
LOGIC, LOGICAL FORM, AND THE DISUNITY OF TRUTH

This paper is concerned with the metaphysics of truth, and the metaphysics of truth for logically complex truthbearers in particular.

It is the task of a comprehensive metaphysics of truth to tell us what truth consists in for every truthbearer.¹ Monists are committed to truth always consisting in the same thing, no matter what: perhaps *corresponding* to the facts, or *cohering* with a specific set of beliefs, or *being superwarranted*.² Pluralists think that the nature of truth varies for different truthbearers: some truths might correspond, others cohere, while yet others are superwarranted.³ The most prominent such pluralists individuate the truthbearers that are apt for different properties via their subject matter or *domain*; that is, what they are *about*. Truths concerned with medium-sized dry goods might correspond, while those about mathematics cohere, and those about ethics are superwarranted.

Pluralists are meant to face embarrassing problems surrounding logic and logical form the moment truthbearers that are apt for different truth properties are “mixed” together, in inferences or logical compounds. Both the so-called “Problem of Mixed Inferences” and “Problem of Mixed Compounds” have generated quite some literature. I here respond on behalf of the pluralist. In Part I, I show that these “mixing” problems are just instances of perfectly general, structural constraints on the metaphysics of truth, which the monist’s metaphysics is by no means guaranteed to satisfy just because it is monistic. On the contrary, I suggest that the monist is, if anything, at a methodological *disadvantage* when it comes to satisfying the relevant constraints, since she is ideologically *constrained* to say that truth always and everywhere consists in the same thing. In Part II, I present an intuitively plausible and pluralist-friendly metaphysics of truth for complex truthbearers that satisfies the relevant constraints, and defend it from objections. This theory proposes that complex truthbearers themselves are apt for properties distinct from, but grounded in, that or those relevant for atomic truthbearers.

My goal is not to argue against monism, nor to respond to every objection against pluralism. There is still, for example, the challenging “Problem of Mixed Generalisations”, which asks us to explain the expressive role of the truth predicate as a *fully general* device for endorsement, given the underlying diversity

¹ I set aside for present purposes “deflationary” and “primitivist” hypotheses, according to which we do not need to or cannot say what the nature of truth consists in, for one reason or another. I use ‘truthbearer’ as a neutral term for whatever the primary truthbearers are: sentences, propositions, beliefs, or what have you.

² For introductions to the correspondence and coherence theories of truth, see David (2016) and Walker (2001). Superwarrant is an epistemic theory of truth, Lynch’s (2009) variation on Wright’s (1992) “superassertibility” theory. To be superwarranted is, roughly, to have a warrant in some state of information actually accessible to a suitably receptive inquirer.

³ Most prominently defended by Crispin Wright (1992) and Michael Lynch (2009). There are other theories in this domain that are accurately described as “pluralist”, but this is both the most prominent variety and the only kind I will be concerned with here.

in the metaphysics of truth.⁴ My goal is just to show that there is no special problem for pluralism *as far as logic and logical form are concerned*. Nonetheless, this paper has been developed in conjunction with another, in which I show that we can avoid the liar paradox if we reject monism and instead endorse the form-restricted pluralism I articulate and defend here ([omitted]). I ask the reader to bear in mind that, while my goal is to show that we don't *need* a single truth property with unrestricted application of the kind the monist postulates to provide an adequate metaphysics of truth for complex truthbearers, part of what is driving me is the thought that we do not *want* such a property, on pain of paradox.

Part I – Truth, Logic, and Logical Form

1.1 The Problem of “Mixed” Inferences

Consider first the so-called “Problem of Mixed Inferences”.⁵ Presentation of the problem typically goes something like as follows. Suppose that truth property T_1 is relevant for truthbearers in set D_1 and that T_2 is relevant for truthbearers in D_2 , and suppose further that (1) is in D_1 and (2) is in D_2 . Consider, then, the inference that we'll call *Cat*:

Cat

(1) Felix is a household pet.

(1 \rightarrow 2) If Felix is a household pet, then eating Felix is wrong.

Therefore:

(2) Eating Felix is wrong.

As an instance of *modus ponens*, *Cat* is valid. But validity is necessary *truth*-preservation. An argument is valid just in case: necessarily, if the premises are true, then the conclusion is true. But, according to the pluralist, the truth of (1) consists in T_1 and the truth of (2) consists in T_2 . Supposing, then, that (1) can be T_1 without being T_2 and (2) can be T_2 without being T_1 , it looks like *Cat* should be sound, by the pluralist's lights, despite there being *no* (relevant) property in common between the premise (1) and the conclusion (2). How, then, is the pluralist to characterise validity, if there is no single property that is necessarily preserved in valid inference?

Some clarificatory points about this. (i) What if the truth properties are not independent in the way the argument suggests? For instance, perhaps any truthbearer that corresponds is superwarranted. (It does not matter if this is plausible – I'm interested in the structural point here.) As a matter of fact, we can

⁴ See e.g., Lynch (2001: 726; 2004: 389; 2009: 57), Cotnoir (2013: 563, fn.2). This is primarily a reason to think that 'is true' voices a single *concept* with unrestricted application, and we may thus be able to explain the expressive function without postulating a *property* with unrestricted application that the predicate ascribes. Especially if the unrestricted concept so voiced is inconsistent, as has been forcefully argued recently by *inter alia* Eklund (2002), Scharp (2013).

⁵ See, e.g., Williamson (1994), Sainsbury (1996), Tappolet (1997, 2000), Beall (2000), Lynch (2001, 2004, 2009), Pedersen (2006), Wright (2013), Cotnoir (2013), and Stollo (fc).

get some version of the argument going as long as it's not the case that having *any* one of the pluralist's truth properties entails having *all* the others (and perhaps even then), which would risk collapsing pluralism back into monism; so we can set aside this possibility here. (ii) The pluralist *might* be able to formulate an extensionally adequate characterisation of *validity* using one or other of her truth properties. For instance, if (1) and $(1 \rightarrow 2)$ are both superwarranted, then presumably (2) will be superwarranted too. But this would be to get the right result for the wrong reason; that is why I was careful to mention *soundness* in the presentation of the problem. That is, we want our characterisation of validity to be such that the inference is sound when (1) and (2) have *different* properties. Given the relevant independence of the truth properties, then as soundness is a species of validity, this means we cannot characterise validity in terms of a *single* property. (iii) The pluralist might simply opt out of the semantic account of validity, in favour of, say, a proof-theoretic account. Aaron Cotnoir has claimed that 'pluralism ought to be consistent with a semantic account of validity as well' (2013: 566), but I don't see where the support for this is. We might think of the fates of these two views as intertwined: e.g., that an argument for pluralism is an argument for the proof-theoretic account of validity too. Nonetheless, it is no doubt *better* for the pluralist if she can be neutral on this front.

