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What copredication can(not) teach us

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Abstract: Copredication sentences such as 'Lunch was delicious but took hours' and 'The book on the shelf was written by Tolstoy' can be used to express truths despite ascribing *prima facie* incompatible properties to single entities. Theorists have drawn far-reaching and dramatic lessons about what copredication can teach us about language. We begin by focusing on the three such central lessons. In each case we argue that the lessons are mistaken. We then explain our own preferred account of copredication: the Property Versatility approach. We conclude by drawing out some substantive consequences of the Property Versatility approach.

Keywords: copredication; ambiguity; polysemy; properties; counting; genericity

1 The problem of copredication

The following sentences are paradigmatic examples of copredication:[1]

(1) *Lunch was delicious but took hours.*

(2) *The school was vandalized after expelling Bob.*

(3) *The book on the shelf was written by Tolstoy*.

Each of these sentences can express a truth in a relatively straightforward context. If our midday meal consists of delicious food but the event of eating it drags on for hours, (1) can be used to express a truth. (2) can express a truth when a school building is vandalized, after the school board has decided to expel Bob. (3) can express a truth when a particular physical copy of a novel by Tolstoy is on the shelf.

The fact that (1)–(3) can be used to express truths is puzzling. When we reflect on (1), it seems that it is the food that is delicious, but the event of eating that takes hours.

1 Pustejovsky (1995: 236) coined the term 'co-predication', though it is not clear whether he uses it in the same way as subsequent theorists. We won't offer a definition of 'copredication' as we don't want to foreclose any theoretical possibilities at the outset. See Gotham (2014), Liebesman and Magidor (2025), and Vicente (2021) for more comprehensive overviews of copredication.

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In the case of (2), it seems to be a physical building that was vandalized, but an institution that expelled Bob. In the case of (3), it seems that a particular physical copy is on the shelf while an abstract work is written by Tolstoy. Furthermore, it might seem that in each sentence, the two properties ascribed are mutually exclusive.[2] Nothing can be delicious and take hours, and that's because the properties apply to different sorts of entities: *being delicious* is a property of food, while *taking hours* is a property of events, and nothing can be both some food and an event. In short, it is puzzling how copredication sentences can express truths despite ascribing *prima facie* incompatible properties to a single argument. We call this '**the truth challenge**'.

Sentences involving numerical quantifiers generate further intriguing data concerning copredication. Consider a shelf containing three copies of *War and Peace* and no other books. Relative to this scenario, each of the following has both a true and a false reading:

(4) *Three books are on the shelf.*

(5) *(Exactly) one book is on the shelf.*

On the true reading of (4), which is salient in this context, we count each of the individual physical copies (call these 'p-books'). But (4) has an additional reading which is false: if asked to write a book report on all of the books on the shelf, you might be reassured by the fact that there is only one book on the shelf (*War and Peace*). On this second reading – one on which (4) is false and (5) is true - we seem to be counting these more abstract informational works (call these 'i-books').

Note that on the true reading of (5) we seem to be quantifying over informational books, and yet still truly ascribing the property of being on the shelf – a property which you might think i-books cannot have. This shows that (5) is itself a copredication sentence, and thus that not all copredication sentences have the form exemplified by (1)-(3), where two predicates ascribe properties to a single argument. Furthermore, when initially considering classic examples of copredication such as (3), one might get the impression that – however we end up accounting for the phenomenon – such sentences are somehow simultaneously about p-books and i-books (see Section 2.2) or at least about some kind of complex entity that incorporates both types of objects (see Section 2.3). The contrast between (4) and (5), however, pulls in the other direction: in order to get the correct count of one in (5), it seems like that sentence should be exclusively about informational books.

Other cases in which copredication and counting interact in interesting ways concern counting sentences with both "informational" predicates (such as 'memorized') as well as "physical" ones (such as 'yellow'). Consider the following:

2 See, e.g., Pietroski (2005: 268) and Vicente (2021: 920).

(6) *Granger memorized three yellow books.*[3]

According to several theorists, sentences such as (6) require "double-distinctness" individuation conditions: they can only be witnessed by three distinct volumes each expressing a distinct novel (i.e. they cannot be witnessed by three yellow copies of *War of Peace*, nor by a single yellow volume binding together three different novels). It is argued that a key desideratum for any account of copredication is that it predicts these double-distinctness individuation conditions.

Accounting for the wide range of intricate data concerning counting and individuation thus places further constraints on theories of copredication. We call this '**the counting and individuation challenge**'.

A further puzzling aspect of the phenomenon of copredication concerns the contrast between felicitous copredication sentences and infelicitous category mistakes (sentences such as 'Green ideas sleep furiously' or 'The number two is blue').

Consider the following:[4]

(7) *Lunch, which occurred on Tuesday, was delicious.*

(8) *# The birthday party was delicious.*

(9) *# The sandwich occurred on Tuesday.*

(7) is a perfectly felicitous copredication sentence. Yet attempting to apply similar predicates to terms designating apparently similar kinds of objects results in clear category mistakes: the birthday party is an event which cannot felicitously be said to be delicious, and the sandwich is a portion of food that cannot felicitously be said to occur on Tuesday.

This is puzzling. There are a wide range of different accounts of category mistakes,[5] but consider any view which accounts for the infelicity of (8) by maintaining that 'is delicious' cannot be appropriately applied to an event (setting aside whether this constraint is syntactic, semantic, or pragmatic). Such a constraint suggests that 'lunch' in (7) cannot denote an event. Similarly, one might think that any account of the infelicity of (9) requires that 'occurs on Tuesday' cannot appropriately apply to a portion of food, and hence that 'lunch' in (7) does not designate some food. But this makes interpreting (7) particularly challenging. More generally, we are faced with the challenge of providing an account of the infelicity of category mistakes that will not end up predicting that copredication sentences are also infelicitous, and conversely providing an account of copredication that does not 'over-repair'

3 This example comes from Gotham (2022: 106), though it is very slightly modified.

4 We use the hash sign throughout to mark a sentence that is infelicitous/unacceptable in context, for whatever reason (including just being obviously false in the relevant scenario).

5 See Magidor (2013, 2025), for overviews.

sentences, predicting that category mistakes such as (8) or (9) are felicitous. We call this '**the category mistakes challenge**'.

Copredication is thus both a deeply puzzling and highly pervasive linguistic phenomenon. It is therefore not surprising that a range of theorists have reached some radical and far-reaching lessons about what the phenomenon can teach us about natural language.

In Section 2, we discuss three such lessons. In Section 2.1 we discuss the view that copredication teaches us that familiar semantic theories that assign worldly entities to words and derive sentential truth-conditions are altogether impossible. In Section 2.2 we discuss the view that copredication shows that polysemous expressions have the distinctive property of being such that single occurrences of them can simultaneously utilize multiple meanings. In Section 2.3 we discuss the view that counting sentences involving copredication compel us to introduce novel and often complex semantic machinery. However, we argue that none of these lessons are warranted and that the theories that naturally pair with them do not yield successful accounts of copredication.

Moreover, we maintain that there is in fact an alternative theory which does successfully account for copredication, and does so using entirely orthodox means while rejecting these three lessons: the Property Versatility approach to copredication, which we sketch and briefly defend in Section 3.

Assuming one accepts the Property Versatility approach, one might be under the impression that – interesting as it is as a topic in its own right – copredication has little to teach us about the study of language more generally. In Section 4, we argue that this is not so: the Property Versatility approach has a number of important implications, though these are very different than other theories have assumed. In particular, we'll discuss the implications with regard to ambiguity tests (Section 4.1), the semantics of generics (Section 4.2), and the metaphysics of languages and words (Section 4.3).

2 Three mistaken lessons

Copredication has been discussed in a wide variety of contexts, and our purpose here is not to survey every discussion.[6] Rather we focus on three dramatic lessons drawn

6 See Liebesman and Magidor (2025) for a comprehensive critical survey of accounts of copredication. One type of account which we do not discuss at all in this paper are Reinterpretation accounts. On this kind of view, predicates in copredication sentences such as (1) receive *ad hoc* reinterpretations in context, via a mechanism such as meaning transfer. For example, 'is delicious' might be reinterpreted in context to mean 'involves delicious food', and the sentence as a whole might be read as saying that the lunch event involved delicious food but took hours. Like our own

from the copredication and the theories of copredication developed in tandem with these lessons. In each case we argue both that the lessons are mistaken and the theories do not offer satisfactory accounts.

2.1 First mistaken lesson: externalist semantics is impossible

Familiar semantic theories systemically derive sentential truth-conditions by assigning non-linguistic and non-mental semantic values to sub-sentential expressions. Chomsky has influentially argued that copredication (alongside some other troublesome linguistic phenomena), creates trouble for such theories – which he calls 'externalist'. Externalist theories, the thought goes, would be forced to assign external semantic-values to the nouns in copredication sentences, but that is impossible. Thus, externalist theories must be rejected. As Chomsky (2000: 16f.) puts it:

> Contemporary philosophy of language…asks to what a word refers, giving various answers. But the question has no clear meaning. The example of "book" is typical. It makes little sense to ask to what *thing* the expression "Tolstoy's *War and Peace*" refers, when Peter and John take identical copies out of the library. The answer depends on how the semantic features are used when we think and talk, one way or another. In general, a word, even of the simplest kind, does not pick out an entity of the world, or of our "belief space". Conventional assumptions about these matters seem to me very dubious.

Inspired by Chomsky, a similar lesson has been drawn by several other theorists (Collins 2017; Pietroski 2018).[7]

Ultimately the best rebuttal of this sceptical stance is to give a successful externalist theory. King (2018: 779) puts the point clearly:

> This argument is only as strong as the claim that data like [the sentences Chomsky takes to pose trouble for the externalist] cannot be accounted for by an externalist semantics and must be accounted for by a theory that posits semantic features in such a way that the claim that words have references ends up having no clear meaning. This claim strikes me as rather weak.

In Section 3, we will offer our favoured externalist account of copredication. For the remainder of this section, though, we set this point aside in order to examine whether the rejection of externalist semantics and the corresponding internalist

Property Versatility approach, this type of view also does not require any unorthodox linguistic machinery, but we argue elsewhere that it is independently unsuccessful (see Liebesman and Magidor 2023, 2025: ch. 5).

7 Chomskyans give a variety of more specific arguments from copredication to scepticism about externalist semantics. We discuss these in Liebesman and Magidor (2025: ch. 6, Section 2).

theories allow a satisfying treatment of copredication. Our main claim will be that the rejection of externalist semantics does not provide any advantage in addressing copredication.

Before delving into the details, we can put our argument in general terms: a natural first reaction is to think that semantic sceptics can simply dismiss the phenomenon of copredication altogether, claiming there is nothing to account for. This, however, is not so. In introducing copredication in Section 1, we did not use words like 'external', 'compositional' or even 'semantic'. Rather, we simply observed that sentences like (1)–(3) can be used to express truths, and that this is a ubiquitous and often seamless affair.[8] Merely adopting semantic scepticism does nothing to explain this straightforward observation.[9] After all, arguing that the explanation should not be given in terms of compositional semantics does not make this task easier, it merely deprives us of one potential kind of explanation.

What special resources, if any, do Chomskyans have in order to account for copredication? It might help to start by observing that the theory that is developed based on this sceptical outlook about externalist semantics is not purely negative.[10] On such views, henceforth called *Internalist*, words do have meanings. Although these meanings do not generate sentential truth-conditions or associate words with externalist referents, they are intended to explain central facets of the interaction between language and cognition. Here are three key components of Internalist views:

> **Anti-Externalism:** Semantics does not deliver truth-conditions for sentences, nor do particular words refer to external entities. However, speakers can use words to refer and use sentences to express truth-conditional content.

