

Unarticulated Constituents and Propositional Structure

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Abstract: Attempts to characterize unarticulated constituents (henceforth: UCs) by means of quantification over the parts of a sentence and the constituents of the proposition it expresses come to grief in more complicated cases than are commonly considered. In particular, UC definitions are inadequate when we consider cases in which the same constituent appears more than once in a proposition that only has one word with the constituent as its semantic value. This article explores some consequences of trying to repair the formal definitions.

Introduction

Long ago, philosophers of language began coming to grips with the hard realization that there is significant slippage between the meaning a plausible, conservative semantic theory determines for a sentence in context and what speakers intend (and manage) to get across by uttering it. The apparent slippage, while completely obvious to anyone who has ever had a conversation, read a book or attempted to read or write poetry, conflicts with the only plausible known story that explains how we use language to communicate thoughts. On that story, both speaker and hearer possess and use a semantic theory that couples sentences (relative to a context) with meanings, and thus, in normal circumstances, uttering *S* lets the hearer know that the speaker wants him to think that *P* (while perhaps implying other propositions). The story falls short if uttering a sentence doesn't result in the speaker saying what the sentence means. It reduces to shambles if there is no systematic embellishment that explains the slippage.

One doesn't have to traffic in fancy philosophical cases and counterexamples to find examples of the slippage. The otherwise uninteresting cases of 'open' and 'empty' provide nice examples. A door that is only slightly ajar satisfies the predicate

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'is open' in some contexts but not others. A fridge that contains only a small puddle of beer satisfies the predicate 'is empty' in some contexts but not others. One may complain that the uses in these cases are not *strict*, but this simply labels the problem: how do we manage to employ meaning loosely to express propositions that don't correspond to the so-called 'strict' reading? Not only do we use the words in such ways but we expect others to know that we use them in such ways. If a theory of meaning is tied even remotely to a theory of linguistic knowledge and communication, we have to account for these expectations and their satisfaction.

The slippage is intimately related to questions regarding the infamous semantics-pragmatics distinction. The history is well known. Relying on a not-yet-completed (or even really begun) theory of rationality, Grice (1975) provides a set of considerations designed to sever the tie between how speakers use language to achieve their ends and what a sentence means, claiming that the latter is required to make sense of the former. Kaplanian semantics (Kaplan, 1989) and its commitment to double indexing provides the formal mechanisms for representing the interactions of context and content. From there, the theories begin to proliferate with little to no agreement on genuinely core issues: where the semantic-pragmatic line is to be drawn, what evidence counts in favor of, or against, any particular line, how important the line is, what the input to semantic interpretation is supposed to be in the first place. . .

The battles rage on, fueled partly by the intrinsic interest in the question, and partly by sheer lack of tractability. One battle-line that theorists have hoped would provide traction involves looking at specific cases that paradigmatically display the slippage. Perry (1986) famously pointed out that there is a clear sense in which an utterance of 'it's raining' expresses more information than the sentence itself seems to contain. The extra ingredients of content are called 'unarticulated constituents' (henceforth 'UCs'). Ever since their inception, UCs have captured the hearts and minds of many linguistically minded metaphysicians, epistemologists, philosophers of language and the like.¹

¹ There are alternatives to be kept in mind, and I shall mention two for the sake of contrast. First, one might treat 'rains' and similar cases much in the way current semantic theory treats 'I'. It's easy to do in principle for 'rains': endow contexts of utterance (which already are presumed to be composed of speakers, places, times) with a new element, a salient location. Then endow 'rains' and similar cases with a character that takes as input the salient location and returns an intension as part of the content of the proposition expressed by 'it's raining'. The intension expresses what we would express by saying 'it is raining in _____' where the '_____' is filled in by the salient location. The problem is solved in a manner that is entirely internal to semantic theory and involves no extra-semantic processes of propositional enrichment.

Second, one might claim that sentences are to be identified with syntactic structures that are far more articulated than what is actually said. On this sort of view, the syntactic input to semantic interpretation has more constituents than the sounds or inscriptions of the sentence suggest: some parts simply aren't said aloud. On this view, 'it's raining' has as part of its syntactic structure a constituent that denotes a location. If this view is plausible, then it looks once again like the information conveyed is firmly within the purview of semantic theory and

Remarkably, given how much work UCs are called upon to perform, there is a surprising shortage of attention paid to explaining just what they are. Most papers on the topic offer necessary and sufficient conditions adhering to the basic tenet that a UC is a constituent of a proposition expressed by a sentence that isn't the semantic value of any phrase in the sentence. However, these definitions are woefully inadequate. Achieving definitional adequacy, moreover, leads to a surprising result that we will investigate below.

One proviso to keep in mind as we proceed: the task at hand is to consider a certain view of UCs, one that involves defining UCs by reference to the difference between a proposition expressed by an utterance of a sentence *S* (in a context *c*) and the input to semantic interpretation given by the syntactic structure of the sentence. Other views may treat UCs differently, perhaps as the result of interplay between two levels of representation, and we will explore some of these issues near the end of the paper.

Section 1 reviews some of the motivation for positing UCs and presents some of the proposed definitions of UCs. Section 2 presents certain troubling cases for some definitions of UCs and investigates the nature of the trouble. Section 3 diagnoses the problems for these definitions. Section 4 explores ways to fix the definitions. Section 5 deals with some anticipated replies from UC theorists. Section 6 discusses other potential definitions of UCs that involve relations between the syntactic structure of the sentence and a further level of semantic representation. Section 7 reviews some of the lessons for UC theorists.

1. UCs

It seems easy to prove the existence of UCs. The *locus classicus* involves a verb that historically speaking has been of very little interest to philosophers:

- 1) It's raining.

Perry (1986) writes, regarding (1):

In order to assign a truth-value to my son's statement [of (1)] ... I needed a place. But no component of his statement stood for a place ... Palo Alto is a constituent of the content of my son's remark, which no component of his statement designated; it is an unarticulated constituent (Perry, 1986, p. 206).

Perry's considerations are only immediately intelligible if we assume that propositions are structured (see Soames, 1985, 1987, 1989; Salmon, 1986; Russell, 1903).² Perry's

the problem is solved in a manner that is entirely internal to semantic theory. Both of these stories differ from the UC story by denying the slippage, while the UC story embraces the slippage as the most natural explanation of the phenomenon at hand.

