



Truth as none and many

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Abstract

Truth pluralists say that there are many ways to be true. Aaron Cotnoir (“Pluralism and Paradox” in: Pedersen and Wright (eds) *Truth and pluralism: current debates*, Oxford University Press, Oxford, 2013) has suggested a “uniquely pluralist response to the liar”. The basic idea is to maintain that, if a sentence says of itself that it is not true in a certain way, then that sentence is not apt to be true in *that* way, but is instead apt to be true in a different way. While this is consistent with the basic tenets of truth pluralism, it is an open question whether or not it is amenable to any actual pluralist theory. The primary goal of this paper is to argue that Cotnoir’s proposal is amenable to form-based pluralism, rather than domain-based pluralism. In particular, in Section 1, I argue that there are several serious obstacles in the way of the domain-based pluralist who wishes to endorse Cotnoir’s proposal; in Section 2, I show how the form-based pluralist can overcome these difficulties. The secondary goal of the paper is to argue that most, if not all, substantivists about truth should find form-based pluralism independently attractive. As such, the possibility of a form-based pluralist solution to the liar is not merely a technical curiosity, but something in which substantivists about truth have a vested interest.

Keywords Truth pluralism · Liar paradox · Truth

Truth pluralists say that there are many ways to be true. Cotnoir (2013a) has suggested a “uniquely pluralist response to the liar”. The basic idea is to maintain that, if a sentence says of itself that it is not true in a certain way, then that sentence is not apt to be true in *that* way, but is instead apt to be true in a different way. This is consistent with the basic tenets of truth pluralism, but it is an open question whether or not it is amenable to any actual pluralist theory.

The primary goal of this paper is to argue that Cotnoir’s proposal is amenable to *form-based* pluralism, rather than *domain-based* pluralism. Where domain-based

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pluralists say that sentences in different domains are apt to be true in different ways, form-based pluralists say that sentences of different logical forms are apt to be true in different ways. In Sect. 1, I argue (*contra* Cotnoir) that there are several serious obstacles in the way of domain-based pluralists who wish to endorse Cotnoir's proposal. In Sect. 2, I argue that form-based pluralists (of at least one variety) can overcome these obstacles. My goal is not to defend this kind of pluralism or this pluralist response to the liar. Rather, it is to *make progress* towards such a solution, by showing how the form-based pluralist can overcome the difficulties facing domain-based pluralists. My conclusion is thus a conditional one: *if* we are to avoid the liar paradox in this way, *then* form-based pluralists are much better equipped to do so than domain-based pluralists.

The secondary goal is to argue that most, if not all, substantivists about truth should find form-based pluralism independently attractive. This is on two grounds. First, most if not all such theorists should agree that the relevant variety of form-based truth pluralism is extensionally adequate (Sect. 2.1). Second, most if not all such theorists *independently* stand to benefit from endorsing form-based pluralism (Sect. 2.2). A form-based pluralist solution to the liar is therefore no merely technical curiosity, but something in which substantivists about truth have a vested interest: insofar as the theory is independently attractive to substantivists, it would be a major boon to such theorists if form-based pluralism *also* provides a solution to the liar.

1 Cotnoir's proposal

1.1 Pluralism: moderate and strong

Truth pluralism, as we'll understand it here, is the view that there are many ways to be true; and, in particular, that claims of certain different kinds are apt to be true in different ways. That is, while claims of one kind (type-1 claims) are apt to be true in one way, claims of another kind (type-2 claims) are apt to be true in a different way.¹ We get different versions of the view depending *inter alia* on: (i) what different ways of being true there are; (ii) which different kinds of claim are apt to be true in different ways; and (iii) how we understand the relationship between truth as such and the different ways of being true. (i) and (ii) will be important later, but let's start by thinking a little about (iii).

On (iii), pluralists divide into two families.² "Moderate" pluralists recognise the existence of a generic truth property, truth *as such*, for which all claims are apt. In this sense, they are monists about truth. However, possession of this generic property is grounded in, or realised by, or manifested by, or determined by, or in some other

¹ I use 'claims' to refer to the primary truth-bearers, whatever they may be (sentences, propositions, etc.). I will move between talk of 'ways of being true' and talk of 'truth properties' throughout.

² For discussion, see (Lynch, 2004, 2009: ch.3; Wright, 2005, pp. 6–7; Pedersen, 2006, p. 106ff, 2010; Pedersen & Wright, 2013, pp. 2–5; 2018: Sect. 1.1; Wright, 2013; Cotnoir, 2013a, p. 339; 2013b, p. 563; Edwards, 2018b, ch.7; Ferrari et al., 2021, pp. 629–630). Note that 'strong pluralism' is sometimes used to include the view that there is a generic truth property, but one that is merely abundant, or disjunctive, or deflationary. Here I use it to refer to the stronger view that there is no such property.

important metaphysical sense dependent on different properties for claims of different kinds. In this sense, they are also pluralists about truth. In a slogan, truth is “one and many” (Lynch, 2009). “Strong” pluralists, by contrast, do *not* recognise the existence of a generic truth property for which all claims are apt. The property of being true reduces to, or is constituted by, or is to be identified with different properties for claims of different kinds; and there is no further alethic property that these different claims have in common. In a slogan, truth is none and many. (It will be useful to have a way of talking that is neutral between moderate and strong pluralism, so let’s stipulate that “in virtue of” talk can be read in either a moderate or strong way. So we say both kinds of pluralist think that claims of different kinds are apt to be true in virtue of possessing different properties.)

I think it’s fair to say that, since these views have been distinguished, strong pluralists have been on the defensive. Moderate pluralists have advanced a battery of arguments for postulating a generic truth property, arguing that strong pluralists struggle to accommodate the truth of “mixed compounds” (logically complex claims composed of claims that are apt to be true in different ways), the validity of “mixed inferences” (arguments composed of claims that are apt to be true in different ways), the normative role of truth, or the expressive role of the truth predicate as a device for generalisation and endorsement.³ Those sympathetic with strong pluralism have largely been preoccupied with trying to meet these challenges (or questioning whether moderate pluralists are any better off). The *positive* case for strong pluralism over moderate is usually limited to the idea that strong pluralism is more parsimonious (Ferrari et al., 2021, pp. 645–650): both strong and moderate pluralists postulate different ways of being true, but moderate pluralists *also* postulate a generic truth property. On this way of seeing things, moderate pluralists are guilty of little more than an unnecessary indulgence.

³ On the “problem of mixed compounds” see: (Williamson, 1994, pp. 141–142; Sainsbury, 1996, pp. 900–901; Tappolet, 2000; Sher, 2004, pp. 30–35, 2005, pp. 325–326, 2013, pp. 164–167; Lynch, 2004, p. 389, pp. 396–397, 2009, pp. 56–57, 62–63, 87–91; Edwards, 2008, 2009, 2018b, pp. 133–136; Cotnoir, 2009; Cook, 2011; Wright, 2013, pp. 132–135; Yu, 2017a, 2017b, 2018; Kim & Pedersen, 2018; Pedersen & Wright, 2018, Sect. 4.5.2; Gamester, 2019; Ferrari et al., 2021, pp. 639–641; Wrenn, 2021). On the “problem of mixed inferences” see: (Sainsbury, 1996, pp. 900–901; Tappolet, 1997, 2000; Beall, 2000; Lynch, 2001, pp. 726–727, 2004, p. 388, 403, 2009, pp. 55–56, 63, 86–87, Wright, 2005, p. 9; Pedersen, 2006; Nulty, 2010; Wright, 2013, pp. 132–134; Sher, 2013, pp. 164–168; Cotnoir, 2013b; Yu, 2017b, 2018; Edwards, 2018b, pp. 132–133; Pedersen & Wright, 2018, Sect. 4.5.3; Stollo, 2018a, 2018b, 2021, 2022; Keefe, 2018; Gamester, 2019; Smith, 2019; Ferrari et al., 2021, pp. 641–644). On pluralism and the normative role of truth see: (Lynch, 2004, pp. 390, 403–404, 2009, pp. 57–58, 2020; Engel, 2013; Wright, 2013, pp. 132–134; Edwards, 2018b, pp. 133, 2020; Pedersen & Wright, 2018, Sect. 4.6; Pedersen, 2020; Sher, 2020; Stollo, 2020; Yu, 2020; Ferrari, 2020, 2021). On the comparatively neglected “problem of mixed generalisations” see: (Lynch, 2001, pp. 726, 2004, pp. 389, 403, 2009, pp. 57, 63; Wright, 2005, pp. 8–9; Wright, 2013, pp. 132–133; Edwards, 2018b, p. 133; Pedersen & Wright, 2018, Sect. 4.5). On this latter problem, I think strong pluralists can take heart from recent work on *alethic nihilism*, the view that nothing is true. Both Liggins (2019) and Gamester (2023) argue that nihilists can explain how the truth predicate can play its expressive role even if nothing is true; I argue that the nihilist can also use the truth predicate for this purpose by treating truth-talk as a useful pretence. The strong pluralist should be able to apply these moves to generic-truth-talk in particular.