Tappolet (1997, 2000) suggests that the Problem presents the pluralist with a trilemma: either (a) deny that mixed inferences can be valid; (b) allow that there *is* some truth property that is shared by the premises and conclusion in a sound argument (so, which *can* be shared by the premises and conclusion in a *valid* argument); or (c) reject the usual semantic account of validity. And the literature has pretty much followed her lead here. For two decades now, this has been guiding the dialectic.⁶

It is, I am convinced, a false trilemma. Assuming that rejecting (a) and (c) lands one on horn (b) is to assume that the semantic account of validity presupposes that there is a single *property* that can be shared by the premises and conclusion of a valid argument. But I do not think it presupposes this at all.

Presentations of this problem are often fixated on the idea that "necessary truth-preservation" requires that there is a single thing – truth – that is preserved from premises to conclusion:

'If there is more than one property of truth... then there is no single property being preserved from premises to conclusion in [a mixed] argument.' (Lynch 2004: 388)⁷

'...for the strong alethic pluralist, no single property of truth would be preserved from premises to conclusion.' (Wright 2005: 9)⁸

⁶ Tappolet thinks (b) renders pluralism redundant; the consensus now is that this is premature, given the possibility of moderate pluralism – see §1.3, especially fn.19 and the citations therein. (See also Pedersen 2010 and Wright 2012 for discussions of "the instability challenge".) Moderate pluralists thus endorse horn (b). Others go for horn (c). Beall (2000), e.g., suggests that the pluralist endorse a many-valued logic; Pedersen (2006) a plural (re-)interpretation of logic (see fn.17 below). Cotnoir (2013) proposes a novel semantic account of validity using an algebraic semantics. While I'm sympathetic to Cotnoir's proposal on its own terms, I think it – and the other suggestions – are simply unnecessary. Truth pluralism, I'll argue, leaves logic untouched.

⁷ See also Lynch (2006: 64; 2008: 125; 2009: 63).

⁸ See also Wright (2010: 271).

‘...what is the property that is preserved from premises to conclusions if they don’t share a unique truth-property?’ (Caputo 2012: 854)

‘The problem of mixed inferences... can be solved as there is a single truth property that is preserved across valid inference.’ (Edwards 2013: 116, fn.8)

‘...if one accepts that there is more than one kind of truth, then, when an inference proceeds from premises that differ in the kinds of truth they possess, one must explain what sort of truth, if any, the conclusion has inherited from the premises.’ (Barnard & Horgan 2013: 192-3)

‘...there cannot be a single truth property that is transmitted from premises to conclusion, and the apparent validity of the inference cannot be accounted for in terms of necessary truth preservation.’ (Strollo *fc*)

Indeed, often little *more* is said in order to generate the appearance of a problem. First, then, a cautionary point that shouldn’t have to be made, but probably does. Consider the concept, PRESERVATION. This is a *diachronic* concept: things are preserved across time. VALIDITY, however, is a *synchronic* concept. Arguments are valid at a time. What’s the upshot? When we say that validity *is* “necessary truth-*preservation*”, we are talking *metaphorically*. Validity does not happen across time, so validity does not literally consist in something being preserved at all. Similar points can be made regarding “inheritance” and “transmission”. Consider also that there can be 0-place valid arguments with tautologous conclusions or valid arguments where the premises *cannot* be true together, so *a fortiori* nothing is “preserved” from premises to conclusion. These cases bring out the oddity of this way of presenting the argument, for *everyone* thinks that, in these cases, there is no single property that is “preserved”.⁹ We should not be fooled by the metaphor alone into thinking that validity literally requires the preservation of some (single) thing.

No, “necessary truth-preservation” is just a nice way of talking about the principle that: necessarily, if the premises of the argument are true, then the conclusion is true.¹⁰ What constraint, exactly, does this principle put on our *metaphysics* of truth? Does it really require that, when sound, the premises and conclusion *share* a property? Well, let me extract a constraint that it definitely *does* enforce, for our mixed inference *Cat*:

Semantic Validity Constraint (SVC)

⁹ Strollo (*fc*) shows that he is aware of these points.

¹⁰ This principle features the word ‘true’ twice, so one worry concerns *equivocation*: how can the pluralist account for the *semantic* unity of these uses given the underlying *metaphysical* diversity? The pluralist’s answer, again, ought to be that it voices a single general *concept*. One might then worry that the existence of such a concept somehow entails the existence of a general property; this is a real worry, but is simply a different argument – see fn.4 above.

If the truth of (1) consists in F, the truth of $(1 \rightarrow 2)$ in G, and the truth of (2) in H, then F, G, and H must be such that: necessarily, if (1) is F and $(1 \rightarrow 2)$ is G, then (2) is H.

Or generally:

General Semantic Validity Constraint (SVC)*

For a valid argument from premises $\{A_1, \dots, A_n\}$ to B, if the truth of A_1 consists in F_1, \dots , the truth of A_n in F_n , and the truth of B in G, then F_1, \dots, F_n , and G must be such that: necessarily, if A_1 is F_1, \dots , and A_n is F_n , then B is G.¹¹

For simplicity, let's focus on the particular constraint, SVC.

The first thing to note about SVC is that it is *a perfectly general constraint on the metaphysics of truth*. Monists and pluralists alike must satisfy it.

The second thing is that there is nothing about postulating an identity between F, G, and H, as the monist does, that makes satisfying SVC any easier. This is obvious. There is absolutely no reason to think that, in general, both (1) and $(1 \rightarrow 2)$ exemplifying some property F^* guarantees that (2) will exemplify that property. Consider, for example, the property of *being a premise in Cat*. (1) and $(1 \rightarrow 2)$ exemplify this property; (2) does not. So far as this constraint is concerned, then, the monist *qua monist* is at no immediate advantage.

If SVC* is the strongest constraint enforced by a semantic account of validity, then worries that trade on there being 'no single property preserved by the inference' (Lynch 2009: 63) are ill-founded. Indeed, it is tempting to think that most of the intuitive pull of the Problem of "Mixed" Inferences comes from taking the "preservation" metaphor a little too literally. But perhaps SVC* is not the strongest such constraint. I think that it is, but rather than considering and rejecting other proposals at this stage, it will be more productive to propose a metaphysics that satisfies this constraint without postulating a general truth property. With this hand, we can ask what is *missing*, as far the semantic account of validity is concerned. It is incumbent upon the objector to argue that something more is needed.

One *might* suspect, on slightly different grounds, that the pluralist will struggle to satisfy SVC because she postulates diversity between F and H, the thought being that identifying some property G such that SVC is satisfied might therefore be more difficult. This is essentially the charge at the heart of the Problem of Mixed Compounds, to which we now turn.