² Some other frameworks aren't quite as congenial. In particular, possible worlds semantics doesn't acknowledge the existence of non-world constituents of propositions.

existence proof seems to run as follows (assuming that content is propositional and that only propositions are truth-evaluable):

- P1) An utterance of (1) expresses a proposition with a truth value.
- P2) The proposition contains a location as a constituent.
- C) The utterance expresses a proposition with a location as a constituent.
- P3) (1) does not contain a constituent that has a location as its semantic value.³
- C1) The proposition expressed by an utterance of (1) contains a constituent that is not the semantic value of any constituent of the sentence.

(C1) is the conclusion of an argument that purports to prove that there are such elements even in mundane cases. The proof is short and sweet, but it raises more questions than it answers. A great deal of the literature since 1986 has focused on the argument's various shortcomings. All three premises in the argument have come under attack. (P1) has been rejected by theorists who reject the idea that what is expressed by (1) is a full proposition, preferring to think of it as a propositional radical that is enriched by the listener.⁴ (P2) has come under attack by theorists who deny that an utterance of (1) expresses a unique proposition at all. (P2) is plausible, in other words, only if you are misled by a false presupposition regarding the expression relation.⁵ (P3) is rejected by theorists who claim that the relevant input to semantic interpretation is a syntactic level of representation with a great deal of unsaid-but-present syntactic material including a silent representation of a location.⁶ (P3) is also rejected by some contextualists—those who think that words like 'rain' are context sensitive and the semantic value of 'rains' differs from context to context. I mention these views, in particular the last two, to set them aside: the considerations that follow are not intended to apply to them.

UC theorists are partly motivated to accept (P3) by hostility to positing hidden syntactic structure. With sufficient syntactic structure, even if it is not phonologically realized, we can explain, or explain away, the slippage's appearance. The thought is that whatever twists and turns syntactic theory may involve, it is not going to give us a location in the syntactic representation of (1) (or in the other examples that purportedly exemplify UCs). Perry (1998) states the idea nicely in a footnote:

In some cases of implicit reference there is a feature, a trace, a sort of phantom expression, that serves in place of an expression, so the referred to constituent really isn't unarticulated. Linguists often agree on the criteria for and presence of such features; it is a robust phenomenon. But I do think that saying there is

³ I intend this to be consistent with the location being part of the semantic value, as some contextualist views treat the location in utterances of (1).

⁴ See Bach, 1994.

⁵ See Cappelen and Lepore, 2002; Soames, 2002—though Soames (2004) presents a view much like the UC view discussed in the present paper.

⁶ See Stanley, 2002a, 2002b.

such a feature [a covert syntactic element] should amount to more than saying that we use an $n-1$ -place predicate for an n -ary relation. I am interested in the theoretical possibility and coherence of truly unarticulated constituents; I also hope, however, that I have found some convincing examples that they really occur (Perry, 1998, fn. 4).

I will assume with Perry that UCs are not traceable to hidden syntactic structure. The thought is pretty clear: if a syntactic representation chock full of phonologically unrealized structure is the proper input to semantic interpretation then mere lack of vocalization becomes much less interesting than thought at first.⁷ Furthermore, the ability to establish the presence of UCs becomes much more difficult if there is a great deal of syntactic structure that is left unarticulated: mere non-vocalization becomes no bar to semantic interpretation. To this end I'm going to assume, on behalf of the UC theorist, the following principle:

No-Structure: Hidden syntactic structure is to be posited in a sentence only if one is forced to do so by syntactic evidence.

No-Structure is not unique to UC theorists—theorists like Stanley (2000, 2002a,b) and Stanley and Szabó (2000) may well be happy to accept it (and then argue against slippage where no syntactic evidence is available). The principle is regrettably vague and it is difficult to make it more precise.⁸ Fortunately, I don't think its vagueness matters too much for our purposes. I intend to argue that we need to posit structure simply to get the definitions of UCs to work out right, at least as they have been offered in the literature.

Let me be clear: there are theorists who don't accept No-Structure, but who clearly think that there are elements of the proposition expressed by utterances of (1) that have *unpronounced* syntactic constituents. In one sense the location involved in utterances of (1) are unarticulated—they aren't said aloud, though they are part of the syntactic structure of (1) and thus they are interpreted by the semantics as any other syntactic constituent. The considerations adduced below do not apply to such theorists.

⁷ Two caveats: (1) nothing hangs on vocalization as opposed to, say, being signed or written. (2) the consideration is only relevant if hearers and speakers both know, albeit implicitly perhaps, that the representation they are interpreting and uttering respectively contains such material. Lack of phonological representation is of course interesting and coordination problems remain, but they are less relevant to the slippage alluded to in the introduction.

⁸ Here, and throughout this paper, I ignore the 'variable free' approach to semantics championed by Jacobson (1999). This oversight is purely because of how the dialectic set up by the UC theorists is structured, but the results here can be translated into a variable-free system once the UC theorist tries to give a definition that interacts with type-shifting mechanisms. As far as the semantics-pragmatics distinction goes, nothing hangs on restricting attention to approaches that revolve around the presence or absence of syntactic structure.

Given the intensity of the fights over UCs, it's a bit surprising how little attention has been paid to their proper characterization. Generally, there are two ways of introducing UCs. The first involves intuitive appeal to the sort of phenomena exhibited by our considerations of (1): a UC is exemplified by the location of the rain in the proposition expressed by an utterance of (1). Call this the *ostensive* characterization. The second manner of characterizing unarticulation is more formal and involves the relationship between constituents of a sentence and propositional constituents. Below is a series of such definitions culled from the literature:

In this case [the case of (1)], I say that the place is an *unarticulated constituent* of the proposition expressed by the utterance. It is a constituent, because, since rain occurs at a time in a place, there is no truth-evaluable proposition unless a place is supplied. It is unarticulated, because there is no morpheme that designates that place (Perry, 1998).

... an unarticulated constituent is simply a propositional constituent that is not explicitly mentioned—it is not the content of any expression in the sentence (Crimmins, 1992, p. 16).

... an entity (object, property, or function) *e* is an unarticulated constituent relative to an utterance *u* if and only if (a) *e* is a constituent of the proposition that a competent, reflective speaker under normal circumstances would intuitively believe to be what is expressed by *u*, and (b) *e* is not the value of any constituent in the expression uttered in *u*, and (c) *e* is not introduced by context-independent composition rules corresponding to the structural relations between the elements in the expression uttered (Stanley, 2000, p. 149).