> **Multiplicity:** Often, sentences can be used to express several different thoughts ('the duck is ready to eat') and words can be used to refer to several different things ('lunch'). One of the tasks of semantics is to explain such multiplicity, which may be due to homonymy or polysemy, and may be lexical or structural. The absence of readings, or referential uses, is often as important as their presence, and constrains semantic theories.[11]

8 Collins (2023) adopts an error theory on which copredication sentences do not genuinely express truths. However, even such an error theory will have to explain why copredication sentences seem to express truths.

9 Cf. Ortega-Andrés and Vicente (2019: 16), who write: "Co-predication is not a specific problem for defenders of truth-conditional semantics," and go on to say that even a view on which speakers (rather than words) refer, we still face the challenge of understanding what is expressed by speakers when they use copredication sentences to express truths.

10 Glanzberg (2021) gives an overview of the positive components of Chomsky's approach to semantics.

11 Pietroski (2005; 2018: ch. 2) emphasizes the importance of negative data as well as accounting for multiple readings.

> **Constraints:** While word meaning does not determine reference, it does place constraints on reference. The word 'book', for instance, can be used to refer to informational or physical books, but it cannot be used to refer to bananas.[12]

Consider again *the truth challenge*. Mere appeal to Anti-Externalism is not sufficient to relieve the internalist of this explanatory burden. According to Anti-Externalism, copredication sentences might not be themselves true or false, but they can still be used to express truths. Furthermore, while we framed Constraints in terms of word-reference, a natural generalization is that one task for semantics is to give constraints on which truths/falsehoods sentences can be used to express. So, even by the Internalist's own lights, it is plausible that they must explain how copredication sentences can be used to express truths, and which truths they express.

A more sophisticated strategy departs from Multiplicity and Constraints. On this view, the nouns involved in copredication sentences (e.g. 'lunch') can be used simultaneously to refer to two different things (Multiplicity), and the exact things they can be used to refer to explain the specific truth-conditional possibilities for copredication sentences (Constraints).

It is important to notice that this proposal requires a particularly strong version of Multiplicity. The initial Chomskyan observation is that single expressions can be used to refer to different things. This is especially plausible when we focus on different occurrences or uses of those expressions. However, on the proposed explanation, it is not merely a single expression that can be used to refer to different things – rather, a single use/occurrence of that expression is simultaneously used to refer to different things.

In fact, this stronger version of Multiplicity faces an immediate challenge. Many words which can be used to refer to different things on different occasions cannot be used to construct copredication sentences utilizing those referents. Consider (10):

(10) *# The bank along the Thames was liable for major real estate losses.*

There is a natural rejoinder for the Internalist: to rely on the distinction between polysemy and homonymy.[13] The refined hypothesis is that copredication sentences can be true in virtue of the fact that they contain polysemous subject terms that are

12 See Chomsky (2000: 34). Chomsky thinks of these constraints as semantic features of expressions, roughly on par with phonetic features. While the latter allow the faculty of language to interface with the articulatory/perceptual system, the former allow the faculty of language to interface with the conceptual/intentional system (see King 2018: 776–779).

13 While the distinction between polysemy and homonymy is highly controversial, to a first approximation we can think of polysemous expressions as those which have multiple related meanings, whereas in the case of homonymy the meanings are unrelated. See Sennet (2023) for an overview of ambiguity which discusses the distinction and Vicente and Falkum (2017) for an overview of polysemy.

simultaneously interpreted in multiple different ways. We will soon return to the strategy of relying on polysemy in this way in order to account for copredication, and argue that it fails (Section 2.2). But a more important observation for current purposes is this: a polysemy-based account of copredication has nothing specifically Internalist about it. Even if there is a sophisticated version of a polysemy-based view that accounts for sentences such as (1)–(3) using a non-uniform interpretation of the relevant nouns, there is no reason why a committed externalist cannot utilize such a theory.

Analogous points apply to how Internalism might try to address *the category mistakes challenge*. Consider again the contrast between the following two sentences:

(11) *# My sandwich, which took place on Tuesday, was delicious.*

(12) *Lunch, which took place on Tuesday, was delicious.*

The challenge is that the most straightforward explanation for the anomaly of (11) attempts to ascribe a property (*taking place on Tuesday*) which is categorially mismatched to the subject term ('my sandwich'). The problem is that this explanation of the anomaly of (11) seems to over-generalize to (12): if 'lunch' picks out some food then the predicate 'took place on Tuesday' should give rise to a similar anomaly (and similarly, if 'lunch' picks out an event, then the parallel worry arises with respect to 'is delicious').

An Internalist might try to object to this latter line of argument by appealing to Anti-Externalism: words, the thought goes, do not refer at all (though they can be used to do so) and this blocks the argument that (12) is anomalous at the first step: we cannot derive the conclusion that the referent of 'lunch' is categorially mismatched to the predicates, because 'lunch' does not refer at all. The problem with this strategy is that it also blocks the Internalist from claiming that (11) is anomalous. After all, the explanation of its anomaly likewise depended on a claim about expression-reference – in this case about 'my sandwich'. Given that the challenge is to explain the contrast between (11) and (12), merely emphasizing Anti-Externalism will not help the Internalist: any failure of the argument for the anomaly of (12) will equally apply to (11).

Here too there is a more sophisticated strategy available to the Internalist that appeals to Multiplicity and Constraints. There is an intuitive difference between 'sandwich' and 'lunch': the former, it seems, can only be used to refer to one kind of thing while the latter, it seems, can be used to refer to at least two very different things (some food and an event). And here too, an Internalist can hold a version of Multiplicity on which polysemous expressions (in contrast to homonymous or entirely unambiguous ones) can be used to simultaneously refer to multiple entities.

The contrast between (11) and (12) is then explained as follows: on the only referential construal of 'my sandwich', it is categorially mismatched to its predicate in (11), whereas 'lunch' has multiple referential construals simultaneously, and for each predicate in (12) there is a non-mismatched construal. The generalization, then, is that we can distinguish copredication sentences from category mistakes, because the former but not the latter contain polysemous subject-terms that allow for multiple simultaneous referential construals. As with our discussion of the truth challenge, there are two problems with this strategy. The first is that, as we'll argue below, a polysemy-based explanation of copredication ultimately fails. The second, is that such an explanation does not in any way rely on accepting Internalism: it is just as much available to an externalist.

Ultimately, the purported lesson that externalist semantics is impossible, and its corresponding theory, Internalism, are not well-supported by the phenomenon of copredication. Scepticism is only as well-motivated as the view that no non-sceptical account is possible, and as we'll soon argue in Section 3, there is a successful non-sceptical account. Furthermore, Internalism offers us no advantage in accounting for the phenomenon of copredication. Of course, one might be motivated to adopt Internalism for independent reasons, but that we should be motivated to adopt it is not learned by reflecting on copredication.

2.2 Second mistaken lesson: polysemy allows utilizing multiple meanings simultaneously

It is common to distinguish between two types of lexical ambiguity: homonymy and polysemy. The definition, scope, and theoretical treatment of polysemy are controversial,[14] but, as a rough gloss, a term is homonymous in case it has at least two unrelated senses (for example, 'bat' as used for a kind of animal, and as used for a wooden stick), and a term is polysemous when it has at least two related senses (for example, 'lunch' as used for mid-day meals, and as used for the food consumed in them).

It is common in the literature to hold that copredication teaches us that polysemy behaves in importantly different ways from homonymy. In particular, that a single token of a polysemous expression can utilize multiple meanings simultaneously.[15]

14 As Carston (2021) puts it in the conclusion of her paper: "This is an area in which just about everything is up for grabs…".

15 See Abbott (2013), Collins (2017), and Ortega-Andrés and Vicente (2019). Indeed, note that some even take this as a defining feature of polysemy – see e.g. Collins (2023: 368). We clearly reject this definition (but if one wants to simply stipulate that this is what 'polysemy' means, then we reject that there are any cases of "polysemy" in this defined sense).

From a foundational point of view, this hypothesis is radical: it challenges the traditional picture on which we assign single stable meanings to sub-sentential tokens and then compositionally derive meanings for linguistic complexes. After all, if a single token is assigned multiple meanings then we will need additional machinery to determine which meaning is selected for various compositional processes. Nevertheless, the claim is commonly endorsed in the literature. Abbott (2013: 8), for example, comments that "in…cases of polysemy, a single occurrence of a lexical item may often be construed with two different senses." After offering (among others) the following example:

(13) *Linda opened the green door and walked through it.*

She comments: "the underlined word…is being used in two different ways. In [(13)] the word *door* applies both to the opening which Linda walks through, and to the physical object which is painted green".[16]

Similarly, Collins (2017: 679) presents 'book' as "another example of polysemy", and then argues that in the following:

(14) *Bill memorized and (then) burned the book.*

"No problem arises here, although, clearly two distinct construals of *book* are in play, one as content and one as a concrete particular."

One might think that the claim that polysemes can simultaneously utilize multiple meanings is a straightforward linguistic observation. This, impression, however, should be resisted: examples such (13) and (14) which are used to demonstrate the point are always copredication sentences. And the so-called observation relies on an implicit theoretical assumption about how one ought to account for copredication: that the interpretation of such sentences requires construing a single occurrence of the relevant noun ('book', 'door', or 'lunch') to be simultaneously interpreted with multiple meanings.

It will be easier to see that this is a controversial theoretical assumption once we discuss our own theory of copredication, which accounts for copredication sentences while rejecting the assumption that multiple meanings of 'door' or 'book' are in play in these examples.[17]

In addition to those who hold that the interpretation of sentences such as (13) requires simultaneously utilizing multiple meanings, some theorists are more explicit in developing an account of copredication that relies on the hypothesis; we'll

16 See Liebesman and Magidor (2025: ch. 9, Section 2) for a discussion of this and some closely related examples.

17 Note that it is not just the Property Versatility view that rejects this assumption. The 'Dual Nature' views defended by Asher (2011) and Gotham (2014) reject the assumption as well.

call these **'Polysemy-Centric'** approaches to copredication.[18] In the previous section, we've already seen the idea of appeals to multiple meaning utilization in the context of Internalism,[19] but as we noted there, the same idea can also be pursued in the context of externalist truth-conditional semantics. For example, Ortega-Andrés and Vicente (2019: 2), argue that "Co-predication occurs when one polysemous nominal expression has simultaneous predications selecting for two different meanings or senses," they then utilise this idea to interpret several copredication sentences. For example, on their view (15) is interpreted as (16) (2019: 16):

(15) *Brazil is a large Portuguese-speaking republic that is very high in inequality rankings but always first in the FIFA ranking.*

(16) *Brazil* [place] *is a large piece of land & Brazil* [people] *is Portuguese-speaking & Brazil* [government] *is a republic & Brazil* [economic system] *is very high in inequality & Brazil* [football team] *is always first in the FIFA rankings.*

The key idea of Polysemy-Centric approaches is that copredication sentences can be interpreted by taking each predicate to apply to a different sense of a polysemous noun. But while it seems initially attractive, as soon as we try to generalize the approach it faces serious difficulties.