1.2 The Problem of "Mixed" Compounds

¹¹ Sher (2013: 158-9) thus gets much closer to the right construal of the Problem. With it so understood, it is obvious that it cannot be solved simply by endorsing conceptual monism, as is suggested by Wright (2013: 132-3).

For present purposes, let's assume that 'not', 'and', 'or', 'if... then', and 'neither... nor' all voice truth-functional operations (symbolised by '¬', '&', '∨', '→', '↓').¹² Consider the following truth-functional compounds:

- (¬1) Felix is not a household pet.
- (1&2) Felix is a household pet and eating Felix is wrong.
- (1∨2) Felix is a household pet or eating Felix is wrong.
- (1→2) If Felix is a household pet, then eating Felix is wrong.
- (1↓2) Neither is Felix a household pet, nor is eating Felix wrong.

As mentioned in the introduction, any comprehensive metaphysics of truth owes us an account of what the truth of such compounds consists in. The following constitute schematic extensionality constraints on our theory (using single-quotes here as a device for taking a declarative sentence to the relevant primary truthbearer):

Truth-Functional Extensionality Constraints

- '¬p' is true ↔ ¬('p' is true).
- 'p & q' is true ↔ ('p' is true & 'q' is true).
- 'p ∨ q' is true ↔ ('p' is true ∨ 'q' is true).
- 'p → q' is true ↔ ('p' is true → 'q' is true).
- 'p ↓ q' is true ↔ ('p' is true ↓ 'q' is true).

To see the *prima facie* worry for the pluralist, consider the conjunction (1&2). The truth of (1) consists in T₁, the truth of (2) consists in T₂. What, then, does the truth of (1&2) consist in? There's no guarantee that the conjunction *as a whole* will be either T₁ or T₂ when (1) is T₁ and (2) is T₂, especially given that (1) might be T₁ and not T₂, while (2) might be T₂ and not T₁.¹³

(The problem with this rather schematic way of putting things, of course, is that whether or not the conjunction as a whole can fail to be either T₁ or T₂ when (1) is T₁ and (2) is T₂ depends entirely on the nature of the truth properties involved; it doesn't simply follow from the mere fact that T₁ and T₂ are distinct. E.g., if being T₁ entails being T₂, then when (1) is T₁ it is T₂, and if (2) is T₂ as well, then (1&2) as a whole may well be T₂ – suppose that T₂ is *being supervarranted*. But still, let's grant this for the sake of argument, so the truth of the conjunction cannot consist in T₁ or T₂.)

¹² Those with the truth-tables FT, TFFF, TTTF, TFFT, and FFFT, respectively.

¹³ See, e.g., Williamson (1994), Tappolet (2000), Lynch (2004, 2009), Edwards (2008, 2009), Cotnoir (2009), Cook (2011), Wright (2013).

What do the extensionality constraints tell us about the metaphysics of truth? Here, some theorists have once again suggested that identity flows immediately, at least when the compound in question is a conjunction:

‘Mixed conjunctions need to be true in a further way... But then each conjunct needs to be true in the same way. This is what follows from the truism that a conjunction is true if and only if its conjuncts are true.’ (Tappolet 2000: 385)

‘A conjunction is true if and only if the conjuncts are true, and further, the conjunction should be true in the same way as the conjuncts are true. Hence neither T_1 nor T_2 is the appropriate notion of truth for this conjunction: if the conjunction were T_1 -true, then both [(1)] and [(2)] would need to be T_1 -true, but there is no general guarantee that [(2)] is T_1 -true (and, similarly, if the conjunction were T_2 -true, then both [(1)] and [(2)] would need to be T_2 -true, but there is no general guarantee that [(1)] is T_2 -true). Thus there must be some third truth property T_3 in virtue of which statements from the combined discourse are true.’ (Cook 2011: 626)¹⁴

But, in fact, the only constraints that we can extract from the extensionality constraints alone are the following. Where ‘!’ is a schematic marker for a truth-functional operator, if the truth of ‘p’ consists in F, the truth of ‘q’ consists in G, and the truth of ‘p !! q’ consists in $H_{!!}$, then:

- ‘ $\neg p$ ’ is $H_{\neg} \leftrightarrow \neg$ (‘p’ is F).
- ‘p & q’ is $H_{\&} \leftrightarrow$ (‘p’ is F & ‘q’ is G).
- ‘p \vee q’ is $H_{\vee} \leftrightarrow$ (‘p’ is F \vee ‘q’ is G).
- ‘p \rightarrow q’ is $H_{\rightarrow} \leftrightarrow$ (‘p’ is F \rightarrow ‘q’ is G).
- ‘p \downarrow q’ is $H_{\downarrow} \leftrightarrow$ (‘p’ is F \downarrow ‘q’ is G).

To this, we can plausibly add a direction of explanation: ‘p & q’ is true, when true, not just in all and only the cases where ‘p’ and ‘q’ are true, but *because* ‘p’ and ‘q’ are true (Edwards 2008: 146-7). The ‘because’ here is the ‘because’ of constitutive explanation or grounding: a true conjunction *just is* a conjunction with two true conjuncts. It is tempting – as will be prominent in the metaphysics offered below – to say: the truth of the conjunction *consists in* the combined truth of its conjuncts.

Again, these are *perfectly general constraints* to which any comprehensive metaphysics of truth is subject. And again, merely postulating an identity between F, G, and $H_{!!}$ does not render the task of satisfying them any easier. A negation does not have every property that its negand does not have; nor a

¹⁴ It is interesting that Tappolet and Cook suggest slightly different constraints. Tappolet says that, if the truth of ‘p&q’ consists in F, then the truth of ‘p’ consists in F and the truth of ‘q’ consists in F. Cook (at least initially, but I think throughout) suggests the other direction: if the truth of ‘p’ (or ‘q’) consists in F, then the truth of ‘p&q’ consists in F.

conjunction every property shared by its conjuncts; nor does a disjunction inherit every property possessed by one of its disjuncts.

Indeed, the monist faces a *prima facie* difficulty that we can call *the concatenation problem*. Given the identity she postulates between $H_{\&}$, H_V , H_{\rightarrow} , and H_{\downarrow} with her preferred truth property – label it ‘ T_U ’ – she must explain why the concatenation of two truthbearers that are T_U *in a conjunction or a disjunction* results in a complex that is T_U , while their concatenation in a neither/nor construction does not; and likewise, why the concatenation of two truthbearers that are not T_U results in a complex *that is* T_U when the complex is a (material) conditional or a neither/nor construction, but not when the complex is a conjunction or disjunction. My point is not that this is some insuperable difficulty. It is that, whatever the monist’s explanation is, it cannot consist in *mere concatenation*. Not in any case – even for a conjunction – since even by the monist’s own lights, mere concatenation of two truthbearers that are T_U is neither necessary nor sufficient for the resultant complex to be T_U . The explanation, whatever it is, will require more than this.

