



How to Be a One-Thinger

Mark Balaguer¹ 

Received: 28 March 2025 / Accepted: 23 October 2025
© The Author(s), under exclusive licence to Springer Nature B.V. 2025

Abstract

This paper provides a response to a wide class of arguments for the existence of either coincident objects or 4-dimensional objects. These arguments proceed by pointing to certain intuitions we have—about things like statues and lumps of clay—and arguing that in order to account for the truth of these intuitions, we need to endorse the existence of either coincident objects or 4-dimensional objects. This paper undermines these arguments by developing a novel (and intuitively pleasing) theory of reference that explains how our intuitions here could be true—or, more precisely, how the sentences that express these intuitions could be true—even if (a) there are no such things as coincident objects or 4-dimensional objects, and (b) ordinary objects like statues and rocks and cats are numerically identical to the hunks of matter that constitute them.

Keywords Constitution · Multi-thingism · 4-dimensionalism · Statue-lump · Semantics · Reference

1 Introduction

My aim in this paper is to undermine a wide class of arguments of a certain kind—what I’ll call *save-our-intuition arguments*—for the existence of either coincident objects or 4-dimensional objects. These arguments proceed by pointing to certain intuitions that we have—about things like statues and lumps of clay—and arguing that in order to account for the truth of these intuitions, we need to endorse the existence of either coincident objects or 4-dimensional objects. In contrast to this, I’m going to argue that we can account for the truth of our intuitions here without committing to objects of either of these two kinds. I’ll do this by developing a novel

✉ Mark Balaguer
mbalagu@calstatela.edu

¹ Department of Philosophy, California State University, Los Angeles, USA

theory of reference that I'll call *Names-Follow-Properties* (or, for short, *NFP*) that explains how our intuitions about things like statues and lumps of clay could be true—or, more precisely, how the sentences that express these intuitions could be true—even if there are no such things as coincident objects or 4-dimensional objects. To put the point differently, I'm going to argue that if NFP is true, then our intuitions about things like statues and lumps of clay come out true even if *3D-one-thingism* is true—where, as we'll see, *3D-one-thingism* entails that (a) there are no such things as coincident objects or 4-dimensional objects and (b) ordinary objects like statues and rocks and cats are numerically identical to the hunks of matter that constitute them. Now, if NFP were an implausible theory of our ordinary-language sentences, then this wouldn't be very important. But it seems to me—and I hope you'll agree—that NFP provides a plausible, intuitively pleasing interpretation of the sentences that I'll be discussing, i.e., the sentences that express our intuitions about things like statues and lumps of clay. So my claim here is that we can undermine the save-our-intuition arguments that I'll be discussing—the arguments that purport to show that we have to endorse the existence of either coincident objects or 4-dimensional objects—by endorsing NFP.

It's important to note that NFP does not entail *3D-one-thingism*. On the contrary, NFP is perfectly compatible with all three of the metaphysical theories that are relevant here, namely, *4Dism* (i.e., roughly, the view that there are 4-dimensional objects), *multi-thingism* (i.e., roughly, the view that there are coincident objects), and *3D-one-thingism* (i.e., roughly, the view that there are neither coincident objects nor 4-dimensional objects). Thus, if we endorse NFP, then we can account for the truth of our intuitions about things like statues and lumps of clay without committing to *any* of the three metaphysical theories here—or indeed, any other controversial metaphysical theory. And so if NFP is true, then we can't draw *any* substantive metaphysical conclusions from the truth or our intuitions about things like statues and lumps of clay.

As I've described my aim in this paper so far, it's purely *negative*—to undermine the save-our-intuition arguments for the existence of either coincident objects or 4-dimensional objects. This, I think, is already important—because I think we have good Ockham's-razor-based reasons for not committing to the existence of coincident objects or 4-dimensional objects, if we don't have to. But there's also a positive contribution here. For to the best of my knowledge, NFP is entirely original, and I think that it's an interesting, plausible theory that's worthy of further consideration.

2 Preliminaries

2.1 4Dism and 4-dimensional objects

Let's say that an object *O* is a *4-dimensional object* if and only if (i) *O* is located at multiple times, and (ii) for each time *t* at which *O* is located, it has a temporal part that's located only at *t*. Here's another way to think about condition (i): 4-dimensional objects are *spread out in time*—or *spread out along a temporal dimension*—in a

way that's analogous to the way in which ordinary physical objects are spread out in space.

(Notice two oddities about this definition. First, it doesn't require the objects in question to be spread out in exactly four dimensions—because it doesn't require that they be spread out in exactly three non-temporal dimensions. But to make things easy, we can assume the naïve view that physical objects are spread out in exactly three spatial dimensions and that they're not spread out in any other non-temporal dimensions, so that if a physical object is spread out in time—i.e., in a temporal dimension—then it's spread out in exactly four dimensions. Second oddity: while I'm following standard practice in demanding that 4-dimensional objects have *temporal parts*, it seems to me that an object could be 4-dimensional in the intuitive sense—it could be located at multiple times, and it could be spread out in exactly three spatial dimensions and one temporal dimension—without having any proper parts at all and, hence, without having any (proper) temporal parts. E.g., an ontological monist might say that (a) there exists exactly one physical object (namely, the entire universe), and (b) this object (i.e., the universe) is spread out in four dimensions (including a temporal dimension), but (c) it doesn't have any proper parts. But, again, to make things easy, we can ignore this issue here and just assume that if an object is spread out in time (i.e., if it's located at multiple times), then it has temporal parts.)

In any event, given the above definition of a 4-dimensional object, we can say that *4-dimensionalism* (or, for short, *4Dism*) is the view that (a) there are 4-dimensional objects, and (b) ordinary objects (i.e., things like cats and rocks and statues) are 4-dimensional objects.¹

It's important to note that 4Dism entails that ordinary clay statues are (usually—more on this in a moment) *numerically distinct from the lumps of clay that constitute them*. Suppose, e.g., that (a) Statchy is an ordinary clay statue, and (b) Lumpy is the lump of clay that constitutes Statchy, and (c) Lumpy was created in 2010 and Statchy was created in 2020. Then, according to 4Dists, Statchy and Lumpy are 4-dimensional objects, and they're numerically distinct from one another because Lumpy has temporal parts that Statchy doesn't have because Lumpy existed before Statchy did.

(The reason I say that 4Dism entails only that clay statues are *usually* numerically distinct from the corresponding lumps of clay is that if a statue and lump are created and destroyed simultaneously—as in the famous case of Lumpl and Goliath (see Sect. 2.3 and 5.4 for more on this)²—then 4Dism does not entail that they're numerically distinct.)

2.2 Multi-thingism and coincident objects

Let's say that two objects are *coincident* if and only if (a) they're numerically distinct, and (b) they have the same location and they're made of the same matter (or if you'd rather, they're composed of the same parts). And let's say that *multi-thingism* is the view that (a) there are coincident objects, and (b) ordinary objects (i.e., things like

¹ Some philosophers define 4-dimensionalism in slightly different ways, but advocates of views in this general vicinity include Quine (1950), Lewis (1986), Heller (1984), Hawley (2001), and Sider (2001).

² This case comes from Gibbard (1975).

cats and rocks and statues) are coincident with other objects, most notably, the hunks of matter that constitute them. So, e.g., multi-thingers think that Statchy and Lumpy are numerically distinct coincident objects, and that Whiskers the Cat is numerically distinct from (and coincident with) the matter that constitutes her, and so on.³

2.3 Relations between 4Dism and multi-thingism

If we wanted to, we could set things up differently; instead of defining coincidence as I just did in Sect. 2.2, we could use the following alternative definition:

Alternative definition: Two objects are *coincident at a time t* iff (a) they're numerically distinct, and (b*) they have the same location and parts at t.