First, as we noted in Section 1, copredication comes in a variety of forms. Consider again an utterance of (17), as uttered in a context where there are three copies of *War and Peace* on the shelf. As we noted this sentence has a natural true interpretation:

(17) *(Exactly) one book is on the shelf.*

But if we interpret 'book' as *p-book*, we get a false reading (after all, there are *three* p-books on the shelf in this scenario). And if we interpret book as *i-book* then – at least by the lights of the current approach – we also get a false reading (after all, the reason for thinking that such sentences are puzzling in the first place and require multiple meanings was precisely the thought that informational books are not the kind of thing that can be on shelves). Now, let's grant for the sake of argument that 'book' can be simultaneously interpreted in both ways. It is hard to see how that helps generate the true reading of (17). By analogy to Ortega-Andrés and Vicente's interpretation of (15) we could attempt to interpret the sentence as follows:[20]

(18) *Exactly one p-book is on the shelf and exactly one i-book is on the shelf.*

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18 We discuss Polysemy-Centric views extensively in our 2025: ch. 7.

19 Collins (2017) defends an Internalist view that appeals to multiple meaning utilization.

20 Ortega-Andrés and Vicente (2019: 17) acknowledge that in the case of some sentences it is harder to provide a suitable paraphrase, though they use a different example to demonstrate the point.

But then we simply get a conjunction of two false claims which is itself false.[21]

A second problem is that Polysemy-Centric approaches overgenerate: they predict of some infelicitous sentences that they should be felicitous. Consider for example the following example (Gillon 2004: 177):

(19) *# The newspaper fell off the table and fired its editor.*

It's widely accepted that 'newspaper' is polysemous between a reading on which it picks out a physical object (the particular copy) and a reading in which it picks out an institution. But if polysemy typically allows each predicate to be interpreted relative to a different reading of the noun, one would have expected (19) to be a perfectly felicitous case of copredication, interpreted as:

(20) *The newspaper* [copy] *fell off the table, and the newspaper* [institution] *fired its editor.*

This prediction, however, does not bear out: (19) is highly infelicitous.[22]

Defenders of Polysemy-Centric approaches to copredication are well-aware of this issue and have a rejoinder: not all collections of senses of a polysemous noun allow for simultaneous access. The most sophisticated development of this idea is offered by Ortega-Andrés and Vicente (2019). According to their view, some families of senses form what they call 'activation packages': this is intended as an empirically testable psychological notion, where using (or activating) one sense makes the other available for interpretation. For many polysemous nouns, their different senses do form an activation package (for example: p-book and i-book in the case of 'book'; and the food and event in the case of 'lunch'). However, in other cases, a polysemous noun can have multiple readings that do not form an activation package. This is what we get with the two readings of 'newspaper' mentioned above.

The problem with this rejoinder is that it suggests that the difference between felicitous and failed attempts at simultaneous access is determined entirely by *which senses* we are attempting to access. This prediction, however, is not borne out by the data. Consider for example the following:

(21) *# The book was translated to many languages and has a small coffee stain on its cover.*

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21 An alternative proposal is to interpret (17) as expressing a more complicated claim, for example that exactly one i-book is instantiated by a p-book which is on the shelf. But first, note that this interpretation requires far more than mere simultaneous access (for example, it is not clear how the sentence expresses something about the instantiation relation, let alone a claim with this particular structure). And second, as we argue in Liebesman and Magidor (2025: ch. 5) there are other examples that don't easily lend themselves to any such paraphrase.

22 Haber (2022: ch. 4) contains extensive experimental data establishing that ordinary speakers find (19) unacceptable.

(22) *# Lunch took place on Tuesday and weighs 500 grams.*

If the two senses of 'book' and of 'lunch' form respective activation packages and this explains why they allow for copredication in familiar examples such as (1) and (3), then we would have predicted that (21) and (22) are perfectly felicitous and can be interpreted respectively as:

(21*) *The (i-)book was translated to many languages and the (p-)book has a small coffee stain on its cover.*

(22*) *Lunch (event) took place on Tuesday and the lunch (food) weights 500 grams.*

However, this prediction too is not borne out.

A third problem for Polysemy-Centric approaches is that there are cases of felicitous copredication sentences that do not involve polysemy at all. Viebahn (2022: 1079) offers the following examples:

(23) [Pointing at a copy of a book:] *That is heavy but informative.*

(24) [Pointing at a picture of a school:] *It was celebrating 4th of July when the fire started.*

These sentences contain the demonstratives 'that' and 'it' as their subjects, and, as Viebahn (2022: 1079) puts it "'that' and 'it', the copredicating expressions, are standardly taken to be non-polysemous: they appear to be fairly clear examples of expressions that are context-sensitive and univocal."

Of course, one could point out that while not polysemous, the context-sensitive terms 'that' and 'I' are semantically variable – they can receive different interpretations in different contexts. But as the case of (10) demonstrates, semantic variability doesn't in general support multiple simultaneous access, and in fact, nor does that specific semantic variability that is exhibited by demonstratives. In the following, one cannot generate a true reading by interoperating 'that' as simultaneously referring to a child and a bit of food:

(25) *# That is both a preschooler and an egg.*

In fact, in Liebesman and Magidor (2025: ch. 7, Section 5.1), we argue that copredication doesn't require semantic variability at all. A standard assumption in the literature is to claim that 'school' is polysemous between (at least) a sense in which it picks out an institution and sense in which it picks out a building (Haber 2022; Ortega-Andrés and Vicente 2019). However, on reflection, there is substantive linguistic evidence that 'school' simply does not have a reading where it picks out a building.

First, consider a school that is housed in two adjacent buildings, and assume that there are no other schools on the street where the school-buildings are located. If 'school' has a building sense, we would expect a true reading of the following:

(26) *# There are two schools in the street.*

In fact, though, (26) has just a false reading in this scenario: the only correct count is that there is exactly one school in the street. This suggests that 'school' does not have a 'building' sense.

Second, consider a brand-new school has been founded and a vacant 100 year-old office-building was chosen to house it, i.e. the office-building becomes a school-building. Given that the school-building long predates the school, (27) is true while (28) has no true reading:

(27) *The school building is 100 years old.*

(28) *# The school is 100 years old.*

However, if 'school' could have been read as referring to a school-building, one would have expected (28) to have a salient true reading in this context.

To summarize: many theorists hold that copredication teaches us that polysemous terms allow for single tokens to simultaneously utilize multiple meanings. Based on this, some have developed theories on which we account for copredication by utilizing this purported property of polysemy. We should reject the lesson and the related theories though. The purported lesson is not directly supported by linguistic observation but relies on controversial theoretical assumptions which several well-developed theories of copredication reject. In addition, Polysemy-Centric theories of copredication suffer from multiple problems. First, simultaneous utilization of multiple meanings cannot in itself account for the complex truth-conditions of the wider variety of copredication sentences. Second, polysemy is not sufficient for felicitous copredication: even when focusing on the same noun (e.g. 'book') and the same collection of senses (e.g. i-books and p-books), we get varying felicity judgements. And third, polysemy – and indeed semantic variability more generally – is not necessary for felicitous copredication.

2.3 Third mistaken lesson: counting sentences require novel semantic machinery

In Section 1 we mentioned that counting and individuation sentences pose substantial challenges in accounting for copredication. Consider the following series of sentences:

(29) *Three books are wrinkled.*

(30) *Three books are by Tolstoy.*

(31) *Three wrinkled books are by Tolstoy.*

On the most natural reading of (29), we are counting p-books. On this reading, (29) is true in a scenario with three different wrinkled p-books (e.g. wrinkled copies of *War and Peace*, *Anna Karenina,* and *Resurrection*), but false in a scenario in which we have a single wrinkled volume that binds together all of these novels. On the most natural reading of (30), by contrast, we are counting i-books. On this reading, (30) is true in a scenario with three distinct informational works, each of which is written by Tolstoy such as *War and Peace*, *Anna Karenina*, and *Resurrection*, but false when we have three distinct p-books that express the same i-book, e.g. if a shelf contains three copies of *War and Peace*. The biggest challenge comes in accounting for (31), which seems to many to somehow simultaneously count both p-books and i-books. In fact, as we mentioned in Section 1, numerous theorists have held that (31) has special "double-distinctness" truth conditions such that its truth can only be witnessed by books that are both informationally and physically distinct. (We will go on to argue that double-distinctness truth-conditions are illusory.).

Generating the desired truth-conditions in these cases is not trivial – especially if one focusses on double-distinctness. If, for instance, 'book' is simply polysemous between i-book and p-book readings, then no matter which we chose we seem to be counting books either physically or informationally, but not both. In response to this challenge, an important class of theorists draws the lesson that we must introduce novel semantic machinery.

The exact machinery invoked differs between theorists. But it will be useful to sketch some general commitments of such theories, which we call '**Dual Nature**' approaches to copredication.[23] On Dual Nature approaches, the nouns underlying copredication sentences receive a single reading, which picks out a special type of 'hybrid' or 'dual-nature' object. For example, 'book' denotes a type of object that has both informational and physical components. This core idea is accompanied by the thought that neither mere i-books nor mere p-books fall under the extension of 'book'. Rather, the noun 'book' has a single reading on which it picks out a type of objects which incorporates both informational and physical "components".[24]

23 Dual Nature approaches are developed in Luo (2010, 2012) and Chatzikyriakidis and Luo (2015, 2018, 2020); Pustejovsky (1995), Asher and Pustejovsky (2013), and Asher (2011); Gotham (2014, 2017, 2022); Cooper (2006, 2007, 2011, 2018); and Mery et al. (2019).

24 Different theorists hold different views on just what it is to be a component of a dual-nature object. Gotham (2017) holds that the components are parts, while Asher (2011) holds that they are aspects.

How does this idea help account for copredication? Consider the following copredication sentence, as uttered in a context where a single copy of *War and Peace* is on the shelf:

(32) *The book by Tolstoy is on the shelf.*

The idea is that (32) is witnessed by a dual-nature object which has both the physical volume and the informational book *War and Peace* as components. The physical volume has the property of being on the shelf, while the informational object has the property of being by Tolstoy. This in turn provides an account of the truth of (32) using one of two broad strategies: either a metaphysics of dual-nature objects on which they inherit both the relevant properties from their components; or some non-standard semantics which generates truth-conditions for (32) that do not require the book itself to have the relevant properties, only its components.

However, the key motivation for Dual Nature approaches comes from the purported lesson that we need novel machinery to analyse sentences like (31), and, more generally, the views are designed to address the *counting and individuation challenge*. Proponents of Dual Nature approaches propose a number of complex linguistic mechanisms in order to account for counting and individuation. These include appeals to relative identity, aspectual predication, type-shifting, individuation-sensitive predication and quantification, modern type theories, and complex record types. The details of each Dual Nature account are intricate, and we do not here have the space to discuss them in full detail.[25] Let us, though, briefly present some key aspects of the two best-developed Dual Nature theories: that of Asher (2011) and that of Gotham's (2014, 2017).

Asher's view is developed against a background system of fine-grained types. In addition to familiar types such as *e* and *t*, there are finer types such as P (physical objects) and I (informational object). Asher also postulates a special kind of hybrid types – called 'dot types'. For example, books belong to the hybrid type P•I (read 'P dot I'), where each book has both physical aspects (corresponding to what we call p-books) and informational aspects (corresponding to what we call i-books).

Interpretation is initially subject to strict typing constraints, but Asher's system also allows for some special type-shifting mechanisms which offer 'repairs' of type-clashes in specific, grammatically constrained, circumstances. Here is what his account predicts about (29)–(31).[26] In (29), 'wrinkled' expects an argument of type P

25 We discuss Dual Nature approaches extensively in our (2025: chs 1–4).

26 We focus here on examples which according to Asher ultimately involve quantification over aspects of books. Other cases (e.g. 'Mary picked up and mastered three books') require on his view quantification over the dot-object books themselves, which in turn is interpreted using the notion of relative identity.

