Daniel Molto

Copredication, Davidson and Logical Form

Abstract. This paper offers a novel account of polysemous copredicative sentences. The solution, which it is argued enjoys a number of advantages over the alternative accounts currently on the market, is inspired by Donald Davidson's first attempt to deal with ambiguity. Specifically, the account involves mapping ambiguities in the object language (in this case polysemous singular terms) onto ambiguities in the metalanguage. If this account is coherent and superior to its rivals, it tells us something important about logical form: the value of logical form does not lie in the elimination all lexical ambiguity.

Keywords: polysemy; ambiguity; copredication; logical form

Introduction

It is often said that part of the importance of logical form is its elimination of ordinary-language ambiguity. Sentences in logical form, then, are often thought to be ambiguity-free. In this paper, I will challenge this assumption. My challenge will hinge on a proposed account of copredicative sentences, a class of sentences involve polysemous subject terms. My proposed treatment of these sentences takes its inspiration from Donald Davidson's initial attempt to accommodate lexical ambiguity in his truth-conditional semantics, namely by mapping ambiguous sentences of the object language onto parallel ambiguous sentences of the metalanguage.

In Section 1 of this paper, I briefly set out Davidson's initial treatment of ambiguity. In Section 2, I turn to the phenomena of copredication, the category of polysemy that has received most of the recent interest, and I set out the major existing accounts. In Section 3, I offer

my own, Davidsonian-inspired account which allows polysemy (which I take to be a kind of ambiguity) to carry over from the object language to the metalanguage and therefore does not require an absence of ambiguity at the level of logical form. Finally, in Section 4, I try to motivate my account by highlighting some of the advantages it offers and answering an obvious objection.

1. Davidson's initial treatment of ambiguity

Davidson made several attempts to deal with lexically ambiguous sentences in the course of defending his truth-conditional semantics. The first attempt is nicely summed up in the following passage:

> [o]ne problem touched on in passing by Tarski does not, at least in all its manifestations, have to be solved to get ahead with theory: the existence in natural languages of 'ambiguous terms'. As long as ambiguity does not affect grammatical form, and can be translated, ambiguity for ambiguity, into the metalanguage, a truth definition will not tell us any lies. The trouble, for systematic semantics, with the phrase 'believes that' in English is not its vagueness, ambiguity, or unsuitability for incorporation in a serious science: let our metalanguage be English, and all these problems will be translated without loss or gain into the metalanguage.   (Davidson, 1967, pp. 315–316)

In short, so long as the metalanguage contains the same ambiguities of the object language, there is no need to disambiguate in the course of assigning truth conditions to sentences of the former. This view of course entails that sentences either do not need to be put into logical form when being assigned truth conditions or that sentences in logical form can be ambiguous. In this paper, I intend to defend the latter version of this early-Davidsonian position, arguing that it provides the best semantic treatment of some cases of polysemy. I should note at the outset, that I take polysemy to be a sort of ambiguity, one where the different senses of the term are more closely connected with one another than in other cases of ambiguity. I do not have a criterion by which to distinguish polysemy from non-polysemous ambiguity, but all the cases I shall focus on below are examples of polysemy in my view.

Returning to the Davidsonian position, this view is scarcely discussed in the contemporary literature and I am aware of no contemporary defenders. Part of the reason for this, no doubt, is that Davidson himself

seems to have rejected this position, though without ever arguing against it, explaining his change of position or indeed mentioning the position in his later work. Cohen (1985, pp. 129–130) and Lepore and Ludwig (2005, pp. 124–129) offer a similar argument) suggests that Davidson likely came to reject the view because it would mean, implausibly, that (1) provided adequate truth-conditions for Davidson's semantic project:

(1) 'The box was in the pen' is true for an English-speaker at time t if and only if the box was in the pen before t.

Cohen (1985, p. 130) argues:

> [a]n ambiguous description of some knowledge that a person has is not a scientifically satisfactory description of that knowledge, even if the knowledge in question is about an ambiguity. To assert such a description would be to make a pun, and play on words is scarcely a serious contribution to the investigation of linguistic competence.