A salient exception comes from Cotnoir (2013a).⁴ Cotnoir argues that strong pluralists are entitled to a “uniquely pluralist response to the liar” (Cotnoir, 2013a, p. 346). This is a bold conjecture, which needs to be taken seriously if we are to properly evaluate the credentials of the view. The liar paradox is among the most difficult and tenacious problems facing theories of truth. If strong pluralists have a solution, that’s a significant reason to favour strong pluralism as a theory of truth. (Whether it *outweighs* the putative shortcomings of the view, and whether this response is preferable to those responses available to its opponents, are of course further questions; but we need to know whether we can put this on the “pro” side of the scale before we can hope to see which way it tips.) Moreover, Cotnoir’s conjecture provides a bridge between two literatures that have historically been problematically isolated: that on the metaphysics of truth and that on the alethic paradoxes.

1.2 Strong pluralism and the liar

How does the “uniquely pluralist” response to the liar go? Suppose we accept all instances of schema (T):

(T) ‘*p*’ is true iff *p*

where ‘*p*’ is a schematic marker to be replaced with a declarative sentence and single-quotes are a device for turning a sentence into a singular term denoting that sentence.⁵ We run into problems the moment we encounter a sentence that says of itself that it is not true, e.g., Liar = ‘Liar is not true’. By (T), Liar is true iff Liar is not true; contradiction quickly follows. We face the uncomfortable choice of somehow resisting this reasoning, learning to live with contradiction, or finding a principled way of restricting which instances of schema (T) we accept.

Truth pluralists, however, think that different claims are apt to be true in different ways. The pluralist can therefore maintain that each of these different ways of being true validates schema (T), but only for certain claims. That is, the pluralist can accept all instances of schema (TP):

(TP) If ‘*p*’ is apt to be true in virtue of being *F*, then ‘*p*’ is *F* iff *p*.

Now, *providing that there is no generic way of being true*, this creates an opportunity that Cotnoir exploits. Cotnoir’s proposal has two major components. The first, which will be our focus, is to maintain:

⁴ Cotnoir talks in terms of truth *predicates* rather than *properties*. For the purposes of this paper, I assume a suitably abundant conception of properties such that it is straightforward to translate between talk of predicates and talk of the properties they ascribe. Nothing turns on this, though property-talk is perhaps more appropriate given that most (though not all) pluralists are substantivists about truth.

⁵ Or whatever your preferred primary truth-bearer is, e.g., the proposition that the sentence expresses. For illustrative purposes, I will assume that the primary truth-bearers are sentences, but if you prefer a different option, the discussion can be modified accordingly. Note, however, that form-based pluralism requires that the primary truth-bearers have logical structure. For propositions, this may be by way of, e.g., structured Fregean senses or Russellian propositions.

(Shiftiness) If a sentence S says of itself that it is not true in a certain way, then S is not apt to be true in *that* way, but is instead apt to be true in a different way.⁶

Shiftiness allows us to avoid contradiction because it is perfectly consistent to maintain that a sentence is not true in one way iff it is true in a different way (assuming that these different ways of being true are suitably independent). For example, suppose that the different ways of being true are T_1 , T_2 , etc. Then take $\text{Liar}_{T_1} = \text{'Liar}_{T_1}$ is not T_1 '. By Shiftiness, it follows that Liar_{T_1} is not apt to be true in virtue of being T_1 , but instead apt to be true in some other way; say, in virtue of being T_2 . By (TP), Liar_{T_1} is T_2 iff Liar_{T_1} is not T_1 . As long as being T_1 is neither necessary nor sufficient for being T_2 , there is no contradiction.⁷

Shiftiness is not compatible with moderate pluralism, since such pluralists postulate a generic truth property for which *all* sentences are apt. A sentence that says of itself that it is not true in that way *must* be apt to be true in that way, if it is apt to be true at all. The moderate pluralist therefore faces the same uncomfortable choice everyone else faces when it comes to this generic truth property. It is precisely by denying the existence of any such generic truth property that strong pluralism is compatible with Shiftiness. Strong pluralists can therefore avoid the liar paradox in a way that moderate pluralists cannot. If this is right, then the moderate pluralist's postulation of a generic truth property is no mere unnecessary indulgence, but outright lands them in contradiction.

(Note that, if the strong pluralist strategy fails, and a liar sentence concerning some local truth property leads to contradiction, this is as much a problem for the moderate pluralist as it is for the strong pluralist! It is just that it is not an *additional* problem for the moderate pluralist, given that she already has to deal with the problem when it comes to the generic truth property.)

As Cotnoir (2013a, pp. 347–348) discusses, the structure of his proposal is reminiscent of Tarski's (1935/1956, 1944) hierarchical proposal. But I think Cotnoir's is much more interesting, for reasons that Cotnoir does not mention. For Tarski, a truth predicate is a truth predicate *for a language* and Tarski *chooses* to focus on languages that are not "semantically closed"—that is, roughly, languages that do not contain their own truth predicates. It is easy to see that Shiftiness is true of sentences of *those* languages: since these languages do not contain their own truth predicates, any sentence (including a liar sentence) that uses such a truth predicate is not a sentence of the language to which the relevant truth predicate applies. But it does not follow that Shiftiness holds in general. On the contrary, Tarski clearly held that natural languages like English *are* semantically closed, and consequently give rise to the liar paradox. Tarski's view seems to be that the concept of truth is simply *incoherent*; and the decision to focus on languages that are not semantically closed is intended as a directive for avoiding contradiction while employing this incoherent concept (Ray, 2018, pp. 702–706). Cotnoir's proposal, while structurally similar, does not involve merely

⁶ As we'll see, Cotnoir's presentation of Shiftiness deploys the notion of a "domain"; my presentation here is intentionally more abstract. 'Shiftiness' is my label. I choose it because: (i) the way in which a particular liar sentence is apt to be true "shifts" depending on which way(s) of being true it concerns; and (ii) absent independent motivation, the principle looks too good to be true, and hence suspicious or "shifty". Whether the pluralist can find independent motivation for Shiftiness is, in a way, the primary question of this paper.

⁷ Not all pluralists will endorse this independence claim, e.g., Kölbel (2008, 2013); but let's grant it here.

choosing to focus on languages in which the problem does not arise! Instead, Cotnoir's proposal employs pluralist resources that are supposed to be motivated entirely independently of the liar.

1.3 Domain-based pluralism and the liar

Now, while Cotnoir's proposal is *consistent* with the basic tenets of truth pluralism, we should still ask whether or not it is a proposal that any actual truth pluralist can accept. At the outset, we noted that we get different versions of the view depending on: (i) what different ways of being true there are, and (ii) which different kinds of claim are apt to be true in different ways. Shiftiness makes a claim about the way in which certain sentences—namely, liar sentences, sentences that say of themselves that they are not true in one way or another—are apt to be true. So, to see whether any pluralist can accept Shiftiness, we should ask what they have said about (ii).

On this, Cotnoir follows the mainstream in appealing to the notion of a *domain of discourse*.⁸ The intuitive idea is reasonably clear. We are used to distinguishing ethical claims ('Stealing is wrong'), mathematical claims ('7 is prime'), aesthetic claims ('That song rocks'), and so on, both from each other and from mundane descriptive claims like 'The dog is hairy'. These claims belong to different domains of discourse: the ethical, the mathematical, the aesthetic, and so on. Philosophers often have different views about different domains. One could be a realist about things like dogs, for example, while being an expressivist about ethics, an error theorist about mathematics, and a subjectivist about aesthetics. According to what we will call *domain-based pluralism*, the way in which a particular claim is apt to be true is determined by the domain of discourse it is a part of.⁹ For example, ethical claims may be apt to be true in a different way to mathematical claims, which are true in a different way to ordinary descriptive claims, and so on.