One might be tempted to “go recursive”, citing, e.g., the authority of Tarski: a conjunction is true if and only if its conjuncts are true!¹⁵ Right. But this is a *datum* that our theory has to predict and explain. The only way I can read this as telling us anything about the *nature* of truth is if we read it in accordance with the form-restricted pluralism I’ll articulate below. This results, as I’ll explain, in a radical disunity in the nature of truth; if everyone who endorses recursion here is happily committed to this pluralism then they’re being awfully quiet about it! But if this is *not* what is intended, then the recursive definition here amounts to nothing more than a repetition of the very constraint at hand, and repetition is not explanation.

That the task is non-trivial is foregrounded by the fact that the traditional monists may well *struggle* to satisfy these constraints:

‘it is not the case that p’ coheres \leftrightarrow ‘p’ does not cohere.

‘p or q’ is superwarranted \leftrightarrow (‘p’ is superwarranted or ‘q’ is superwarranted).

‘neither p nor q’ corresponds \leftrightarrow (neither ‘p’ corresponds nor ‘q’ corresponds).

None of these is obviously true. That a belief does not cohere with a set of beliefs does not guarantee that its negation will cohere with that set of beliefs (perhaps the beliefs do not lend support either way). Similarly, a disjunction may plausibly be superwarranted despite the fact that neither of its disjuncts are. We might have a warrant that one or the other of the disjuncts is true without having a warrant that one of them in particular is so. And the final one is just one of a number of embarrassing problems faced by the correspondence theory. Do we want to say that there are conjunctive facts, or disjunctive facts, or (shudder) *negative* facts that conjunctions, disjunctions, or negations correspond to?¹⁶

¹⁵ Thus one sometimes hears or reads talk of ‘the recursive strategy familiar since the age of Logical Atomism’ (Caputo 2012: 856; see, e.g., Lynch 2009: 86-91).

¹⁶ The problem for correspondence theorists has been pointed out in this context by Edwards (2008) and Wright (2013: 134-5). Truthmaker maximalists have notoriously gone to extremes to avoid postulating negative facts, including postulating totality facts (Armstrong 2004) and absences (Martin 1996), or even denying that there are any negative truths (Mumford 2007). Given these kinds of worries, I simply do not understand Cotnoir’s (2009: 477-8)

Of course, there are a multiplicity of responses the monist might give to these worries; but the fact that they need to give responses illustrates precisely the point I'm making. *Merely being a monist*, even of one of the widespread, "popular" varieties, does not guarantee that one's theory of truth satisfies the relevant constraints.

Once we acknowledge this, it becomes apparent that the monist is, if anything, at a tactical disadvantage here. For she is ideologically *constrained* to postulate an identity between F, G, and H_{||}, where the pluralist is not: she has to identify a truth property that is plausible for *all* truthbearers, complex or otherwise. The pluralist is not so constrained. Contrary to the (unargued) claims of Tappolet and Cook, then, the raw extensionality constraints themselves do not legislate in favour of identity; indeed, being ideologically committed to monism merely makes the task of satisfying them that much more difficult.

When it comes to validity, the monist can *say* that it is her preferred truth property that is "preserved" across valid inference. But I have argued that this is not really what is at stake. The monist needs to show that she can satisfy SVC(*); and *that* involves giving a satisfactory metaphysics of truth for complex truthbearers.¹⁷ Given, then, that the monist is, if anything, at a tactical disadvantage here, she is also to that extent worse off when it comes to the constraint laid down by the Problem of "Mixed" Inferences.

Both of the Problems of "Mixed" Inferences and Compounds have thus transpired to be instances of perfectly general constraints on the metaphysics of complex truth, which the monist also has to satisfy, and with regards to which her mere monism constitutes no progress. The primary difference between the monist and the pluralist is that the monist is ideologically committed to a *further* constraint, which can hardly make life easier.

Nonetheless, the pluralist does face some challenges that the monist does not. The first challenge here comes from *inappropriate truth properties*. Suppose that (1) is not T₁, but is T₂, and (2) is not T₂, but is T₁; thus neither is true, though each possesses *a* truth property. Our metaphysics of truth for, e.g., (1&2), needs to be such that (1&2) is H_& when (1) is T₁ and (2) is T₂, but *not* when these properties are "reversed". Likewise, H_↓ needs to be such that (1↓2) is H_↓ when (1) is not T₁ and (2) is not T₂, even if (1) is T₂ and (2) is T₁.¹⁸ The second challenge comes from the sheer fact that the pluralist tolerates diversity in the nature of truth for the components of a complex: F and G in the above schemas. Suppose that some truthbearer (3), like (1), is in D₁, and (4), like (2), is in D₂. One might wonder what property H_& can satisfy all three of:

proposal that we "let" negations have the relevant truth properties of their negands and disjunctions the truth property or properties of their disjuncts (perhaps both!). As the correspondence case renders especially salient, whether or not these are plausible theories for the *negation* or *disjunction* as a whole is an open question that may well have a negative answer.

¹⁷ This point also scuppers other pluralist attempts to solve the Problem of "Mixed" Inferences. For instance, Pedersen's (2006) proposal requires reconstruing validity as: necessarily, if the premises have properties *from among the truth properties*, then the conclusion must have a property *from among the truth properties*. But which of the truth properties does (1→2) have?

¹⁸ Again, it is no mere truism that truthbearers in one domain *can* possess truth properties relevant for other truthbearers; nor that they can do so (if they can) without possessing their own truth properties. It very much depends on the metaphysics of the truth properties involved. But I continue to set this aside.

(1&2) is $H_{\&} \leftrightarrow ((1) \text{ is } T_1 \ \& \ (2) \text{ is } T_2)$.

(1&3) is $H_{\&} \leftrightarrow ((1) \text{ is } T_1 \ \& \ (3) \text{ is } T_1)$.

(2&4) is $H_{\&} \leftrightarrow ((2) \text{ is } T_2 \ \& \ (4) \text{ is } T_2)$.

Note, however, that while the pluralist is certainly committed to giving some metaphysics of truth for each of the different conjunctions, she is *not* antecedently committed to thinking that all conjunctions are true in the same way. That's the monist's ideology. The pluralist is simply not committed to the identity of the above " $H_{\&}$ " properties.

Of course, if she does postulate diversity here, it is incumbent on her to show that this is tolerable. But that is just part of giving a satisfactory metaphysics of (complex) truth. These challenges are, then, just that: challenges. Whether or not they can be met is at this point an open question. I'll confront the issue directly by presenting a satisfactory and pluralist-friendly metaphysics of complex truth in the next section. In this section, however, I have argued that the Problems of "Mixed" Inferences and Compounds are just instances of perfectly general constraints on the metaphysics of truth, and that the monist *qua monist* is no better situated to satisfy them than the pluralist is.

