VERSITA

WHAT IS WRONG WITH UNARTICULATED CONSTITUENTS?

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Abstract: It is quite popular nowadays to postulate various kinds of unarticulated constituents that have essential bearing on truth conditions of utterances. F. Recanati champions an elaborated version of contextualism according to which one has to distinguish two kinds of unarticulated constituents: those that are articulated at the level of the logical form of a given sentence and those that are truly unarticulated. Recanati offers a theory which explains the manner of incorporating truly unarticulated constituents into the propositions expressed. This theory invokes variadic functions. The present paper shows that variadic functions are unnecessary because no constituents are truly unarticulated in the sense assumed by Recanati. An alternative explanation is offered according to which all propositional constituents are either explicitly or implicitly represented at the syntactic level.

Keywords: adicity, free enrichment, saturation, unarticulated constituent, variadic function

Saturation vs. Free Enrichment

It is an uncontroversial claim that certain constituents of propositions expressed by utterances are unarticulated.[1] The proposition expressed by an utterance in a given context is richer than the literal meaning of the sentence used to make the utterance. This phenomenon is essential to communication because it enables us to be sparing with words. With enough contextual setting it is possible to communicate complex information by uttering simple locutions. For example, if John utters[2]

(1)   Jane is ready,

his utterance may express, in a suitable context, the proposition that Jane is ready for a fancy-dress ball. Similarly, another utterance of (1) can be used to express a different proposition, e.g., that Jane is ready for a math exam. The propositional constituents represented here by

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[1] This claim presupposes that propositions are complex entities having parts. Although there are various strong arguments against such a view, I adopt it here for the sake of argument. The reason is that the debate on unarticulated constituents usually assumes this view.

[2] This example is adapted from Bach (1994).

the words "for a fancy-dress ball" and "for a math exam", respectively, are unarticulated in what John explicitly pronounced. Despite this fact, they are parts of the respective propositions expressed. Thus, different utterances of the same linguistic representation produced in different contexts may express different propositions.

How can we explain the nature of this phenomenon? It seems to me that the predicate "is ready", which is portrayed as one-place in (1), is in fact two-place. It is always the case that if someone or something is ready, he or she or it is ready *for something*; it is impossible for anyone or anything to be ready *simpliciter*. So, what we have in English is the two-place predicate "… is ready for …" instead of the one-place predicate "… is ready". (1) is syntactically incomplete because there is an expression missing that would fill the second empty slot in the two-place predicate. The expression "… is ready" (which can be taken as incomplete) contributes to the propositions expressed by utterances of (1), the binary relation *being ready for* rather than the property (unary relation) *being ready* (whatever it may be).[3] So, the above supplementations were necessitated by the fact that there was an empty slot in the relation to be filled with appropriate constituents.[4] Otherwise, the utterances of (1) could not be taken as expressing complete propositions.[5] Since there are no corresponding linguistic representations in (1) which might express the items required to fill the second empty slot in the relation *being ready for*, these constituents have to be provided on a different basis; in these cases, they are provided by the contexts of utterances.

This example illustrates what F. Recanati calls *saturation* (see Recanati 2002, 299-300 or Recanati 2004, 7). Saturation is a "contextual assignment of semantic value to a context-sensitive expression, whether that assignment is fully pragmatic or governed by a linguistic rule" (Recanati 2002, 299). It "is a 'bottom-up' process, i.e., a process triggered (and made *obligatory*) by a linguistic expression in the sentence itself" (Recanati 2002, 300). Whenever there is a context-sensitive expression in a sentence, utterances made using such a sentence express propositions enriched with contextually provided constituents.

Saturation may take different forms. In the case of sentences with indexical expressions, these expressions go with linguistic rules determining which kind of entities are their values with respect to particular contexts of utterance. If a sentence involves the pronoun "she", the

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[3] H. Cappelen and E. Lepore claim that utterances of (1) express just the proposition that Jane is ready. According to their view, there is the property *being ready* and it is a proper constituent of such a proposition. Although I am sympathetic to their minimalist position in various respects, I cannot accept their arguments in support of this view on utterances (1) and the existence of the purported property *being ready*; cf. Cappelen, Lepore (2005).

[4] I assume that there are empty places both in predicates, i.e., linguistic items, and in relations, i.e., extra-linguistic items.