On this lingo, 4Dism entails that Lumpy and Statchy are coincident (at the present time) because their present-time temporal parts are numerically identical with one another. But on the definition of 'coincident object' that I'm employing in this paper—i.e., the definition given in Sect. 2.2—standard versions of 4Dism imply that there are no such things as coincident objects.

I say that *standard versions* of 4Dism imply that there are no (Sect. 2.2-style) coincident objects, but it's worth noting that 4Dism is strictly compatible with the existence of such objects. To see why, suppose that a clay statue (Goliath) and the corresponding lump of clay (Lumpl) were created simultaneously and will be destroyed simultaneously, so that even if they're 4-dimensional objects, they still have all the same parts. Given this, 4Dists *could* claim—if they wanted to—that Lumpl and Goliath are numerically distinct 4-dimensional objects; and if they did that, then they would be committed to the existence of both 4-dimensional objects and (Sect. 2.2-style) coincident objects.

But this is a very odd view. Standard versions of 4Dism entail that Lumpl and Goliath are numerically identical and that there are no such things as (Sect. 2.2-style) coincident objects. Likewise, standard versions of multi-thingism entail that there are no such things as 4-dimensional objects. Or, at the very least, standard versions of multi-thingism do not commit to the existence of 4-dimensional objects.

2.4 3D-one-thingism

Let's say that *3D-one-thingism* is the view that (a) there are no such things as coincident objects or 4-dimensional objects (or past or future objects—so 3D-one-thingism entails *presentism*⁴), and (b) every physical object is identical to a bare 3-dimensional (presently existing) hunk of matter—in particular, the 3-dimensional hunk of matter that constitutes it—and these objects are not spread out in time (i.e., they're not

³ Multi-thingist views are developed by, e.g., Wiggins (1967), Thomson (1983), Baker (1997), Fine (2003), Bennett (2004), Koslicki (2008), and Fairchild (2019).

⁴ We can define presentism as the view that there are no such things as past or future objects. This view has been defended by Hinchliff (1996), Zimmerman (1998), Markosian (2004), Merricks (2007), and me (forthcoming).

located at any times other than the present time), and they're not coincident with any other objects. Thus, e.g., if we use the expression '*the SL-hunk*' to denote the bare 3-dimensional hunk of matter that constitutes Statchy and Lumpy right now, then 3D-one-thingism entails that Statchy and Lumpy are both identical to the SL-hunk, and so they're identical with one another.

(Since 3D-one-thingism entails presentism, advocates of this view will eventually have to respond to all of the objections to presentism—most notably, (a) the special-relativity objection, and (b) the truthmaker objection, and (c) the singular-proposition objection, and (d) the cross-time-relations objection. I think that 3D-one-thingers can adequately respond to all four of these objections—and, indeed, I've responded to them elsewhere (forthcoming)—but these objections are all very different from the save-our-intuition objections that I'll be discussing in this paper, and I won't be able to say much about these other objections here. I won't say *anything* here about the special-relativity objection or the truthmaker objection, but Sect. 5.8 contains some remarks that are relevant to the singular-proposition objection, and in Sect. 5.9, I'll say a few words about how 3D-one-thingers can respond to one instance of the cross-time-relations objection.)

2.5 Save-our-intuition arguments

In this section, I'll quickly clarify what I mean when I talk about save-our-intuition arguments against 3D-one-thingism (and in favor of the disjunction of 4Dism and multi-thingism). I'll do this by formulating a couple of examples. To this end, suppose again that Lumpy was created in 2010 and Statchy was created in 2020, and consider the following four sentences:

[E1] Lumpy existed in 2012.

[E2] Statchy didn't exist in 2012.

[S1] Lumpy could survive being rolled into a ball.

[S2] Statchy couldn't survive being rolled into a ball.

Intuitively, it seems that all four of these sentences are true. But this seems incompatible with 3D-one-thingism. For 3D-one-thingism entails that Lumpy and Statchy are numerically identical, and so it seems to entail that (a) either [E1] or [E2] is false, and (b) either [S1] or [S2] is false. So it seems that we have to reject 3D-one-thingism and endorse either 4Dism or multi-thingism—which both entail that Lumpy and Statchy are numerically distinct objects.

This gives us two different save-our-intuition arguments against 3D-one-thingism, one based on the intuition that [E1] and [E2] are true, and one based on the intuition that [S1] and [S2] are true. In Sect. 5, I'll articulate (and respond to) a few more save-our-intuition arguments against 3D-one-thingism (and in favor of the disjunction of 4Dism and multi-thingism). But the two arguments listed here are sufficient to bring

out what I've got in mind when I talk about save-our-intuition arguments against 3D-one-thingism.

3 Three competing theories

In Sect. 4, I'm going to introduce my theory of reference—NFP—and in Sect. 5, I'm going to explain how NFP enables us to maintain that our intuitions about things like statues and lumps of clay are true even if 3D-one-thingism is true and, hence, there are no such things as coincident objects or 4-dimensional objects. But before I do that, I want to articulate NFP's main competitors—in particular, the theories of reference that I think multi-thingers and 4Dists are most likely to endorse. This will be important in evaluating NFP.

Multi-thingers think that when we introduce the names 'Statchy' and 'Lumpy', with the SL-hunk sitting in front of us, there are actually *many* objects sitting in front of us. So multi-thingers need to explain (a) how the referents of 'Statchy' and 'Lumpy' get *fixed*—i.e., how these names get attached to their referents—and (b) how these names refer across time. Now, there are numerous theories that multi-thingers could endorse here, but I think that the following is the most obvious and plausible theory for multi-thingers to endorse:

Multi-thingist theory of reference: We use ordinary names like 'Statchy' and 'Lumpy' to refer to objects that have certain properties *essentially*. E.g., 'Statchy' denotes the object that's constituted by the SL-hunk that has its *shape essentially* (and *being a statue essentially*), and it keeps referring to that object for as long as it exists; 'Lumpy', on the other hand, denotes the object that's constituted by the SL-hunk that has *being a lump of clay essentially* (but doesn't have its shape essentially), and again, it keeps referring to that object for as long as it exists.

A similar problem arises for 4Dists. They think that the SL-hunk is a temporal part of *many* 4-dimensional objects (remember, the SL-hunk is, by definition, a 3-dimensional hunk of matter), and so if they claim that 'Lumpy' and 'Statchy' refer to 4-dimensional objects, then they too will have to explain how the referents of these names get fixed. The most obvious and plausible theory for 4Dists of this kind to endorse is the following:

4Dist theory of reference: We use ordinary names like 'Statchy' and 'Lumpy' to refer to 4-dimensional objects whose temporal parts are related by certain *continuity relations*. E.g., 'Statchy' denotes an object whose temporal parts are related by a shape-continuity relation; and 'Lumpy' denotes an object whose temporal parts are related by a lump-of-clay-continuity relation; and so on. (To say a few words about the continuity relations at work here, if we roll the SL-hunk into a ball, then on the view we've got in mind here, the post-rolling 3-dimensional hunk of matter stands in the lump-of-clay-continuity relation (but not the shape-continuity relation) to the pre-rolling 3-dimensional hunk

of matter. Likewise, if Jane is sitting at t_1 and standing at t_2 , then Jane's t_1 temporal part stands in the person-continuity relation (but not the sitting-thing-continuity relation) to her t_2 temporal part. And so on.)