When Cotnoir argues that strong pluralists can avoid the liar, he is squarely focused on domain-based pluralism. He introduces truth pluralism thus:

"Pluralists endorse many truth predicates T_1, \dots, T_n . Usually, each predicate is a truth predicate *for* a certain 'domain of discourse'. [...]"

What does it mean to be a truth predicate *for* a domain? [...] One such minimal constraint is the T-scheme:

(TS) $_i$ – $T_i(\ulcorner \alpha \urcorner) \leftrightarrow \alpha$ for all sentences α of domain $_i$." (Cotnoir, 2013a, p. 340)

And his proposal for avoiding the liar deploys the notion of a domain. Consider $\text{Liar}_{T_1} = \text{'Liar}_{T_1}$ is not T_1 '. Cotnoir (2013a, p. 342) argues that deriving a contradiction

⁸ This gloss is ubiquitous in the literature on truth pluralism (as a quick glance at the literature cited above will verify). For more detailed discussion, see, e.g.: (Lynch, 2009, pp. 79–80; Wyatt, 2013; Edwards 2018a, 2018b, ch.4; Gamester, 2022). In the latter, I argue that such pluralists should not, strictly speaking, invoke the notion of a "domain," but should instead appeal to whatever (e.g., ontological or teleological) differences underlie the alethic variation between domains. The objections to Cotnoir's proposal below can be reformulated in this setting, however.

⁹ A domain-based pluralist need not maintain that a claim's truth-class is *solely* determined by its domain—for example, as discussed below, some domain-based pluralists are also form-based pluralists—but for ease of presentation let's suppose this is so in this section.

from this sentence “depends crucially on the assumption that $[\text{Liar}_{T_1}]$ is actually in domain_1 . But the pluralist, of course, is free to reject that $[\text{Liar}_{T_1}]$ is in domain_1 .”¹⁰ What about $\text{Liar}_{T_2} = \text{‘Liar}_{T_2}$ is not $T_2\text{’}$? “Here again, the pluralist is free to reject that $[\text{Liar}_{T_2}]$ is in domain_2 , but rather in, say, domain_3 . This process can continue...”

(Let’s address a presentational awkwardness. In the above, Cotnoir’s discussion, his formulation of (TS), and his subscripting convention for truth predicates and domains may suggest that each truth predicate is a truth predicate for *exactly one* domain: ‘ T_1 ’ for domain_1 ; ‘ T_2 ’ for domain_2 ; etc. Later, however, he is explicit that “domains may share the same truth predicate.” (2013a, p. 347) This is the conventional picture—a domain-based pluralist may think that, say, moral claims and aesthetic claims are true in the same way—but it complicates Cotnoir’s proposal. If two domains, say domain_1 and domain_2 , share a truth predicate, say ‘ T_1 ’, then it is *not* enough to avoid contradiction to deny that Liar_{T_1} is in domain_1 . The pluralist needs to deny that Liar_{T_1} is in domain_1 *or any other domain that shares the same truth predicate*. Let’s take this amendment as read. With this in place, and *modulo* some presentational differences, what Cotnoir articulates is Shiftiness as implemented by a domain-based pluralist.)

However, domain-based pluralists are ill-equipped to endorse Shiftiness. To see this, note first that Shiftiness requires that there are infinitely many ways to be true, and in particular that there are infinitely many different liar sentences that are apt to be true in different ways. Suppose, for *reductio*, that there are just two ways to be true, T_1 and T_2 , and consider two liar sentences: $\text{Liar}_{T_1} = \text{‘Liar}_{T_1}$ is not $T_1\text{’}$ and $\text{Liar}_{T_2} = \text{‘Liar}_{T_2}$ is not $T_2\text{’}$. It follows from Shiftiness that Liar_{T_1} is apt to be true in virtue of being T_2 , while Liar_{T_2} is apt to be true in virtue of being T_1 . By (TP): Liar_{T_1} is T_2 iff Liar_{T_1} is not T_1 ; and Liar_{T_2} is T_1 iff Liar_{T_2} is not T_2 . So far, so consistent. But now consider a sentence that says of itself that it lacks both of these properties, which we can formulate, for example, by disjunction: $\text{Liar}_{T_1 \& T_2} = \text{‘It is not the case that } (\text{Liar}_{T_1 \& T_2}$ is T_1 or $\text{Liar}_{T_1 \& T_2}$ is $T_2)\text{’}$. It follows from Shiftiness that $\text{Liar}_{T_1 \& T_2}$ is not apt to be true in virtue of being T_1 or in virtue of being T_2 ; but since these are *ex hypothesi* the only two ways to be true, it must be apt to be true in one of these two ways, assuming it is apt to be true at all.¹¹ A contradiction. To maintain Shiftiness, we must postulate a third way of being true—call it T_3 —and say that $\text{Liar}_{T_1 \& T_2}$ is apt to be true in virtue of being T_3 . But then we can use disjunction to formulate another sentence that says of itself that it does not possess any of these three properties: $\text{Liar}_{T_1 \& T_2 \& T_3} = \text{‘It is not the case that } (\text{Liar}_{T_1 \& T_2 \& T_3}$ is T_1 or $\text{Liar}_{T_1 \& T_2 \& T_3}$ is T_2 or $\text{Liar}_{T_1 \& T_2 \& T_3}$ is $T_3)\text{’}$. To maintain Shiftiness, we will need to postulate a fourth way of being true. And so on ad infinitum.

A brief aside. Even if there are infinitely many ways to be true, if we accept infinitary disjunction, then there will still be a sentence that says of itself that it is not true in

¹⁰ Lubrano (2014, p. 136) objects that, since ‘ T_1 ’ can take Liar_{T_1} as an argument, Liar_{T_1} must be in domain_1 . I’m afraid I cannot see how this follows. Perhaps if we assume that: if a truth predicate can be meaningfully applied to a sentence, then it is the truth predicate *for* that sentence? But no pluralist I know of would accept such a weak constraint.

¹¹ The pluralist may deny that (some?) liar sentences are truth-apt. This is a familiar response to the liar, which faces well-known difficulties, and we are here looking for a “uniquely pluralist” response. However, see (Wright, 2017) for a suggestion as to how certain domain-based pluralists may argue that liar sentences are domainless and hence meaningful but undecidable.

any of these infinitely many different ways: $\text{Liar}_\omega = \text{'It is not the case that } (\text{Liar}_\omega \text{ is T1 or } \text{Liar}_\omega \text{ is T2 or } \dots \text{'}$, where the ellipsis abbreviates an infinite disjunction of atomic sentences that ascribe each of the infinite different ways of being true to Liar_ω .¹² Cotnoir therefore proposes that the pluralist rejects infinitary disjunction, which he argues “we already have pluralism-independent (but paradox-motivated) reasons to reject.” (Cotnoir, 2013a, p. 339) This is the second major component of Cotnoir’s proposal, and it is the component that Cotnoir is primarily concerned to defend, apparently taking Shiftiness to be unproblematic. As such, I am going to grant, for the sake of argument, that we have good reason to reject infinitary disjunction.¹³ My discussion focuses on Shiftiness instead.

Returning to our main thread: Shiftiness requires that there are infinitely many ways to be true. For the domain-based pluralist, the way in which a particular sentence is apt to be true is determined by its domain. So, Shiftiness requires that there are infinitely many domains of discourse. A first worry is that it is not at all obvious that there are infinitely many domains of discourse. In a related setting, Cook (2011, p. 628) suggests that “[t]here seem to be no good reasons for thinking that there are only finitely many distinct discourses”; but Wright (2017, p. 356) argues to the contrary that “our presumption should be in favour of [...] a large but countably finite class”.

However, even granting that there are infinitely many domains of discourse, distinct domains can share a truth property, so there may still only be finitely many truth properties. Do we have any reason to think that there are in fact infinitely many? Here, we might profitably ask what pluralists have said about (i): what different ways of being true there are. Many domain-based pluralists are clear about what *kinds* of truth properties there are. According to “correspondence pluralists,” for example, the many ways of being true are all different ways of corresponding to reality.¹⁴ Others maintain that, while corresponding to reality is one way of being true, other claims are true in some “anti-realist” or “non-representational” sense.¹⁵ Yet others maintain that some claims are only true in a deflationary sense, while others are (also?) true in a more robust or substantive sense.¹⁶ Beall (2013) has even suggested a kind of “deflated truth pluralism.” Pluralists are less often explicit about *exactly how many* local truth properties they endorse, but a quick perusal of the literature will verify that they only usually countenance a few such properties, almost always in single figures. (For example, in their book-length defences of the view, Edwards (2018b) and Lynch (2009) each only explicitly commits to *two*.) And the most detailed arguments given for domain-based pluralism do not suggest that the local truth properties will proliferate to any great extent, since they draw on binary distinctions between, e.g.,

¹² Cotnoir (2013a, pp. 342–343) formulates Liar_ω via an equivalent two-step procedure: infinitary disjunction is used to define a generic truth predicate, which is then used to formulate a liar sentence.