[5] K. Bach would say that (1) expresses a *propositional radical*. So, whenever the speaker produces an utterance using (1), the utterance expresses the propositional radical that Jane is ready. What is important is that the propositional radical is what the speaker said by uttering (1). The empty slot is afterwards filled with something on the basis of certain processes. The idea that propositional radicals are relevant to communication has been much criticized by Recanati. According to Recanati, what is relevant for communication—i.e., what is said—is the complete proposition resulting from supplementing the propositional radical with a contextually determined constituent. Cf. Bach (1994), (2001) and Recanati (2001).

set of possible values is restricted to females. There are also less strict cases of saturation. Consider the case of the genitive (Recanati 2002, 310). When one utters

(2) John's car is broken down,

her utterance expresses a proposition in which the kind of relation holding between John and the car is specified—it may be either the car John owns or the car John rides, etc. For, otherwise, (2) cannot express anything specific. What might it mean if we say that a car, which bears an unspecified relation to John, is broken down? However, there are no linguistically determined restrictions on possible relations, i.e., there is no indexical expression in (2) determining which relation is permissible. The relevant relation is, rather, selected on pragmatic grounds. Be that as it may, there has to be an empty place at the level of proposition that is reserved for a suitable relation. This empty place corresponds to an empty place which occurs at the level of the logical form of (2). For this reason, the relation between John and the car is somehow syntactically (though non-indexically) determined after all.

Now is it always the case that contextual constituents enriching propositions are syntactically determined? Recanati responds in the negative. According to him, not all contextual supplementations are instances of saturation. Some of them stem from *free enrichment* (see Recanati 2002, 300 or Recanati 2004, 10); they are not controlled by any (explicit or implicit) linguistic constituents of sentences used, i.e., they are not required by any context-dependent expression. Such sentences can be used to express a complete proposition independently of any contextual supplementation; in some cases, however, they can be used to express richer propositions involving contextually supplied constituents. Consider a much discussed example

(3) John has had breakfast.

(3) can be used to express the proposition that John has had breakfast (sometime in the past as indicated by the past tense in the sentence); it is, however, much more usual to use it to express the proposition that John has had breakfast *recently* (or *today* or *this morning* etc). The added constituent *recently* (*today*, *this morning* etc.) is supplied by free enrichment rather than by saturation because it is not determined by a syntactic manner.

Those constituents that are supplied by saturation are unarticulated in a different sense from those that are supplied by free enrichment. In the case of saturation, the supplemented constituents are not unarticulated in the proper sense. For they are, in a sense, articulated after all; they are called for by the presence of context sensitive expressions (or empty slots or variables) in sentences (either at the surface level or at the level of logical form). However, free enrichment requires unarticulated constituents in the proper kind of sense. Their presence is not required by any feature of the sentence used.[6]

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[6] When I talk about unarticulated constituents, I mean those constituents that are unarticulated in the *communicational* sense as opposed to those that are unarticulated in the *metaphysical* sense. According to Recanati, "[f]or something to count as an unarticulated constituent in the communicational sense, it

Recanati's Tests

Recanati suggests at least two tests for distinguishing the case of saturation from that of free enrichment. The first one—which may be called the *Optionality Test*—is based on what he calls *Optionality Criterion*:

> Whenever a contextually provided constituent is (truly) unarticulated, we can imagine another possible context of utterance in which the contextual provision of such a constituent would not be necessary for the utterance to express a complete proposition (Recanati 2002, 323).

In the case of saturation, supplementation is required by the presence of a context-sensitive expression (or an empty slot) in the sentence used. An utterance cannot express a complete proposition unless the context-sensitive expression (the empty place) is assigned a contextually determined value. Such a value is "necessary for the utterance to express a complete proposition". This is the case with utterances of (2), for example. The fact that, whenever (2) is used to make an utterance, a contextually determined relation between John and the car has to be provided indicates that the relation in question is not truly unarticulated. There has to be a free variable or an empty place (at the level of logical form) which calls for contextually determined evaluation. On the other hand, utterances made using (3) can be viewed as expressing complete propositions without any contextually determined supplementations. There is no empty slot to be filled; for, otherwise, the empty slot would call for supplementation. Consequently, the additions such as *recently* or *this morning* are truly unarticulated.

There is also another kind of test (*cf*. Recanati 2007, 128) which we may call the *Inadequate Response Test*. Recanati argues that "arrive" contains an empty slot for location because A's second statement does not make sense in the following dialogue:

(4) A: John has arrived.
     B: Where has he arrived?
     A: *I have no idea.

Since the last statement is not an appropriate reaction to B's question, "arrived" in A's first statement involves an empty place for location. The first statement A made is sensible only provided A has some idea about the place of John's arrival and, thus, expresses a proposition in which the location is present. As a result, location cannot be truly unarticulated. In contrast, the following dialogue is by no means defective:

(5) A: John has danced.
     B: Where has he danced?
     A: I have no idea.

"Dance" does not contain an empty slot for location. So, if the context of utterance of "John has danced" supplies location—and the speaker expresses, e.g., the proposition that John has danced at Jane's party—it is truly unarticulated; it has to be provided by free enrichment.

The two tests can be used to show, rather surprisingly, that "rain", as it occurs in (6), does not involve an empty place for location.[7]

(6)   It is raining.