... a UC is an element required for grasping the proposition literally expressed by an indicative utterance of a sentence, *S* (i.e. *S*'s explicature), yet an element which receives no linguistic (i.e. syntactic) representation (Borg, 2005, p. 241).

Recanati (2002) considers the sentence 'I've had a very large breakfast':

Here we arguably have a case where something (the temporal location of the breakfast event on the day of utterance) is part of the intuitive truth conditions of the utterance yet does not correspond to anything in the sentence itself. If this is right, then the temporal location of the breakfast event is an *unarticulated constituent* of the statement made by uttering the sentence in that context (Recanati, 2002, p. 300).⁹

⁹ To be fair, it is not clear that Recanati is offering this as a definition of 'UC' so much as a sufficient condition. His actual view is discussed below in Section 6.

The common theme is evident: UCs are constituents of propositions that aren't represented in the sentence. We can coin a slogan: Constituency without Representation! (CWR hereafter).¹⁰

While all UC theorists accept that there are constituents that are not syntactically represented, not all agree that the constituents aren't represented *tout court*. The field divides naturally into two sorts of theorists. On the one hand, some philosophers take UCs to be the result of intending to express a proposition that has 'extra' content in it as defined above. For them, UCs are a matter of the difference between what is actually expressed by a sentence and what the syntactic structure of the sentence provides for semantic interpretation. Other theorists, however, accept that the constituents *are* represented, but not that they are syntactically represented, nor that they are the product of any semantic interaction. Recanati (2002) captures this distinction nicely, calling the former sort of view the 'semantic' conception and latter the 'syntactic' conception.

... on the semantic conception [of UCs], free enrichment determines aspects of the *interpretation* of a given representation, aspects which are unarticulated in the sense that nothing in the representation corresponds to them. On the syntactic conception, free enrichment determines aspects of the *representation* which is interpreted: it contributes further symbols, further representational elements, which are unarticulated in the sense that nothing corresponds to them in the natural language sentence that has been uttered (Recanati, 2002, p. 339).

I will consider syntactic conceptions in Section 6. The principal arguments of this paper, however, are directed against the semantic conception.

With CWR as a guiding principle, some linguistically minded philosophers have posited UCs to explain many diverse phenomenon such as quantifier domain restriction, relational nouns, comparative adjectives, belief reports, climatic verbs, etc. Some philosophers claim to spot them literally *everywhere*, thus attempting a re-realization of a Wittgensteinian dream of dissolving the semantics-pragmatics divide altogether.¹¹ While most are more circumspect in appealing to UC treatments, it is common to find philosophers who have learned to live with and love UCs. The simple proof above suggests that, absent strong evidence to the contrary, we all should, since they are required in even very simple cases.

There is a glitch in the program. In the rush to determine whether there are any UCs, we managed to overlook a critical gap between the ostensive and the explicit characterization of UCs. Let's turn to some cases that wreak havoc for the explicit definitions considered above.

¹⁰ This is to be distinguished from definitions of UCs that involve the interplay of various levels of representation. These will be looked at in Section 7.

¹¹ Wittgenstein, 1953. See Travis, 2001; Bezuidenhout, 2002.

2. How Many Places Can a Constituent Be In At Once?

I am going to assume, for the purpose of this section, that the typical uses of the following constructions are amenable to UC treatments if anything is:¹²

- climatic verbs ('snowing', 'raining');
- domain restriction ('every boy', 'some girl');
- comparative adjectives ('tall', 'short').

We have already examined a member of the first group and the considerations generalize to its other members. The second group is a plausible candidate on account of the well-known phenomenon of domain restriction. For example:

2) Every farmer complained about his taxes.

(2), uttered in a context where California farmers are under discussion, can be true even if there are sanguine farmers outside of California. This suggests that an utterance of (2) in this context expresses a proposition that concerns farmers in the region. Since this restriction isn't explicitly stated and is plausibly part of the proposition expressed by (2) in this context, the restriction is plausibly unarticulated.

The third group is rather tricky since the semantics of adjectives is itself a tricky affair. But, to simplify massively (in ways that don't do violence to the substance of the claim), sentences such as (3) seem to express propositions containing more material than the sentence represents:

3) Jamie is tall.

Being told (3) yields little of use until one knows the relevant standard of tallness in play. Jamie is 3 feet tall. Relative to three year olds (3) may be true but relative to 4th graders (assume Jamie skipped a few grades), (3) is false. So, like (1), (3) seems to contain unrepresented propositional material.

There may be very good reason to reject a UC treatment for at least some of these constructions. I think there are, in fact. But unless they are highly construction specific, these reasons would provide strong evidence that UC treatments should generally be resisted. For now, we can grant that UC treatments are generally plausible. After all, we are more interested in what they are than if there are any.

With these groups in mind, let's explore a few cases:

Case 1:

Context: Brooke lives in California and misses snow. As such, when she hears that it is snowing in Vancouver, her favorite city, she gets on a plane immediately. When asked about Brooke's traveling habits, Lauren claims:

4) Brooke comes to Vancouver when it snows.

¹² As we will see, we could actually relax this requirement to just one of the constructions. Strictly speaking, UC treatments apply to sentences, not to phrases of this sort.

(4) is naturally interpreted in context as meaning the same thing as ‘Brooke comes to Vancouver when it snows *in Vancouver*’. This reading, however, is not the only possible reading: (4) could be easily uttered in contexts where it is clear that the snowing takes place in some place other than Vancouver.

Case 2:

Context: The new mayor of New York is looking over the financial misdealings of the former mayor and chastises him on television. The newspapers the next day read:

5) The mayor of New York excoriated the old mayor.

(5), in this context, is most naturally read as expressing the same thing as ‘The mayor of New York excoriated the old governor *of New York*’. This, however, is not the only acceptable interpretation of the sentence: one could utter (5) in Syracuse and intend that ‘the old mayor mean the same thing as ‘the old mayor of Syracuse’.

Case 3:

Context: People are seeing if they are the right height to join the team. Jim utters:

6) Jerry is already a team member and Mary is short.