Now, if 4Dists deny that ordinary names denote 4-dimensional objects—if they claim instead that ordinary names denote temporal parts of 4-dimensional objects—then they won't face the same problem of reference fixing. But they'll still have to explain how names refer across time. The most obvious and plausible theory for 4Dists of this kind to endorse is the following:

Stage Theory (see Sider, 2001): We use ordinary names like 'Statchy' and 'Lumpy' to refer to 3-dimensional stages (or temporal parts) of 4-dimensional objects whose temporal parts are related by certain continuity relations. Consider, e.g., the SL-hunk. It's a temporal part of one 4-dimensional object (call it *4S*) whose temporal parts are related by the shape-continuity relation, and it's a temporal part of another 4-dimensional object (call it *4L*) whose temporal parts are related by the lump-of-clay-continuity relation. And according to Stage Theory, for any time t at which *4S* exists, 'Statchy' refers to the time- t temporal part of *4S*; and likewise for *4L* and 'Lumpy'—and for other ordinary names, like 'Saturn' and 'Obama' and so on.

It's important to note that all three of the theories articulated in this section imply that we use *properties* (e.g., *being a lump of clay* and shape properties) to explain either (i) how the referents of ordinary names are fixed, or (ii) how ordinary names refer across time. Now, of course, multi-thingers and 4Dists don't have to endorse the specific theories articulated above; but they have to endorse *some* theory here, and it's hard to see how they can avoid saying that the reference of ordinary names like 'Lumpy' is connected in some way to properties like *being a lump of clay*. There doesn't seem to be any other way (if multi-thingism or 4Dism is true) to explain (i) and (ii). So it seems to me that any plausible theory here will appeal to properties in some way or other.

You might think that the three theories listed above are incompatible with the idea that names are rigid designators and directly referential. But they're not. I won't explain why here, but in Sect. 4.2 and 6, I'll explain why NFP is compatible with rigidity and direct referentiality, and it will be clear that advocates of the above three theories can adopt analogous stances.

4 NFP

4.1 The theory

The theory of reference that I want to propose can be put like this:

Names-Follow-Properties (NFP): Part I: We use ordinary names like 'Statchy' and 'Lumpy'—and 'Mars' and 'Obama' and so on—to refer to 3-dimensional

hunks of matter. So, e.g., ‘Statchy’ and ‘Lumpy’ are coreferential—i.e., they both denote the same hunk of matter, namely, the SL-hunk.⁵ *Part 2:* Every ordinary name is associated with a certain property—what I’ll call a *keep-referring property*—that an object (i.e., a hunk of matter) needs to have (and keep having) in order to be (and keep being) a referent of the given name. Thus, if we use the name N to denote the hunk of matter H, and if F is the keep-referring property associated with N, then if H stops having F, then N stops referring to H. E.g., the keep-referring property associated with ‘Lumpy’ is *being a lump of clay*, and the keep-referring property associated with ‘Statchy’ is a shape property; so if the referent of ‘Statchy’ and ‘Lumpy’—i.e., the SL-hunk—were rolled into a ball, then ‘Statchy’ would stop referring to it but ‘Lumpy’ wouldn’t. *Part 3:* While names refer to hunks of matter, they almost never keep referring to the same hunk of matter for a long period of time; rather, they stay connected to their keep-referring properties and refer to the often-changing new hunks of matter that have those properties. More precisely, as time passes, ordinary names like ‘Statchy’ and ‘Lumpy’ often switch their referents according to the following rule:

Reference rule: Suppose that (i) N is a name that refers at t₁ to a hunk of matter H₁; and (ii) F is the keep-referring property associated with N; and (iii) at some later time t₂, H₁ stops having F, and there’s a distinct hunk of matter H₂ that both (a) has F, and (b) is F-continuity related to H₁. Then (iv) at t₂, N stops referring to H₁ and starts referring to H₂.⁶

So, e.g., if ‘Lumpy’ refers at t₁ to a hunk of matter H₁, and if at t₂ a few particles get knocked off of H₁, so that the lump of clay is now made up of a *different* hunk of matter, H₂, rather than H₁, then at t₂ ‘Lumpy’ stops referring to H₁ and starts referring to H₂—because now H₂ is the relevant hunk of matter that has the property *being a lump of clay*. (There can also be cases in which *multiple* hunks of matter become suitable referents for a given name, but we needn’t worry about this here.⁷) *Part 4:* If N refers to H₁ at t₁, and if at t₂, H₁ stops having F and there’s *no* hunk of matter that satisfies conditions (a) and (b) from Part 3 above, then N stops referring altogether. So, e.g., if the SL-hunk were rolled into a ball, then ‘Statchy’ would stop referring altogether. *Part 5:* Claims of the form ‘a had property P at time t’, where ‘a’ is a name, are true if and only if (i) there was a referent of ‘a’ at t (or, more precisely, there was an

⁵ I’ll assume throughout, to make things easy, that ordinary names like ‘Statchy’ and ‘Lumpy’ refer to *unique, precise* hunks of matter; this is of course false, but it won’t cause any problems if we make this simplifying assumption.

⁶ Clause (a) is probably redundant because clause (b) probably entails it; but I won’t worry about this here.

⁷ There are two different kinds of cases here. One arises in virtually *all* cases of reference; this is Unger’s (1980) problem of the many. The other arises in cases of fission (see, e.g., Parfit (1975)). Very different things need to be said about the two different kinds of cases. I think NFP-ists can adequately deal with both kinds of cases, but I can’t get into this here.

object at t that *would be* a referent of *our* name ‘ a ’ at t^8), and (ii) that object had P at t . (Thus, the question of whether the *current* referent of ‘ a ’ had P at t is not relevant to whether claims of this form are true. Also, note that names are being individuated *finely* here, à la Kaplan (1990); more specifically, they’re individuated more finely than *types* but less finely than *tokens*; on this view, new names are created with baptismal events; so, e.g., if tomorrow a newborn baby is named ‘David’, then that will be a *new name*, and so the baby will *not* have the same first name as, e.g., David Lewis. Given this, what clause (i) requires is that *the specific ‘ a ’-name in question*—i.e., the one used in the given utterance—had a referent at t .⁹) Similarly, claims of the form ‘ a had P ’ are true if and only if (i) there was a referent of ‘ a ’ (or an object that would be a referent of our name ‘ a ’), and (ii) that object had P . And likewise for claims of the form ‘ a will have P (at t)’; and ‘ a was (or will be) R -related to b (at t)’; and so on. *Part 6*: Analogous claims can be made about modal sentences, e.g., ‘ a could have property P ’—more on this in Sect. 5.3.

You might object here on the grounds that continuity relations are *cross-time* relations, and so 3D-one-thingers can’t legitimately appeal to such relations. But I have two responses to this worry. First, if we set things up right, we can resist the claim that continuity relations (of the kind referred to in NFP) are cross-time relations; for we can maintain that these continuity relations need to obtain for only an instant, while both of the relevant hunks of matter exist. Second, even if we took these continuity relations to be cross-time relations, it wouldn’t create a serious problem for NFP-ist 3D-one-thingers because there’s an easy way for them to make sense of our talk of cross-time relations of this kind. I’ll say a few words about this in Sect. 5.9, but we needn’t worry about it here.