1.3 *Against Moderate Pluralism*

It's worth pausing to note that being a so-called "moderate" pluralist constitutes no advantage on this front. Moderate pluralists maintain that there *is* a general truth property, T_U , that is possessed by all truths. For the moderate pluralist, having a "restricted" truth property – T_1, T_2 , etc. – is a *way* of being T_U . For instance, T_U may be a genus, determinable, functional role property, or disjunctive property, of which the domain-restricted truth properties are the species, determinates, realisers, or disjuncts.¹⁹ The moderate pluralist will want to say:

$\neg p$ is $T_U \leftrightarrow \neg(p \text{ is } T_U)$.

$p \ \& \ q$ is $T_U \leftrightarrow (p \text{ is } T_U \ \& \ q \text{ is } T_U)$.

$p \vee q$ is $T_U \leftrightarrow (p \text{ is } T_U \vee q \text{ is } T_U)$.

¹⁹ The first three are the philosophically familiar one-many relations. "Correspondence pluralists", like Sher (2004, 2013), are probably best interpreted in terms of genus/species (Pedersen & Wright (2013a: 7) seem to agree). Edwards (2011, 2013, fc) calls his theory "simple determination pluralism" and says the restricted properties "determine" the unrestricted property, but stops short of saying the relation is the determinable/determinate one. Lynch (2001, 2004, 2005, 2006; see also Pettit 1996) defended the "alethic functionalist" theory that T_U is the second-order property of having a property that realises the "truth-role", where the "role" is identified via platitudes about truth and different restricted properties realise this role in different domains. "Alethic disjunctivism", where T_U is defined in terms of disjunction of the domain-restricted properties, perhaps conjoined with their relevant domains, is explored and defended in, e.g., Pedersen (2006, 2010), Edwards (2012b), and Pedersen & Wright (2013b). I consider Lynch's more recent "manifestation functionalism" below. Each view suffers difficulties on its own terms, but there may be other, more plausible, versions. I settle here for showing that they are unmotivated by the Problems under consideration. This is significant: given domain-restricted pluralism, the "mixing" problems are often cited by way of motivating moderate pluralism.

$\langle p \rightarrow q \rangle$ is $T_U \leftrightarrow (\langle p \rangle$ is $T_U \rightarrow \langle q \rangle$ is $T_U)$.

$\langle p \downarrow q \rangle$ is $T_U \leftrightarrow (\langle p \rangle$ is $T_U \downarrow \langle q \rangle$ is $T_U)$.

Where she'll explain the components' being T_U in at least some cases in virtue of their possessing some restricted truth property, T_1 , T_2 , etc.

I've already argued that merely postulating an identity here doesn't help. But the moderate pluralist faces a further difficulty. Supposing that T_U is a genus, determinable, functional role, or disjunctive property, we can ask *which* species, determinate, realiser, or disjunct the complex truthbearers on the left-hand side are supposed to possess. T_1 and T_2 are meant to be species, determinates, realisers, or disjuncts of T_U , but the whole point of the "Problem of Mixed Compounds" is that T_1 and T_2 look ill-suited to play this role. If not, there'd be no problem and T_U would be redundant, at least as far as this problem is concerned. Furthermore, some complexes are meant to be T_U despite none of their components being either T_1 or T_2 .

Perhaps the complexes possess some *other* species, determinate, realiser, or disjunct of T_U ; perhaps one somehow "composed" or "constructed" from the component's species, determinates, realisers, or disjuncts. Maybe. But that requires that we identify some *other* truth property that the complex possesses when true (perhaps one "composed" or "constructed" from the component's truth properties), which is just the task of giving a metaphysics of truth for logical complexes. Again, if we had that then there'd be no problem, and T_U would be redundant. So, that's no progress on the problem.

Relatedly, perhaps the complexes possess T_U despite *not* possessing any particular species, determinate, realiser, or disjunct of it, but nonetheless in virtue of its components possessing their relevant truth properties (somehow). But this is a very odd suggestion indeed. Something cannot typically be of a genus without being of a species of that genus (a bear that is no particular species of bear?), nor possess a determinable without possessing a determinate of that determinable (a coloured object that has no colour; a red object that is no shade of red?), a functional role property without having a realiser of that role (a kidney that doesn't play the role of a kidney?),²⁰ nor a disjunctive property without satisfying some disjunct (something that is *either red or a cow* despite being neither red nor a cow?). Many of these sound completely conceptually confused.

The possible exception is in the case of determinable/determinate: perhaps if we glue together something that is scarlet with something that is crimson, we'll have something that is red (all over) despite being no *particular* shade of red (all over). But even if this is right, it is of no help. It provides a model for conjunctions, but this model goes out the window once we recall the concatenation problem: mere concatenation of two truthbearers that are T_U is neither necessary nor sufficient for the complex as a whole to be T_U . The complex's possession of T_U would still need explaining.

²⁰ Perhaps a malfunctioning kidney is a kidney that doesn't play the role of a kidney. But the functionalist presumably does not want to say that the complex's position is analogous to that of a malfunctioning kidney. (The analogy here is difficult to even make sense of, but that is the functionalist's problem.)

Lynch realised that his erstwhile alethic functionalist view faced the problem of saying which property realised T_U for complex truthbearers, and this was one motivation for his change in view.²¹ His ingenious response was to make up a brand new one-many relation – manifestation – which allows that something can possess the one despite not possessing any of the many (Lynch 2009: 74). Indeed, the manifestation relation is *reflexive*, so *every* property self-manifests. According to Lynch, a property F manifests a property G just in case it is a priori that the conceptually essential features of G are a subset of the features of F. Lynch then thinks that T_U can be manifested in T_1 , T_2 , and so on. He thinks of his view as a variety of functionalism still, because he thinks the conceptually essential features of T_U delineate a functional role; but that doesn't matter for our purposes. (In fact, the proposal has all kinds of problems on its own terms.)²² But in any case, since it is a priori that any property F's conceptually essential features are a subset of its own features, every property self-manifests. (All the time. They even self-manifest while they're busy being manifested in other properties.) And this, Lynch thinks, allows him to divide the truths – those truthbearers with T_U – into the “unplain” truths, for whom T_U is manifest in some other property, and the “plain” truths, for whom T_U exclusively self-manifests. Mixed compounds can then simply be plain truths! Problem solved. (Lynch 2009: 86-91.)

If only things were so easy. Consider again the concatenation problem. Nothing in Lynch's metaphysics tells us why T_U chooses to self-manifest when a conjunction's components are T_U , but not when a neither/nor construction's are so; nor why it chooses to self-manifest when a neither/nor construction's components are not T_U , but not when a conjunction's are so. All it tells us is that T_U sometimes chooses to self-manifest, and sometimes chooses not to; and in all and only the right cases. But then Lynch has only succeeded in labelling the phenomenon we want explaining.

