects involved are discontinuous in a variety of ways, an analysis of their distinctness* is only available in one of those frames. For example, in the frame where your husband is eating a sandwich

is nonsimultaneous with the thief is hotwiring the car, your husband and the thief are psychologically, causally, and spatiotemporally discontinuous. And suppose that the distinctness* of your husband and the thief is analyzable in virtue of at least one of the above types of discontinuity in that frame. But even in frames where the events are simultaneous, your husband and the thief are discontinuous in the same respects. Why wouldn't the distinctness* fact be analyzable in those latter frames too? The proponent of frame-relative analyzability needs a principled answer to the question of why we should treat the frames differently.

I am not sure how to fully motivate frame-relative analyzability, but let us address the question of how to understand the metaphysics of frame-relative analyzability. How should we develop the idea that object distinctness* is primitive in some frames but not in others? There are different versions of frame-relative analyzability one could adopt depending on one's conception of the metaphysical significance of reference frames and one's understanding of frame-relative facts.

Those sympathetic with frame-relative analyzability may benefit from adopting resources found in discussions of the philosophy of time to answer this question. One option is to claim that—even though no reference frames are physically privileged—one reference frame is metaphysically privileged, and synchronic distinctness* facts from the perspective of the metaphysically privileged frame are fundamental. But it is controversial to claim that one frame is metaphysically privileged over the others, and it is unclear what would explain or determine that the frame is metaphysically privileged.

Another option is to embrace fragmentalism. On this proposal, we may understand frame-relative analyzability through an appeal to an “in reality” operator. Fine (2005) introduced fragmentalism; Lipman (2015, 2020), Simon (2018), and others develop the view further. Lipman states that the core thesis of fragmentalism is that “conflicting matters that appear to obtain from equally good yet conflicting perspectives do not have to be mere appearances of an underlying layer of compatible facts” (99). We can use a sentential operator, *R*, to express obtaining or existing *in reality*. According to fragmentalism, some facts that obtain in reality “cohere” with one another and others do not.

Because conflicting facts can all exist *in reality*, it may be true in reality that some distinctness* facts are synchronic and unanalyzable. It may also be true in reality that those same distinctness* facts are diachronic and analyzable. Fragmentalism about tensed reality embraces the perspectival nature of reality³⁵ and explains why the conflicting judgments associated with different frames are not problematic.

Fragmentalism is worth considering due to its utility in responding to relativistic objections elsewhere. Nevertheless, fragmentalism and the perspectival account of reality it promotes are controversial—as are other responses to relativistic objections in the philosophy of time.³⁶ There is an extensive literature on

³³ We can also accommodate versions of Generalized Separatism that take diachronic and synchronic distinctness* facts to be analyzable in different ways. For reasons of space, I do not articulate this alternative.

³⁴ Lee (2007). See also Demarest (2016).

³⁵ See Solomyak (2020) and McDaniel (2017) for more on the metaphysics of perspectives.

³⁶ See Hofweber and Lange (2017) for example.

responses to relativistic objections in the philosophy of time, but we do not have space to explore other proposals here. Some responses to relativistic objections may be useful in developing the frame-relative analyzability proposal or in developing other responses to the argument for Generalized Parallelism.³⁷

My objective is not to persuade the reader to accept Generalized Parallelism (or Generalized Parallelism 2.0). My objective is a conditional thesis: If relativistic objections are persuasive against tensed theories of time, such objections support Generalized Parallelism too. Just as tensed theorists have resources to resist relativistic objections, one can utilize some of those resources on behalf of Generalized Separatism.

Taking stock so far: I have presented the argument for Generalized Parallelism. We briefly explored two avenues of response on behalf of Generalized Separatism. The first response involves replacing Generalized Separatism with Generalized Separatism 2.0, but I argued that Generalized Separatism 2.0 leads to metaphysical arbitrariness. The second response invokes the notion of frame-relative analyzability, but frame-relative analyzability requires further development and motivation. One way to develop frame-analyzability is by appealing to resources found in the philosophy of time. But such resources are controversial and often incur strong metaphysical commitments. Thus, while we can resist the argument for Generalized Parallelism, the path is not straightforward or trivial.