4.2 NFP isn’t a description theory

It’s important to note that NFP is not a version of the description theory of names. This is because, according to NFP, the keep-referring properties that are associated with ordinary names do not *fix the referents* of those names. The easiest way to appreciate this is to notice that, according to NFP, all ordinary names of people, e.g., ‘Donald Trump’ and ‘Joe Biden’, have the *same* keep-referring property—namely, *being a person*. And likewise for ordinary planet names like ‘Jupiter’ and ‘Mars’—they all have *being a planet* as their keep-referring property. This is very different from the description theory; that theory says that every name is associated with its *own* description, or *descriptive sense*; e.g., on this view, the descriptive sense of ‘Barack

⁸ Suppose I say, “Aristotle lived in the 4th Century B.C.” Clause (i) does not require that *people back then* used ‘Aristotle’ to refer to Aristotle; all that’s needed is that *our* name ‘Aristotle’ would refer to him—i.e., that it would have referred to him if eternalism had been true, where *eternalism* is the view that past and future objects like Aristotle and Martian outposts exist (presumably in past and future regions of a 4-dimensional spatiotemporal block).

⁹ So, e.g., if I’m talking about David Kaplan and I say, “David wrote *On the Plurality of Worlds* in the 1980s,” then NFP correctly delivers the verdict that my utterance isn’t true—because the *specific* ‘David’-name that I used never referred to David Lewis.

Obama' might be *the 44th president of the USA*, or *the contextually determined bearer of 'Barack Obama'*, or some such thing.

Another way to appreciate this point—that NFP is not a version of the description theory—is to notice that NFP is perfectly compatible with direct reference theory. In other words, you can endorse NFP and still maintain that when someone utters a sentence containing a name *N*, the referent of that use of *N* is what gets contributed to the proposition expressed by that utterance. Or to put the point differently, just as Kaplan (1989) claimed that the *character* of an indexical *D* doesn't in general show up in the propositions expressed by utterances of sentences containing *D*, so NFP-ists should claim that the keep-referring property associated with a name *N* doesn't in general show up in the propositions expressed by utterances of sentences containing *N*. So, again, NFP is perfectly compatible with direct reference theory. Moreover, we'll see in Sect. 6 that NFP is also perfectly compatible with the fact that names are *rigid*.

But even if NFP isn't a version of the description theory, you might balk at the idea that names are associated with properties. But I don't think we should be bothered by this, and I'd like to make four quick points to defend the NFP-ist's claim that names are associated with properties. First, I just want to remind the reader that multi-thingers and 4Dists are committed to this as well. For they have to tell some story to explain (i) how the referents of ordinary names are fixed, and (ii) how ordinary names refer across time, and to repeat what I said in Sect. 3, it's hard to see how they could do this without appealing to properties. Indeed, given how names like 'Statchy' and 'Lumpy' function in our language, it's hard to see how *anyone* could explain (i) and (ii) without claiming that these names are associated, in some way or other, with properties.

Second, according to all four theories of reference—i.e., NFP, stage theory, and the multi-thingist and 4Dist theories of reference—the property that's associated with a name can be the property of being an instance of some natural kind. E.g., the keep-referring property associated with ordinary cat names is just *being a cat*. This, I think, makes the reliance on properties more plausible.¹⁰

Third, NFP does not entail that the keep-referring properties associated with ordinary names can be precisely defined or succinctly characterized. (Likewise, stage theory and the multi-thingist and 4Dist theories of reference don't entail that the properties associated with names can be precisely or succinctly defined.¹¹)

Fourth, and most importantly, compared with the other three theories of reference, NFP is *metaphysically undemanding* in the way that it appeals to properties. E.g., in connection with 'Lumpy' and the property *being a lump of clay*, the only thing that

¹⁰ Also, NFP-ists should say that what the keep-referring property of a name is depends on the empirical facts being as they seem to be. If things are as they seem, then the keep-referring property associated with cat names is *being a cat*; but if we discover that cats are robots, we'll have the option to change this. (Thomasson endorses a similar stance in her (2020), pp. 99–105.)

¹¹ If advocates of the multi-thingist and 4Dist theories of reference go for imprecisionist views here, they'll have to say that ordinary names like 'Statchy' don't have unique referents. You might think that's a problem, but I don't think it's a very bad problem, and I think these theorists will encounter worse problems (having to do with arbitrariness, anthropocentrism, and epistemology) if they endorse precisionist views—i.e., if they maintain that each name is associated with a precise property and a unique referent. E.g., they'll have to say that there's a determinate fact of the matter about exactly how much squashing is needed to make Statchy disappear.

NFP requires is that the referent of ‘Lumpy’ *has* this property; it doesn’t require that object to have that property *essentially* (as the multi-thingist theory requires), or to be a 4-dimensional object whose temporal parts are connected by that property (as the 4Dist theory requires), or to be a temporal part of such a 4-dimensional object (as stage theory requires). Those three theories entail that if the relevant metaphysical claims aren’t true, then ‘Lumpy’ doesn’t refer. But if NFP is true, then ‘Lumpy’ would still refer even if there were no such things as coincident objects or 4-dimensional objects or essential properties.

This last point is worth emphasizing. You might doubt my claim that NFP is metaphysically undemanding; you might be thinking something like the following:

- (i) Since NFP says that nothing can be the referent of ‘Statchy’ that doesn’t have a certain shape, how is it not committed to the idea that Statchy has its shape *essentially*? And (ii) NFP seems to be equivalent to stage theory—for it says that ‘Statchy’ refers at different times to distinct 3-dimensional hunks of matter that are all continuity-related to one another—so how is NFP not committed to 4-dimensionalism?

The answer to these questions is that NFP avoids metaphysical commitments by building everything into the *semantics of ordinary language*—so, ultimately, into our linguistic intentions and conventions. The claim that Statchy has its shape property essentially (and Lumpy doesn’t) is a *metaphysical* claim—about the nature of these *objects*—and so it entails that Lumpy and Statchy are numerically distinct objects. But NFP doesn’t say *anything* about any objects, and it’s compatible with the claim that Lumpy and Statchy are numerically identical and that that object—the SL-hunk—doesn’t have its shape property (or any other interesting property) essentially. NFP just says something about *names*—it says that it’s built into our linguistic intentions and conventions that ‘Statchy’ will stop referring if the SL-hunk loses its shape property (and that this *isn’t* true of ‘Lumpy’). And, likewise, while stage theory commits to 4-dimensionalism—in particular, it commits to the existence of past (and future) objects that were (and will be) referents of names like ‘Statchy’—NFP doesn’t commit to this. NFP says that ‘Statchy’ used to refer to a 3-dimensional hunk of matter, but it doesn’t say that that object—i.e., the former referent of ‘Statchy’—*still exists in a past region of spacetime*; so NFP is compatible with presentism. In short, while NFP makes a bunch of semantic claims, it doesn’t commit to any metaphysical claims at all.¹²

Here’s another way to think about this. NFP entails that if we graphed the referential histories of the names in our language, we’d see that they *corefer* in patterns that exactly match where multi-thingers believe in *coincident objects* and where 4Dists believe in *distinct 4-dimensional objects that share temporal parts*. So on the NFP-ist picture, metaphysically controversial facts about objects *coinciding*, or *sharing tem-*

¹² If you like mereological nihilism, you could construct a version of NFP that’s even less metaphysically demanding (you could take ordinary names to refer to pluralities of simples—in particular, to pluralities of presently existing mereological simples that are arranged Fwise, where F is the keep-referring property associated with the given name—regardless of whether those simples compose an object).

poral parts, get replaced by semantic facts about *names coreferring*—and by (pretty uncontroversial) facts about the *coinstantiation* of properties by hunks of matter.¹³

4.3 Four quick points

Let me make four final points about NFP. First, if F is the keep-referring property associated with a name N, then if you like, you can think of F as a sort of “reference magnet” for N. For according to NFP, as F “moves” from one hunk of matter to another, it “drags” N with it, so that N refers to whichever hunk of matter has F (so long as that hunk is F-continuity related to the previous referent). To put the point differently, according to NFP, while names refer to hunks of matter, they don’t (usually¹⁴) follow hunks of matter around; rather, *they follow their associated properties around*. But, of course, NFP-ists don’t think this is because there’s some weird metaphysical connection between F and N; they just think it’s built into our intentions and conventions that N is supposed to follow F around in the way described in NFP.