(6), in the described context, is naturally taken to express the same things as ‘Jerry is already a team member but Mary is short *for a team member*’. This, however, is not a required reading in every context. If we know that Mary isn’t on the team (and didn’t try out) but she is standing next to a bunch of taller girls in her class, (6) is naturally read as expressing the same thing as ‘Jerry is already a team member and Mary is short *for a girl in her class*’.

These sentences, relativized to the described contexts, express propositions that contain UCs, by the lights of the ostensive characterization. We don’t know what is expressed by (4) unless we know where it snows: Brooke doesn’t go to Vancouver when it snows just *anywhere*. Similar points hold for (5) and (6). We don’t know what is expressed by an utterance of (5) unless we know which mayor is under question. We don’t know what is expressed by (6) unless we know what comparison class is under consideration. We can’t evaluate them for truth (except in very peculiar cases) anymore than we can evaluate (1) for truth without extra information.

However, none of the explicit definitions capture the fact that the location in (4), the city in (5) and the comparison class in (6) are UCs. In (4), the constituent Vancouver is articulated: it is the semantic value of the word ‘Vancouver’, which is indeed part of the sentence. Similar facts hold for (5) and (6): New York is articulated by ‘New York’ and the property of being a team member is articulated by ‘is a team member’. The explicit definitions one and all claim that a constituent is unarticulated when and only when it is *not* the semantic value of any part of the sentence. Since they all are the semantic values of a part of their respective sentences they are all articulated. The formal definitions, in other words, are failing

to capture the intuitive phenomenon at hand. This means that they are inadequate to capture the slippage we began with and hence, presumably, must be modified if they are to be even extensionally adequate.

We may anticipate two responses to the problems presented by (4)–(6). First, at least (4) and (6) (though not (5)) rely on conjoining two separate clauses and so we can modify the definitions to include clausal restrictions. For example, let's consider altering Crimmins's definition appropriately:

... an unarticulated constituent is simply a propositional constituent that is not explicitly mentioned in the sentence—it is not the content of any expression in the smallest sentential *clause* under consideration.

This would rule out only two of the cases above, since (5) doesn't involve any cross-clausal issues. In any case, it doesn't stand up to scrutiny. For example, consider (7), (7a) and (7b):

- 7) Some people prefer football players that are heavy.
- 7a) It rained in Vancouver on every farmers' birthday.
- 7b) It rained on every resident of Vancouver's birthday.

It is fairly easy to imagine a case in which (7) is true just in case the football players are heavy *for football players*, which contains the unarticulated constituent football players. However, there is no plausible syntactic analysis that will divide (7) into more than one sentential clause. Similarly, (7a) can be uttered in a context where 'every farmer's birthday' is to be restricted to farmers in Vancouver. (7b) can be uttered in a context in which the rain takes place in Vancouver. The same point holds as before: there is a word in the clause that has Vancouver as its value. *Pace* Crimmins, there is nothing simple about defining unarticulated constituents.¹³

Second, one might deny that (4)–(7) are cases involving UCs. One may instead claim that they involve ellipsis. If such an appeal can be sustained, then (4)–(7) are no problem for the formal definitions: (4)–(7) contain sufficient syntax to prevent the relevant unarticulation.

One may claim this, but at her own peril. The appeal is dangerously *ad hoc*—the sort of ellipsis appealed to is not like more respectably behaved cases of ellipsis (or gapping, sluicing and the like).¹⁴ Thus, the UC theorist here is treating ellipsis as a

¹³ See Section 5 for a more sophisticated attempt to press similar fixes.

¹⁴ For example, ellipsis and gapping don't allow cataphora:

- *Jordan does too and Jim loves his mother.
- *Jim, a cigar and John lit a cigarette.

These examples pretty clearly do:

- The new mayor excoriated the old mayor of New York.
- It started to rain so Brooke went to Vancouver.

case where the relevant words syntactically present but too obvious to utter. This may be respectable but it undermines the simple proof for UCs we began with. Any ellipsis treatment in (4)–(7) of this sort just as easily applies to the considerations regarding (1). Thus, without special reason to think that there is a process that saves the definitions in (4)–(7) from counterexample, one appeals to ellipsis at the cost of making the simple proof we started with dialectically impotent.

Let's turn to some more sophisticated ways to fix the definitions.

3. What Are We Defining? What *Should* We Be Defining?

Ironically, the most striking problem about the explicit definitions is that they define the wrong notion.

The notion UC theorists define is that of an 'unarticulated constituent' but the notion they need is an unarticulated *occurrence* of a constituent. The constituents of structured propositions are items such as objects, properties and relations. For example, the city of Palo Alto is a constituent of the proposition expressed by (1). In (4)–(7) the relevant constituents appear multiple times in the proposition. Intuitively, only some of those appearances are articulated. For example, in (4) the constituent Vancouver appears twice, but only one appearance is unarticulated. The theory, thus, should focus on a notion of articulation that relates expressions to *appearances* of constituents, not constituents themselves.

Luckily, in a structured proposition framework, we need to make sense of occurrences of constituents, whether or not we are concerned with articulation. For example

8) Residents of Vancouver pay taxes in Vancouver.

contains two occurrences of 'Vancouver'. Structured proposition theorists have propositions with structure at their disposal and so all we have to do is make sense of Vancouver being located at more than one spot in the structure. Let's consider quickly some of the ways we can use this structure to yield the relevant notion of occurrence.

First, we may be tempted to employ spatial considerations. There is a 'Vancouver' on the right, a 'Vancouver' on the left and so perhaps we can use an analogous relation between constituents of the proposition to distinguish occurrences. This suggestion clearly confuses properties of the representation of a proposition with properties of the proposition itself.

Second, one may claim that structured propositions are best regarded as sequences of items such as objects, properties and relations. We can indicate position in a sequence by number. The positions in the sequence are distinct, even if their occupants are not. Thus, we can use sequence positions to define a notion of occurrence within a proposition. An occurrence can be defined as a constituent-at-a-sequence-position. For convenience, we could think of this as an ordered pair of an object (or property, relation) and a number representing the spot

in the sequence. In this way, we could identify the first occurrence of Vancouver with $\langle \text{Vancouver}, n \rangle$ and the second with $\langle \text{Vancouver}, n' \rangle$ where n and n' are distinct positions in the sequence.