Of course, we can imagine Lynch *saying* “ T_U self-manifests for the conjunction because conjunctions are true if and only if their conjuncts are true”. But *this is not an explanation*; it is an explanandum! We want the property that a conjunction possesses when true to be a property it possesses just in case its conjuncts are true; but just *saying* that the property one chooses to play this role satisfies this constraint (because it “self-manifests” just in case this is so) is just repeating the very constraint at hand. Again, repetition is not explanation.

Lynch tries to instigate a tighter connection between the self-manifesting T_U of a mixed compound and the unplain truth or otherwise of its components by endorsing the following “weak grounding principle”:

“There can be no change in the truth-value of a compound proposition without change in the truth-value of *some* atomic propositions. The truth-value of compounds supervenes on the truth-value of atomic propositions... What makes a compound proposition plainly true? Given the weak

²¹ E.g., Lynch (2009: 65-7).

²² E.g., Tappolet (2010: 1195-7), Pedersen & Edwards (2011), Shapiro (2011), Caputo (2012), Edwards (2012a), Horton & Poston (2012), Pedersen (2012), Newhard (2013, 2014, 2017), Pedersen & Wright (2013b). See Lynch (2012, 2013) for some replies.

grounding principle, compound propositions are plainly true if their truth-value is grounded. That is, if their truth-value supervenes on the truth-value of propositions which are either compound and grounded or atomic...’ (Lynch 2009: 90-1)

For one thing, supervenience is too weak for explanation.²³ But, in any case, *nothing* about Lynch’s metaphysics predicts the weak grounding principle. It’s simply a promissory note to which Lynch is voicing his commitment, and which therefore does nothing to render the convenient self-manifesting behaviour of T_U any less mysterious. We’re all committed to the weak grounding principle: it’s a *constraint* we need to show our metaphysics meets, not a principle to which we are antecedently entitled.

Moderate pluralists are thus no better off when it comes to the Problem of “Mixed” Compounds; i.e., when it comes to giving a metaphysics of complex truth. And in turn, like traditional monists, they’re no better off when it comes to the Problem of “Mixed” Inferences. They can *say* that it is T_U that is “preserved” in valid inference, but the real challenge is providing a metaphysics of truth that satisfies SVC(*). Since *Cat* contains a mixed compound, $(1 \rightarrow 2)$, the moderate pluralist has no solution to the Problem of “Mixed” Inferences until she has a solution to the Problem of “Mixed” Compounds.

Part II – Form-Restricted Pluralism

2.1 *The Theory*

We need to say what the truth of a compound consists in, when it is true; and we need to do so in such a way that the constraints extracted in Section 1 are satisfied. My proposal will, I think, strike some as utterly absurd and others as platitudinous and boring. Let me say this from the outset. My proposal is pluralistic: different complex truthbearers are apt for different properties. But (perhaps surprisingly) for each property that I say is relevant for some set of truthbearers S , *every* inflationist is committed to all and only the true members of S having that property. To this extent, my proposal is utterly non-revisionary. But it is “revisionary” in suggesting that this is what their truth *consists in* (though I scare-quote the revisionism, because I think many theorists may be committed to this). What is new is, I think, that I take the ensuing disunity in the nature of truth seriously. That is what gives “form-restricted” pluralism, on first contact, its paradoxical *platitudinous-yet-radical* feel.²⁴

²³ Worries about how explanatory or not manifestation can be are also raised by Caputo (2012) and Pedersen & Wright (2013b).

²⁴ Symptomatic of this is that Edwards (2008) proposes something that sounds very similar to my proposal; but when Cotnoir (2009) calls him out on it, Edwards (2009) disavows form-restricted pluralism. Instead, he maintains that he was only talking about truth *conditions*. He then identifies the relevant truth property for *any* logical compound with whatever property is relevant for truthbearers in the “logical domain” – i.e., for truthbearers *about* logic – about which he tells us nothing. This is on the one hand surprising and counter-intuitive: after all, $(1 \& 2)$ is about Felix and the moral status of eating him, not about logic. But it also *doesn’t solve the problem until we’re told what the nature of this property is*. This makes it all the more remarkable that Stollo (fc) tries to leverage this proposal into a solution to the Problem of “Mixed” Inferences (by saying that valid inferences are conditionals – with the conjunction of the premises as antecedent and the conclusion as consequent – that have this truth property), again without offering a single detail

Complex truthbearers come in different orders of complexity. We will say a truthbearer is of the n^{th} -order just in case its highest-order component is of the $(n-1)^{\text{th}}$ order, where atomics are 0^{th} -order. Let ‘ T_A ’, then, label the property that the truth of all atomics consists in. For the monist, ‘ T_A ’ refers to correspondence, coherence, superwarrant, or what have you. For the pluralist, it abbreviates a disjunction: being either (in D_1 and T_1) or... or (in D_n and T_n). The disjunctive aspect of this proposal is ultimately dispensable, but it will be easier to work with it for the time being. Further, let ‘ T_{II} ’ label the property that the truth of the relevant first-order complex consists in. Here, then, are my rather mundane theories as to the nature of these properties:

$$\forall p (\Gamma_{\neg 1}(\neg p) \leftrightarrow \neg T_A(p)).$$

$$\forall p \forall q (\Gamma_{\& 1}(p \& q) \leftrightarrow (T_A(p) \& T_A(q))).$$

$$\forall p \forall q (\Gamma_{\vee 1}(p \vee q) \leftrightarrow (T_A(p) \vee T_A(q))).$$

$$\forall p \forall q (\Gamma_{\rightarrow 1}(p \rightarrow q) \leftrightarrow (T_A(p) \rightarrow T_A(q))).$$

$$\forall p \forall q (\Gamma_{\downarrow 1}(p \downarrow q) \leftrightarrow (T_A(p) \downarrow T_A(q))).$$

That is, the truth of a first-order negation consists in *being a negation that negates a truthbearer that is not T_A* , or just *negating a truthbearer that is not T_A* ; similarly, the truth of a first-order conjunction consists in *being a conjunction of a truthbearer that is T_A with another truthbearer that is T_A* , or simply *conjoining two truthbearers that are T_A* ; and so on.

First, this metaphysics straightforwardly satisfies the constraints laid down by the Problems of “Mixed” Inferences and Compounds. The relevant truth property for $(1 \rightarrow 2)$ is such that, if (1) is T_A and $(1 \rightarrow 2)$ is $T_{\rightarrow 1}$, then (2) must be T_A . This is consistent with the nature of truth consisting in T_1 for (1) and T_2 for (2), for any such T_1 and T_2 . Of course, no single property is *literally* preserved across the inference; but we should never have been tempted to think that any property was *literally* preserved. The extensionality (and grounding) constraints are satisfied trivially.