Second, if you like, you can think of NFP as a version of the phase sortal view. In particular, it’s a sort of *phase referent* view, for it entails that the SL-hunk goes through a phase in which it’s the referent of ‘Statchy’. And so NFP also entails that the SL-hunk goes through a phase of *being* Statchy—i.e., of being identical to Statchy. But NFP does *not* commit to a nonstandard theory of identity. It entails that certain identity sentences—e.g., ‘Lumpy is Statchy’—are true at some times but not others. But (a) this is only because NFP entails that ‘Statchy’ refers to Lumpy at some times but not others; and (b) we’re committed to sentences like this anyway (consider, e.g., ‘Charles is the King of England’); and (c) NFP doesn’t commit to a nonstandard theory of the identity relation itself (e.g., it doesn’t entail that there could be two objects that were identical at some times and distinct at other times).

Third, you might worry that NFP is incompatible with the fact that Lumpy is the *same thing* that it was yesterday. But as we’ll see in Sect. 5.9, this isn’t true—NFP is actually compatible with the cross-time sameness of ordinary objects like Lumpy.

Fourth, it might seem that NFP mistakenly implies that sentences like ‘Lumpy existed in 2012’ are *about names*. But this just isn’t true; according to NFP, these sentences are about the *referents* of names—so they’re about *objects*.

¹³ Another view that’s similar in some ways to NFP is the view that Jubien developed in his (1993). But NFP is importantly different from that view as well. For starters, it’s *metaphysically* different—most notably in the present context, Jubien’s view entails that there are 4-dimensional objects, and as we’ve seen, NFP does not. But NFP is also *semantically* different from Jubien’s view. One semantic difference is that Jubien’s view entails that ordinary names like ‘Lumpy’ and ‘Statchy’ are *not referring expressions*—that, instead, they’re disguised predicates that express properties like *being Lumpy*—whereas, in contrast, NFP entails that names *are* referring expressions. And a second semantic difference is that, unlike NFP, Jubien’s view entails that sentences like ‘Lumpy is Statchy’ are not identity sentences (Jubien thinks that the ‘is’ here is the ‘is’ of predication, not identity).

¹⁴ If the keep-referring property that’s associated with N is *being a hunk of matter*, then N will follow a hunk of matter around; but that’s not the norm.

5 How NFP undermines save-our-intuition arguments

In this section, I'll explain how NFP enables us to undermine a number of different save-our-intuition arguments for the disjunction of 4Dism and multi-thingism—or, what comes to essentially the same thing, for the falsity of 3D-one-thingism. In other words, I'll argue that if NFP is true, then a number of seemingly problematic sentences—sentences that seem intuitively true to us and that seem to commit to the existence of either coincident objects or 4-dimensional objects—come out true even if 3D-one-thingism is true and there are no such things as coincident objects or 4-dimensional objects.

5.1 'Lumpy existed in 2012 but Statchy didn't'

Consider the following sentences:

[E1] Lumpy existed in 2012.

[E2] Statchy didn't exist in 2012.

Now consider the following save-our-intuition argument:

Intuitively, it seems that [E1] and [E2] are both true. But this seems incompatible with 3D-one-thingism. For 3D-one-thingism entails that Statchy and Lumpy are numerically identical, and so it seems to entail that either [E1] or [E2] is false.

My response: If NFP is true, then 3D-one-thingism is perfectly compatible with the truth of [E1] and [E2]. For according to NFP, [E1] is true if and only if there was a referent of 'Lumpy' in 2012, and [E2] is true if and only if there wasn't a referent of 'Statchy' in 2012—i.e., iff there wasn't a referent of this *specific* 'Statchy'-name in 2012 (see part 5 of NFP)—and 3D-one-thingsers can and should say that both of these claims are true.

5.2 Predicates with tense built into them

There are some present-tense sentences that behave (in some ways) like past- and future-tense sentences because of the meanings of the predicates appearing in them. Consider, e.g., the following two sentences:

[O1] Lumpy is more than twelve years old.

[O2] Statchy is not more than twelve years old.

You might construct a save-our-intuition argument against 3D-one-thingism based on the claim that [O1] and [O2] are both true. But NFP-ist 3D-one-thingsers can respond to this by claiming that there's something like tense, or cross-time-ness, built into the

meanings of predicates like ‘is more than twelve years old’; and they can say that, because of this, sentences containing such predicates function in ways that are similar to the ways in which past- and future-tense sentences function. E.g., NFP-ist 3D-one-things might say that [O1] is true if and only if a referent of ‘Lumpy’ existed more than twelve years ago (and ‘Lumpy’ currently refers), and [O2] is true if and only if no referent of ‘Statchy’ existed more than twelve years ago (and ‘Statchy’ currently refers¹⁵)—or some such thing.

5.3 Modal sentences

Consider the following sentences:

[S1] Lumpy could survive being rolled into a ball.

[S2] Statchy could not survive being rolled into a ball.

You might construct a save-our-intuition argument against 3D-one-thingism based on the claim that [S1] and [S2] are both true. But NFP-ist 3D-one-things can respond to this by claiming that modal predicates like ‘could survive being rolled into a ball’ function in a way that’s similar to the way in which cross-time predicates like ‘is more than twelve years old’ function. More specifically, they can claim that [S1] is true if and only if there could be a referent of ‘Lumpy’ that survived being rolled into a ball, and [S2] is true if and only if there couldn’t be a referent of ‘Statchy’ that survived being rolled into a ball. And if they say this, then they’ll get the result that [S1] and [S2] are both true; for if the SL-hunk were rolled into a ball, then, assuming NFP, ‘Lumpy’ would still refer to it but ‘Statchy’ wouldn’t.

It’s important to note that this view of [S1] and [S2] can be combined with any mainstream view of the semantics of modal discourse. Most notably, it can be combined with a possible-worlds view or a primitivist view. NFP-ists who endorse a possible-worlds semantics of modal discourse can say that (a) [S1] is true if and only if there’s a possible world in which there’s a lump-of-clay counterpart of Lumpy—and, hence, a referent of our actual-world name ‘Lumpy’—that has survived being rolled into a ball; and (b) [S2] is true if and only if there’s no possible world in which there’s a shape counterpart of Statchy—and, hence, a referent of our actual-world name ‘Statchy’—that has survived being rolled into a ball. And NFP-ists who endorse a primitivist view of modal discourse can say that (a) [S1] is true if and only if POSSIBLY(there’s a referent of our name ‘Lumpy’ that has survived being rolled into a ball)—where ‘POSSIBLY’ is a primitive sentential possibility operator; and (b) [S2] is true if and only if it’s not the case that POSSIBLY(there’s a referent of our name ‘Statchy’ that has survived being rolled into a ball). Either way—whether they endorse a possible-worlds view or a primitivist view—NFP-ists will be able to say that [S1] and [S2] are both true.

It’s also worth noting that this view of [S1] and [S2] is a version of the general view—endorsed by, e.g., Gibbard (1975), Lewis (1986), and Noonan (1991)—that

¹⁵ I’m assuming that the ‘not’ in [O2] has narrow scope.