This approach seems to assume that propositions are literally sequences of constituents. This assumption is not especially plausible and is the cause of hemming and hawing. The chief worry is fairly familiar and akin to Benacerraf's (1965) worries regarding reducing numbers to set theoretic objects. Consider a simple sentence:

9) Jim loves Jane

Here's one sequence that can easily serve as the 'proposition' expressed by (9):

10) Jim, Jane, Loves

Here are a couple more:

11) Jane, Jim, Loves

12) Loves, Jim, Jane

All of (10)–(12) are able and willing candidates for the proposition expressed by (8).

There are two standard responses to this worry. The first is that there is something that is not identical with any of (10)–(12) but which they each usefully represent. In Benacerraf's case of multiple set theoretic candidates for numbers, one might claim that there are numbers that can be successfully represented by set theoretic objects without being thereby identified with those objects. In our case, we may claim that there are propositions that are represented by sequences (or other set theoretic objects) without literally being those objects. The second response is structuralism. We are fortunate enough to not have to decide between the two possibilities here. We know what we need in order to speak of occurrences: an object (whether a proposition or simply a structure thought of in preferred structuralist terms) that has enough structure to distinguish between occurrences of one and the same constituent.^{15, 16}

We thus have the distinction we need: in (4) the first Vancouver (at a position in the structure) is articulated while the second one is not. Once we are dealing with

¹⁵ These considerations dovetail nicely with recent work by King (2007), who argues that propositions are not only heavily structured, but that they are exactly structured in the ways that sentences are syntactically structured. In order to get sufficient structure to speak of occurrences of constituents, we don't need to import quite this much structure. In the current dialectic, the amount of structure King-propositions contain may well be overkill and his contention that the structure is more-or-less inherited directly from the sentence that expresses it is one we cannot blithely accept without begging the question against the UC theorist. The UC theorist who is on board with propositional structure, however, incurs the responsibility of explaining why the propositions expressed by sentences have the structures that they do.

¹⁶ King (2007) uses Benacerraf-style arguments to argue for the impossibility of identifying propositions with sequences of objects or set theoretic objects, as well another argument: if propositions are mere sequences, it is mysterious why some are truth evaluable while others are not.

constituents relative to positions in a structure, we can start to make some progress on fixing up the explicit definitions: instead of saying what it is for a constituent to be unarticulated, we can begin to try to say what it is for a particular occurrence of a constituent to be unarticulated.

One victim of these considerations is our slogan. We must trade in CWR for the considerably less pithy ‘Constituency in a Node of a Structure without Representation!’, or CNSWR for short.

Let’s recap. We started with the ostensive notion of a UC and surveyed definitions that tried to capture the notion more formally. We showed that the definitions were unable to yield the correct classifications in (4)–(7). We then considered how to fix the definitions and our preliminary diagnosis involved altering the target notion from *constituent* to *occurrence of a constituent*. We then investigated accounts of occurrences of constituents.

So far, so good. But we haven’t solved our problem of explicitly defining occurrences of unarticulated constituents. We turn to the problem of explicit definition next.

4. Fixing the Definition

There’s a surprise lurking.

While we have made progress, we aren’t yet in a position to solve the problem raised by (4)–(7). We cannot simply substitute ‘unarticulated occurrence of a constituent’ for ‘constituent’ in the old definitions and get a satisfactory account of articulation. Consider Crimmins’ definition with the relevant substitution:

... an unarticulated *occurrence of a constituent* is simply an occurrence of a propositional constituent that is not explicitly mentioned. . .

While we have isolated two occurrences of Vancouver in the proposition expressed by (4), the definition doesn’t determine which occurrence is unarticulated unless there is a story about what it is to explicitly mention an occurrence of a constituent. What is left to do is to make sense of how an expression in (4) can articulate one occurrence rather than the other.

We are in a good position to tell a story about articulation of occurrences. The sentence has a structure that is sufficiently similar to the structure of the proposition. This is sufficient to determine a mapping between the occurrences of constituents of the proposition and parts of the sentence.

Consider an analogy. Say that Lana takes trips by airplane from city to city and we have some, but not all of the tickets for her trips. If she goes to Cancun only once and we have no tickets for her trip to Cancun but we have tickets for all the rest of her trips, we can tell easily which trip is unticketed. It’s the trip that isn’t represented by any ticket. However, say she goes to Cancun twice and we have only one ticket to Cancun. We know that one of the trips is unticketed but we are

in no position to tell which trip it was, unless we can impose some ordering on the trips and tickets that lets us tell which ticket is missing. Intuitively, we want an ordering of tickets that (a) corresponds to the ordering of trips and (b) allows us to deduce which trip is unticketed.

Similarly, we can think of ways to map expressions to occurrences. Here is a way:

x is an occurrence of an articulated constituent (relative to an utterance *u* of a sentence *S* with structure *S'*) *iff* the position that *x* occupies is the semantic value of an expression in *S* that occupies a corresponding position in *S'* (and *x* is an unarticulated occurrence of a constituent otherwise).

We can now see a way to make sense of unarticulation in cases such as (4)–(7). However, this requires making sense of the notion of correspondence.^{17, 18}

There is no way to do this without positing sufficient sentence structure to coordinate the positions in a proposition with similarly individuated parts of the sentence. This requires a fair bit of structure to be imposed on the sentence and, arguably, a fair bit of it to be hidden structure: after all, we need enough structure to point out that there is a spot in the sentence that correlates with, say, the second occurrence of Vancouver in (4) that doesn't contain 'Vancouver'.¹⁹

Fortunately, we don't have to take any particular stand on how similar the structure has to be other than to note that it has to be similar enough to isolate the positions of the occurrences of the constituents in the proposition and correlate them with the positions in the sentence. Since we know already that there are two occurrences of the relevant constituents in the propositions expressed by (4)–(9), and only one position in the sentence containing the relevant expression, we have to posit enough non-visible structure to align the unarticulated constituent with the part of the sentence relative to which it is unarticulated.²⁰

Once such sentential structure is posited, the notion of correspondence relevant to the UC theorist is (somewhat) demystified.²¹ However, the achievement comes at a high cost to the UC theorist. Trading in hidden structure for an adequate definition

¹⁷ See Neale (2007) who, in response to the problems suggested at the beginning of this paper, employs 'corresponds' as a primitive relation, admitting that it does a great deal of 'heavy lifting' but demurring from offering any sort of hint as to what relation is expressed by 'corresponds'. He notes that making sense of 'correspondence' may adjudicate between the 'implicit' and 'explicit' approaches to the semantics of unarticulation.