(physical object). Since books are of type P•I (the noun 'book' is of type <P•I,t>), one initially gets a type-clash. However, this clash can be repaired using Asher's type-shifting rules which dictate that in this case the sentence is interpreted as quantifying over physical objects (in this case, physical aspects of books), and receives the following truth-conditions:

(29^{A}) There are three wrinkled physical objects, each of which is an aspect of some book.

Similarly, in (30), 'by Tolstoy' expects an argument of type I (informational object). Since books are not of this type, one gets an initial type clash, which after repair yields the following truth-conditions:

(30^{A}) There are three informational objects by Tolstoy, each of which is an aspect of some book.

Matters get more complicated with cases like (31), where the books are described both using a predicate ('wrinkled') which expects a physical argument, and predicate ('by Tolstoy') which expects an informational one. Here, Asher's system predicts that we would need two successive type-shifts. The first is needed to repair the clash between 'wrinkled' and 'book', and yields an interpterion of 'wrinkled book' as 'a P•I object which is a book and has a wrinkled physical aspect'; the second is needed to repair the class between 'wrinkled book' (which is of type <P•I,t>) and 'by Tolstoy' (which is of type <I,t>). Ultimately, the sentence receives the following truth-conditions:

(31^{A}) There are three informational objects which are by Tolstoy, each of which is an aspect of some book which has a wrinkled physical aspect.

Here, Asher predicts that (31) is false when there are three wrinkled copies of the same novel by Tolstoy (in that scenario there aren't three informational objects by Tolstoy), but true in a scenario involving a single wrinkled volume binding together three distinct novels by Tolstoy.

Gotham takes a very different approach to counting. Consider a single red physical copy (p_1) of the informational book *War and Peace* (WP). On Gotham's view, neither of these are books, but their mereological sum p_1+WP is a book. Moreover, the mereological sum inherits many of the properties of its components: since p_1 is red so is the sum, and since WP is by Tolstoy, so is the sum. The book (p_1+WP) is thus literally both red and by Tolstoy, with no need for any type shifting or reinterpretation of the relevant predicates.

Interpreting counting sentences, however, is far less straightforward. On Gotham's view, nouns encode a second component of meaning (in addition to their standard truth-conditional contribution), which is a (quasi)-equivalence relation – a

'criterion of individuation'. For example, 'wrinkled' encodes a physical criterion (PHYS) which holds between two objects just in case they share the same physical component, and 'by Tolstoy' encodes and informational criterion (INFO) which holds between two objects just in case they share the same informational component. Furthermore, numerical quantifiers are sensitive to these criteria of individuation.

On Gotham's system, we get the following interpretation of sentences of the form 'N Fs are Gs' (with the highlighted part going beyond the standard semantics of numerical quantifiers):

(Gotham's counting): There is a plurality of N objects, each of which is F and is G, *and where no two are equivalent to each other according to the criterion of individuation which is the disjunction of the criterion contributed by F and the criterion contributed by G*.

To see what this view predicts regarding (29) and (30) note that according to Gotham, 'book' encodes the conjunctive individuation criterion PHYS⊓INFO (where two objects stand in this relation just in case they share both their physical and informational components). The disjunction of this criterion with PHYS yields the criterion (PHYS⊓INFO)⊔PHYS, which is equivalent to PHYS, and similarly its disjunction with INFO, is equivalent to INFO. The sentences thus receive the following truth-conditions respectively:

(29^{G}) There is a plurality of three wrinkled books, each of which is physically distinct from each other.

(30^{G}) There is a plurality of three books by Tolstoy, each of which is informationally distinct from each other.

The interpretation of (31) is again, somewhat more complicated. First, we need a rule that determines which criterion of individuation is encoded by 'wrinkled book'. Gotham provides a fully compositional theory for both standard truth-conditions and for the encoded criteria, and this predicts that the phrase encodes the criterion PHYS (the disjunction of the criteria contributed by 'book' and by 'wrinkled'). This criterion contributed by 'wrinkled book' is then disjoined with the criterion INFO (encoded by 'by Tolstoy') to yield the disjunctive criterion PHYS⊔INFO, and thus the sentence as a whole receives the following truth-conditions:

(31^{G}) There is a plurality of three books which are wrinkled and by Tolstoy, and where no two books share either a physical or an informational component.

On this interpretation (31) is true relative to a scenario containing three wrinkled volumes each instantiating a distinct novel by Tolstoy, but is false relative to a scenario containing either a single wrinkled volume binding together three novels (in which case we won't have three physically distinct books); and is also false in a scenario containing three copies of *War and Peace* (in which case we won't have three distinct informational books). These are the 'double distinctness' truth-conditions alluded to in Section 1 above, and Gotham takes generating them to be a major desideratum of his view (2017: 334).

Let us take stock: defenders of Dual Nature approaches take it to be a lesson of copredication that we need novel semantic machinery for counting sentences. While the added complexity is a price, one might be under the impression that this is a key lesson of sentences like (29)–(31).

In the next sub-section we argue that this is a mistaken lesson. Not only are the complex manoeuvres not needed in order to address the counting and individuation challenge (see Section 3), but in fact they yield entirely inadequate empirical predictions.

2.3.1 Empirical problems for Dual Nature theories of counting

Above we have seen two different proposals for how to accommodate counting in the context of a Dual Nature approach to copredication. Here we present a series of empirical problems for these approaches. Although Asher and Gotham's theories differ substantially on the mechanisms they use to generate truth-conditions of counting sentences (and also differ to a lesser extent on the truth-conditions generated), we show that their semantics of counting face similar empirical problems.

First, while Dual Nature approaches might seem to address sophisticated and subtle counting data, they falter with some of the most basic counting sentences that triggered the counting and individuation challenge in the first place. Recall the scenario on which there are three copies of *War and Peace* on the shelf, which as we saw generates both true and false readings of each of the following:

(33) *Three books are on the shelf.*

(34) *(Exactly) one book is on the shelf.*

Both Asher and Gotham's semantics, though, only deliver the true reading of (33). On Asher's view, 'on the shelf' is of type <P,t> and on Gotham's view, it encodes the PHYS

criterion: thus both views account for this sentence as with (29), and only get a count of *three* books.

Other cases might seem more favourable to Gotham and Asher's contention that we only count books in a single way relative to a particular predicate. Consider the following:

(35) *Alice picked up three books.*

(36) *Three books are by Tolstoy.*

As we have seen above, both views predict that (on its only reading), (35) is true relative to situations containing three *physical books* while (on its only reading), (36) is true only relative to situations containing three *informational books*. While these are certainly the more salient readings of each sentence, we maintain that each also has an additional reading – one that neither view captures.

To see this, suppose first, that Alice and Bob own a bookstore. Four new (i-)books have just been published, and they would like to bring in one hundred copies of each into their store – four hundred volumes in total. Initially, Alice was going to go pick up all the books from the publisher herself, but she realises that she can only fit three hundred volumes into her car so she says to Bob: 'I will pick up three books, and you can pick up the fourth one tomorrow'. She is here using (a variant of) (35) to count the number of informational books.

By contrast, suppose that Alice and Bob are figuring out which shelves in their store need reinforcement. A particular shelf contains all the books by Tolstoy, and Alice wants to know if it is strong enough to hold the weight of the books which are currently on it. In that context, it is entirely felicitous for Bob to utter: 'I don't think we need to reinforce this shelf. There are only three books by Tolstoy (two copies of *War and Peace* and one copy of *Anna Karenina*)'. By counting these as three (rather than two) books, Bob is counting the number of physical books.

The crux of both problems is this: Dual Nature views take 'book' to have only a single reading. On these views, one can still accommodate seemingly conflicting ways of counting or individuating books – but these come from the type or criterion of individuation encoded by the predicate ascribed to the books. But the problem is that these mechanisms only allow for varying individuation conditions in environments where *different predicates* are ascribed. However, the views cannot accommodate cases like (33)–(36), where a single sentence receives multiple readings.

A different problem arises with the interpretation of counting sentences such as (31), involving both "physical" and "informational" predicates. Consider the

following scenario: our bookstore contains twelve volumes that are wrinkled: ten wrinkled copies of *War and Peace* and two wrinkled copies of *Wuthering Heights*. Now consider an utterance of the following sentence:

(37) # *Exactly one wrinkled book is by Tolstoy*.

Both Gotham and Asher's views predict that (on its only reading) the sentence is true in this scenario. To our ears, however, there is no true reading of the sentence in this scenario. (The only true count here is that exactly ten wrinkled books are by Tolstoy: the ten copies of *War and Peace*).

To see why Asher and Gotham predict that (37) is true in this scenario, note their respective truth-conditions:

(37^{A}) There is exactly one informational object, which is by Tolstoy, and which is an aspect of some book which has a wrinkled physical aspect.

(37^{G}) There is a plurality of at least one object but no plurality of at least two objects where each member is a book, is wrinkled, is by Tolstoy, and where no two books share either a physical or an informational component.

Given Asher's view, (37^{A}) is true in this scenario, because the only informational object (the i-book *War and Peace*), is by Tolstoy, and is an aspect of at least one (dual-nature) book that has wrinkled physical aspects (any of the wrinkled copies). And given Gotham's view, the scenario contains ten objects which are wrinkled books by Tolstoy (p_1+WP, p_2+WP,…., p_{10}+WP). Any one of these constitutes a singleton plurality of at least one wrinkled book by Tolstoy (where the distinctness clause is satisfied trivially). But any two books share an informational component, and thus cannot be part of a plurality of objects that are both physically and informationally distinct.

Dual Nature views might generate intricate truth-conditions for a variety of counting sentences. The problem, however, is that they generate the *wrong* truth-conditions. By contrast, in the next section, we show that in fact the correct truth conditions can be generated in the context of an entirely orthodox semantics for counting sentences. This shows that Dual Nature approaches are of no help in accounting for copredication. Moreover, the alleged lesson that counting sentences require novel semantic machinery is unsupported if we can give an adequate treatment of such sentences without such novel machinery, and we'll shortly argue that we can.

3 The Property Versatility approach to copredication

3.1 The Property Versatility approach introduced

In contrast to theories which have drawn radical lessons from copredication, our favoured approach to copredication ('The **Property Versatility** approach') is guided by the hypothesis that there is nothing semantically distinctive about copredication: the phenomenon of copredication should lead us to neither semantic scepticism nor semantic revisionism, and can be accounted for using entirely standard semantic machinery, which is used to account for sentences not involving copredication.

Consider the following case of copredication:

(38) *The bestselling book is on the shelf.*

Assuming this sentence presents no distinctive semantic challenge, we should expect it to be interpreted in a parallel way to ordinary, copredication-free sentences such as:

(39) *The happy dog is in the yard.*

When Toto – the only happy dog – is in the yard, (39) is true. On our view, this same straightforward approach can be used to analyse a copredication sentence such as (38): when (38) is true, there is a single entity in the extension of both 'bestselling book' and 'is on the shelf', where none of these terms require reinterpretation or non-standard semantic interpretation.

The controversial element of this proposal is that a single entity can be in the extensions of 'bestselling', 'book', and 'is on the shelf'. The worry is that 'bestselling' and 'is on the shelf' ascribe properties that are incompatible. We hold that this is false: these predicates ascribe properties that can be jointly true of a single entity. Underlying this proposal is the observation that properties in general are typically *versatile*: they can apply to very different objects in very different ways.