(a) modal predicates like ‘could survive being rolled into a ball’ are context-sensitive in the sense that they express different properties in different contexts, and (b) utterances of [S1] and [S2] involve different contexts because they involve different names, i.e., because ‘Lumpy’ appears in [S1] and ‘Statchy’ appears in [S2].¹⁶ To put the point differently, the idea here is that the predicate ‘could survive being rolled into a ball’ ascribes a different property to the SL-hunk when it’s paired with ‘Lumpy’ than it does when it’s paired with ‘Statchy’.

5.4 Quantified sentences

Consider the following two sentences:

[Q1] $(\exists x)(x$ is constituted by the SL-hunk and x existed in 2012).

[Q2] $(\exists x)(x$ is constituted by the SL-hunk and x didn’t exist in 2012).

Now consider the following save-our-intuition argument:

Intuitively, it seems that [Q1] and [Q2] are both true, and it seems that NFP-ist 3D-one-thingers are committed to the truth of these two sentences. But together, [Q1] and [Q2] seem to entail that there are at least two objects that are constituted by the SL-hunk—and that seems incompatible with 3D-one-thingism.

3D-one-thingers can respond to this in the same way that Lewisians respond to the analogous worry about quantified modal sentences. Suppose that (a) Goliath is a clay statue and Lump1 is the lump of clay that constitutes Goliath, and (b) Lump1 and Goliath were created simultaneously and they’ll be destroyed simultaneously, so that according to 4Dis1, Lump1 and Goliath are one and the same 4-dimensional hunk of matter (let’s call it the *GL-hunk*). Given this, it seems that Lewisians are committed to the truth of both of the following sentences:

[Q3] $(\exists x)(x$ is constituted by the GL-hunk and x could survive squashing).

[Q4] $(\exists x)(x$ is constituted by the GL-hunk and x couldn’t survive squashing).

But Lewisians can avoid trouble here by simply claiming that [Q3] and [Q4] are true in different contexts. And 3D-one-thingers can endorse an analogous view of [Q1] and [Q2]. According to NFP, there’s a change in context from [E1] to [E2]—these sentences have different truth conditions, despite the fact that ‘Lumpy’ and ‘Statchy’ are coreferential—and so we arrive at [Q1] and [Q2] by existentially generalizing on sentences that are true in different contexts. So NFP-ists can solve the [Q1]-[Q2]

¹⁶ Noonan claims that the reason that the uses of ‘Lumpy’ and ‘Statchy’ create different contexts is that these two names have different *senses*—and that their senses might just be indefinite descriptions like ‘a lump of clay’ and ‘a statue’. This is similar to the NFP-ist’s claim that ‘Lumpy’ is associated with the property *being a lump of clay* and ‘Statchy’ is associated with the property *being a statue*; but NFP doesn’t entail that these properties are the *senses* of these names.

problem in the same way that Lewisians solve the [Q3]-[Q4] problem, and so if there's not a deep problem here for Lewisians—and there presumably *isn't*—then there's not a deep problem here for NFP-ists either.

5.5 Two-place predicates with tense built into them

Consider the following sentence:

[O3] Lumpy is older than Statchy.

Now consider the following save-our-intuition argument:

Intuitively, it seems that [O3] is true. Moreover, it seems that NFP-ists can account for this; for they can presumably say that a sentence of the form 'a is older than b', where 'a' and 'b' are both names, is true if and only if there was a time when a referent of 'a' existed but no referent of 'b' existed—or something like that. But 3D-one-thingers are committed to the claim that Lumpy and Statchy are *identical*. So if they endorse the above view of 'older than' claims—indeed, if they endorse *any* view that enables them to save the truth of [O3]—then they'll have to give up on the irreflexivity of the *older-than* relation. And that seems really implausible.¹⁷

I don't think there's a deep problem here. For while I agree that NFP-ist 3D-one-thingers should say that, *strictly speaking*, the *older-than* relation is not irreflexive, I think there are numerous things they can say to make this palatable. For starters, they can account for the fact that we have an intuition of irreflexivity here by pointing out that we only get counterexamples to the irreflexivity of *older-than* in connection with weird cases involving things like statues and lumps of clay that no non-philosopher would ever think of—and so it's no wonder that we have the intuition that *older-than* is irreflexive. Second, NFP-ist 3D-one-thingers can save a restricted sort of irreflexivity of *older-than*. Indeed, there are numerous restricted principles of irreflexivity that NFP-ist 3D-one-thingers can endorse with respect to *older-than*. E.g., here are two such principles:

- (i) For any sentence of the form 'a is older than b', where 'a' and 'b' are names, if the sentence in question is true, and if the keep-referring property associated with 'a' is identical to the keep-referring property associated with 'b', then 'a is not identical to b' is true.
- (ii) For any object x and any object y and any property F, if we calculate the ages of x and y under the *F-continuity relation*, then if x is older than y, then x isn't identical to y.

¹⁷ Thanks to Jack Spencer for encouraging me to think about the issue of the irreflexivity of *older-than*.

5.6 ‘Statchy doesn’t exist anymore’

Suppose that at some time in the future (say, t_1) the SL-hunk is rolled into a ball and that after this—at, say, t_2 —someone utters the following sentence:

[E3] Statchy doesn’t exist anymore.

Now consider the following save-our-intuition argument:

Intuitively, this utterance is true (or at least colloquially true—more on this in a moment). But this is incompatible with 3D-one-thingism. For (a) the SL-hunk still exists at t_2 , and (b) 3D-one-thingism entails that Statchy is identical to the SL-hunk.

My response: If NFP is true, then 3D-one-thingism is compatible with the truth of [E3]. For if NFP is true, then ‘Statchy’ stopped referring when the SL-hunk was rolled into a ball. ‘Statchy’ used to refer to the SL-hunk, and the SL-hunk still exists, but ‘Statchy’ doesn’t refer to it anymore. In fact, it doesn’t refer to anything anymore—it’s a vacuous name—and that’s why [E3] is true. In short, [E3] is true in this scenario for the same reason that sentences like the following are true:

[P] Pegasus doesn’t exist.

(Perhaps it’s better to say that [P] and [E3] are only *colloquially* true. Sentences like [P] are notoriously problematic. The reason is that [P] seems to be a claim about the referent of ‘Pegasus’, and so it seems that since that name has no referent, [P] can’t be true. I don’t know what the solution to this puzzle is, but I want to allow for the possibility that the right thing to say is that while [P] is strictly speaking *not* true (because ‘Pegasus’ has no referent), it’s still “colloquially true,” or some such thing, because there are nearby truths (e.g., “‘Pegasus’ doesn’t have a referent”) that people are “getting at”, or some such thing, when they utter [P]. But whatever we decide to say about [P], NFP-ists can say the same thing about [E3].)

I suppose you might complain that the view I’m proposing here is nit-picky, or crafty (in a bad way), or some such thing. For you might think that on this view, [E3] comes out true on a technicality. I agree with the general idea that we should be leery of crafty views that save our intuitions by making them come out true on technicalities, but I don’t think that NFP is guilty of this. On the contrary, I think it’s plausible to suppose that NFP plays a central role in a deep explanation of why sentences like [E3] seem true to us. For if NFP is true—if it’s the best theory of this part of *our* language—then it’s plausible to suppose that it’s deeply embedded in our linguistic conventions and our ways of thinking about these sorts of things. But if this is right, then it explains not just why sentences like [E3] are true, but why they seem intuitively right to us. For in this scenario, it would be deeply embedded in our ways of thinking about these kinds of things that when the SL-hunk is rolled into a ball, ‘Statchy’ stops referring to it and, indeed, doesn’t refer to anything anymore. Thus, I just reject the idea that on this view, [E3] comes out true on a technicality.