Now, Cohen might well be right about (1). Applied to cases of non-polysemous ambiguity, it is implausible that ambiguous metalinguistic sentences can give satisfactory truth-conditions for object language sentences for the purposes of a truth-conditional semantics. Therefore, I will not be defending Davidson's position as it relates to ambiguity *in general*. However, I reject Cohen's claim that ambiguous descriptions of knowledge are not scientifically satisfactory *in any circumstances*. My view is that, in some cases of ambiguity, the ambiguity need not be eliminated either from the object-language sentence in logical form or from the metalinguistic statement of its truth-conditions. This is enough for me to draw an important conclusion about logical form: sentences in logical form may still contain lexical ambiguities.

2. Copredication

Prima facie, polysemy is a common feature of natural language. The apparent cases that have received the most attention in the recent literature are cases of copredication. Here are some examples:

(2) That book is heavy but informative (Viebahn, 2022, p. 1066),

(3) Lunch was delicious, but went on forever (Asher, 2011, p. 11),

(4) The school that caught fire was celebrating 4th of July when the fire started (Ortega-Andrés and Vicente, 2019, p. 2).

Some have taken cases like this to cast the whole project of referential semantics into doubt. Most notably, this seems to be Chomsky's view (see also Collins, 2017):

> 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 [. . .]. 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. (Chomsky, 2000, pp. 16–17)

However, it is unclear why pessimism about the whole project should be our first response, especially in view of a variety of alternative options.

The interest in these cases derives from the fact that polysemy is not easily eliminated, since on the face of it, it is not merely the sentence types that feature polysemy but at least some individual tokens of these sentences as well. Thus, context of utterance on its own (which is sufficient, for example, to distinguish the content of 'this is a bank' expressed while sitting beside a river from the content of 'this is a bank' expressed while withdrawing money) does not seem to do the job of disambiguation. This strategy does not seem to work for (2)–(4) because it seems that at least some tokens of each of them might be polysemous. The type word 'book' is well-known to be polysemous, at least between informational books (ie the *War and Peace* created by Tolstoy in 1869) and physical books (ie the *War and Peace* sitting on my desk which was created in 2007). However, in many possible utterances of (2), it would seem that 'book' is referring both to an informational book and a physical book at the same time. Informational books are informative (if you were asked how many informative books you had read, and you had read *War and Peace* twice using different copies, it would be very odd to count it as two books). Physical books are heavy (if you were moving your private library and were asked how many of the books were heavy, you would count the two copies of *War and Peace* separately). And yet not only does (2) seem grammatically fine, it is also intuitively true (at least if *War and Peace* is the book in question). Similar considerations go for cases (3) and (4). Sentences such as these seem to be talking about two different items at the same time, they seem to be predicating properties that are true of one item and false of the other and they seem, in spite of this, to be possibly true.

Copredication has seen a small cottage industry develop around it in the past two decades — starting with (Pustejovsky, 1995), (Luo, 2012), (Asher, 2011), (Collins, 2017), (Liebesman and Magidor, 2017, 2018), (Gotham, 2017, 2022), (Viebahn, 2022), (Ortega-Andrés and Vicente, 2019), (Vicente, 2021a,b), (Ortega-Andres, 2022), among others — and we will have to briefly consider some of the most notable recent treatments of the phenomenon before presenting an alternative. Most of these contributions focus on cases of copredication, like (2)–(4), involving general terms in the subject position, and this has informed aspects of the current state of the debate. For example, a major concern has been to show that the preferred account of copredication can satisfy intuitions about sentences involving cardinality. By contrast, copredicative sentences with proper names in the subject position, have been comparatively overlooked. There are plenty, though:

(5) London is populous, but tends to vote Conservative (modified from Chomsky, 2000, p. 37),
(6) Brazil is a large Portuguese-speaking republic that is very high in inequality rankings but always first in the FIFA ranking (Ortega-Andrés and Vicente, 2019, p. 25),
(7) *Texas Eagle* is a 26-hr train service, but arrived early in San Antonio this afternoon.

This is significant because some of the positions currently on the market do not lend themselves to providing an account of the how sentences like these can be true (particularly Liebesman and Magidor 2017). Explanatory power is a virtue of theory choice and so an account that can work for both (2)–(4) and (5)–(7) is to be preferred, *ceteris paribus*. As it happens, I think the account I provide in Section 3 does work for both sets of examples, including getting the right truth-conditions for sentences involving cardinality, but the details of some aspects of my account (including how it gets the right truth-conditions for predications of cardinality) will have to wait for future research. The immediate goal is to sketch the basic idea of an entirely novel account and underline its advantages, but first we need a quick discussion of the competition.