6 | Living With Generalized Parallelism

I have articulated the argument for Generalized Parallelism and explained the burdens of resisting it. Now we return to the significance of Generalized Parallelism. In Section 3, I suggested that Generalized Parallelism alters how philosophers should approach distinctness* criteria. Under Generalized Parallelism, discussion of distinctness* criteria in persistence contexts and discussion of distinctness* criteria in synchronic contexts should be far more unified.

How should the discussion of distinctness* criteria be more unified? It would be helpful to observe ways in which Generalized Parallelism can impact debates about persistence and synchronic distinctness*. I will present two applications or “case studies” of Generalized Parallelism to debates about distinctness*.

In each of the following applications, I assume that distinctness* in persistence contexts is analyzable in terms of some type

of discontinuity between the objects involved. For example, x and y are distinct* in virtue of their being either causally, spatiotemporally, or psychological discontinuous. I make this assumption not because I adhere to such distinctness* criteria.³⁸ Rather, I take the criteria to provide a clear backdrop on which we can assess the consequences of accepting Generalized Parallelism.

6.1 | Case Study 1: Castor and Pollux

Let us examine how Generalized Parallelism impacts the discussion of Max Black’s iron spheres. Generalized Parallelism claims that we should provide the same analysis of the distinctness* of Max Black’s spheres wherever they are in spacetime. And if we substitute a disunity relation (say *is not the same sphere as*) in place of numerical distinctness, Generalized Parallelism requires that if we can analyze Castor and Pollux’s not being the same sphere when they are located at certain spacetime regions, a common analysis should apply to Castor and Pollux at any of the spacetime regions they occupy.

Suppose we have a persistence criterion that appeals to causal and qualitative continuity. Della Rocca (2011, 594) nicely formulates this criterion: “Let us say that persistence from t_1 to t_2 occurs because the state that A has at t_1 is causally and qualitatively continuous with the state that B has at t_2 .” The thought is that an Object A at time t_1 persists as Object B at t_2 if and only if the states of the two objects are causally linked in an appropriate way and the state of A at t_1 is not “too dissimilar” from the state of B at t_2 . Furthermore, A and B are distinct* if they are either causally or qualitatively discontinuous. Of course, to defend the causal continuity account, we would need to address objections to it,³⁹ but let us temporarily adopt the proposal for now just to see how Generalized Parallelism impacts it.

This criterion should apply to a wide variety of material objects, such as tables, cars, and iron spheres. If this is our only criterion for persistence, Generalized Parallelism requires that we apply this criterion to objects irrespective of their spatiotemporal locations. Thus, we should apply this criterion to Max Black’s spheres as well.⁴⁰ Because Castor and Pollux are qualitatively very similar, we would thereby analyze the distinctness* of Castor at one region and Pollux at another by arguing that Castor and Pollux are not causally connected in the right way. This is surprising because no one (to my knowledge) has argued that we can distinguish Castor and Pollux in virtue of their causal discontinuity.⁴¹

³⁷ For example, Callender (2017) describes how to capture a sense of the passage of time (even if it cannot approach our intuitive notion of “manifest time”) in Minkowski spacetime. And Skow (2009) outlines ways for the moving spotlight theorist to recover various notions of simultaneity.

³⁸ But continuity accounts are popular. See Locke (1689), Parfit (1971), and Whiting (1986) for a small selection of psychological continuity theorists about personal identity. See Butterfield (2005) for a way to make the notion of spatiotemporal continuity precise. See Della Rocca (2011) for discussion of causal continuity. The above types of continuity are also not exhaustive. Sometimes “sortal continuity” (Runggaldier 1998) and “qualitative continuity” (Della Rocca 2011) are appealed to in persistence contexts as well.

³⁹ For example, one may worry that an omnipotent god, for example, could allow one object to systematically causally influence a qualitatively similar but distinct* object’s future states, and we would need to elaborate on the conditions “causal continuity” to see if we can rule out such a scenario.

⁴⁰ If one worries there is no physically possible world that contains only two iron spheres, we can replace the example with one where the universe contains two sets of objects that stand in a mirror-image to each other. This universe contains two sets of objects, where the objects in set 1 can put in a one–one correspondence with the objects in set 2, and where each object in the first set has a qualitatively identical, “matching” object in the second set. Just as it is difficult to distinguish Castor from Pollux, it will be difficult to distinguish each object in the first set from its “mirror image” in the second set.