¹⁸ Thanks are due to an anonymous referee for helpful suggestions.

¹⁹ One possibility I won't deal with here is that the structure of the sentence is not fully articulated and so the input to semantic interpretation has an analogue of UCs. See Stanley, 2002b for relevant considerations, as well as Sennet, 2007.

²⁰ See Section 5 for an attempt to minimize the hidden structure needed.

²¹ Remember, as a helpful reviewer reminded me, that the constituent here is added in to the proposition in the sense that the syntactic structure didn't contain a representation in the right place of the constituent. On other views of UCs, such as ones that don't accept CWR and locate different levels of representation as input to semantic interpretation, this notion is more complicated.

of ‘unarticulated occurrence of a constituent’ undercuts the very motivation that we began with, namely, avoiding hidden syntactic structure. The fight between UC theorists and others ceases to be a fight over positing hidden syntactic structure. Once we have to accept the very hidden structure UC theory was supposed to avoid, it’s hard to see what is left of the theory to differentiate it from deniers of (P3) in the simple argument with which we started.

This isn’t a knock-down objection to the existence or even ubiquity of UCs. One may claim that positing UCs is independently motivated aside from the desire to avoid hidden structure. One may avoid the costs by ceasing to search for definitions and take (un)articulation as a primitive. I don’t know how any of these lines could be fruitfully pursued. What is important is that there is no easy way to define the notion of a UC in terms of correspondence that doesn’t detour through syntactic structure.

5. The Options and the Costs

Perhaps there are other ways to define UCs that are less costly in terms of hidden structure. Here are three possibilities:

*Can’t we simply count up the occurrences of a constituent in the proposition, and then count up the words in the sentence that have the constituent as their semantic value and notice that there are more of the former than the latter?*²²

Yes. The described procedure offers a sufficient condition for a proposition having an unarticulated constituent relative to the sentence that expresses it. But you get what you pay for: you fail to be able to say in sentences like (4) just *which* occurrence of the relevant constituent is unarticulated.

Can’t we just drop the explicit definitions and rely on the ostensive characterization?

No. The ostensive definition merely isolates a phenomenon. The whole point of the explicit definition is to provide a theoretical tool to explain this phenomenon. Without the explicit definition, all we have is a label for the phenomenon, not a distinctive addition to our toolbox for characterizing the slippage with which we began.

*Why does the correspondence have to go all the way down to the level of individual expressions?*²³

In the cases we have considered so far, one *could* get away with slightly less structure in a sentence than in the proposition on the condition that we could trace the function of which the UC was an argument. Let me explain:

Let’s reconsider (4):

4) Brooke comes to Vancouver when it snows.

As noted, Vancouver occurs twice in the proposition. Since we need to ensure that the second occurrence isn’t articulated in virtue of the word ‘Vancouver’

²² Thanks to Herman Cappelen who raised this in discussion.

²³ Much gratitude is owed to Elia Zardini and Carrie Jenkins for discussion on this point.

appearing in the sentence, it is essential that we have sufficient structure in the sentence to align the first occurrence of Vancouver with the word, and not the second occurrence. But perhaps in cases such as (4) we can get away with less structure by claiming that the second occurrence of Vancouver in the proposition is unarticulated in the part of the sentential structure that has as its semantic value the occurrence of the predicate 'snows'. Then we could quantify over the parts of the phrase 'when it snows' and claim that no part of that phrase has as its semantic value Vancouver—and perhaps the UC theorist can allow that much structure in order to separate himself from those who deny (P3).

In other words, perhaps the UC theorist can get away with the following:

(RD) *u* is an unarticulated occurrence of a constituent in a proposition *P* relative to a sentence *S* iff the smallest phrase in *S* that articulates the smallest part of the proposition that properly contains, but is non-identical to, *u* contains no expression that has *u* as its semantic value.

(RD) assumes that we can make sense of the notion of 'smallest part', which I will assume for now is a notion we can make sense of. This helps out with (4)–(7); it eschews commitments to hidden structure. It also allows the UC theorist to hold on to the idea that what is visible and hearable is what counts when it comes to semantic interpretation, and that the latter is insufficient to capture what is said.

There is a general argument against (RD). (RD) places a very strong constraint on natural language syntax, semantics and communicated content: (RD)'s adequacy requires that no natural language contains a sentence which at the sub-clausal level has only one occurrence of a phrase that, when the sentence is uttered, in the relevant part of the propositional structure. This is a very strong constraint to impose *simply in order to provide an adequate definition of a theoretical term*. It is one thing to make this claim about syntax and semantics once we are arguing about whether or not a particular sentence exhibits UCs; it is unauthorized domain-invasion to impose such constraints simply to get a definition to work.²⁴

6. Representation Re-introduced?²⁵

As mentioned early on, some theorists have at their disposal representations that may help solve the UC theorists' problems. These theorists postulate levels of

²⁴ One option is the following: define 'occurrence of an unarticulated constituent' as an occurrence of a constituent that is 'left over' after all other occurrences have been accounted for by being the semantic values of expressions at corresponding syntactic positions. The success of this route similarly depends on the argument against (RD) failing. Thanks to Angela Mendelovici for this suggestion.

²⁵ Many thanks to anonymous *Mind & Language* referees who urged me to consider this sort of view.

representation that will allow us to maintain that UCs are represented, just not syntactically represented, or represented in the sentence's syntactic structure. There are two views of this sort in the UC literature that we will explore.

Let me note that the main arguments of this paper concerns approaches that take UCs to be the result of proposition expression without representation, not views that take on extra levels of representation, be it counterfactual or actual. With extra machinery at one's disposal, one may well be able to give an account of UCs. I have general doubts about both approaches that we will discuss below, but the discussion will not be able to do justice to either of these views.

6.1 The Explicit Approach

The explicit approach appeals to counterfactually uttered sentences. The proposition expressed by a speaker in a context using a sentence *S* is the proposition expressed by another sentence *S'* that the speaker could have used but did not in fact use. A nice statement of this view can be found in Neale (2007):

... an ellipsis (or explicit) approach to unarticulated constituents according to which α is an unarticulated constituent of $\langle \dots \alpha \dots \rangle$ relative to X^u only if there is a natural expansion $E(X)$ of X with the following property: if $E(X)$ rather than X had been used to express $\langle \dots \alpha \dots \rangle$ the tokening $E(X)^u$ would have a portion corresponding to and representing α (Neale, 2007, p. 363 f.n. 32).