2.1. Ortega-Andres and Vicente

If sentences like (2)–(7) involve genuine polysemy, then perhaps the first thought that might strike us is that their logical form must involve more

than one referring expression, if the sentences are capable of being true. Ortega-Andrés and Vicente (2019) (see also Vicente, 2021a, and Ortega-Andres, 2022) defend such a view. The underlying structure of copredicative sentences is not the central concern of Ortega-Andrés and Vicente, who are primarily focussed on providing a psychological account which can explain *why* some copredicative sentences sound unexceptional and possibly true to us, while others sound heavily zeugmatic. Their psychological account, involving a notion of "activation packages", is one I have no objection to and which I believe is compatible with the semantic account I will short offer; however, they combine it with an account of the underlying structure of copredicative sentences which I wish to reject. In particular, they take the sentence (6) to have the following logical form:

- 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 (Ortega-Andrés and Vicente, 2019, p. 26).

They, along with many others in the literature, seem to tacitly suppose that the only hope a truth-conditional semantics has of making sense of copredicative sentences is by positing a logical form which departs significantly from the natural-language syntax of the sentence. In fact, Vicente is quite explicit about this:

> while there may be a strong intuition that in co-predication and similar environments some words refer to more than one entity or event, the price of accommodating such an intuition is high. Firstly, one should have a special kind of semantics for co-predicational sentences: if the NP <noun phrase> contributes to the truth-conditions of the sentence with two denotations, then the truth-conditions of said sentence cannot be obtained simply from its syntactic structure. It seems that the truth-conditions of <the book is heavy and interesting>, for instance, have to be: the book-physical object is heavy and the book-content [the corresponds to the book-physical object] is interesting. Thus, the guiding idea of truth-conditional semantics, namely, that truth-conditions are a matter of composing constituents' meaning according to syntactic structure, is compromised. (Vicente, 2021b, pp. 348–249)

I think this is simply wrong and a major goal of this paper is to develop, and set out the advantages of, an account of copredication which recognizes such sentences as polysemous but on which their logical form is more closely related to grammatical syntax and identical with the

logical form of parallel monosemous sentences (like 'the book is heavy and green'). There are still several more accounts to survey first, though.

2.2. Dot types

Nicholas Asher (2011) has proposed a sophisticated treatment of the semantics of copredication. His account turns on a theory of types which posits "dot types" and involves a metaphysical commitment to corresponding "dot" objects. On Asher's view, semantic types are highly fine-grained. Thus, although type concordance between predicate and argument is a feature of the compositional approach to the semantic of natural language in the Montagovian tradition, Asher argues that the linguistic data, including phenomena such as copredication requires us to recognize a much larger number of types than hitherto (see Asher, 2011, Chapter 1). Specifically for our purposes, Asher thinks that the data requires us to recognize types with compositional structure, such that two types may combine to form a joint dot type. With respect to copredication, for a sentence like 'that book is heavy but informative', Asher maintains that 'book' must fall under a dot type because the predicate 'heavy' takes only arguments of certain, presumably physical, types, while the predicate 'informative' takes only arguments of nonphysical types.

The notion of dot types has been influential in the recent treatment of copredication, but the different accounts which make use of the notion can be subdivided into two categories on the basis of the accompanying metaphysics. One of the resulting views takes the items falling under dot types to be compositional in nature. Matthew Gotham (2017, 2022) is the major exponent of this view (though, see also Arapinis and Vieu, 2015). According to Gotham (2017, 2022) the predicate 'book' picks out a set of objects each of which is the sum of a physical book-copy and the information that that book conveys. In short, Gotham's proposal is that books are both physical and informational, because they have physical and informational parts. If the informational part of the book is informative, the book as a whole is informative, claims Gotham, in the same way that if the exterior surface of a car is blue, then the car is blue.