Consider a dark-blue gemstone and a light-blue scarf. These are two very different kinds of entities (a natural substance made of stone vs. an artifact made of wool). Moreover, they are blue in very different ways (light-blue vs. dark-blue). And yet, they exemplify the very same property *being blue*. No unconventional semantic machinery or special meaning of the predicate 'is blue' is needed to account for this. Similarly, consider an interesting painting and an interesting philosophy lecture. These are two very different kinds of entities (one is a concrete physical object, and the other an event-like entity), and moreover they are interesting for very different reasons (the former might have a surprising assortment of colours, the latter might

contain a novel argument). And yet, they can both exemplify the very same property of *being interesting*. Our key claim is that these mundane observations should be extended: many properties are even more versatile than theorists have previously assumed. The upshot is that (38) can receive a perfectly straightforward analysis, as long as at least one of *being bestselling* or *being on the shelf* is more versatile than commonly supposed, allowing both properties to be instantiated by a single entity.

This broad outline still leaves open many potential specific analyses of (38). To settle on one of them, we can proceed by considering independently motivated interpretations of each of its constituents. Begin with 'book'. As we have seen in Section 1, sentences such as (40) have multiple distinct readings when there are three copies of *War and Peace* on the shelf*:*

(40) *There is (exactly) one book.*

This provides substantive motivation for the thought that 'book' itself has multiple readings. (After all, this is precisely what we find in other cases: for example, 'There is (exactly) one bat' has both a true and a false reading when there is one baseball bat and three marsupial bats, and similarly for other semantically variable nouns.) Moreover, it is natural to hold that the true reading of (40) is due to the fact that the multiple copies are all copies of *War and Peace.* In order to account for this, we can take one reading of 'book' to range over entities that are distinct from their copies and are instantiated by multiple copies – what we have been calling 'i-books'. The false reading is due to the fact that there are three distinct physical objects. In order to account for this reading, we can take 'book' to have a reading ranging over physical copies of books – what we have been calling 'p-books'.

Does 'book' have any additional readings – perhaps a reading where it ranges over mereological sum of the two? Nothing we've said rules that out, but at least the data we presented so far doesn't motivate it: the two suggested readings (i-books, p-books) are sufficient to account for (40).

Next, we need to determine which of these two readings, if any, is utilised in (38). To do so, we examine the other predicates in the sentence: 'bestselling' and 'on the shelf'. It is relatively uncontroversial that p-books can be in the extension of 'on the shelf'. After all, the following can be true in the envisioned scenario:

(41) *There are three books on the shelf, and they are heavy and musty.*

Similarly, it is relatively uncontroversial that i-books can be in the extension of 'bestselling'. After all, the following can be true in the same scenario:

(42) *There is one bestselling book, which was written by Tolstoy and has been in print for over a century.*

If either of the proposed interpretations of 'book' is to succeed, then given the Property Versatility approach, at least one of these predicates must designate a highly versatile property: either 'bestselling' is true of p-books (in addition to i-books) or 'on the shelf' is true of i-books (in addition too-books), or both.

Which of these options is correct is not something to be determined by antecedent principles, such as a principle which states that whenever a physical object has a property, the informational object it expresses has the same property, or vice-versa. Instead, we should examine the linguistic data pertaining to each predicate. Begin with 'on the shelf'. If it ascribes a property that is true of i-books as well as p-books, then we would expect to find a variety of true sentences which are made true by i-books instantiating that property. And this is precisely what we find. Consider (43) and (44), where there are three copies of *War and Peace* on the shelf:

(43) *(Exactly) one book is on the shelf; it was written by Tolstoy and has been in print for over a century*.

(44) *War and Peace is on the shelf; it is the first novel Tolstoy wrote.*

Both sentences have true readings in the envisioned scenario. And since the second clauses ascribe properties uncontroversially true of i-books, there is good reason to take the first clauses to be made true by those same i-books. This is reinforced, in the case of (43), by the count of *one* book; and in the case of (44), by the fact that the best analysis of '*War and Peace*' is that it designates an i-book, especially in scenarios in which there are multiple copies (none of which are salient) present. So by taking 'on the shelf' to ascribe a property that can be true of i-books, we can easily explain the truth of (43) and (44). This motivates an analysis of 'on the shelf' on which it designates a property that can be true of i-books.

Of course, one might be initially puzzled by how i-books can have the property of *being on the shelf*. But recalling that properties can be very versatile helps dissolve the puzzle. Just as what it takes for the philosophy lecture to be interesting is something very different than what it takes for the painting to be interesting, what it takes for the i-book to be on the shelf is very different than what it takes for a p-book to have the property: in this specific scenario, the i-book might be on the shelf in virtue of the fact that it is instantiated by a p-book on the shelf. Note, though, that this does not mean that 'on the shelf' here picks out a different property when applied to i-books as in other mundane sentences ('The sweater is on the shelf').[27] Nor does it commit us to any general principle such as saying that for every property *P*, when a p-book has it, the i-book that it instantiates has it (it certainly isn't true of the property of *being a physical book*, and we will see below it also isn't even true of the property of

27 In fact, that sentences such as 'War and Peace is on the top shelf, as is my sweater' have true readings provide evidence that 'on the shelf' picks out the same property.

being wrinkled). The fact that the conditions for having a highly versatile property such as *being on the shelf* is unsystematic and diverse echoes something we already accept for property ascription more generally. For example, there are no simple reductive analyses of the full set of situations in which entities count as *just wars* or *pieces of gingerbread*, and so neither should we expect such an analysis for *being on the shelf*.

Putting all of this together, we can now see how a proponent of the Property Versatility approach can generate a true reading of (38): 'book' designates i-books, 'bestselling' is (uncontroversially) true of i-books, and 'is on the shelf' designates a versatile property that is true of both i-books and p-books.

Furthermore, we can see that this is superior to an alternate analysis on which 'bestselling' designates a property which is sufficiently versatile to be true of p-books (in addition to i-books). If 'bestselling' designated such a property, it would be true of all three p-books in the envisioned scenario, and we would have a true reading of (45). However, (45) does not have a true reading in the envisioned scenario, so there is evidence against taking 'bestselling' to designate such a versatile property.

(45) *# Three books on the shelf – the volume over there, and the two volumes next to it - are bestselling.*

Having discussed our account of (38), let's turn to a second example of copredication:

(46) *The wrinkled book is by Tolstoy.*

As above, we initially have (at least) two options to consider. First, 'book' might range over p-books, and 'by Tolstoy' might pick out a property which is versatile enough to apply to p-books (in addition to i-books). Second, 'book' might range over i-books, and 'wrinkled' might pick out a property which is versatile enough to apply to i-books (in addition to p-books).

Suppose we have three wrinkled copies of *War and Peace* on the shelf. On the first hypothesis, we expect (47) to be felicitous and true, and indeed this is just what we find:

(47) *Three books on the shelf are by Tolstoy.*

By contrast, on the second hypothesis, we expect (48) and (49) to have felicitous and true readings. But this is not what we find:

(48) *# (Exactly) one book on the shelf is wrinkled.*

(49) *# War and Peace, which is a bestselling book printed in millions of copies, is wrinkled.*

The upshot is that the linguistic data suggests that p-books can be by Tolstoy, that i-books are not wrinkled (at least in the type of scenario envisaged), and that on the

best analysis of (46), 'book' ranges over p-books, which can be both wrinkled and by Tolstoy.[28]

Finally, consider the following copredication sentence:

(50) *The book by Tolstoy is on the shelf.*

Our previous discussion has already established that 'book' can range over either i-books or p-books, and that 'by Tolstoy' and 'on the shelf' both denote highly versatile properties, which can each be had by both p-books and i-books. This suggests that there are *two* distinct ways to generate a true reading of (50). This, though, is no less mysterious than the fact that when a town has one popular river-bank and one popular money-bank, then 'The bank is very popular' has two distinct but equally true readings.

The discussion thus far demonstrates a key feature of the Property Versatility approach to copredication: it is driven directly by the data. Given a true copredication sentence we can determine its correct analysis – including which predicates designate relatively versatile properties – by utilizing independently motivated interpretations of the terms in the copredication sentence. These interpretations are based on the truth-conditions of particular sentences rather than on background assumptions about ontological categories or generalizations about the analysis of all copredication sentences. Of course, one could wheel in more data, and take issue with each particular analysis. This doesn't matter for our purposes: the important point is that having adopted the Property Versatility approach to copredication generally, analyses of particular sentences are determined by the data, rather than by any general theoretical principles.

3.2 The mistaken lessons revisited

With the Property Versatility approach in hand, we can now gain a better understanding of why the three purported lessons discussed in Section 2 were mistaken.

3.2.1 Externalist semantics is not impossible

The first purported lesson was that in light of copredication, externalist semantics is impossible. The Property Versatility approach, however, suggests otherwise: as we have seen above, copredication sentences such (38) have perfectly standard compositional semantic interpretations: when there is a single copy of *War and*

28 For cases where the predicate 'is wrinkled' might apply to i-books see Liebesman and Magidor (2025: ch. 9, Section 3 and Section 8).

Peace on the shelf there is a single entity – the i-book *War and Peace* – which is (in one sense of the word) a book, is bestselling and is on the shelf.

In Section 2.1 we have also seen that Internalism does not offer any resources for addressing *the category mistakes challenge*: explaining the contrast between felicitous copredication sentences and infelicitous category mistakes. Does the Property Versatility approach fare any better?

At a first pass, it might seem that it doesn't. Consider the following category mistake:

(51) # *The number two is on the shelf.*

There are a wide variety of accounts of the infelicity of category mistakes, but a fairly uncontroversial starting point is that the predicate ('is on the shelf') places some kind of restriction or requirement which its argument is expected to satisfy but fails to do so, thus resulting in infelicity. One source of disagreement between various accounts of category mistakes concerns what is the nature of this requirement (is it syntactic, semantic, or pragmatic?) and correspondingly, in what way are sentences which violate these requirements defective (are they syntactically ill-formed, meaningless, truth-valueless, or merely pragmatically inappropriate?). For the purposes of the current discussion, we can remain neutral on this issue.[29]

A second question concerns the specific content of the requirement. A common assumption in the literature is that the requirement in question is a type requirement. For example, in (51) 'on the shelf' requires a subject that is a *physical object*. Since the number two is not a physical object it violates the requirement, and the sentence is an infelicitous category mistake.

The problem is that this doesn't yet help explain the contrast between the category mistake (51) and the following copredication sentence:

(52) *War and Peace is on the shelf.*

Consider a context where there are multiple identical-looking copies of *War and Peace*. (52) is true in this context, and given that there is no salient copy of the book, 'War and Peace' picks out an informational book. According to the Property Versatility approach, the informational book has the property of being on the shelf, which accounts for why (52) is felicitous and true. The problem, however, is that *War and Peace* is not a physical object, so on the face of it, it should also violate the restriction

29 See Magidor (2025) for an overview, and Magidor (2013) for a more detailed discussion. Magidor (2013) defends the view that the requirements in question are pragmatic presuppositions, and correspondingly that category mistakes are syntactically well-formed, meaningful, truth-valuable, but pragmatically inappropriate. As noted, however, endorsing this particular account is not essential for our discussion above.

placed by 'on the shelf'. It thus might seem that the Property Versatility approach makes the incorrect predication that (52) is an infelicitous category mistake.

In response, we maintain that the above reasoning makes a false assumption regarding how to account for the infelicity of category mistakes: category mistakes do not arise because of general type requirements but rather due to much more specific constraints placed by the predicate. Indeed, Magidor (2013) argues for this for reasons entirely independent of copredication. For example, on her account, 'is red' requires its argument to *have a colour* or *be coloured* (rather than to be a physical or concrete object) and 'is prime', requires its argument to be *prime or composite* (rather than to be a number). One central reason to prefer these more specific requirements concerns the fact that each of the following speeches is entirely felicitous:

> *Philosopher of Perception*: You know, not only concrete objects have colours, afterimages have them too. This afterimage, for example, is red.