The idea here is that unarticulated constituents *are* represented; they are just represented in a sentence that wasn't used, but might have been.

The formulation, as it stands, is not a definition or even a set of necessary and sufficient conditions: it is a necessary condition on being a UC.²⁶ This isn't a sufficient condition because there are *many* natural expansions of any given sentence that contain 'portions' corresponding to and representing constituents, which fail to be expressed by the speaker (but would have been). The definition would then count all the constituents of the natural expansions as UCs, which is absurd. If we could narrow the set of natural expansions to uniqueness, we could define UCs as the occurrence of a constituent that is represented by the expanded sentence but not by the tokened sentence.²⁷

The most common manner of doing this is to let speaker intention select the relevant expansion. But as oft noted in the literature, intentions don't seem to be reliable enough or even necessary to get the job done.²⁸ In particular, the speaker

²⁶ Note: Neale never intended this to be a definition or set of necessary conditions. His notion of an UC solves the current problem by stipulation. He accepts that the problem may force a UC theorist's hand into accepting the sort of view mentioned in the current work.

²⁷ Alternatively, a unique set of natural expansions, if a tokening of X can express many propositions at once (that have unarticulated constituents).

²⁸ Borg (2002) argues that in the case of deferred reference with descriptions, views that require the speaker to have a specification in mind fail:

need not have any determinate intention at all regarding other sentences when he decides what proposition he wants to express using a sentence. There may be other ways to get a grip on 'natural', and a more complete theory of the 'natural expansion' may well get the job done. Perhaps context can provide a most natural expansion in the way it provides values of variables on approaches that take context sensitivity to be explicitly syntactically represented. I leave this to further research.²⁹

6.2 Alternative Levels of Representation (Free Enrichment)

The second approach involves positing layers of interpretation that take LFs (syntactic Logical Forms) as input but augment the LFs to produce a semantic representation, the interpretation of which is the proposition expressed by using the sentence. Recanati (2002) gives an elegant statement of the view:

Let a 'representation' be a sequence of symbols in some linguistic/representational medium, and the 'interpretation' of a representation be some worldly entity or complex of entities to which the representation corresponds—which it represents. Then, on the semantic conception, free enrichment determines aspects of the *interpretation* of a given representation, aspects which are unarticulated in the sense that nothing in the representation corresponds to them. On the syntactic conception, free enrichment determines aspects of the *representation* which is interpreted: it contributes further symbols, further representational elements, which are unarticulated in the sense that nothing corresponds to them in the natural language sentence that has been uttered. The output of this process of free enrichment in the syntactic sense is a mental representation which articulates what the speaker means by his utterance, *including* those aspects of the speaker's message that are not articulated in the natural language sentence she uses.

On the syntactic conception, free enrichment is still free: nothing in the natural language sentence triggers that process, which takes place as part of an attempt to make sense of the utterance. But what the process delivers is

One thought might be that we could appeal to the description the speaker had in mind to convey; yet there seems no reason to believe that the speaker must actually have had *any* particular one of these descriptions in mind prior to her utterance (indeed, there seems to be no requirement that a speaker has *any* description in mind prior to the use of a deferred demonstrative or pronoun). Also, even if the speaker did happen to have one such description in mind, we have no guarantee that it will be a *true* description: the speaker may falsely believe that the individual who previously occupied the chair she is now pointing at was the Queen of England, yet this mistaken belief seems quite irrelevant to the truth or falsity of what is expressed (Borg, 2002, p. 494).

These sorts of considerations generalize: why think that the speaker has to have any particular expansion of the sentence 'in mind'? Doesn't error on their behalf seem irrelevant to the truth or falsity of the proposition actually expressed?

²⁹ See Stanley and Szabó, 2000 and Stanley, 2002 for syntactic evidence of hidden indexicals.

unarticulated only in the sense that nothing in the natural language sentence encodes that element. It is unarticulated in the sense of not being articulated *in the natural language sentence*. Still the element in question may be ‘linguistic’: it is a constituent in a (mental) *representation*, not a constituent in a state of affairs represented by a representation (Recanati, 2002, p. 339).

In other words, syntactic structures (presumably LFs) are mapped onto more ornate structures (SRs). The SRs are the objects that determine the propositions expressed.³⁰

Stanley (2000) argues against similar views put forth by Partee (1989) and Culicover and Jackendoff (1995). In Stanley’s words, the positing of an ‘extra’ level of evaluation is possible but seems to relegate LF syntactic structure to near irrelevance other than as a first object in need of augmentation. As Stanley puts it:

This picture of interpretation is *prima facie* difficult to accept. According to it, the interpretative process involves the production of an interpretively superfluous level of representation, namely the output of the syntactic mechanism. We would need a massive amount of empirical and methodological motivation to justify the added complexity such an interpretive process involves over straightforwardly applying a semantic interpretation to the output of our best syntactic theory (Stanley, 2000, p. 428).

A way to put Stanley’s worry is this: there’s no reason to add more layers of representation when we can explain the phenomenon with one layer of syntactic representation. To illustrate, imagine we accept (the oversimplification) that ‘it’s raining’ syntactically decomposes into a dummy NP (‘it’) and a verb (‘raining’) and perhaps a quantifier over events binding a variable to which ‘raining’ is predicated. On the Recanati picture, this structure is then mapped onto a new structure that contains additional material (i.e. a location, perhaps) which is fully represented and which then determines a proposition. So, the question is, why should we think that the new structure is required when we could have just had the material present at LF and simply failed to phonologically execute it?

We can sharpen the worry with a few points. First, notice that we have a straightforward violation of No-Structure, since the sentence is associated with a syntactic representation that contains structure not contained in the sentence and which determines the proposition that the sentence expresses. In this sense,

³⁰ It’s worth noting that the SRs are representations in a medium such as the language of thought, while LFs are typically thought of as the syntactic structure assigned by linguistic theory to strings of natural language. However, the LFs must also be represented in the same medium as the SRs (i.e. a medium like a language of thought)—otherwise, the thought of ‘enriching’ doesn’t make much sense. Thanks to a referee from *Mind & Language* for urging me to clarify this point. This may help answer some of the charges below.

the constituents are no longer truly unarticulated. Second, the posited level of representation obeys very similar syntactic constraints that the first level obeys; there is no possibility, for example, of interpreting (13) where the quantifier 'every town' takes wide scope:

- 13) A man who visited every town₁ hated it₁.