According to Asher, by contrast, objects that fall under dot types are bare particulars, which can be attributed properties in virtue of having "aspects". In other words, it is not that the dot object picked out by the term 'that book' in 'that book is heavy but informative' is the sort

of thing which is capable of being heavy and informative at the same time, but rather it is the sort of thing that has a '"dual" nature – two conceptualizations, if you will, that are equally "true of" or "faithful to" the object' (Asher, 2011, pp. 130–131). In short, we can conceptualize the dot object in at least two ways, the different ways rendering true different predications, but there is no obstacle to our employing multiple conceptualizations of the same dot object to make two incompatible predications in a single sentence, even where we have named the dot object only once. As with Gotham's account, Asher's account posits a single object which makes copredicative sentences true and as such, it seems that the sentence is unambiguous (albeit Asher does accept that his view leads a relative theory of identity, according to which objects do not have single non-overlapping identity conditions).

The view I set out below is partly motivated by the desire to avoid, as I see it, the implausible metaphysics of the Asher and Gotham accounts. Whether the technical progress on dot types is detachable from the metaphysics that I am rejecting is another issue I will leave for future research.

2.3. Liebesman and Magidor

Liebesman and Magidor (2017) also hold that the word 'book' is not ambiguous. However, in contrast to dot type theories, their account of the semantics of such sentences is strikingly uncomplicated. They take the word 'book' to pick out all the books of all the different kinds. However, the domain relevant for determining the truth or falsity of an utterance is restricted and this restriction is determined in large part by context. So, for example, in a context where I am tired from carrying books and I say 'phew, I have only three more books to move', the domain of 'book' relevant for determining the truth of the sentence will *ceteris paribus* be restricted to the set of physical books. When I am showing off by telling someone how many Dickens novels I've read and I say 'I've read every one of Dickens's books', *ceteris paribus*, the domain of 'book' will be contextually restricted to the set of informational books. So, for any utterance of the sentence 'that book is heavy but informative', 'book' will normally either have as its domain physical books or informational books, though we might need to know more about the context of utterance in order to figure out which. Nevertheless, our intuition that the sentence might be true is nevertheless satisfied on their account be-

cause, they claim, physical books can be informative and informational books can be heavy, if only derivatively (Liebesman and Magidor, 2017, pp. 137–138).

Liebesman and Magidor's account has the virtues of ontological intuitiveness and minimal mutilation to a familiar semantic framework, features I would like my own account to capture. On the other hand, I have a number of general concerns about it. First, as the account involves contextual shifts of the domain of general terms, it is unclear how this account could be tweaked to account for copredicative sentences involving proper names, like (5)–(7). Of course, some philosophers do think that names are predicates and therefore have domains, but this is a controversial view and not one I share. Second, it is unclear whether context will always, in practice, determine whether a term like 'book' is ranging over informational books or physical books in every context.

My own account agrees with Ortega-Andres and Vicente in taking copredicative sentences to involve genuine instances of polysemy and therefore ambiguity. At the same time, it agrees with Liebesman and Magidor that the logical form of copredicative sentences does not involve replacing the single subject term of the natural-language sentence with multiple different subject terms. It also agrees with Liebesman and Magidor and Ortega Andres and Vicente in avoiding any particular metaphysical commitments to informational/physical parts, aspects or conceptualizations of books, or anything else of the kind. Like Liebesman and Magidor's, my account does involve a contextual element, but of a very different kind. In short, I try to adapt what I take to be the most plausible elements of the existing accounts, while avoiding what I see as their most salient drawbacks.

3. My proposal

I will set out my view in more detail now, before listing some advantages of it and finally considering some objections. As I said above, I do not have space to address type-theory and the broader issues of translating natural language sentences into sentences of logic. I intend to address these issues in future research. Instead I will assume, for the sake of argument, that a copredicative sentence involving a proper name, such as 'London is populous and tends to vote conservative' has the logical form 'P(London) & T(London)'. What follows will be a sketch of the three central components which constitute my account.

The first key component of my account is the contextualist component. I hold that the meaning of 'London is populous and tends to vote conservative' is different in different contexts of utterance. This is hardly news, but what does separate my account from those already extant is that, on my view, context determines the *precision* of the content of an utterance. Thus, on my proposal, prior to mapping logical constants and variables onto the domain, the interpreter must map contexts of utterance onto specifications of the domain. Intuitively, in highly precise contexts (a metaphysics seminars seminar on the type/token distinction would be a good example of a highly precise context), the sentence 'London is populous and tends to vote conservative' is false[1], and the interpretation will accommodate this intuition if this context has been mapped onto a highly precise specification of the domain. In most less-precise contexts, the sentence is intuitively true, and this will be the case on any model mapping this context onto a sufficiently imprecise specification of the domain. How does this happen?