¹³ And, presumably, infinitary conjunction, given: $\text{Liar}_\omega^* = \text{'Liar}_\omega^* \text{ is not T1 and } \text{Liar}_\omega^* \text{ is not T2 and } \dots \text{'}$, where the ellipsis abbreviates an infinite conjunction of negations of atomic sentences that ascribe each of the infinite local truth properties to Liar_ω^* . Indeed, let’s assume the prohibition extends to infinitary logical compounds in general.

¹⁴ E.g., (Sher, 1998, 2004, 2013, 2016) see also (Horgan & Potrč, 2000, 2006; Horgan, 2001; Barnard & Horgan, 2006, 2013) though Horgan et al. typically appeal to *contexts* rather than *domains*.

¹⁵ E.g., (Edwards, 2018b; Lynch, 2009; Wright, 1992).

¹⁶ E.g., (Ferrari & Moruzzi, 2019; Kölbel, 2008, 2013).

mind-independent and mind-dependent entities, abstract and concrete entities, natural and non-natural entities, objective and projected entities, or sparse and abundant properties (Gamester, 2020). Even if a domain-based pluralist endorsed a thousand—or a hundred billion!—truth properties, this would be *nowhere near* enough for Shiftiness; but as things stand we have no reason to think they will endorse more than a handful. It is hard to imagine what these infinitely many domain-specific truth properties would look like.

However, even granting that there are infinitely many domains of discourse and infinitely many ways of being true, Shiftiness requires that infinitely many different liar sentences are apt to be true in different ways, which for the domain-based pluralist means that infinitely many different liar sentences must fall into different domains. But there is no reason to think that *any* different liar sentences will fall into different domains, and some reason to think they will not. Domain-based pluralists have rarely been clear about how they intend to individuate domains, but the general idea seems to be that they are individuated by their *subject matter*: the *kind* of thing they are about.¹⁷ Thus those sentences about mathematical entities constitute the mathematical domain; those sentences about ethical entities constitute the ethical domain; and so on. While different liar sentences will concern different truth properties, they are nonetheless all about the same *type* of thing—namely, truth properties—and thus would seem to all fall into *the same* domain. (Just as ‘Torture is wrong’ and ‘Charity is right’ concern different properties, but nonetheless concern the same *type* of property—namely, ethical properties—and thus fall into the same domain.)

Finally, even granting that there are infinitely many domains *and* infinitely many ways of being true *and* that infinitely many liar sentences fall into different domains, all it takes is for one liar sentence to fall into the wrong domain and contradiction follows: if Liar_{T_1} is in domain_1 ;¹⁸ or Liar_{T_2} is in domain_2 ; or Liar_{T_3} is in domain_3 ; and so on ad infinitum. As we saw above, Cotnoir says that the domain-based pluralist is “free to reject” that Liar_{T_1} is in domain_1 . But it is not up to the pluralist to decide what domain a sentence falls into. So, for all that has been said, we have no reason to think that Shiftiness is true of *any* particular liar sentence, let alone that it is true of *all* of them. And remember there are infinitely many! It is hard to imagine what assurance the domain-based pluralist might be able to give us that Shiftiness holds across the board.

All this suggests that domain-based pluralists are ill-equipped to endorse Shiftiness and so to avoid the liar in the way Cotnoir suggests: they typically endorse very few—certainly finitely many—truth properties; their liar sentences are unlikely to fall into different domains, and so (by their lights) are unlikely to be apt to be true in different ways; and, even setting all this aside, we have no reason to think Shiftiness would be true of any particular liar sentence, let alone all of them.

¹⁷ See, e.g., those works cited in fn.8.

¹⁸ Or another domain that is apt to be true in the same way. I continue to leave this clarification implicit.

2 Form-based pluralism

Domain-based pluralists maintain that the way in which a particular sentence is apt to be true is determined by its domain of discourse. *Form-based pluralists*, by contrast, maintain that the way in which a particular sentence is apt to be true is determined by its logical form.¹⁹ Having argued that domain-based pluralists face serious difficulties when it comes to endorsing Shiftiness, I now turn to arguing that form-based pluralists, of at least one variety, are able to overcome these difficulties.

Suppose that the atomic sentences ‘snow is white’ and ‘grass is green’ are each apt to be true in virtue of corresponding to a fact. And suppose that a conjunction is true iff its conjuncts are true. It follows that ‘snow is white and grass is green’ is true iff ‘snow is white’ corresponds to a fact and ‘grass is green’ corresponds to a fact. And suppose, finally, that ‘snow is white’ and ‘grass is green’ each corresponds to a fact. So, the conjunction is true. Now we can ask: is it true in the same way as its conjuncts? That is, does the conjunction *itself* also correspond to a fact? As I think of it, the central intuition driving form-based pluralism is that this is surplus to requirements. It is enough that the conjunction conjoins two sentences each of which corresponds to a fact; it does not need to correspond to a fact itself. But if the conjunction is not apt to be true in virtue of corresponding to a fact, then it is not apt to be true in the same way as its atomic components, and so must be apt to be true in a different way (very roughly, in virtue of combining, in the right kind of way, sentences that are true). Thus a logically complex sentence is, in virtue of being logically complex, apt to be true in a different way to its atomic components. This is form-based pluralism. Analogous reasoning applies to sentences of other logical complexity, whatever property (or properties) we say their atomic components are apt for.

Of course, there may be advantages to saying that complex sentences are true in the same way as their atomic components that outweigh this intuitive case. But in fact we will see that, for most if not all substantivists about truth, this commitment is independently problematic (Sect. 2.2). Form-based pluralism should therefore be independently attractive to substantivists about truth. And of course maintaining that all sentences are apt to be true in the same way, regardless of logical complexity, blocks Shiftiness, and so commits you to finding some other way of dealing with the liar paradox. It would therefore be a major boon for substantivists if form-based pluralism also provided a solution to the liar via Shiftiness.

How might form-based pluralism be amenable to Shiftiness? When thinking about the logical form of a sentence, it’s useful to think about two things. First, the logical connectives it uses and in particular its *main connective*: the latter determines whether the sentence is a negation, a disjunction, a conjunction, a conditional, etc. Second, its *order of complexity*: letting atomic sentences be 0th-order, the order of complexity of a logically complex sentence is one greater than its highest-order component. Thus a *first-order negation* is the negation of an atomic sentence; conjoining a first-order

¹⁹ As discussed below, form-based pluralism has been endorsed by the logical atomists, as well as some domain-based pluralists: (Edwards, 2008; Lynch, 2009, pp. 78–79; Kim & Pedersen, 2018; Gamester, 2019; Ferrari et al., 2021). Note, however, that Edwards (2009) disavows this interpretation of his view in light of objections from Cotnoir (2009), one of which (ironically enough) is that Edwards’s view leads to an “infinite proliferation” of truth properties.

negation to an atomic sentence gets us a *second-order conjunction*; etc. Since any declarative sentence can be embedded in a negation, disjunction, conjunction, etc., there is no upper limit on how high the order of complexity of a sentence may be (so long as it remains finite, given our prohibition on infinitary compounds). So, assuming that a sentence's logical form is determined, in part, by its order of complexity, there are infinitely many logical forms that a sentence may have.

This suggests a two-step strategy for endorsing *Shiftiness*. First, maintain that sentences of different orders of complexity are apt to be true in different ways.²⁰ Second, maintain that any sentence that says of itself that it is not true in the way in which sentences of a certain order of complexity are apt to be true is of a different order of complexity to those sentences. In what follows, we take these steps in turn.