⁴¹ There are also Max Black-style cases concerning allegedly colocated yet distinct bosons. See Della Rocca (2005), French and Redhead (1988), Hawley (2009), Jeshion (2006), Saunders (2006), and Shumener (2022) for discussion. Because my thesis is restricted to objects that are not colocated, I do not have such cases in mind here.

Metaphysicians may deny that appealing to causal discontinuity provides a satisfying solution to the puzzle of Castor and Pollux. Appealing to causal discontinuity does not identify a qualitative property that differentiates the spheres.⁴² The skeptical metaphysician may doubt that any theory of persistence can be extended to provide a satisfying analysis of the distinctness* of Castor and Pollux at all spacetime regions they occupy for such reasons. But the crucial point is that this is no longer just an issue for metaphysicians interested in Max Black's cases and the principle of the identity of indiscernibles. According to Generalized Parallelism, if the persistence criterion fails to analyze the distinctness* of Castor and Pollux, then the criterion fails more generally. Persistence theorists must return to the drawing board.

Some more optimistic metaphysicians may accept that we can distinguish Castor and Pollux at the regions they occupy by appealing to their causal discontinuity. Whether one should accept the skeptical metaphysician's perspective or the more optimistic metaphysician's perspective is a matter for further exploration. But now we can see how Generalized Parallelism impacts our approach to potential counterexamples to the identity of indiscernibles. If we have a unique, satisfying account of the persistence of iron spheres, it must constitute a satisfying analysis of Castor and Pollux's distinctness* wherever they are located. And if that criterion does not provide a satisfying analysis of Castor and Pollux's distinctness*, we must reject that criterion of persistence in favor of a better one or reject it in favor of providing no theory at all. Thus, Generalized Parallelism binds us in important ways. Generalized Parallelism should either lead metaphysicians to adopt grander ambitions for the scope of their distinctness* criteria or lead metaphysicians to withhold providing distinctness* criteria altogether if their criteria cannot generalize to objects scattered throughout spacetime.

6.2 | Case Study 2: Amy and Time Travel

Generalized Parallelism reveals another point of contact between discussions of persistence and intuitively synchronic distinctness*. Let us turn our attention to puzzling cases involving persistence and time travel. We typically claim that objects having conflicting properties at a time suffices to explain or account for their distinctness*. This would involve an application of the less controversial half of Leibniz's Law, the indiscernibility of identicals. For example, in Section 1, we took your husband was eating a sandwich while the thief was across town (not eating a sandwich) to suffice for their distinctness* at a time.

However, some metaphysicians believe that in cases of time travel, "conflicting" properties do not suffice for distinctness*. Demarest (2016, 570)⁴³ makes this point:

Consider a time traveler, Amy Pond, who travels to her own past. Let us suppose that Amy has a conversation with her younger self. Clearly, Amy could have contradictory properties at a single time. She could occupy different places (two adjacent chairs at a café), she could have different total mental states, different perceptions, different memories, and she would have two bodies.

Whether Amy can possess these properties is controversial. To adequately address Demarest's case, we need to determine whether this version of time travel is metaphysically possible.⁴⁴ Let us set that issue aside for now. Suppose that we share Demarest's assessment. We believe that Amy can occupy two different chairs at the café and have a chat with herself. And suppose we believe that Amy occupies multiple chairs based on our theories of persistence. Perhaps it is because time-traveling Amy is psychologically continuous with non-time-traveling Amy that they count as a single person. The occupancy of two café chairs does not require the existence of two people—there is only one Amy in the café. But given that we are considering persons at a single time, it is natural to wonder why it is appropriate to consult our theory of *persistence* in this context to justify the judgment that there is one Amy.

Generalized Parallelism provides a straightforward answer to this question.⁴⁵ Demarest's description of Amy is well-supported if we take there to be a single distinctness* criterion that applies to persons wherever they are located. If the correct account of personal identity maintains that persons are distinct* when they are psychologically discontinuous, we must extend that criterion to the distinctness* of persons wherever they are located. Because Amy is psychologically continuous with her time-traveling self in the café, we have no reason yet, according to the psychological continuity criterion, to believe there are two people sitting at the café table. Thus, Generalized Parallelism offers additional support for Demarest's judgments about time-traveling Amy: Generalized Parallelism provides reason to trust our persistence criterion as delivering the correct verdict in the current context.