> *Mathematician*: You know, not only numbers, but polynomials too are prime or composite. This polynomial, for example, is prime.

The assumptions that 'red' requires its argument to be a concrete object, and that 'is prime' requires its argument to be a number, yield the incorrect prediction that both speeches are infelicitous.[30] By contrast, Magidor's more specific requirements do account for why these speeches are not category mistakes (the afterimage does satisfy the requirement of having a colour, and the polynomial does satisfy the requirement of being prime or composite), while still explaining why 'the number two is red' or 'The lump of clay is prime' are infelicitous category mistakes (the number two does not have a colour; the lump is neither prime nor composite;).

With this in mind, return to the contrast between (51) and (52). Recall, that the challenge was to account for why applying 'on the shelf' to the number two is infelicitous, while applying it to an i-book is not. The key idea is that the requirement placed by the predicate is specific enough to discriminate between these cases. The predicate 'on the shelf', we maintain, does not require its argument to be a *physical object* but rather requires that it *have a location* or *be located*.[31] Since numbers don't

30 Note moreover that the felicity in these cases cannot be explained away by ignorance of whether the argument satisfies the proposed requirement or by creating a special context in which the restriction is presupposed to be satisfied: the contexts have been intentionally crafted so that it is salient that the object in question violates the proposed type requirement.

31 Or at least the presupposition in question is something in this vicinity – the exact formulation of the presupposition might need to be adjusted. See Magidor (2013: 141–144) on a discussion of the difficulty in giving precise phrasings of presuppositions, not just in the case of category mistakes but more generally.

have locations, the number two violates the requirement and hence (51) is a category mistake. By contrast, informational books do have locations. This can be established by working through the Property Versatility account of sentences such as the following:

(53) *One book is currently located in every university library in the world: War and Peace.*

The sentence is clearly about informational books (no p-book is multiply located in various libraries), and it ascribes to the i-book the property of *being located* in various libraries.

In summary, once the Property Versatility approach is combined with a correct account of category mistakes, the challenge of distinguishing between infelicitous category mistakes and felicitous instances of copredication can be addressed. Copredication does not pose an insurmountable obstacle to externalist semantics.

3.2.2 Polysemy does not allow utilization of multiple meanings simultaneously

Consider the following copredication sentence:

(54) *The lunch was delicious but took hours.*

According to the mistaken lesson, 'lunch' in (54) somehow simultaneously designates an event and a portion of food. By contrast, according to the Property Versatility approach, (54) has a similar semantic structure to ordinary sentences such as 'The dog was happy but tired'. On this view, in (54), 'lunch' is interpreted uniformly with a single reading, on which (54) requires an entity that is a lunch, is delicious, and took hours.

Which type of entity does 'lunch' in this sentence pick out? As above, we have to consider the data carefully. The first thing to note is that the noun 'lunch' is indeed semantically variable. We can see this by considering a scenario in which two unrelated couples are each having a separate meal on the restaurant patio. Now consider the following sentences:

(55) *Two lunches are on the patio.*

(56) *Four lunches are on the patio.*

Each of these sentences has both a true and a false reading. The person in charge of organising the restaurant bookings might utter (55), followed by 'one began at noon and will end soon but the other is only now starting'. On this interpretation, lunches at least have properties such as starting at a certain time, and we thus classify them

as 'event-like' and call lunches in this sense 'meals'.[32] By contrast, the person in charge of bringing the plates from the kitchen might utter (56), followed by 'I've placed two on the table on the left, and two on the table on the right'. On this interpretation, 'lunch' denotes a portion of food.

Crucially, however, note that the fact that 'lunch' happens to be semantically variable does not mean that multiple interpretations are utilized in any single reading of the sentence. This is just like the fact that even though 'bat' is homonymous, only one reading of the noun is utilized in any single reading of:

(57) *The bat is on the table.*

Which, if either, of these two meanings of 'lunch' is used in true readings of (54)? According to one hypothesis, 'lunch' in (54) picks out a meal, and 'is delicious' denotes a property that is versatile enough to be true of event-like entities such as meals (in addition to portions of food). According to a second hypothesis, 'lunch' in (54) picks out a portion of food and 'taking hours' denotes a property that is versatile enough to be true of portions of food, (in addition to meals).[33] There are a number of linguistic tests we can use to adjudicate between these hypotheses. As in Section 3.1, it is useful to appeal to both counting data as well as predicates that uncontroversially apply to each type of entity. Returning to the above scenario involving two couples dining on the patio, consider the following:

(58) *Two lunches are taking place on the patio. One started at noon, one started at 1pm, and both are delicious.*

(59) *Four lunches are on the patio. The server just placed two on the table to the left and the other two on the table on the right. # All four are taking hours.*

On the first hypothesis, we predict that (58) is felicitous and this is just what we find. On the second hypothesis, we predict that (59) is felicitous – but this prediction is not borne out. Together, this data suggests that on its true readings, 'lunch' in (54) denotes an event-like entity, which has the (versatile) property of being delicious.[34]

In other cases, both interpretations of the noun can yield true readings. We have seen this above in the case of:

(50) *The book by Tolstoy is on the shelf.*

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32 Note that 'meal' also has a food sense, such that there are four of them in our patio-scenario. However, we'll focus here on the event-like sense of 'meal'.

33 And of course, in principle, both hypotheses might be true or neither – lunch could designate something else entirely in (54).

34 For a more in-depth discussion of this example see Liebesman and Magidor (2025: ch. 9, Section 1).

As with 'lunch', the noun 'book' also happens to be semantically variable (we can establish this by noting that there are two readings of 'There is one book' when there are three copies of *War and Peace*). There are thus two potential readings of the sentence:

(50[a]) The i-book by Tolstoy is on the shelf.

(50[b]) The p-book by Tolstoy is on the shelf.

As we have argued above, both 'on the shelf' and 'by Tolstoy' are versatile in the right way to allow both (50[a]) and (50[b]) to be true. But again, this is no more puzzling than the fact that (57) can have two potentially true readings: one which is true when there is a baseball bat on the table, and the other which is true when there is a marsupial bat on the table.

In Section 2.2 we have seen that one central challenge for Polysemy-Centric approaches to copredication, was to explain why sentences such as the following are infelicitous:

(60) *# The bestselling book is slightly wrinkled.*

The Property Versatility approach, by contrast, does not have any particular problem explaining these infelicities. Different properties apply to different entities, and versatile properties are no exception. In particular, we have already seen evidence above that 'wrinkled' denotes a property that is not sufficiently versatile to apply to i-books (at least in typical circumstances), and 'bestseller' denotes a property that is not sufficiently versatile to apply to p-books (see our discussion of (45) above). Thus if 'book' in (60) is interpreted as 'p-book' the sentence will be trivially false (because the p-book cannot be bestselling) and if it is interpreted as 'i-book' the sentence will also be trivially false (because i-books are not – at least in typical circumstances - wrinkled). This contrasts with the earlier mentioned felicitous copredication sentence (38).

(38) *The bestselling book is on the shelf.*

Here, as we've seen, there *is* an interpretation of 'book' that yields a true reading: i-books can have both the property of *being a bestseller* and of *being on the shelf*. In short, the contrast between (60) and (38) is no less mysterious than the contrast between the following:

(61) *The bat on the table heard someone approaching.*

(62) *# The bat made of wood heard someone approaching.*

(61) is felicitous because we can easily think of an interpretation of 'bat' (as the animal) on which it can both be on the table and hear someone approaching. By contrast, (62) is infelicitous because neither interpretation of 'bat' yields a true

reading: animals cannot be made of wood, and baseball-bats cannot hear anything. Moreover, there are no perfectly general principles that can predicts which sentences of this form might be felicitous: that depends on specific knowledge of which properties are satisfied by which entities.

Thus far in this section, we have discussed examples of copredication that use the nouns 'lunch' and 'book' – nouns which both happen to be semantically variable. This, however, is purely coincidental, and plays no important role for our ability to interpret copredication sentences.[35] Indeed, consider again the copredication sentence:

(63) *The school was vandalized after expelling Bob.*

In Section 2.2 we have seen that evidence from both counting and substitution suggests that, contrary to common assumption, 'school' does not have a reading on which it picks out a building. But given the Property Versatility approach, no such reading is necessary to generate a true reading of (63). A natural hypothesis is that on its only reading, 'school' in (63) denotes an 'institution-like' entity (the kind of entity that can be established, can hire or expel people, and can relocate to a new building), and that *being vandalized* is a property that is sufficiently versatile that it be true of such entities (in addition to buildings). Of course, when an (institution-like) school is vandalized, it is plausible that it gets to be vandalized at least in a large part in virtue of a relevant building being vandalized. But this does not require 'school' itself to denote the building, any more than the fact that 'Jake has a toothache' might be true in a large part in virtue of the happenings in Jake's mouth, even though there is no sense on which 'Jake' refers to his mouth.

To summarize: polysemy plays no important role in the interpretation of copredication sentences. Even when a copredication sentence involves a noun that happens to be polysemous, the sentence is interpreted with a single, uniform interpretation of that noun throughout (or, if the sentence has multiple readings, then *each reading* involves just a single, uniform interpretation of the noun). There is no reason to think that Polysemy allows for simultaneous access to multiple meanings.

3.2.3 Counting sentences do not require novel semantic machinery

Let us finally turn to the third mistaken lesson: that in the context of copredication, counting sentences require novel semantic machinery.

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35 That said, in Liebesman and Magidor (2025: ch. 7, Section 6) we offer a hypothesis for why polysemy and copredication seem so closely connected, even though they are not.

In Section 2.3, we discussed Dual Nature approaches, which introduce complex and novel semantic machinery in order to account for the following three sentences:

(64) *Three books are wrinkled.*

(65) *Three books are by Tolstoy.*

(66) *Three wrinkled books are by Tolstoy.*

In each case, Dual Nature approaches make two substantive claims: first, they make some predictions concerning *which truth conditions* these sentences have; second, they offer a proposal about *which semantic machinery is needed* to generate these truth conditions. For each example, we contest at least one of these claims.

Begin with (64). Here the purported prediction was that on its only reading, the sentence requires three wrinkled p-books. We agree that on the only natural reading of (64), it has these truth conditions, but we maintain that these can be generated using perfectly ordinary semantic machinery. As we have argued above, i-books are not (in typical circumstances) wrinkled, and hence if 'book' is interpreted as 'i-book' the sentence would be trivially false. Thus, on the only natural reading of the sentence, 'book' is interpreted as p-book, and the sentence requires three such books. (Compare: on its only natural reading 'Three bats heard someone approaching' the sentence counts three marsupial bats).

Things are a little trickier with (65). Here the purported prediction is that on its only reading, the sentence quantifies over i-books. As we have shown in Section 2.3.1, although this is the more salient reading of the sentence, it also has a second available reading, one on which we count physical books. Crucially, though, both readings can be accounted for using no novel machinery: 'book' can be interpreted as ranging over either p-books or i-books, and as we have seen, both types of books can have the property of being 'by Tolstoy', yielding two distinct readings of the sentence that can be potentially true. Moreover, the Property Versatility approach also has an explanation for why the reading on which we quantify over i-books is more salient in this case: although on our view both p-books and i-books can be by Tolstoy, there is some sense in which the property is more "at home" or primarily applied to i-books (for one thing, when a p-book is by Tolstoy, this is true in virtue of a corresponding i-book being by Tolstoy but not vice versa).[36] In the absence of any context, it is thus more natural to read 'book' in (65) as ranging over i-books. As we have seen, though, with sufficient context, the other reading is easily brought out.