2.1 Introducing the view

Our first step is to maintain that sentences of different orders of complexity are apt to be true in different ways. Is it possible to spell this out in a plausible way? Yes. Most theorists accept that a conjunction is true iff its conjuncts are true; that a disjunction is true iff at least one of its disjuncts is true; that a negation is true iff its negand is not true; and so on. As I'll now show, it follows from these recursive principles that, for sentences of any given logical form, there is a property that is co-extensive with truth for all and only the sentences of that logical form. The pluralist can therefore endorse these properties as her truth properties, and anyone who accepts the principles will be committed to the extensional adequacy of this theory.

To fix ideas, let's focus on a simple language, consisting of: singular terms 'a', 'b', etc.; one-place predicates 'F', 'G', etc.; negation '~'; and conjunction '&'. In this language, all atomic sentences (or "atoms") are of the form 'Fa'. For brevity, let's say that a sentence of the form 'Fa' is T_A iff there exists some x such that 'a' denotes x and 'F' is true of x . We can then say:

- (i) An atom φ is true iff φ is T_A .
- (ii) $\lceil \sim \varphi \rceil$ is true iff φ is not true.
- (iii) $\lceil \varphi \ \& \ \psi \rceil$ is true iff φ is true and ψ is true.

The rough idea is then as follows. Any sentence is made up of logically atomic sentences combined in a certain kind of way using logical connectives. From (i)–(iii), it follows that whether or not a sentence is true is determined by how it combines its atomic constituents (that is, its logical form) and how T_A is distributed among its atomic constituents. In the limit case, a sentence might just be an atomic sentence that is T_A . Or it could negate an atomic sentence that is not T_A . Or it could conjoin an atomic sentence that is T_A with another atomic sentence that is T_A . Or it could conjoin the negation of an atomic sentence that is not T_A with an atomic sentence that is T_A .

²⁰ Note that this does not follow from form-based pluralism alone: just as it is consistent with domain-based pluralism that sentences in certain different domains are apt to be true in the same way, so it is consistent with form-based pluralism that sentences with certain different logical forms are apt to be true in the same way. On the views described by Kim and Pedersen (2018) and Ferrari et al. (2021), for example, it is the main connective that determines the way in which a logically complex sentence is apt to be true; order of complexity is irrelevant.

Table 1 Table listing the properties that are co-extensive with truth for sentences of the given logical forms (where ‘ p ’, ‘ q ’, and ‘ r ’ represent the logically atomic constituents of said sentences)

Form	Property
p	Being an atom that is T_A
$\sim p$	Negating an atom x such that x is not T_A
$p \ \& \ q$	Conjoining an atom x and an atom y such that x is T_A and y is T_A
$p \ \& \ \sim q$	Conjoining an atom x and the negation of an atom y such that x is T_A and y is not T_A
$\sim (p \ \& \ q)$	Negating the conjunction of an atom x and an atom y such that it’s not the case that x is T_A and y is T_A
$\sim p \ \& \ \sim (q \ \& \ \sim r)$	Conjoining the negation of an atom x with the negation of the conjunction of an atom y with the negation of an atom z such that x is not T_A and it’s not the case that (y is T_A and z is not T_A)

Or it could conjoin the conjunction of the negation of an atomic sentence that is not T_A and an atomic sentence that is T_A with the negation of an atomic sentence that is not T_A . And so on. For any given logical form, all and only the true sentences of that form will combine a set of atomic sentences with the relevant distribution of T_A in the way that sentences of that form combine them. Thus, the property of combining a set of atomic sentences with *that* distribution of T_A in *that* way will be co-extensive with truth for all and only the sentences of the given logical form. For instance, according to (i)–(iii), each of the properties listed in Table 1 will be co-extensive with truth for sentences of the given logical form (where ‘ p ’, ‘ q ’, etc. represent atomic constituents).

Now, co-extensiveness is not sufficient for metaphysical dependence, of any of the kinds endorsed by moderate pluralists, let alone reduction or identity, as per strong pluralism. So, commitment to (i)–(iii) does not hereby commit you to form-based pluralism in either its moderate or strong guises. But it *does* commit you to the *extensional adequacy* of any variety of form-based pluralism that maintains that sentences of the relevant logical forms are apt to be true in virtue of possessing the relevant properties. It is this kind of form-based pluralism that we will be interested in for the rest of this paper. For present purposes, we will work with the intuitive characterisation of the view just given; I provide a precise characterisation in the [Appendix](#).

Now, the above discussion is obviously focused on an incredibly simple language. But the key observation—that, for any given logical form, there is a property that is necessarily co-extensive with truth for all and only the sentences of that form—will hold as long as we endorse recursive connections between the truth of a logically complex sentence and the truth of its components, like (ii) and (iii). In particular, while I worked with a particular conception of what it is for an *atomic* sentence to be true that was only suitable for sentences of a particular form, which I labelled ‘ T_A ’, we could work with any other conception instead.

For example, suppose that you are a monist about truth, and in particular that you think that truth always consists in *corresponding to a fact*. It follows *a fortiori* that an atomic sentence is true iff it corresponds to a fact. It then follows from (ii) that a

first-order negation is true iff it negates an atomic sentence that does not correspond to a fact; from (iii) that a first-order conjunction is true iff it conjoins two atomic sentences, each of which corresponds to a fact; from (ii) and (iii) that the negation of a first-order conjunction is true iff it negates the conjunction of two atomic sentences x and y such that it's not the case that x corresponds to a fact and y corresponds to a fact; and so on. These are the properties listed in the table above, if we interpret 'is T_A ' as standing for *corresponds to a fact*. Analogous reasoning would run given any other monistic conception of truth.

Alternatively, suppose you are a pluralist about truth, and in particular that you think that sentences in domain₁ are true in virtue of being T1 and sentences in domain₂ are true in virtue of being T2 (and all atomic sentences are either in domain₁ or domain₂). It follows that an atomic sentence ϕ is true iff (ϕ is in domain₁ and ϕ is T1) or (ϕ is in domain₂ and ϕ is T2). It then follows from (ii) that a first-order negation is true iff it negates an atomic sentence x such that it is not the case that ((x is in domain₁ and x is T1) or (x is in domain₂ and x is T2)); from (iii) that a first-order conjunction is true iff it conjoins two atomic sentences x and y such that ((x is in domain₁ and x is T1) or (x is in domain₂ and x is T2)) and ((y is in domain₁ and y is T1) or (y is in domain₂ and y is T2)); and so on. These are the properties listed in the table, if we interpret 'T_A' disjunctively, as standing for a disjunction of the domain-specific truth properties restricted to the relevant domains. Analogous reasoning would run given any other (non-form-based) pluralistic conception of truth.

Our characterisation of form-based pluralism can therefore afford to be schematic in two respects: first, on how we should interpret 'T_A'; second, on exactly which recursive principles like (ii) and (iii) we endorse. You can fill in those details however you like. *Whatever it in fact is* that the truth of a logically atomic sentence consists in, including those not of the simple "singular-term-plus-predicate" form—that is, however we should *in fact* interpret 'T_A'—if we endorse *some* recursive principles like (ii) and (iii) for logically complex sentences, then it follows that, for any given logical form, there is a property that is co-extensive with truth for all and only the sentences of that form. I therefore take this observation, and thus the extensional adequacy of the relevant kinds of form-based pluralism, to be largely uncontroversial; or, at least, no more controversial than recursive principles like (ii) and (iii). *In this sense*, form-based pluralism is a highly non-revisionary theory of truth.

The *controversial* element of form-based pluralism will be the claim that truth is *grounded in* or *reduces to* these properties for sentences of different logical forms. Even then, I'm unsure to what extent *moderate* form-based pluralism will be controversial. For example, the relationship between the truth of a conjunction and the truth of its conjuncts is often thought to be a *paradigm case* of grounding. But it is primarily strong form-based pluralism that we are interested in, and the reduction claim is obviously much more controversial. The question we're interested in here is thus whether this controversial claim might come with a substantial pay-off with respect to the liar paradox. (Note that, insofar as strong form-based pluralism is extensionally adequate, if Shiftiness turns out not to hold, and the view is hereby inconsistent, then this is a problem for everyone! It is just not an *additional* problem for non-strong-form-based pluralists, who already have to find some other way to deal with the liar paradox.)