We know why: 'every town' is unable to move out of the island of a relative clause. But why should the SRs that the syntactic structure of (13) gets mapped onto obey such constraints? Why do we see any syntactic constraints on SRs at all?

One possibility is to insist that the representations that are posited can only *augment* material rather than *shift it around* as the proposed change in (13) would require. Fair enough, but then we should start to wonder why (14):

- 14) Every boy₁ will go to the zoo with her₂.

does not have a reading on which it means

- 14*) Every girl₁ hopes that every boy will go to the zoo with her₁.

This seems like paradigmatic enrichment rather than 'shifting around'.

The fairly tightly constrained nature of the mappings from LF to a second level that provides the proposition expressed by the sentence should be theoretically worrisome. Stanley (2002) gives similar arguments against a syntactic enrichment view of the sort Recanati offers:

Suppose that speakers tacitly know that hearers have available to them a tacit pragmatic process that allows them to grasp, when they hear a sentence that does not semantically express what the speaker clearly intends to communicate, the proposition that would be expressed by a sentence that results from the uttered sentence by the addition of some extra syntax, including bound pronouns. If so, [speakers should] be able to exploit them by smoothly communicating what would be expressed by any of the sentences in (18) by an utterance of (17):

- (17) Everyone likes Sally.

- (18) a. Everyone likes Sally *and himself*.
b. Everyone likes Sally *and his mother*.

In short, if there were the envisaged pragmatic processes, then speakers would be able to utter (17), and thereby successfully communicate (say) (18b), via the audience's exploitation of the alleged tacit pragmatic process (Stanley, 2002b, p. 165).

In other words, there are tight syntactic constraints on the generation of another level of representation that serves as a semantic level.³¹ But the whole point of free enrichment is its supposed *freedom*: the enriched material is supposed to be non-linguistically mandated and yet truth conditionally relevant material that is introduced *via* pragmatic means.

One may try to motivate the extra level by appeal to optionality: Recanati (2002) argues that in some cases, the putative UC is entirely optional (called 'A type') while in some cases it is mandatory ('called B-type').³² A-type UCs can be added *freely*, and hence are the product of *free-enrichment* at the SR level. Linguistic non-mandatoriness would then be the hallmark of a pragmatic 'extra' which would exist at the SR level but not at LF. However, optionality provides rather dubious evidence for an entire extra level of representation. In particular, one might ask why LFs should be restricted to linguistically mandatory constituents? Martí (2007) puts this nicely:

In the simplified system, there are no A's, only B's and metaphysical constituents. B-variables in this system, however, are slightly different from Recanati's B-variables: they may or may not be generated in the syntax. That is, once we distinguish two types of B-variables, those that are adjuncts and those that are arguments, there is no need to categorize the silent place of *RAIN* or the silent object of *EAT* differently from the comparison class of *short*, etc., or the perspective of *local*. Ultimately, the important thing is that there is no need to appeal to free enrichment (Martí, 2007, p. 149).

In other words, much speaks against positing the extra level of structure, and little speaks for it compared the provision that LFs can contain optional and unvoiced material that is grist for semantic interpretation.³³ The evidence, in other words, for extra levels of interpretation is not very good. If this is right, we will need a definition of UCs that depends on the CWR thesis, which as we have shown above comes at a great deal of cost and syntax.

³¹ See Sennet, 2007, pp. 147–8 for some elaborations of this argument.

³² Recanati argues that even in the sacrosanct case of 'rain', the location is an A-type UC, as he is convinced that we *could* truly utter 'it's raining' without any requirement of locational specification, though generally we do specify a location. See Recanati, 2002, p. 317 for the intriguing argument and Neale, 2007 for some detailed considerations of the case.

³³ I think there is a real worry here about how the various parties in these debates are treating LFs. It's natural to think of Recanati as taking LFs to be whatever syntactic theory tells you is the syntactic structure of the sentence, and naturally, no syntactician is going to posit optional adjuncts where there is no syntactic reflex thereof. It's natural for Martí to take them to be selections of a structure that is compatible with the relevant PF (Phonological Form) of the sentence and then so long as the structure is derivable, it can be the LF of the sentence in question, thought of not as syntactic theory's assignment of an LF, but as a consequence of speaker intentions.

None of the above constitutes a knock down argument against Constituency-With-Representation views that don't take LF to be the relevant level of semantic interpretation. Ultimately, there may be good reason to posit these levels and then the UC theorist can help herself to a definition that accepts representation at one level but not at another. The motivation seems lacking to me and one certainly shouldn't have to accept the existence of these levels merely to *define* the intuitive notion of UC that we began with and which characterized the relevant slippage.

7. Conclusion

Let's review.

None of the preceding is meant to serve as a refutation of the existence of UCs, but is rather meant to highlight the hidden costs the theory incurs. The main line of argument is against those who accept a theory of UCs that accepts the controversial principle CWR and I hope to have shown that there are substantial costs to going down this road. This leaves views on which there is representation of the constituents at a level of representation which is the input to semantic interpretation but which is distinct from the syntactic representation of the sentence itself.

I have argued that we need to posit (a) unarticulated occurrences of constituents as the relevant type of unarticulated items and (b) sufficient syntactic structure to define them in terms of the correspondence posited above. Any attempt to motivate a UC view from a less syntax-heavy view on the basis of avoiding hidden structure fails. Of course, the hidden structure may come from elsewhere (as in Recanati's syntactic approach).³⁴

Finally, let's look at some possibilities for further research. We might try the following:

- a. Deny the No-Structure principle.
- b. Accept (RD) and hope for the best from natural language syntax/semantics.
- c. Adopt a definition of UCs that is process dependent: try to define UCs by looking at the steps by which a proposition is generated as the interpretation of a sentence.³⁵

I leave it to the UC theorist to provide a more complete story.

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³⁴ As above, the claim need not be spelt out in a purely syntactic implementation: a variable free semantic story can easily accommodate the problems set out above. It is a pragmatic story that runs into the trouble suggested above.

³⁵ Thanks to Pranav Anand and Benj Helle for pushing this possibility.

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