Finally, consider (66). Here our interlocuters predict that the sentence has complex truth conditions, ones that are sometimes referred to as 'double distinctness' truth conditions. Precisely what these truth-conditions are varies between

36 See Liebesman and Magidor (2025: ch. 8, Section 3.3).

different authors (see our discussion of (30^{A}) and (30^{G}) above), but either way, Dual Nature theories go into great pains to formulate a system that generates them.[37]

It is interesting that extant discussions of copredication and counting have focused so much on the question of *how* to generate the truth-conditions of sentences of this form, without paying sufficient attention to the question of *whether* these sentences really have such double-distinctness truth-conditions. Indeed, as we have argued in Section 2.3, a simple variant of the sentence shows that both Gotham and Asher make incorrect predictions in this case. Recall the scenario where our bookstore contains twelve volumes that are wrinkled: ten wrinkled copies of *War and Peace* and two wrinkled copies of *Wuthering Heights*. As we have seen, both Asher and Gotham predict the following sentence has (only) a true reading:

(67) *# Exactly one wrinkled book is by Tolstoy.*

This prediction, however, is not borne out: the sentence seems to have only false readings in this scenario. And indeed, the Property Versatility approach predicts just this: if 'book' is interpreted as ranging over p-books, the sentence is false because the scenario contains *ten* (rather than only one) wrinkled p-books by Tolstoy; and if 'book' is interpreted as ranging over i-books, the sentence is false because i-books are not (typically) wrinkled – and hence the scenario contains *zero* (rather than one) wrinkled i-books by Tolstoy. On either reading the sentence is false in this scenario.

In light of our previous scepticism about double-distinctness readings, Gotham (2022: Section 5.4) attempts to bolster the evidence in their favour by considering the following sentence:

(68) *Granger memorized three yellow books.*

Gotham then proceeds to argue as follows:

> Imagine the dystopian world [where] possession of books is illegal, and the job of the firemen is…to burn books wherever they are found. There is a resistance movement who take it upon themselves to memorize books before all copies of them are destroyed. Now imagine a book memorization session in which the resistance have divided up the book memorization task by colour. When asked how it is going, you are told 'Granger has memorized three yellow books already'.
> Given this contextual set-up, I contend that [(68)] has no interpretation on which it is made true by three (yellow) copies of the same book, even if Granger read through all of them to make sure there are no discrepancies between the copies. Nor is it made true by three informational books in one (yellow) volume.

37 For a more detailed discussion of double-distinctness see Liebesman and Magidor (2025: ch. 9, Section 4).

Even if one accepts Gotham's judgement about the data (namely the claim that (68) must be false relative to a situation containing three copies of the same i-book),[38] we maintain this data can be accounted for without postulating a 'double-distinctness' reading of the sentence.

To see how, suppose Granger went through the typical processes involved in memorization with respect to three yellow copies of the same i-book. If 'book' is read as meaning i-book, (68) is clearly false (after all, there is only one i-book in this scenario). But what if 'book' is read as meaning p-book? Even if *being memorized* is sufficiently versatile to apply to p-books (as we think it is), that says little about under what conditions one counts as memorizing a p-book, and it certainly does not entail that every activity of scrutinizing the text of a book (not even that every intrinsically identical activity of this sort) counts as memorizing the book. Suppose, for example, that in order to memorize a p-book you need to learn its text by heart *for the very first time*. In that case, (68) will be false on its p-book reading: neither because p-books cannot be memorized nor because the books receive some special 'double distinctness' individuation conditions, but rather simply because you cannot memorize three p-books instantiating the same text. In short, on this hypothesis, (68) would receive no true reading, for the same reason that the following sentence has no true readings:

(69) *# Granger ran her very first marathon both in 2013 and in 2019.*

To summarize: Dual Nature theories claim that counting sentences such as (64)–(68) have very specific truth-conditions, which can only be accounted for by introducing complex and novel semantic machinery. By contrast, we argue that at least some of their predicted truth-conditions are simply incorrect, and moreover that the correct truth-conditions can be accounted for using entirely standard semantic machinery.

This case can be reinforced by returning to the most basic form of the counting and individuation challenge, one that as we have seen Dual Nature theorists struggle to accommodate.[39] In a scenario where there are three copies of *War and Peace* on the shelf, the following has both a true and a false reading:

(70) *(Exactly) one book is on the shelf.*

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38 We ourselves are not entirely convinced by Gotham's data: to our ear, even given the context just described, (68) can arguably get a true reading in scenarios that involve three yellow copies of the same informational book. (Imagine for example Granger exclaiming in dismay: 'I can't believe it! I put so much effort into memorizing those three yellow books, only to realize in hindsight that they were three copies of the very same novel!') But we'll set this point aside.

39 Gotham (2022) modifies his Dual Nature approach to accommodate these worries. However, we argue in Liebesman and Magidor (2023) and Liebesman and Magidor (2025: ch. 3, Section 3.1.3) that these modifications fail.

When other counting sentences with a similar structure have multiple readings, this is usually due to the semantic variability of the noun involved ('Exactly one bat is on the table' has multiple readings, depending on which reading we give to 'bat'). And this is just what the Property Versatility approach suggests for (70): 'book' is semantically variable. If it is read as meaning *p-book* then, the sentence requires there to be exactly one p-book on the shelf (which is false in this scenario); if it is read as meaning *i-book*, then the sentence requires to be exactly one i-book on the shelf (which is true in this scenario). These two readings can be accounted for, and we do so with entirely ordinary semantics for counting.

4 Implications of the Property Versatility approach

Given that a central feature of the Property Versatility approach is that we don't need any novel semantic machinery to account for copredication, it may be tempting to think that there are no substantial or interesting implications of the approach (beyond, of course, providing an account of copredication). This, however, is mistaken. In this section we'll discuss three important implications of the Property Versatility approach.[40]

4.1 Polysemy and ambiguity tests

Several familiar tests, which we'll call 'zeugma tests', purport to aid us in identifying ambiguity. Conjunction reduction is perhaps the most familiar. Consider a standard example of ambiguity: 'ball', where it seems to have one sense that picks out a play-object and another that picks out a sort of event. On the most salient readings of 'the ball is red' and 'the ball took place at noon', the sentences utilize these two different senses of 'ball'. But when we try to conjoin the predicates and combine them with a single argument, we produce the following:

(71) *# The ball is red and took place at noon.*

(71) is zeugmatic, and, according to the conjunction reduction test, this provides evidence that 'ball' is genuinely ambiguous. The idea is that in (71) we are attempting to use both senses of 'ball' simultaneously, and since this is impossible, the resulting sentence is zeugmatic. If, by contrast, the "reduced" sentence had been felicitous, this

40 This discussion is not exhaustive. We discuss a number of other implications in our (2025: chs. 10–15).

would have been evidence against the ambiguity of 'ball'. We can use anaphora and elision to run similar tests. For example, the infelicity of (72) provides further evidence, according to the tests, for the ambiguity of 'ball'.[41]

(72) *# I put his ball in my bag, and attended hers.*

Identifying ambiguity is of course important when theorizing about language, but it is important for other purposes as well. The zeugma tests are often used to evaluate philosophical disunity theses. For instance, Liu (2021) argues for a disunified theory of pain on which it can be a bodily state or a mental state in part by arguing that 'pain' and other pain-related terms are ambiguous between designating mental and bodily states. To defend this view, she relies on the claim that the following is infelicitous (2021: Section 2):

(73) *# Kate's leg is sore/aching/hurting and so is John.*

Though the zeugma-based ambiguity tests are influential and frequently used, a number of theorists have recently held that the tests are only effective for homonyms and not for polysemes (Chomsky 2000: 180f., Asher 2011: 63, Hawthorne and Lepore 2011: 471, Abbott 2013: 8, Collins 2017: 678, Viebahn 2018: 753f., and Corkum 2022: 2953). Furthermore, the failure of these tests for polysemes is often taken to be based on nothing more than uncontroversial linguistic data.[42]

If this is correct it would have substantial implications, as most of the philosophically interesting cases of ambiguity would be cases of polysemy. The two meanings for 'pain' alleged by Liu, for example, are highly related, which means that on her view 'pain' is polysemous. Since in cases of homonymy, the multiple meanings are not closely related, the accompanying disunity theses will be far less controversial or interesting.

What data supports the claim that the zeugma tests fail for polysemy? Assume that we take 'book' to be polysemous between an i-book and a p-book sense, and that we take 'lunch' to be polysemous between and event and a food sense. The thought is that the conjunction reduction test would predict that each of the following is infelicitous:

41 Zwicky and Sadock (1975) is the classic statement of these tests, see also Gillon (2004) and Sennet (2023).

42 This is related to the suggestion, which we discussed in Section 2.2, that the ability to use polysemous expressions in two senses simultaneously is established as a straightforward linguistic observation. In that case we argued that this is not a straightforward observation, because the relevant sentences that purport to show this are copredication sentences, and on several views (including our own) the relevant terms are not used in multiple senses simultaneously in such sentences. Similarly, here, the idea that sentences like (74) and (75) show that zeugma tests fail for polysemes depends on controversial analyses of those sentences.

(74) *The bestselling book is on the shelf.*

(75) *The lunch was delicious but took hours.*

However, (74) and (75) are both clearly felicitous. Maintaining the supposition that 'book' and 'lunch' are polysemous, the lesson our interlocuters have drawn from such examples is that the conjunction reduction tests do not work for polysemes.

Crucially, however, (74) and (75) are copredication sentences, and this holds of all sentences that purport to show that the zeugma tests don't work for polysemy. This creates a problem for the above reasoning. On the Property Versatility approach, (74) and (75) each utilize just a single sense of the relevant noun. But if that's right, then neither provides any support for the claim that the zeugma tests fail for polysemy. After all, the felicity of (74) and (75) on the Property Versatility approach is no more mysterious than the felicity of (76) and (77):

(76) *The ball occurred on Tuesday and was well-attended.*

(77) *The lunch was delicious and filling.*

Though (76) contains the homonym 'ball', only one sense of 'ball' (the event sense) is needed to explain the felicity of the sentence. Similarly, though (77) contains the polysemous 'lunch', only one of its senses (the food sense) is needed to make sense of its felicity. The basic idea is that although (76) and (77) each conjoins two predicates, those predicates don't force different readings of their ambiguous argument terms, and the sentences aren't proper applications of the conjunction reduction test. On the Property Versatility view, precisely the same point holds for (74) and (75).

The fact that on the Property Versatility view the felicity of (74) and (75) provides no evidence that the zeugma tests fail for polysemy also undermines the thought that the failure of the tests for polysemy is supported by uncontroversial linguistic data. While the felicity of (74) and (75) does seem uncontroversial, their analysis is highly controversial. And the argument that the tests fail for polysemy relies not merely on those sentences' felicity, but also on assumptions about their analysis. These assumptions are false on the Property Versatility view (as well as several others).[43]

4.2 Gen and copredicational generics

Though both (78) and (79) are generics, the dominant view is that they have radically different semantic analyses:[44]

43 We discuss ambiguity tests in more detail in Liebesman and Magidor (2024).

44 Krifka et al. (1995), an influential overview of the generics literature, contains arguments for this view. See Leslie and Lerner (2022) for a more recent overview and references.