2.2 Independent benefits of form-based pluralism

Not only is form-based pluralism extensionally non-revisionary, but most if not all substantive theories of truth stand to benefit from it, independently of the liar paradox. First, realist theories of truth characteristically postulate “truth-makers”: entities that make sentences true. As a placeholder, let’s suppose that truth-makers are facts.²¹ For example, ‘this cup is blue’ is made true by the fact that this cup is blue. Now, if each true sentence requires its own truth-maker, then in addition to atomic facts like *the fact that this cup is blue*, it looks like we will need to postulate negative facts like *the fact that this cup is not a hippo* and disjunctive facts like *the fact that this cup is either blue or a hippo*, to account for the truth of logically complex sentences. Such logically complex facts strike many as unacceptably mysterious and promiscuous (after all, any true sentence entails infinitely many true disjunctions). Bertrand Russell (1918/2010, p. 42) claims to have “nearly produced a riot” by arguing for negative facts in a lecture at Harvard in 1914. To avoid postulating negative facts, philosophers have postulated exotic entities like totality facts (Armstrong, 2004) or even denied that there are any negative truths (Mumford, 2007). Even Barker and Jago (2012, p. 126), while defending the existence of negative facts, deny that there are any disjunctive facts, and so “do not think that there is a fact corresponding to every true sentence.” But there is no need to postulate logically complex facts if we restrict the truth-making claim to *atomic* sentences and embrace form-based pluralism (David, 1994, pp. 119–124). If a first-order negation is true in virtue of negating an atomic sentence that does not have a truth-maker, then it need not itself be made true by a (negative) fact. Similarly, if a first-order disjunction is true in virtue of disjoining an atom x and an atom y such that either x or y has a truth-maker, then it need not be made true by a (disjunctive) fact itself. This was the idea embraced, to a greater or lesser extent, by the logical atomists; indeed, this insight has been referred to as “[t]he glory of logical atomism” (Mulligan et al., 1984, p. 289).²²

Second, anti-realist theories of truth—such as coherentist, pragmatist, and epistemic conceptions of truth—characteristically entail that all truths are knowable (Künne, 2003, pp. 20–32, 375–452). This notoriously runs into “Fitch’s Paradox,” which demonstrates that, given very plausible assumptions, the claim that all truths are knowable entails the absurd claim that all truths are known (Brogaard & Salerno, 2019). Suppose that all truths are knowable. And suppose, for *reductio*, that there is an unknown truth p , that is, that the following conjunction is true: p and it is not known that p . Since this conjunction is true, it must be knowable. But, plausibly, this conjunction *cannot* be known. Plausibly, if you know a conjunction, you know both its conjuncts. So, if you know this conjunction, you would both *know that p* and *know that it is not known that p* . But if you know the first conjunct, it’s not possible to know

²¹ I intend to include here theories on which truth consists in *correspondence to* or *identity with* or some other substantial relation to a “worldly” relatum like a fact.

²² For this strategy to accommodate the truth of quantified sentences, including negative existentials, we will need our recursive principles to cover such sentences. But it well-known how to do so by analysing truth in terms of satisfaction. A negative existential like ‘There are no unicorns’ will thus be true in virtue of, roughly, negating a first-order existentially quantified sentence that is not satisfied by any assignment. See also fn.33.

the second: if *you* know that p , then it's not the case that it is not known that p ; so, you can't *know* that it is not known that p (since knowledge is factive). But if this conjunction cannot be known, then *ex hypothesi* it cannot be true. By *reductio*, then, there are no unknown truths.

However, Michael Bench-Capon has argued in unpublished work that this worry disappears if we restrict our anti-realist theory of truth, by denying that a conjunction needs to be true in the same way as its conjuncts.²³ Let's suppose that our anti-realist theory of truth—as a placeholder, call it *provability*—applies to both ' p ' and 'it is not known that p '.²⁴ By assumption, then, ' p ' and 'it is not known that p ' are each true, and so provable (and so knowable). But it does not follow that they are *jointly* provable (and so *jointly* knowable). In general, that it is possible that p and possible that q does not entail that it is possible that p and q : there may be possible p -worlds and possible q -worlds, but no overlap between the two. And that is the case here: ' p ' and 'it is not known that p ' are both *provable*, but the possible worlds in which it is proven that p obviously do not overlap with the possible worlds in which it is proven that it is not known that p —this, indeed, is the lesson of Fitch's Paradox, since if either conjunct were proven it would be known, meaning the other cannot be known, and so cannot be proven. So, the conjunction ' p and it is not known that p ' is not provable. But if we say that the conjunction is apt to be true, not in virtue of being provable, but in virtue of conjoining a sentence that is provable with another sentence that is provable, then it can nonetheless be true. As such, there's no contradiction in assuming that there is an unknown atomic claim, even if all atomic claims are knowable.

Finally, suppose one is a (non-form-based) pluralist about truth: type-1 claims are apt to be true in virtue of being T1 while type-2 claims are apt to be true in virtue of being T2. Suppose that 'Fido is hairy' is type-1 and 'Fido is evil' is type-2, and both are true. So 'Fido is hairy and evil' is true. But in virtue of what is this conjunction true? We cannot say that the conjunction is true in the same way as its conjuncts, as there may not be any local truth property shared by both its conjuncts. This is the "problem of mixed conjunctions," one version of the broader "problem of mixed compounds".²⁵ Again, this problem disappears if we restrict *this* pluralism to *atomic* claims and embrace form-based pluralism, since then we *deny* that the conjunction is true in the same way as either of its conjuncts. Instead, 'Fido is hairy and evil' is true in virtue of conjoining a type-1 atom that is T1 with a type-2 atom that is T2. Similar reasoning applies to other logical compounds. This is why several domain-based pluralists are also form-based pluralists.²⁶

Form-based pluralism thus provides solutions to long-standing problems for realist, anti-realist, and pluralist theories of truth. And most, perhaps all, substantivist theories of truth fall into one of these three families. Since form-based pluralism is already extensionally adequate, this should make the view independently attractive

²³ The wonderfully named, "Stop trying to make Fitch happen". See also (Künne, 2003, p. 423).

²⁴ Of course the latter is non-atomic, but anti-realists often deny that it is sufficient for ' $\sim p$ ' to be true that ' p ' is not true, and so deny clause (ii).

²⁵ See citations in fn.3.

²⁶ See citations in fn.19.

to (most, if not all)²⁷ substantivists about truth. Of course, I have not argued that adopting form-based pluralism is the best, let alone the only, possible response to the above worries (though I am inclined to think that it is). It may be possible to find an alternative solution. But the large literature on these problems, along with the fact that many already endorse the form-based pluralist solution, suggests that finding a viable alternative is no mean feat. Since substantivists independently stand to benefit from form-based pluralism, they have a vested interest in *also* being able to hereby avoid the liar paradox.

2.3 Form-based pluralism and the liar

Form-based pluralists are much better equipped to endorse Cotnoir's proposed solution to the liar than domain-based pluralists. Our first worry for domain-based pluralists was that it is not obvious that there are infinitely many domains of discourse. But it is obvious that there are infinitely many logical forms (where logical form is individuated in terms of order of complexity as well as main connective). Our second worry was that domain-based pluralists typically only endorse a handful of different ways in which a claim can be true. But form-based pluralists, of the kind articulated above, endorse infinitely many different ways in which a claim can be true. (And this proposal is, I have stressed, extensionally non-revisionary.)

Our third worry was that it is not obvious that any liar sentences will fall into different domains. But it is obvious that certain liar sentences will have different logical forms. Consider the following liar sentences, which concern the first three properties implicit in (i)–(iii) above:

- (Liar_A) It is not the case that Liar_A is an atom that is T_A.
- (Liar_B) It is not the case that Liar_B negates a sentence x such that x is an atom that is not T_A.
- (Liar_C) It is not the case that Liar_C conjoins a sentence x and a sentence y such that x is an atom that is T_A and y is an atom that is T_A.

These sentences are clearly of different logical forms.

Our fourth worry was that we have been given no reason to think that Shiftiness is true of any particular liar sentence in the domain-based pluralist setting. But Shiftiness clearly is true of at least some of the form-based pluralist's liar sentences. Consider, again, Liar_A. This sentence says of itself that it does not have the property in virtue of which only atomic sentences are true. And Liar_A is not an atomic sentence. So, Shiftiness is true of Liar_A. Similar reasoning applies to Liar_B and Liar_C: Liar_B concerns the property in virtue of which only first-order negations are true, and Liar_B is not a first-order negation; Liar_C concerns the property in virtue of which only first-order conjunctions are true, and Liar_C is not a first-order conjunction. So, Shiftiness is true of Liar_B and Liar_C too.