The mechanism by which a change in context can result in a change of truth value is similar to the familiar phenomenon of quantifier domain restriction. In this case, though, it is not the domain of a specific object-language quantifier which is restricted in certain contexts, but rather the domain of discourse itself. Or rather, the specification of the domain of discourse. The domain of discourse itself does not actually change but instead the way in which the domain is specified changes. To understand what I have in mind here, I must say a bit more about what I mean by the "specification" of a domain of discourse. On my proposal, the terms of sentences in logical form are interpreted by elements or subsets of the domain *as specified by a specification.* So, to take a simple example expressed in the language of set theory: '$\{a, b, c\}$' and '$\{a, b, b, c\}$', where the two tokens of 'b' in the second expression are co-referring, are two different specifications of the same set, which might serve as a domain for some language. In this case, the second of these two specifications contains a duplication, that is, it picks out the same element twice over. More interesting for our purposes is the possibility of specifications that include *compressions*, that is, specifications that pick out items ambiguously.

So, we can imagine this as follows, provided we do not prejudge the

---

[1] If the intuition here isn't strong enough, imagine the lecturer saying 'so, you see, strictly speaking London can't both be populous and tend to vote conservative, at most it can only be/do one of these things'.

issue by ruling polysemy out by fiat. We can name the same three objects by using the expression 'London$_{\text{population}}$, London$_{\text{geographical area}}$, London$_{\text{political entity}}$' or by using the expression 'London'. Similarly, we can "specify" the same set with either '{London}' or '{London$_{\text{population}}$, London$_{\text{geographical area}}$, London$_{\text{political entitiy}}$}'. The idea now is that the former might be the relevant domain-specification for determining the truth value of object language sentences about the various London-related entities spoken in the context of a metaphysics class, while for those same sentences spoken in the context of an everyday conversation between non-philosopher friends, the latter might be the appropriate specification of the domain.

This brings us to the second key component of my account which is adapted from Davidson's original proposal for dealing with ambiguity in a truth-conditional semantics: mapping ambiguous terms of the object language onto ambiguous terms of the metalanguage. The metalanguage need not be the object language, but it must have ambiguities *in the same places*, as it were. So, we can interpret 'London' by mapping that name onto 'London' of an English metalanguage or 'Londres' of a French metalanguage, or what have you (the mapping here being the function from a name of the object language to the term of the metalanguage which names the interpretation of the object language name). On my account, this is how this looks: a context is mapped onto a specification of the domain; a precise context like a metaphysics seminar generates a specification in which types and tokens, informational books and physical books, and so on, are distinguished in the specification of the domain; and an imprecise context, like an everyday conversation with a non-philosopher neighbour, generates a specification in which they might be picked out ambiguously. In an imprecise context, an object-language referring expression can be mapped onto an ambiguity in the specification of the domain.

The idea of a specification of a domain is borrowed from Peter Geach (1980), specifically his *Reference and Generality*, in which Geach argues that a domain must be specified by a list of the proper names (see also Dummett, 1996), which may contain either duplications or compressions. I do not wish to hold with Geach that a domain must be specfied by an exhaustive list of names. Indeed, even the Davidsonian suggestion that ambiguous terms of the object langauge should be mapped onto ambiguous terms of the metalanguage to ensure the intuitive truth conditions should be understood, in some sense, metaphorically. Rather, the claim

is that context determines the appropriate level of precision up to which a metalanguage can pick out the semantic values of terms of the object language for the purposes of stating truth conditions. My talk of 'specification' is really just a way of imagining this.[2]

The third key component of my account is a constraint on the interpretation of predicates which requires that, for any interpretation of a sentence in context C, the interpretation of the predicates cannot be any more precise than the level of precision given by the specification of the domain determined by C. So, to give an example, if the domain is partly specified by the metalinguistic name 'London' which is ambiguous between a geographical region and a political entity, then for any object-language predicate, P, predicated of something which the interpretation maps onto the metalinguistic name 'London', P cannot be interpreted to include one of the entities ambiguously named by 'London' in its domain and to exclude the other.