(78) *Potatoes were first cultivated in South America.*

(79) *Potatoes are starchy.*

(78) is usually analysed as a kind predication, given the assumption that 'first cultivated in South America' picks out a property of kinds rather than individual potatoes. On this view, 'potatoes' in (78) picks out *Solanum Tuberosum* and 'first cultivated in South America' ascribes to *Solanum Tuberosum* the property of being first cultivated in South America. By contrast, most hold that the property of being starchy, which is ascribed in (79), is a property of individual potatoes and not kinds. As a result, on the dominant analysis, (79) contains a tacit device that allows the property to be applied to individual potatoes. Roughly, (79) then expresses the claim that generally, individual potatoes have the property of being starchy – though there is enormous controversy over the details of the generalization expressed by generics like (79). We'll use 'Gen' to name the tacit device allegedly in (79), though note that there is widespread disagreement in the literature about the nature of Gen.[45]

Any analysis which divorces the semantics of sentences like (78) and (79) will have trouble with generics that seem to combine kind predication with property ascription to kind members:

(80) *Potatoes, which were first cultivated in South America, are starchy.*

The challenges posed by generics like (80) closely resemble the challenges posed by copredication sentences, so we'll call these 'copredicational generics'. To give a sense of just how challenging copredicational generics are, consider a straightforward view of Gen on which it is a dyadic quantifier and binds 'potatoes' in (79). The problem is that given that, on the envisioned view, 'potatoes' in (78) is kind-referring (and the sentence contains no Gen), we seem forced to treat 'potatoes' in (80) simultaneously as kind-referential and a bound predicate, which is impossible. Of course, theorists are aware of this problem and some have attempted to invoke complex type-shifting mechanisms to solve it (Cohen 2004; Leslie 2015), but as noted by Nickel (2016:118), this substantial machinery is not well-motivated or linguistically plausible.[46]

Property Versatility allows us to develop an independently well-motivated account of generics that can straightforwardly analyse copredicational generics. Recall the thoughts that motivated the dominant analysis of (79): that the property of being

45 See, e.g. Leslie (2008), Sterken (2015) and Nickel (2016) for very different views of Gen. Leslie and Lerner (2022) is an overview with additional references.

46 This is part of what compels Nickel (2016) and Teichman (2023) to hold that Gen is a predicate modifier, rather than a dyadic quantifier. However, we argue in Liebesman and Magidor (2025: ch. 10) that Gen modifier views ultimately do not provide a satisfactory account of copredicational generics either.

starchy does not apply to kinds (and so the sentence must contain a device that allows us to ascribe the property to individual potatoes). We hold, by contrast, that the property of being starchy is more versatile than theorists have thought, and can apply to kinds as well as individuals.[47] Just as i-books and p-books can instantiate the very same property of being on the shelf, though in different ways, individuals and kinds can instantiate the property of being starchy, though they do so in different ways. Thus, we hold the Property Versatility view of Generics (PVG). On this view, (79) has the same semantic structure as (78): the kind *Solanum Tuberosum* is ascribed the property expressed by the predicate and there is no tacit linguistic device that allows property ascription to individuals. Once one holds this view of (79), copredicational generics like (80) pose no challenge: they simply involve ascribing two properties (*being first cultivated in South America* and *being starchy*) to a single entity (the kind *Solanum Tuberosum*).

In fact, there is independent evidence for PVG. Recall that counting and individuation sentences provide substantial motivation for the Property Versatility view of copredication. Such sentences provide evidence for PVG as well. Consider the following:

(81) *Two animals bark: dingos and dogs.*

(81) can easily be read as true even when no individual animals are contextually salient. This makes it plausible that the truth of (81) is witnessed by the kinds themselves – after all, that's the only sort of relevant entity of which there are two. This thought is bolstered by the fact that it seems that substituting explicit kind names into (81) expresses the same information.

(82) *Two animals bark: Canis Familiaris and Canis Lupus Dingo.*

It is worth noting that the literature contains numerous influential empirical objections to PVG. Here we will discuss one that was first suggested in Carlson (1977): that PVG cannot give an adequate account of certain generics containing pronouns:[48]

(83) *Cats lick themselves.*

On the most salient reading of (83), it seems that individual cats are self-lickers. However, without Gen, it seems hard to deliver this reading. Here is Leslie (2015) expressing the problem (with the labels and spacing adjusted):

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47 We won't take any stand on the nature of kinds here. In fact, the view sketched in this subsection is compatible with a view on which seemingly kind-referential terms are plurally referring (cf. Moltmann 2013). See Liebesman (2011) for some remarks on the nature of kinds as they figure in an account of generics.

48 We discuss a wide range of other objections in Liebesman and Magidor (2025: ch. 11).

> But if we try to render [(83)] in the same way – that is, render it according to [PVG] we get
>
> (λx(x licks x))(cats). Or equivalently, Cats lick cats.
>
> Which is true on [PVG] just in case *Felis catus* licks *Felis catus*. Just as 'cats lick dogs' does not specify anything about which cat licks which dog, this analysis is perfectly compatible with cats licking other cats, but never licking themselves. Thus the analysis just does not capture the most natural (and perhaps only) reading of (83), which requires cats to be self-lickers.

The objection can be summarized as follows: on the most salient reading of (83), individual cats are self-lickers; a view with Gen can easily generate this reading but PVG cannot (since it lacks Gen).

Do views with Gen really fare better with regard to (83)? We argue that they do not. To begin with, note that there is a non-self directed reading of (83) and it is not obvious how Gen views will generate this other reading. To grasp this reading, imagine that we run a kennel that houses both dogs and cats and we are discussing interspecies licking, i.e. whether any cats lick any dogs and vice-versa. If there is no interspecies licking we may felicitously utter the following:

(84) *Cats never lick dogs, and dogs never lick cats. However, cats do love to lick, it is just that cats lick themselves.*

This sort of non-self directed reading may be more salient with other examples:

(85) *Four year-olds clean up after themselves.*

Imagine that two daycare workers are comparing notes. The one who works with two year-olds is complaining about the mess after mealtimes, whereas the one who works with four year-olds utters (85). It seems that (85) may be true even if the individual four year-olds clean up the messes made by other four year-olds and not their own messes (perhaps they just had a lesson on helping others). On this reading, all that's required is that the four year-olds clean collectively.

If (85) is analysed as containing some sort of tacit generalization over individual four year-olds, then it is hard to see how to derive this reading. But if, as PVG holds, there is no such generalization, then this reading is easy to generate.

So, there's a reading of (83) that's easy to generate on PVG and harder to generate on a Gen view, but what about the salient self-directed reading of (83)? If this remains easier to generate on a Gen view, then that may be a significant point in favour of such a view. However, there's reason to think that Gen is not crucially involved in generating such readings: there are perfectly analogous readings of sentences that uncontroversially lack Gen. Consider (86):

(86) *Jane and John love themselves*.

On its most salient reading, (86) is true in a scenario where Jane loves Jane and John loves John, even if neither loves the other. However, by everybody's lights there is no tacit quantificational element in (86) that accounts for this self-directed reading. Given this, derivation of self-directed readings must be possible without Gen, and whatever accounts for this reading of (86) could account for the analogous reading of (83). Of course, a substantial outstanding question remains: just what does account for the self-directed reading of (86)? We won't discuss that here,[49] but regardless of what does in fact explain the self-directed reading of (86), the mere fact that it isn't Gen shows that self-directed readings do not require Gen.

The upshot is that Property Versatility allows us to develop an account of generics – PVG – that's independently well-motivated and easily accommodates copredicational generics.[50]

4.3 The metaphysics of words and languages

Words and languages seem to be concrete in some ways: we hear them and they come into existence as the result of human actions. On the other hand, they seem to be abstract in some ways: a word or language can survive even when nobody happens to be speaking it at a given moment. This is puzzling: how can linguistic entities exist despite instantiating prima facie incompatible properties? This puzzle bears a clear similarity to the truth challenge posed by copredication – it is just a metaphysical correlate of that linguistic puzzle. And given our defence of the Property Versatility approach to copredication, it is natural to ask whether the approach can yield any insight into this puzzling tension regarding the metaphysics of languages and words as well. We hold that it can.

Notice, though, that linguistic entities are not the only sorts of entities that do not easily fit into familiar metaphysical categories. Repeatable artworks are perhaps the most discussed example.[51] Beethoven's Fifth Symphony is, like the word 'cat', something we can hear and which was created. On the other hand, it doesn't drop out of existence when nobody is playing it and it can have many different (even simultaneous) performances.

In attempting to get a handle on these sorts of entities, theorists often begin by taking a stand on the category question. They may hold, of instance, that symphonies are abstract, and then they go on to develop a view that explains how, despite being abstract, symphonies may have properties we associate with non-abstract entities. One could take a similar approach to words, as does, e.g., Irmak (2019), who holds that

49 We discuss several possibilities in our (2025: ch. 11, Section 1).

50 For extensive discussion of PVG see our (2025: ch. 10–11).

51 On repeatable artworks, see Thomasson (2006), Caplan and Matheson (2006), Dodd (2007), and Tillman (2011), as well as our discussion in Liebesman and Magidor (2025: ch. 13).

words are abstract. However, given the Property Versatility approach, we think there is a more natural methodology. Rather than begin by taking a stand on the ontological category of words or languages, we should begin by looking at a wide range of claims about linguistic entities and from them construct a metaphysics.

This emphasis on particular claims rather than high-level categorizations coheres with our discussion of the Property Versatility view thus far. Assume then that we approach the metaphysics of words and languages by looking at particular claims rather than beginning with ontological categorization. What would this yield? Just as counting and individuation sentences were a powerful tool in determining analyses of copredication sentences, counting and individuation may play a central role in determining our metaphysics of linguistic entities. Consider, for example, (87):

(87) *Bears are bears.*

How many words are in (87)? It seems as if there is a true reading of 'there are two words' and also a true reading of 'there are three words'. This suggests that we can count words as individual tokens and as types. This echoes the evidence we used to motivate the existence of p-books, as well as i-books. And more subtle counting and individuation data may yield further insight into the domain of words. Consider a board that has the following inscription:

How many words are on the board? It is easy to get a true reading of 'There are three words on the board', as well as 'There is one word on the board'. But we can also get a true reading of 'there are two words on the board', especially if we follow it with something like 'the British word for honour and the American word for honour'. This data suggests that there are both coarsely individuated words that can be spelled in multiple ways, but also more finely individuated words that cannot.

In fact, counting data can bring out other interesting features of the metaphysics of type-level words. For instance, if John utters 'Bears, bears, bears' and Jane hears the utterance, there is a true reading of 'Jane heard one word', which suggests that type-level words can be heard.

What about the metaphysics of languages themselves? Individuation data can again yield some insight here, and it may have some impact on the Chomskyan view of languages. Taking i-languages to be specific internal states of individuals, we can ask whether i-languages are themselves languages. And individuation data seems to

provide some evidence that they are not. Consider a room occupied solely by two English speakers with the exact same dialect of English. In such a scenario, (88) seems to have a true reading, but not (89). But if i-languages were languages, we'd predict that (89) has a true reading.

(88) *One language is spoken in the room.*

(89) *Two languages are spoken in the room.*

That said, even if we were to claim that i-languages are not languages, this needn't have significant impact on the Chomskyan's general approach to studying natural language. To see this, recall our discussion of 'school' from Section 2.2 and Section 3.2.2. There we argued that there is no sense of 'school' in which it picks out school buildings. However, as we noted in Section 3.2.2, this does not mean that school buildings are wholly irrelevant to the properties of schools. A school may, for instance, be vandalized in virtue of its building being vandalized. A Chomskyan may take the analogous position with regard to i-languages. While they strictly speaking are not languages, they are a reasonable object of linguistic inquiry because many of the features of language that interest us are determined by speakers' i-languages.

Stepping back, we can see that the Property Versatility approach may lead us to a number of significant claims about the metaphysics of words and languages. But these claims aren't dictated by some antecedent commitment to the categorization of linguistic entities, but rather by attending to specific data, especially counting and individuation data.

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