This is progress! We are now *much* closer to being able to endorse Cotnoir's "uniquely pluralist" response to the liar. The question we are left with is whether

²⁷ For brevity, I will leave this qualification implicit moving forwards.

we have any reason to think that this pattern will generalise, such that Shiftiness holds across the board.

As I say, I will not attempt a full defence of the strong form-based pluralist response to the liar here. But I think we do have some reason to think that this pattern will generalise. Recall that, for the form-based pluralist, a sentence is true in virtue of (i) how it combines its atomic constituents, and (ii) how T_A is distributed among its atomic constituents. Canonically, the characterisation of how T_A needs to be distributed among its atomic constituents will mirror the logical form of the sentence itself. A first-order negation, for example, negates an atom that is *not* T_A . A first-order conjunction conjoins two atoms, x and y , such that x is T_A and y is T_A . A sentence of the form ' $p \vee (q \ \& \ \sim r)$ ' is true iff ' p ' is T_A or (' q ' is T_A and ' r ' is *not* T_A). This follows from the "disquotational" nature of the recursive clauses. So, a sentence that *ascribes* one of these truth properties will be *at least* as complex as the sentences that are apt to be true in that way. So, a sentence that says of itself that it is *not* true in some way will be *more* complex than the sentences that are apt to be true in that way.²⁸ If this is true in general, then Shiftiness is true, and the strong form-based pluralist can avoid the liar.

One worry for this line of argument arises from the following two-step procedure. First, we define a new predicate thus:

$T_{\sim 1}$: For any x , x is $T_{\sim 1}$ iff_{def} x negates a sentence y such that y is an atom that is *not* T_A .

Second, we use this new predicate to formulate a liar sentence:

(Liar $T_{\sim 1}$) Liar $T_{\sim 1}$ is *not* $T_{\sim 1}$.

Like Liar B , this sentence says of itself that it does not have the property in virtue of which first-order negations are apt to be true. But unlike Liar B , this sentence *is*—on the surface, at least—a first-order negation. If so, then Shiftiness is *not* true of Liar $T_{\sim 1}$, and contradiction surely follows.

In response, it is worth noting that the two-step structure of this problem can be exploited to pose problems for most if not all substantive theories of truth. In particular, it can be used to reinstate the problems to which we saw form-based pluralism provides a solution in the previous subsection. There, we noted that the following logically complex claims pose problems for substantivists:

- (1) This cup is *not* a hippo.
- (2) This cup is either blue or a hippo.
- (3) p and it is *not* known that p .
- (4) This dog is hairy and evil.

(1) and (2) pose problems for realist theories; (3) for anti-realist theories; and (4) for pluralist theories. We saw that, by embracing form-based pluralism, the substantivist can deny that these logically complex claims are true in the same way as their atomic components, and thus solve the problems to which these problems give rise.

²⁸ Couldn't we characterise the distribution of T_A among the atomic components in a different but logically equivalent way? Sure: but then the ascription of the property will be of a *different* logical form to the relevant sentences; and, therefore, the negation of any such ascription will be so too, even if it is of the same order of complexity.

However, now suppose that we define four new predicates thus:

- Noppo:** For any x , x is noppo iff_{def} x is not a hippo.
Blorpo: For any x , x is blorpo iff_{def} x is either blue or a hippo.
Noknowtrue: ' p ' is noknowtrue iff_{def} p and it is not known that p .
Haivil: For any x , x is haivil iff_{def} x is hairy and x is evil.

We can then use these new predicates to formulate the following superficially *atomic* sentences:

- (1*) This cup is noppo.
 (2*) This cup is blorpo.
 (3*) ' p ' is noknowtrue.
 (4*) This dog is haivil.

(1*)–(4*) are equivalent to (1)–(4). But since they are atomic, the form-based pluralist solutions to the problems posed by (1)–(4) do not apply to (1*)–(4*). The problems posed by (1)–(4) are thus reinstated: the realist, it seems, needs to postulate mysterious and promiscuous facts to explain the truth of (1*) and (2*); the anti-realist is committed to saying that (3*) is knowable if true, which reinstates Fitch's Paradox; and it is unclear in what way (4*) will be true by the pluralist's lights. Substantivists will therefore be forced to find an alternative solution to these long-standing problems. Insofar as it is not clear that there is a viable alternative, as noted at the end of the previous subsection, this is a problem.

Substantivists about truth therefore have a vested interest in responding to problems established via this kind of two-step structure *quite independently of the liar paradox*. This provides a kind of "companions in guilt" response to the problem posed by Liar_{T-1} . If we assume that substantivism about truth is otherwise viable, then (pending some other solution to the problems posed by (1)–(4), of course) this involves the assumption that substantivists are able to respond to the two-step structure when it is used to pose problems via (1*)–(4*). Presumably, then, the form-based pluralist can avail themselves of this response when the two-step structure is used to pose problems via Liar_{T-1} .

To illustrate, one plausible response to the problems posed by (1*)–(4*) is to maintain that the surface form of these apparently atomic sentences masks their underlying logical form. By stipulation, 'this cup is noppo' just means that this cup is not a hippo; so, it is plausible that the underlying logical form of this sentence is a negation. Parallel reasoning applies to (2*)–(4*). If so, then (1*)–(4*) do not pose any problems distinct from (1)–(4) to which, we have seen, form-based pluralism provides a solution. By the same token, it is plausible that the underlying logical form of Liar_{T-1} is the same as Liar_B , namely:

- (Liar_{T-1}) It is not the case that Liar_{T-1} negates a sentence x such that x is an atom that is not T_A .

If so, then despite its surface form, Liar_{T-1} is not a first-order negation, and so does not constitute a counterexample to Shiftiness.

Perhaps this response is unsatisfactory. But the point is that, unless substantivists have *some* such response to the problems established via this two-step structure, then they are independently in trouble. And if they *do* have such a response, such as the one floated above, then the form-based pluralist can avail themselves of this response too.

As I say, this does not constitute anything like a full defence of the form-based pluralist response to the liar. My goal in this paper has been more modest: to make progress towards such a solution by demonstrating how form-based pluralism is able to overcome the difficulties faced by domain-based pluralism. Having shown this, I conclude that, *if* we are to embrace the “uniquely pluralist response to the liar” suggested by Cotnoir, then form-based pluralism is the way to do it. Nor is this form-based solution to the liar a mere technical curiosity, since form-based pluralism should be independently attractive to substantivists about truth: it is extensionally adequate and provides solutions to a variety of long-standing problems facing substantivist theories of truth. I thus conclude that substantivists about truth have a vested interest in this solution to the liar.

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Declarations

Conflict of interest I declare that there is no conflict of interest.

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Appendix

In this appendix, I characterise form-based pluralism more precisely. To that end, recall our account of truth for the simple language introduced in Sect. 2.1:

- (i) An atom φ is true iff φ is T_A .
- (ii) $\lceil \sim \varphi \rceil$ is true iff φ is not true.
- (iii) $\lceil \varphi \ \& \ \psi \rceil$ is true iff φ is true and ψ is true.

(i)–(iii) can be viewed as clauses in a recursive analysis of truth. Canonically, a recursive analysis of a predicate ‘F’ will feature at least one *base clause*, which does not use ‘F’, and at least one *recursive clause*, which does. The recursive clause is what

makes the analysis recursive; the base clause is what stops it from being circular. For example, consider *Ancestry*, a simple recursive analysis of ‘is an ancestor of y ’:

(Ancestry) For any x , x is an ancestor of y iff (I) x is a parent of y ; or (II) x is a parent of an ancestor of y .

The base clause is (I) and the recursive clause (II).

With this in place, we can introduce the *Resolution Procedure*. Start with an open sentence of the form ‘ x is F ’, where ‘ F ’ is the predicate that is recursively analysed. The analysis will allow us to analyse this sentence in terms of an equivalent disjunction. At least one disjunct of this disjunction will not use ‘ F ’ and at least one will. (This is due to the base and recursive clauses respectively.) Call the former, the *resolved disjuncts*; and the latter, the *unresolved disjuncts*. For example, take:

(1) x is an ancestor of y .

Our analysis yields:

(2) x is a parent of y or x is a parent of an ancestor of y .

The resolved disjunct being:

(3) x is a parent of y .

The unresolved disjunct being:

(4) x is a parent of an ancestor of y .

We can then *repeat* this process for each unresolved disjunct. For example, with (4), our analysis yields:

(5) x is a parent of a parent of y or x is a parent of a parent of an ancestor of y .