In the case of four-dimensionalism specifically, Generalized Parallelism pressures us to claim that, for whatever analysis we use to establish that the temporal parts of persons are not I-related or temporal counterparts (or are not parts of the same person worm) in persistence contexts, that same analysis should apply to distinct* temporal parts of persons wherever they are in spacetime. In other words, we should provide the same analysis of the disunity of temporal parts wherever the temporal parts are in spacetime. In this context, the lesson of Demarest's discussion would be that we should be cautious before claiming that "conflicting" properties establish that the two Amy temporal

⁴² We should clarify how to appeal to causal discontinuity on this proposal. We cannot automatically use causal discontinuity to provide general necessary and sufficient conditions for object distinctness* because we would thereby expect objects to be causally continuous with themselves no matter where the objects are in spacetime. But we typically do not take an object at a region to stand in genuine causal relations to itself at that very same region. We could avoid this issue by restricting our distinctness* criteria to explicitly exclude colocated objects or by further specifying the notion of causal discontinuity in play, but more must be said.

⁴³ See Simon (2017) for discussion of a similar case.

⁴⁴ Also relevant to this discussion is the literature on other puzzles of multilocation. See, for instance, Hudson (2005), Kleinschmidt (2011), and Mooney (2018).

⁴⁵ This is not to say that appealing to Generalized Parallelism is the only way to answer this question.

parts in the café are not parts of the same person (are not I-related).

I am not arguing that there is only one Amy in the café or that our intuitions about psychological continuity should trump our intuitions about the indiscernibility of identicals. I discuss the case of Amy on a backdrop of various assumptions about the possibility of time travel, the relevance of psychological continuity, and the (at least initial) appeal of believing there is only one Amy in the café. The point of the case study is to demonstrate Generalized Parallelism's impact on the backdrop of those assumptions.

Another upshot of this discussion is that, if we agree with Demarest's assessment and we adopt Generalized Parallelism, we should be much more cautious in how and when we appeal to the indiscernibility of identicals to distinguish objects. If we cannot use apparently conflicting properties to automatically distinguish persons, then that may call into question other appeals to the indiscernibility of identicals to automatically distinguish objects or persons.⁴⁶ For example, in fission scenarios, we may intuitively think that there are two persons who exist right after the fission event because they have conflicting properties (one is located near the left window while the other is not, and so on). But the Generalized Parallelist—especially one who is convinced by Demarest's example above—may no longer rely on those considerations to automatically distinguish the two fized persons. If the fized persons are distinct, they are distinct because they are causally, psychologically, or spatiotemporally discontinuous from each other. This is another example where Generalized Parallelism has the potential to alter our approach to using the indiscernibility of identicals to distinguish objects or persons.

7 | Conclusion

Generalized Parallelism is significant because it encourages us to seek a unified account of diachronic and synchronic distinctness*. We can still resist Generalized Parallelism, of course. I highlighted ways to resist the argument for Generalized Parallelism in Section 5. There are doubtless more ways to resist the argument. What must be shown is whether there is a way to resist Generalized Parallelism that does not incur substantive and controversial metaphysical commitments.

One final consideration in favor of embracing Generalized Parallelism is that it accords well with certain pretheoretic judgments. Revisiting the example from Section 1, Generalized Parallelism implies that the distinctness* of your husband and the car thief is analyzable wherever they exist in spacetime—if their distinctness* is analyzable at all. Suppose we find a long-lost Arthur Conan Doyle mystery, *The Thief and the Husband*, and we reach the part where the detective provides information that distinguishes the innocent husband now from the thief yesterday at midnight. We would not react, "Aha, the detective proved that the husband now is distinct* from the thief last night, but what proof does the detective have that the thief *now* is distinct* from the husband *now*?" Such a question would never

occur to the reader. The detective's proof should also deliver the information to establish the distinctness* of the thief and the husband whenever they exist. Generalized Parallelism suggests that the metaphysician's criteria for distinctness* should reflect this natural reaction to the mystery tale. We should expect unified distinctness* criteria for objects irrespective of their spatiotemporal locations.

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⁴⁶ Thank you to an anonymous reviewer for calling this to my attention.

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