The goal of this constraint is to avoid paradox. Replace P with '...tends to vote conservative', if we did not place this constraint on the interpretation of predicates, then the result would be that the object language sentence was interpreted as both true and false (true in virtue of one of the ambiguously-named entities satisfying the predicate and false in virtue of the other not satisfying the predicate). Notice that if the metalanguage is the language of set-theory and if predicates are interpreted as subsets of the domain, then this constraint is met automatically. If the domain is the set $\{a, b, c\}$, where a is ambiguous between objects a^1 and a^2, the only available interpretations for any given predicate are: $\{a\}$, $\{b\}$, $\{c\}$, $\{a, b\}$, $\{b, c\}$, $\{a, c\}$ and $\{a, b, c\}$, none of which distinguish a^1 from a^2, thus avoiding the threat of paradox. On the first, fourth, sixth, and seventh available interpretations of some monadic predicate P, '$P(a)$' comes out true (and thus, from the vantage point of a more precise context, we could say that '$P(a^1)$' and '$P(a^2)$'

---

[2] An anonymous referee asks why we should think that the language of the interpreter does, in fact, contain just the right ambiguities. What if the interpreter is a pedant who always distinguishes types from tokens and populations from political entities? This is where the metaphorical nature of talk of "specification" comes into play. A specification, properly understood, is not about the context or the lexicon of the interpreter. It is just about what is made available for mapping object-language terms onto. An alternative version of this account which replaced talk of specifications with talk of partitions of the domain would work just as well. The point is just that my proposal allows for singular terms to be mapped onto multiple entities at the same time.

are both true — that is just a consequence of taking seriously the claim that 'a' in this formal language picks out both a^1 and a^2), while on the second, third, and fifth available interpretations of P, '$P(a)$' is false (and hence so is '$P(a^1)$' and '$P(a^2)$', though this can't be said in the imprecise context where the constraint is operative). My proposed constraint just says that this feature must hold, no matter how we intend to treat the semantics of predicates.

So this means, to change examples, '. . . is physical' cannot be interpreted in such a way that physical books are physical while informational books are not. But this is only true in imprecise contexts, where we cannot talk about physical books without talking about informational books. As soon as we enter a context where we can talk about one without talking about the other, *ipso facto*, we also enter a context where more fine-grained interpretations of the predicate '. . . is physical' are available, and indeed changes in context frequently trigger changes in the interpretation of predicates.

These three components, taken together, constitute my account of copredication. In short, on my view, the singular terms in copredicative sentences, in imprecise contexts, can be ambiguous, even when expressed in logical form. In these contexts, interpretation allows for mapping these singular terms onto ambiguities of the metalanguage. The sentence in this context is nevertheless interpreted as either just true or just false, not simultaneously true and false, because interpretation the predicates in such a way as would distinguish the ambiguously-referred to items is ruled out.

One of the reasons that polysemous accounts of copredication have either involved complicated logical forms or a complicated metaphysical story, I think, is precisely because it has been assumed that paradox would result from taking predications of ambiguous subjects at face value. With the proposed constraint, though, this is not true. Another mistaken assumption is that there is no way to capture intuitive entailments on the sort of account I am proposing. Vicente (2021b, p. 349) puts the point this way (umbering altered from the original):

> allowing for single NPs with two different denotations also compromises the validity of simple entailments such as (8):
>
> (8) NP is P&Q entails there is something that is P&Q.
>
> If 'the book' stands for two different entities, then one cannot conclude from: 'the book is heavy and interesting', that there is something that is heavy and interesting.

However, Vicente is wrong about this. On my account it is possible for a noun phrase to stand for two things and yet for (8) to be valid. If the semantic value of NP is some element, a, as specified in the domain, that is, it is referred to singularly by 'a' in the specification of the domain and where 'a' is ambiguous, then by the above constraint the only available interpretations for the predicates P are ones on which either a is true of D not true of D and the same for Q, but given that a is ambiguous between b and c, this just means that if NP is P&Q, then, even from the perspective of a precise metaphysical context in which the domain is specified in such a way that we can talk about b and c separately, b and c are both each in the domain of both P and Q and thus (8) is valid.