Which contains the resolved disjunct (6) and unresolved disjunct (7):

(6) x is a parent of a parent of y .

(7) x is a parent of a parent of an ancestor of y .

We can then repeat this procedure for (7) to yield yet another resolved disjunct and unresolved disjunct; and so on. This iterative process is the *Resolution Procedure*.

Each resolved disjunct that results from applying the Resolution Procedure to a predicate ‘ F ’ using a recursive analysis specifies what we will call a *grounding property for F* that is *implicit in* the recursive analysis. For example, the grounding properties for *being an ancestor of y* that are implicit in *Ancestry* include:

(A1) Being a parent of y .

(A2) Being a parent of a parent (i.e., a grandparent) of y .

(A3) Being a great-grandparent of y .

(A4) Being a great-great-grandparent of y .

(A5) Being a great-great-great-grandparent of y .

And so on. According to *Ancestry*, instantiating *any* one of these grounding properties is *sufficient* for being an ancestor of y , and instantiating *at least one* of these grounding properties is *necessary* for being an ancestor of y . (As such, one might think

of the right-hand side of *Ancestry* as being equivalent to an infinite disjunction of the grounding properties.) It is the latter fact that secures the non-circularity of *Ancestry*: for any entity that is an ancestor of y , we can in principle say in virtue of what it is an ancestor of y in terms that do not use the predicate being defined.²⁹ Hence why I call these properties *grounding* properties.

Let's see how this plays out with (i)–(iii). Our starting sentence is:

(8) x is true.

Our analysis (i)–(iii) yields:³⁰

(9) x is an atom that is T_A **or** x negates a sentence y such that y is not true **or** x conjoins a sentence y and a sentence z such that y is true and z is true.

The resolved disjunct being:

(10) x is an atom that is T_A

The unresolved disjuncts being:

(11) x negates an atom y such that y is not true.

(12) x conjoins a sentence y and a sentence z such that y is true and z is true.

We can then apply our analysis to (11) to yield:

(13) x negates a sentence y such that y is an atom that is not T_A **or** x negates a sentence y such that y negates a sentence z such that it is not the case that z is not true **or** x negates a sentence y such that y conjoins a sentence z and a sentence x' such that it is not the case that z is true and x' is true.

The resolved disjunct of which is:

(14) x negates a sentence y such that y is an atom that is not T_A .

Things get a bit long-winded when we apply our analysis to unresolved disjunct (12), which uses 'true' twice:³¹

(15) x conjoins a sentence y and a sentence z such that y is an atom that is T_A and z is an atom that is T_A **or** x conjoins a sentence y and a sentence z such that y is an atom that is T_A and z negates a sentence x' such that x' is not true **or** x conjoins a sentence y and a sentence z such that y is an atom that is T_A and z conjoins a sentence x' and a sentence y' such that x' is true and y' is true **or** x conjoins a sentence y and a sentence z such that y negates a sentence x' such that x' is not true and z negates a sentence y' such that y' is not true **or** x conjoins a sentence y and a sentence z such that y negates a sentence x' such that x' is not true and z conjoins a sentence y' and a sentence z' such that y' is true and z' is true **or** x conjoins a sentence y and a sentence z such that y conjoins a sentence x' and a sentence y' such that x' is true and y' is true and z conjoins a sentence z' and a sentence x'' such that z' is true and x'' is true.

²⁹ Strictly speaking, this "in virtue of" claim does not follow from *Ancestry* alone, nor do I need it for my argumentative purposes. But it is very hard to resist.

³⁰ Read 'negates φ ' as short for 'is $\neg \sim \varphi$ ' and 'conjoins φ and ψ ' as short for 'is $\neg \varphi \& \psi$ '. I use bold-face 'or' to make it easier to identify the (un)resolved disjuncts.

³¹ Indeed, for brevity I'm tacitly assuming that it does not matter in what order the conjuncts appear, meaning (15) has only 6 disjuncts rather than the 9 it officially needs.

Of which the resolved disjunct is:

- (16) x conjoins a sentence y and a sentence z such that y is an atom that is T_A and z is an atom that is T_A .

And this process can continue, applying our analysis to the two unresolved disjuncts in (13) and the five in (15) to yield yet further resolved and unresolved disjuncts.

Each resolved disjunct—like (10), (14), and (16)—that results from applying the Resolution Procedure to ‘true’ using (i)–(iii) specifies a grounding property for truth that is implicit in (i)–(iii). These include:

- (T1) Being an atom that is T_A .
 (T2) Being the negation of a sentence y such that y is an atom that is not T_A .
 (T3) Being the conjunction of a sentence y and a sentence z such that y is an atom that is T_A and z is an atom that is T_A .

And so on. According to (i)–(iii), instantiating any of these grounding properties is sufficient for being true, and instantiating at least one is necessary for being true. As with *Ancestry*, it is the latter fact that renders (i)–(iii) non-circular as an analysis of truth: for any true sentence, we can say in virtue of what that sentence is true in terms that do not use ‘true’.

This allows us to state which local truth properties the form-based pluralist endorses in a precise way.³² Recalling that ‘ T_A ’ stands for whatever it is that the truth of an atomic sentence consists in, the form-based pluralists’ local truth properties are the grounding properties for truth implicit in (i) in conjunction with whatever recursive clauses we endorse for the logical complexes, such as (ii)–(vi):

- (i) An atom φ is true iff φ is T_A .
 (ii) $\lceil \sim \varphi \rceil$ is true iff φ is not true.
 (iii) $\lceil \varphi \ \& \ \psi \rceil$ is true iff φ is true and ψ is true.
 (iv) $\lceil \varphi \ \vee \ \psi \rceil$ is true iff φ is true or ψ is true.
 (v) $\lceil \varphi \rightarrow \psi \rceil$ is true iff φ is true only if ψ is true.
 (vi) $\lceil \varphi \leftrightarrow \psi \rceil$ is true iff φ is true iff ψ is true.

Of course, if you think the list should be expanded or contracted, feel free to adjust accordingly, as long as there’s at least one recursive clause in there.³³

Note that the *moderate* form-based pluralist can endorse (i)–(vi) as a recursive analysis of truth—she just adds that truth is grounded in the properties implicit in this

³² In (Gamester, 2019), I provided a “recipe” for specifying the relevant property for a sentence of any given logical form, which delivers the same results as the Resolution Procedure. Wrenn (2021) worries that the theory is not finitely stateable and does not imply generalisations like “All conjunctions with all true conjuncts are true.” This is fair enough, but I note here that: (i) not being finitely stateable renders the view compatible with Shiftiness, so in the present context is an advantage; and (ii) as per (Gamester, 2023), I think the form-based pluralist can still embrace generic-truth-talk in generalisations like this as being a useful bit of make-believe. Indeed, (Gamester, 2023) started life as the first half of a paper, the second half of which became this paper. (Wrenn also worries that the recipe will not work for languages without certain expressive resources. But I cannot see the worry: English, at least, has the resources; and while other languages may not, not being stateable in certain expressively impoverished languages will be a feature of *any* (non-trivial) theory).

³³ Note, then, that no problem for the form-based pluralist is posed by the extension to languages with quantifiers. To follow orthodoxy here, we analyse truth in terms of satisfaction, which is analysed recursively.

analysis for sentences of different logical forms. As discussed, I'm not sure whether anyone who endorses (i)–(vi) would want to resist this claim, so not sure to what extent such a view is controversial. But the strong pluralist thinks that truth *reduces to* the properties implicit in (i)–(vi) for sentences of different logical forms; and the strong pluralist *cannot* endorse (i)–(vi) as a recursive analysis of truth, since we would hereby define a generic truth predicate. The strong pluralist thus only endorses the properties that are implicit in the recursive analysis, not the recursive analysis itself.

Is this position stable? If she maintains that truth reduces to the properties implicit in (i)–(vi), how can the strong pluralist resist the conclusion that the recursive analysis is correct? Here's one possibility: she may hold that the predicate defined by the recursive analysis is incoherent, as demonstrated by the liar sentence. Importantly, thinking that the predicate defined by the recursive analysis is incoherent does *not* commit you to thinking that any one of the resolved disjuncts that result from applying the Resolution Procedure to it is incoherent, but *only* to thinking that the disjunction of all the resolved disjuncts is incoherent. But this would be an infinite disjunction, which—we are assuming—the pluralist independently rejects, precisely on the grounds that infinitary disjunctions induce paradoxes.

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