5.7 Did anything go out of existence when the SL-hunk was rolled into a ball?

Given what I just said in Sect. 5.6, it seems that NFP-ists are committed to the truth of the following sentence:

[E4] Statchy went out of existence when the SL-hunk was rolled into a ball.

But 3D-one-thingers seem also to be committed to this:

[E5] Nothing went out of existence when the SL-hunk was rolled into a ball.

The reason that 3D-one-thingers are committed to [E5] is that they think that (a) there's only one object that's relevant here—namely, the SL-hunk—and (b) that object didn't go out of existence when the SL-hunk was rolled into a ball. (We can make the worry here especially vivid by imagining a world that contains only one object, namely, the SL-hunk; in that world, according to 3D-one-thingism, the one and only thing that exists survives when the SL-hunk is rolled into a ball.) In any event, the worry here is that (a) NFP-ist 3D-one-thingers are committed to the truth of both [E4] and [E5], and (b) this is a contradiction.¹⁸

But I don't think this is a genuine contradiction. All we need to say here, in order to avoid contradiction, is that predicates like 'went out of existence when SL-hunk was rolled into a ball' are context sensitive in a way that's analogous to the way in which modal predicates like 'could survive being rolled into a ball' are context-sensitive. Given this, NFP-ist 3D-one-thingers can say that while [E4] is true, sentences like the following are also true:

[E6] Lumpy didn't go out of existence when the SL-hunk was rolled into a ball.

[E7] The SL-hunk didn't go out of existence when it was rolled into a ball.

More to the point, NFP-ist 3D-one-thingers can say that [E4], [E6], and [E7] are all true while also claiming that 'Lumpy', 'Statchy', and 'the SL-hunk' were all coreferential right up to the moment when the SL-hunk was rolled into a ball. Moreover, they can admit that if we existentially generalize on [E4], we arrive at the following claim:

[E8] Something went out of existence when the SL-hunk was rolled into a ball.

It might seem that [E8] is incompatible with [E5], but NFP-ist 3D-one-thingers can use the strategy employed in Sect. 5.4 to argue that [E8] is, in fact, *compatible* with [E5]. In short, their claim here is that [E8] and [E5] are true in different contexts.

To say a bit more about this, let's suppose that (a) I'm the artist who sculpted Statchy; and (b) my friend Bob comes to my studio, looks around for a moment, and then asks, "Where's Statchy?"; and (c) I respond by saying, "Statchy doesn't exist

¹⁸ Thanks to an anonymous referee for raising this worry to me.

anymore—I rolled it into a ball yesterday.” In this context, [E4] and [E8] would be true, and I would assent to them. But now suppose that Bob leaves and my multi-thinger friend Ann shows up and starts arguing metaphysics with me; she asks me whether anything went out of existence when I rolled the SL-hunk into a ball, and I say, “No; there was only one object there—namely, the SL-hunk—and it still exists.” In this context, [E5] is true, and I would assent to it.

You might ask whether [E4] is true in the second context. To this I would give the following two responses: (i) As soon as the word ‘Statchy’ is used, the context might very well change, and [E4] could be true in the new context. (If it’s an ordinary, non-philosophical context, then the context would very likely change back to something like the first context discussed in the preceding paragraph—i.e., the context of Bob’s question to me; but, of course, this will depend on the exact details of the situation.) (ii) If Ann (my multi-thinger friend) asked me whether [E4] is true *while arguing metaphysics* with me, my response would be to articulate NFP and to explain how I think there can be subtle context shifts that make seemingly contradictory sentences come out true in different contexts.

5.8 Past-tense claims about past objects

My focus in this paper is on sentences of a certain kind—sentences about things like statues and lumps of clay that seem to commit us to the existence of either coincident objects or 4-dimensional objects. But it’s worth noting that NFP also gives 3D-one-thingers a way to save the truth of past-tense (and future-tense) sentences that seem to be about things that no longer exist (and things that don’t yet exist). Consider, e.g., the following sentence:

[A] Aristotle used to exist.

NFP-ist 3D-one-thingers can account for the truth of this sentence because on their view, [A] is true if and only if there used to be a referent of ‘Aristotle’. Now, of course, 3D-one-thingers need to tell us what the *truthmakers* of sentences like [A] are; but that’s a different problem, and as I pointed out in Sect. 2.4, I’m not trying to solve that problem in this paper. The point I’m making here is that NFP helps in connection with sentences like [A] because it entails that [A] is, despite its surface form, not directly *about* a non-present object; rather, according to NFP, [A] says that *there used to be an object of a certain kind*.¹⁹

5.9 Tibbles and Tib

Consider the following save-our-intuition argument:

¹⁹ This gives us a hint about how 3D-one-thingers can respond to the singular-proposition objection to presentism. But I think there’s a lot more to say about that objection; I discuss this in detail in my (forthcoming, Chap. 5).

Suppose that (i) Tibbles is a cat; and (ii) at t_1 , Tib is a big part of Tibbles—in particular, all of Tibbles except for her tail; and (iii) Tibbles has her tail amputated after t_1 , so that at t_2 , Tibbles and Tib are constituted by the same hunk of matter. Given this, it seems intuitively that t_2 utterances of both of the following sentences are true:

[T1] Tibbles was not identical to Tib at t_1 .

[T2] Tib is the same thing now, at t_2 , that it was at t_1 .

But 3D-one-thingism entails that a t_2 utterance of the following is also true:

[T3] Tibbles is identical to Tib now, i.e., at t_2 .

But [T1]-[T3] can't all be true, and so 3D-one-thingism is false.

My response: If NFP is true, then 3D-one-thingsers can say that [T1]-[T3] are all true. For according to NFP, 'Tibbles' changed its referent between t_1 and t_2 ; in particular, it didn't refer to Tib at t_1 , but it did refer to Tib at t_2 . Most notably, according to NFP, [T1] is true if and only if there were referents of 'Tibbles' and 'Tib' at t_1 , and those referents were not identical at t_1 —and 3D-one-thingsers can and should say that that's true. Moreover, this is perfectly compatible with [T3] because [T3] is true if and only if the *current* referents of 'Tibbles' and 'Tib' are identical.

You might complain that 3D-one-thingsers should also want to endorse the following:

[T4] Tibbles is the same thing (and the same cat) now, at t_2 , that she was at t_1 .

And you might think that the truth of [T4] is incompatible with NFP-ist 3D-one-thingism. But NFP-ist 3D-one-thingsers can account for the truth of [T4] by supplementing NFP with a semantic theory of words like 'same' and 'different'. In particular, they can say something like the following:

Words like 'same' and 'different' are ambiguous. Sometimes (usually in non-cross-time cases) 'same' expresses the relation of numerical identity; but other times (usually in cross-time cases) 'same' expresses continuity relations, so that (in connection with these continuity uses) the semantics of 'same' is in synch with the semantics of ordinary names like 'Tibbles'. Thus, on this view, there's a *sense* in which ordinary names like 'Tibbles' routinely change their referents. In particular, if we interpret 'same' as expressing numerical identity, then 'Tibbles' does not refer to the same thing at t_2 that it referred to at t_1 . On the other hand, if we interpret 'same' as expressing a continuity relation (in particular, the cat-continuity relation), then 'Tibbles' *does* refer to the same thing at t_1 and t_2 . Moreover, the *right* interpretation of ordinary-language claims of cross-time sameness is almost always the one that takes 'same' to express a continuity relation, and so ordinary utterances of sentences like [T4] are almost always true.

If 3D-one-thingers endorse this theory in conjunction with NFP, then they can account for the truth of [T4]. For they can claim, speaking a bit roughly, that [T4] is true if and only if there was a referent of ‘Tibbles’ at t_1 , and Tibbles (i.e., the current referent of ‘Tibbles’) is cat-continuity-related to that referent.