4. In defence of the account

I think the advantages of my view are as follows:

A. The logical form of copredicative sentences closely reflects the syntax of the natural language sentences.
B. The view involves no metaphysical commitment to aspects or conceptualizations.
C. The view does not have the consequence that individual books have informational and physical parts.
D. The view does not have the consequence that characteristically physical properties like *being heavy* are also properties of intuitively non-physical entities like informational books.
E. The view captures the intuition that copredicative sentences involve polysemy.

The fourth advantage that I claimed for my view, recall, was that it does not have the consequence that characteristically physical properties like *being heavy* are also properties of intuitively non-physical entities like informational books. This might at first glance appear to be incorrect. My account does have the consequence that, on interpretations on which the polysemous sentence 'The book is heavy but informative' is true, the extension of the predicate '... is heavy' on the interpretation is one which includes both the physical book and the informational book, though this is not stateable in the imprecise context, because any reference to either of the entities polysemously picked out by 'the book' automatically generates a more precise context. Still, this result might

be thought to show that my account does, after all, have the result that the informational book is heavy. However, that is not the case. It is not the case because the context of this paper is of course itself a metaphysically precise context and therefore there are no restrictions on the interpretation of the predicate '... is heavy' as it occurs in the previous sentence. The intended extension of '... is heavy' as it occurs here includes the physical book and excludes the informational book. On the intended interpretation of my current use of the term '... is heavy', it is not therefore true of informational books. All of this of course goes for the predicate '... tends to vote conservative' as well. In an imprecise context, the most appropriate specification of the domain does not distinguish London, a population, from London, a geographical area. Thus, given this specification, the intended interpretation of 'London' is both the population and the geographical area. Correspondingly, in this same imprecise context and given the same specification, either both of the population and the geographical area fall within the range of '... tends to vote conservative' or neither does. In this case, the intended interpretation has it that both do. So there is a sense of '... tends to vote conservative' in which it is true of geographical areas. But that does not mean I am saying that any geographical area actually tends to vote conservative, because in *this sentence* I am now *using* that predicate, rather than mentioning it, and as the context of this paper is precise, my intended use of the predicate is such that it can be true of populations, but not of geographical areas.

This issue leads quite naturally to an obvious objection to my account: that it prevents predicates from being mapped onto their intended extensions in most every-day (i.e., imprecise) speech contexts. Terms are forced to mean something our intuition tells us they do not mean. I think this objection is answerable. As an *ad hominem* response to advocates of Liebesman and Magidor's account, I would point out that they are already committed to the predicates in question having extensions that are available in imprecise contexts on my account, so they can hardly claim that my account forces these predicates to bear inherently implausible meanings in such contexts. According to Liebesman and Magidor many informational books fall within the extension of the predicate '... is heavy', so they can't claim that it is an implausible feature of my position. Still, aren't I claiming that it is an advantage of my position that it isn't committed to the consequence that '... is heavy' has an extension which includes physical and informational books? If this is really an

advantage as I have claimed, surely it is because such an extension represents an implausible interpretation of the predicate. If that is so, then the extension which is needed, in an imprecise context, to be assigned to the predicate '. . . is heavy' in order to make the sentence 'the book is heavy but informative' true represents an implausible interpretation, or so the objection might go.

I think this objection is too quick though. I do not think that it is particularly implausible that there is a sense of the predicate '. . . is heavy' which includes informational and physical books in its extension, just as Liebesman and Magidor claim. What I think is implausible is that that is the sense of '. . . is heavy' at play when we are distinguishing physical books from informational books. So I'm happy to grant that there is a use of the word 'heavy' which applies to both types of books, just as Liebesman and Magidor claim. This is the use of the word which must be at play in imprecise contexts in order to make 'the book was heavy but informative' true. Still, my view enjoys an advantage over Liebesman and Magidor's in that, in contexts where informational books and physical books are referred to monosemously (such as in articles appearing in philosophy journals), the predicate '. . . is heavy' picks out a property which serves to distinguish the two types of book. This, it seems to me, is just as it should be.