Despite essentially reading the metaphysics off of the extensionality constraints, this account does not merely repeat the constraints, though it does make good on the intuition driving the thought that there is nothing more to say about the nature of truth of a conjunction besides the truth of its conjuncts. (And the analogous intuitions for the other compounds.) There is no concatenation problem for the form-restricted pluralist, because the truth of the different complexes consists in different properties.

It’s obvious, but it’s worth saying explicitly: the property of *being a conjunction of a truthbearer that corresponds (or whatever) with another that corresponds* is a distinct property from the property of *corresponding*. If this is your metaphysics of truth for complexes – as I imagine it implicitly is for many tempted by recursive accounts here – you ought to be interested in the ramifications of the resultant pluralism.

about what the nature of this property is. Until we are given a plausible story here these proposals are no proposals at all; we might as well say that the truth of the complex consists in something-or-other.

One may doubt that these properties are really *properties*, in a special sparse or natural sense. This does not concern me here. My claim is that this is what their truth consists in. If one would prefer to translate my talk of “properties” into other terms, feel free to do so.

These theories only cover first-order complexes of the relevant kinds of complex. We will need further truth properties for higher-order complexes. The proposal thus results in an “infinite proliferation” of truth properties (Cotnoir 2009). Given the dependence of a truth-functional complex on the truth of its components, this will ultimately always be cashed out in terms of T_A . For instance, for a truthbearer of arbitrary complexity ($p \rightarrow ((q \vee r) \& \neg(s \vee t))$):

$$\forall p \forall q \forall r \forall s \forall t (T_{\rightarrow 4A \& 3V1 \neg 2V1}(p \rightarrow ((q \vee r) \& \neg(s \vee t))) \leftrightarrow (T_A(p) \rightarrow ((T_A(q) \vee T_A(r)) \& \neg(T_A(s) \vee T_A(t))))).$$

The “complexity” of the truth property – i.e., the complexity of the definition on the right-hand side of the biconditional that tells us the nature of the property – thus mimics the complexity of the truthbearer itself.

(Note, then, that as I am cashing this out, different truth properties will be relevant for truthbearers of the same kind of the same order of complexity, depending on the logical form of their components. For a similar reason, I am happy to allow that, granting domain-restricted pluralism, different truthbearers of the same order of complexity are apt for different properties – characterised in terms of either T_1 , T_2 , or both – depending on the *contents* of their components. For ease I stick with using ‘ T_A ’, since this emphasises that form-restricted pluralism itself is neutral with regards to monism and pluralism at the atomic level.)

Asides from satisfying the relevant constraints, here is the central attraction of the view. *Any* inflationist will concede that all and only the true first-order negations are $T_{\neg 1}$; all and only the true first-order conjunctions are $T_{\& 1}$; all and only the true first-order disjunctions are $T_{\vee 1}$; and so on, for *all* of the form-restricted truth properties I’ve postulated. To this extent, the proposal is utterly non-revisionary; that the relevant truths *have* these properties is simply common ground. But while any monist will concede that a true first-order conjunction is the conjunction of two truthbearers that are T_A , what she denies is that this is what its truth consists in. Instead, she postulates that its truth consists in the same thing that the truth of the components consists in: T_A . (Furthermore, if the explanatory reading of the extensionality constraints is right, then they are even committed to thinking that a first-order conjunction is T_A *because* the conjunction is $T_{\& 1}$.) Ontologically speaking, then, the monist is committed to everything the form-restricted pluralist is committed to. So, despite the “infinite proliferation” of truth properties, my theory is *not* more ontologically committed than the monist’s. On the contrary, what the monist does is add a *further* metaphysical assumption to the form-restricted view: that all the truths are *also* T_A , and that this is what their truth consists in. This puts the monist on the dialectical backfoot: we ought to resist adding the

monist's further assumption until we are given good reason to add it.²⁵ My contention in this paper is that neither logic nor the metaphysics of complex truth gives us such a reason.

Given the infinite proliferation of truth properties, we cannot write down the comprehensive metaphysics of truth. But what we have is a *recipe* for giving the metaphysics of truth for *any* truth-functional complex. That is the sense in which the metaphysics is comprehensive.

We hereby have a pluralist metaphysics of truth for complexes that is monist- and pluralist-friendly at the atomic level. If this is satisfactory, the Problems of "Mixed" Inferences and Compounds are dissolved. I've made the case that, other things being equal, the suggestion is to be preferred to the monist alternative. To make the case that other things *are* equal, I respond to objections in the next subsection.

2.2 *Objections and Replies*

My view is that we should see principles like "an argument is valid iff: necessarily, if the premises are true, then the conclusion is true" and "a conjunction is true iff both its conjuncts are true" as enforcing *structural* constraints on our metaphysics – constraints on the *relations between* the properties relevant for the relevant truthbearers – that *may* be satisfied by an identity (though merely postulating an identity does not guarantee satisfaction), but need not be. And I have provided a metaphysics that satisfies these constraints, as I have construed them, without postulating an identity. Is there any reason *as far as logic and logical form are concerned* to add the monist's further assumption to our metaphysics?

Couldn't we avoid all the messy complexity and the infinite proliferation by simply offering a recursive account of the nature of truth for complexes, a la Tarski? And wouldn't this allow us to define an unrestricted truth property? I don't think so. When it comes to *metaphysics*, I worry that building recursivity into the *nature* of a property renders it self-grounding in a problematic sense. In any case, consider how someone who buys a recursive account of the nature of truth would *explain* the truth of a higher-order complex, like ' $((p \ \& \ q) \ \& \ (r \ \& \ s)) \ \& \ ((t \ \& \ u) \ \& \ (v \ \& \ w))$ '. They would say that it is true because its conjuncts are true; but when pressed to explain the truth of the conjuncts, they would say that they are true because both of *their* conjuncts are true; and when pressed to explain the truth of them, they would say that they are true because of both of *their* conjuncts are true. That is, *the explanation of the truth of the complex would be identical to the form-restricted pluralist's*. So, in what sense does the recursive definition give us any kind of *metaphysical* unity? I don't think it does. The recursive definitions are useful as a kind of shorthand, but add nothing to our metaphysics of the relevant properties.