Now, you might object to this by pointing out that the cat-continuity relation that’s at work here is a *cross-time relation* and, hence, off limits to 3D-one-thingers. But a response to this worry is already inherent in Part 5 of NFP. What NFP-ists can say about [T4], when they’re speaking more precisely, is that [T4] is true if and only if (a) there was a referent of ‘Tibbles’ at t_1 —i.e., there was an object at t_1 that *would have been* a referent of *our* word ‘Tibbles’, if eternalism had been true—and (b) that object would have been cat-continuity related to the current referent of ‘Tibbles’ if eternalism had been true. (See footnote 8 for a definition of eternalism.)

5.10 Ship of Theseus, et al.

I think that NFP, suitably supplemented with theories about words like ‘same’ and ‘different’ and so on, enables 3D-one-thingers to solve all of the mainstream puzzles of coincidence. I won’t run through the details of any more of these puzzles here, but given what I’ve said about the statue-lump puzzle and the Tibbles-Tib puzzle, it should be pretty obvious what NFP-ist 3D-one-thingers would say about other puzzles—e.g., the Ship-of-Theseus puzzle.

6 Why NFP is compatible with the rigidity of names

You might worry that NFP is incompatible with the fact that names are rigid designators; for NFP entails that in order for an object O to be the referent of a name N , it has to have some property P , and this might seem incompatible with the rigidity of names. It seems to me, however, that the rigidity of names actually *dovetails* with NFP. To see why, note first that NFP-ists can endorse the following claims about rigid designators:

- (i) Rigidity has to do with sameness of reference across possible worlds; and (ii) this is best understood in terms of counterpart relations, not numerical identity; and (iii) since there are multiple counterpart relations, it follows that in order for some other-worldly object O to be a referent of some (rigidly designating) name N , it needs to be *appropriately* counterpart related to the actual referent of N ; and (iv) this requires O to have certain crucial *properties*. For example, in order for some other-worldly object O to be a referent of ‘Lumpy’, it needs to be appropriately counterpart related to Lumpy—in particular, it needs to be *lump-of-clay*-counterpart related to Lumpy—and this requires it to have a certain property, namely, *being a lump of clay*.²⁰

²⁰ By the way, I think we can endorse this view of rigidity, or something like it, without committing to an ontology of possible worlds. I can’t get into this here, but see Chap. 6 of my (2021) for more on this.

These remarks give us a view of how (rigidly designating) names refer across possible worlds that fits perfectly with the NFP-ist view of how names refer across time. For on this view of rigid designators, in order for some other-worldly object *O* to be a referent of some name *N*, it needs to be appropriately counterpart related (e.g., shape-counterpart related) to the actual referent of *N*; and according to NFP, in order for some future object *O* to be a referent of *N*, it needs to be appropriately continuity related (e.g., shape-continuity related) to the present referent of *N*. The two views fit together perfectly.

In short, while it's true that NFP-ists claim that (i) in order for an other-worldly object *O* to be the referent of an ordinary name like 'Lumpy', it needs to have certain properties (e.g., *being a lump of clay*), they do *not* claim that (ii) *any* other-worldly object that has the relevant properties is a referent of *N*; on the contrary, they think that (iii) in order for an other-worldly object to be a referent of a name *N*, it needs to be a *counterpart* of the actual referent of *N* (and *also* have the relevant properties). Thesis (ii) is incompatible with the rigidity of names, but (i) and (iii) aren't; indeed, (iii) entails that names *are* rigid.

Acknowledgements A number of people (who either read earlier versions of this paper or listened to me present this paper) have offered me helpful feedback on this project, and I would like to thank all of them. The list includes Karen Bennett, Boran Bercic, Sara Bernstein, Tim Button, Rebecca Chan, Gabe Dupre, Nina Emery, Cody Gilmore, David Glick, Alex Grzankowski, Kathrin Koslicki, Hanti Lin, Michaela McSweeney, Ned Markosian, David Pitt, Kate Ritchie, Adam Sennet, Jack Spencer, Isidora Stojanovic, Hannah Tierney, and Justin Weinberg.

Author contributions There is only one author

Funding Nothing to report

Data availability There are no data or materials not contained in the paper.

Declarations

Competing interests None

References

- Baker, L. R. (1997). Why constitution is not identity. *Journal of Philosophy*, 94, 599–621.
- Balaguer, M. (2021). *Metaphysics, Sophistry, and illusion*. Oxford University Press.
- Balaguer, M. (forthcoming). How to be a presentist, forthcoming with Oxford University Press.
- Bennett, K. (2004). Spatio-Temporal coincidence and the grounding problem. *Philosophical Studies*, 118, 339–371.
- Fairchild, M. (2019). The barest flutter of the smallest leaf: Understanding material plenitude. *Philosophical Review*, 128, 143–178.
- Fine, K. (2003). The Non-Identity of a thing and its matter. *Mind*, 112, 195–234.
- Gibbard, A. (1975). Contingent identity. *Journal of Philosophical Logic*, 4, 187–221.
- Hawley, K. (2001). *How things persist*. Oxford University Press.
- Heller, M. (1984). Temporal parts of four dimensional objects. *Philosophical Studies*, 46, 323–334.
- Hinchliff, M. (1996). The puzzle of change. In J. Tomberlin (Ed.), *Philosophical perspectives 10, metaphysics*. Blackwell.

- Jubien, M. (1993). *Ontology, Modality, and the fallacy of reference*. Cambridge University Press.
- Kaplan, D. (1989). Demonstratives, in J. In J. Almog, Perry, & H. Wettstein (Eds.), *Themes from Kaplan* (pp. 481–563). Oxford University Press.
- Kaplan, D. (1990). Words. *Proceedings of the Aristotelean Society, Supplemental Volumes, 64*, 93–119.
- Koslicki, K. (2008). *The structure of objects*. Oxford University Press.
- Lewis, D. (1986). *On the plurality of worlds*. Basil Blackwell.
- Markosian, N. (2004). A defense of presentism. In D. Zimmerman (Ed.), *Oxford studies in metaphysics* (Vol. 1, pp. 47–82). Oxford University Press.
- Merricks, T. (2007). *Truth and ontology*. Clarendon.
- Noonan, H. (1991). Indeterminate Identity, contingent Identity, and Abelardian predicates. *The Philosophical Quarterly, 41*, 183–193.
- Parfit, D. (1975). Personal identity. In J. Perry (Ed.), *Personal identity* (pp. 199–223). University of California Press.
- Quine, W. V. O. (1950). Identity, Ostension, and hypostasis. *Journal of Philosophy, 47*, 621–633.
- Sider, T. (2001). *Four dimensionalism*. Oxford University Press.
- Thomason, A. (2020). *Norms and necessity*. Oxford University Press.
- Thomson J.J. (1983). Parthood and identity across time. *Journal of Philosophy, 80*, 201–220.
- Unger, P. (1980). The problem of the many. *Midwest Studies in Philosophy, 5*, 411–467.
- Wiggins, D. (1967). *Identity and spatio-temporal continuity*. Blackwell.
- Zimmerman, D. (1998). Temporary intrinsics and presentism. In van P. Inwagen, & D. Zimmerman (Eds.), *Metaphysics: The big questions* (pp. 206–219). Blackwell.

Publisher's note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

Springer Nature or its licensor (e.g. a society or other partner) holds exclusive rights to this article under a publishing agreement with the author(s) or other rightsholder(s); author self-archiving of the accepted manuscript version of this article is solely governed by the terms of such publishing agreement and applicable law.