5. Conclusion

In this paper, I have a presented an account of copredication which takes as inspiration Donald Davidson's initial attempt to handle ambiguity in truth-conditional semantics. I think the account I have provided has significant advantages over the other extant accounts of copredication. The significance of this, if I am right, goes beyond the issue of copredication. It tells us something about the role of logical form and about what we need from a metalanguage. Namely, my account says that neither of these *require* object-language ambiguity to be exorcised in order to adequately state the truth conditions for object-language sentences. Cases of polysemy at least provide exceptions to any purported requirement. This runs counter to deeply-rooted assumptions about the nature of interpretation.

References

Arapinis, A., and L. Vieu, 2015, "A plea for complex categories in ontologies", *Applied Ontology*, 10: 285–296. DOI: 10.3233/AO-150156

Asher, N., 2011, *Lexical Meaning in Context*, Cambridge: Cambridge University Press. DOI: 10.1017/CBO9780511793936

Chomsky, N., 2000, *New Horizons in the Study of Language and Mind*, Cambridge: Cambridge University Press. DOI: 10.1017/CBO9780511811937

Cohen, L. J., 1985, "A problem about ambiguity in truth-theoretical semantics", *Analysis*, 45 (3): 129–134. DOI: 10.1093/analys/45.3.129

Collins, J., 2017, "The copredication argument", *Inquiry*, 60 (7): 675–702. DOI: 10.1080/0020174X.2017.1321500

Davidson, D., 1967, "Truth and meaning", *Synthese*, 17: 304–323. DOI: 10.1007/BF00485035

Dummett, M., 1996, "Does quantification involve identity?", pages 308–326 in *The Seas of Language*, Oxford University Press. DOI: 10.1093/0198236212.003.0013

Geach, P., 1980, *Reference and Generality: An Examination of Some Medieval and Modern Theories*, Cornell University Press.

Gotham, M., 2017, "Composing criteria of individuation in copredication", *Journal of Semantics*, 34 (2): 333–371. DOI: 10.1093/jos/ffw008

Gotham, M., 2022, "Property inheritance, deferred reference and copredication", *Journal of Semantics*, 39 (1): 87–116. DOI: 10.1093/jos/ffab020

Lepore, E., and K. Ludwig, 2005, *Donald Davidson: Meaning, Truth, Language, and Reality*, Oxford: Oxford University Press.

Liebesman, D., and O. Magidor, 2017, "Copredication and property inheritance", *Philosophical Issues*, 27 (1): 131–166. DOI: 10.1111/phis.12104

Liebesman, D., and O. Magidor, 2018, "Meaning transfer revisited", *Philosophical Perspectives*, 32 (1): 254–297. DOI: 10.1111/phpe.12120

Luo, Z., 2012, "Formal semantics in modern type theories with coercive subtyping", *Linguistics and Philosophy*, 35 (6): 491–513. DOI: 10.1007/s10988-013-9126-4

Ortega-Andres, M., 2022, "The denotation of copredicative nouns", *Erkenntnis*. DOI: 10.1007/s10670-021-00493-8

Ortega-Andrés, M., and Vicente, A., 2019, "Polysemy and co-predication", *Glossa: A Journal of General Linguistics*, 4 (1): 1–23. DOI: 10.5334/gjgl.564

Pustejovsky, J., 1995, *The Generative Lexicon*, Cambridge, Mass: MIT Press. DOI: `10.7551/mitpress/3225.001.0001`

Vicente, A., 2021a, "Chomskyan arguments against truth-conditional semantics based on variability and copredication", *Erkenntnis*, 86: 919–940. DOI: `10.1007/s10670-019-00138-x`

Vicente, A., 2021b, "Approaches to co-predication: Inherent polysemy and metaphysical relations", *Journal of Pragmatics*, 182: 348–357. DOI: `10.1016/j.pragma.2021.02.007`

Viebahn, E., 2022, "Copredication, polysemy and context-sensitivity", *Inquiry*, 65 (8): 1066–1082. DOI: `10.1080/0020174X.2020.1822911`

Viebahn, E., and B. Vetter, 2016, "How many meanings for 'may'? The case for modal polysemy", *Philosopher's Imprint*, 16 (10): 1–26.

Daniel Molto
Department of Philosophy
University of Sussex
Brighton, UK
`d.molto@sussex.ac.uk`