What about other complexes? We have not said what truth consists in for *quantificational* truthbearers yet. But I imagine the reader can guess what I am going to suggest here. Truth for quantificational

²⁵ Again, it's worth emphasising, given the argument of this paper's sister paper, that this further assumption saddles us with the liar paradox: the sentence that says of itself that it lacks this unrestricted truth property.

truthbearers is generally understood in terms of satisfaction, and there is both a popular and an unpopular way of doing this. The unpopular way is to understand satisfaction in terms of truth, in which case satisfaction of quantifiers of different logical complexity will be understood in terms of different complex truth properties. The popular way is to understand satisfaction recursively. Once again, I think the *metaphysics* of satisfaction is hereby pluralistic in precisely the same way that the metaphysics of complex truth is. Unsurprisingly, then, I endorse a form-restricted satisfaction pluralism given either approach.²⁶

There are non-truth-functional complexes, and any comprehensive metaphysics of truth must tell us what their truth consists in. For instance, the truth of the components of the following is necessary but insufficient for their truth:

- (3) Felix left the room because there was a loud noise.
- (4) Eating Felix is wrong because he is a household pet.

I will not take any stance on what truth consists in for (3) and (4) here. However, two points need to be made. First, I hope it is clear by now that it would be absurd to suggest that there is any special problem *for the pluralist* when it comes to such compounds. It is the *monist* who is ideologically committed to giving precisely the same answer here as she gives everywhere else. The pluralist can go in for whatever theory of truth seems most plausible. Second, such truthbearers can themselves be components of truth-functionally complex truthbearers. For these purposes, they should be treated as atomics, and the relevant truth properties for the complexes of which they are components will thus be grounded in their relevant truth properties, whatever they may be.

What's validity, then? What's a conjunction, then? Both of the principles mentioned at the start of this subsection mention truth more than once. But my theory is that the nature of truth varies for those truthbearers mentioned each time (the premises and the conclusion on the one hand; the conjunction and its conjuncts on the other). Are these principles not equivocating? How can we make sense of them? There are two challenges here. One is to explain the semantic function of 'is true', given the underlying metaphysical diversity – this, again, is the Problem of Mixed Generalisations, which I argue can be addressed elsewhere (see fn.4 above). The substantive question for our purposes here arises when we read these principles as telling us the *nature* of validity or conjunction. If the underlying metaphysics of truth is disunified, are the phenomena of validity and conjunction disunified?

If one does wish to understand the nature of validity and conjunction in terms of these principles, my suggestion is simply that we read them as articulating *structural* relations on the relevant truth properties, and understand validity and conjunction in these terms. A valid inference is one such it satisfies SVC*. A conjunction is a compound such that its truth depends on the truth of its conjuncts in the way articulated.

²⁶ Shapiro suggests a domain-restricted satisfaction pluralism as an amendment to Lynch's functionalism – see <http://ndpr.ndu.edu/news/truth-as-one-and-many/>.

These structural similarities are explanatorily potent! One might, for example, explain why one should only believe a conjunction when one should believe both of its conjuncts by citing it.

One might instead understand a conjunction as being any truthbearer whose main connective is AND, where this concept is explained in terms of its inferential role (which can be articulated while mentioning neither truth nor validity). This has the virtue of *explaining* the conjunctive structural constraint on $T_{\&}$: the relevant truth property for a conjunction is one it has just in case its components have their relevant truth properties because one can infer a conjunction from both its conjuncts, and can infer each of its conjuncts from a conjunction. This explains the principle in a way that is perfectly consistent with the disunity of truth. I do not see any block to understanding validity or logical operations as unified phenomena resulting from the disunity of truth. (This should be no surprise, since these are not typically pressed as challenges against *deflationists*, who claim that there is *no* substantive property in common among *any* of the truths (qua truths) – a much more radical disunity than the one defended here!)

My challenge to the objector, then, is to articulate what exactly is *missing* from our conception of logic if we do not think of it as concerned with tracking the “movement” of a single property as it travels hither and thither across inferences, and instead think of it as modelling the structural relations between truth properties in order to obtain general theories as to the nature of good inference. Granted, the logician typically assigns single *values* – canonically ‘true’, ‘T’, or ‘1’; and ‘false’, ‘F’, or ‘0’ – in the course of her theorising. But by the form-restricted pluralist’s lights, the use of a single value is an artefact of the model: the purpose is to abstract away from the particular features of the properties to model their structural relations. Note especially that the structural relations between the truth properties is not peculiar to the form-restricted view, but is common ground; the monist merely postulates an additional metaphysical unity to the properties. So this view of logic can be – as conceptions of logic should be – neutral as to the underlying metaphysics of truth.²⁷

Unified explanations and norms? It may seem odd that an inflationist like me, who is happy with the explanatory and normative import of truth, should be ready to defend the radical disunity of the nature of truth. To put the point another way: haven’t I now frustrated the whole point of being an inflationist by postulating that truth has a radically disunified nature after all?²⁸

Now, for one thing, this is simply a different challenge. But for another, I just do not see how this is supposed to follow. The form-restricted disunity of truth is simply consistent with the explanatory and normative roles that truth is supposed to play. For a simple example, suppose we explain why one ought to believe a conjunction in terms of its truth. Every inflationist will agree that the conjunction is true *because* its conjuncts are true; so it should be common ground that it is the truth *of the conjuncts* that ultimately

²⁷ A similar point should stand in, say, semantics, where we use ‘true’ and ‘false’ as the semantic values of sentences or propositions. Compare Yu (2017).

²⁸ One can, of course, be a form-restricted pluralist and a moderate pluralist, by thinking that possessing the form-restricted properties are also ways of being T_U . My argument here has been that T_U is redundant as far as the Problems of “Mixed” Inferences and Compounds are concerned.

explains why the conjunction ought to be believed. (*Even the monist* will say this, since they will think the conjunction is T_U *because* its conjuncts are so.) So it is the truth of *atomics* that is explanatorily and normatively fundamental. Since the form-restricted pluralist's properties are all ultimately grounded in the truth properties relevant for atomics, it makes good sense of this.²⁹

Conclusion

I have argued that the Problems of “Mixed” Inferences and Compounds are just particular instances of perfectly general, structural constraints on our metaphysics of truth, which the monist does not automatically satisfy simply by postulating that truth always and everywhere consists in the same thing. I have then proposed a form-restricted pluralism about the nature of truth that satisfies these constraints, which is neutral between monism and pluralism at the atomic level, and which I have suggested all inflationists should be sympathetic towards. And I have defended the resultant view from the most obvious objections. I cannot claim to have been comprehensive in this defence, but I leave it as a standing challenge to the would-be objector to articulate some shortcoming this form-restricted pluralism has with regards to logic or logical form. My theory is thus that truth is substantive but radically disunified, albeit in a sense I think is ultimately quite familiar and considerably less shocking than it might at first appear.

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²⁹ I am thus even tempted to make the rather more extreme suggestion that, *even if* it should turn that a complex *does* have the monist's favoured truth property, she should not say that this is what the truth of the complex consists in. As far as the truth of complex is concerned, it looks *superfluous* (or, perhaps more politely, *supererogatory*). The form-restricted properties are sufficient. Again, the ultimate justification for this comes from resolving the liar paradox; see [omitted].

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