Recanati devised the following situation, demonstrating that (6) is complete and can be used to make utterances in which no particular location is mentioned:

> I can imagine a situation in which rain has become extremely rare and important, and rain detectors have been disposed all over the territory (whatever the territory—possibly the whole Earth). In the imagined scenario, each detector triggers an alarm bell in the Monitoring Room when it detects rain. There is a single bell; the location of the triggering detector is indicated by a light on a board in the Monitoring Room. After weeks of total drought, the bell eventually rings in the Monitoring Room. Hearing it, the weatherman on duty in the adjacent room shouts: 'It's raining!' His utterance is true, if it is raining (at the time of utterance) in some place or other (Recanati 2002, 317).

In this situation, it is unnecessary to add location; in fact, no specific location enters the proposition expressed. Similarly, the following dialogue is unproblematic (A is the weatherman from Recanati's story):

(7)   A: It is raining.
      B: Where is it falling?
      A: I have no idea.

Syntactically Optional Operators and Variadic Functions

Now let us turn to some technicalities. Free enrichment supplies further constituents into complete propositions. Now the question is how this can be done. For the input proposition is complete in itself, i.e., it does not involve empty slots to be filled with other constituents. Recanati offers an explanation that is based on what he calls *variadic functions*.

Variadic functions are semantic contents of *syntactically optional modifiers*. Syntactically optional modifiers can be used to form expressions of a certain kind from expressions of the same kind. Recanati introduces a special kind of operator labelled "Circ": "When applied to an *n*-place predicate *P*, 'Circ' produces an *n* + 1 place predicate ('Circ *P*')" (Recanati 2002, 321).[8] Take as an example the sentence

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[7]   John Perry argues that "rain" always goes with location; cf. Perry (1986).

[8]   "Circ" is short for "circumstance". A Circ-operator introduces a particular feature of the circumstance in which the utterance is produced; it may be either the time of utterance or the place of utterance, etc.

(8)   Jane took out her key and opened the door.

We may apply the syntactically optional modifier "with the key" to (8) to get the sentence

(9)   Jane took out her key and opened the door with the key.

This fact can be described as transforming the two-place predicate "… opened …" into the three-place predicate "… opened … with …". The syntactically optional modifier "with the key" involves, among other things (see below) a Circ-operator increasing the adicity of the above predicate.

Semantically speaking, Circ-operators express variadic functions. "A variadic function is a function from relations to relations, where the output relation differs from the input relation only by its decreased or increased adicity" (2002, 319). The two-place predicate "… opened …" expresses a binary relation which is transformed by a variadic function into the three-place relation expressed by the three-place predicate "… opened … with …".

It is important to see that a syntactically optional modifier "contributes not only a variadic function, but also the argument… which fills the extra argument-role" (Recanati 2002, 319-320). This can be seen from the above example. The phrase "with the key" not only expresses a variadic function which transforms the binary relation into the ternary one; it also supplies the argument to fill the new argument place—the new argument is denoted by "the key".

Now let us connect the idea of variadic functions with free enrichment. As we have seen, we may transform (8) into (9). In this case, the variadic function is explicitly introduced by the modifier "with the key". However, variadic functions can be introduced also in a different way, i.e., purely contextually.

Let us consider, by way of illustration, a model communication situation. The speaker uses (8) in a situation in which she wants to communicate the proposition that Jane took out her key and opened the door *with the key*. The speaker uttered a complete sentence in which the term "opened" occurs as a two-place predicate with both argument-places being filled with suitable items—the opener and the thing opened. It is plain that utterances of (8) express, on the basis of semantic conventions and compositionality alone, just the proposition that Jane took out her key and opened the door. But this is not *the* proposition that is expressed in the envisaged situation; this proposition is irrelevant here—it is intended neither to be expressed by the speaker nor to be grasped by the hearer. To derive the proposition that better fits the communication situation, one has to take into account not just what is expressed on the basis of semantic conventions and compositionality but also something else. Since the utterance expresses, in a given context, the proposition that Jane took out her key and opened the door *with the key*, an indispensable part is played also by the context of utterance; it provides constituents that are not explicitly mentioned in the sentence used—in particular, the context of utterance provides both a suitable variadic function transforming the binary relation into the ternary one as well as the third argument filling the new empty slot. The two things are provided by free enrichment. It, thus, happens that despite the fact that the speaker uses (8) in her utterance, she communicates the enriched proposition in which there occurs the ternary relation between the opener, the thing opened and the manner of opening.

The literal meaning expressed by (8) is combined with contextually determined items to produce what the speaker's utterance of (8) expresses in a given context of use.

An Alternative Explanation

Now I am going to show that there is a simpler solution to the problem of contextual supplementation of propositions expressed. What I claim is that it is unnecessary to retreat to purely contextually introduced variadic functions and their arguments. As a result, we can dispose of free enrichment altogether.[9] I claim that every contextually determined supplementation can be traced back to an unfilled slot in need of supplementation. So every phenomenon of this kind can be explained in terms of saturation. It means that no unarticulated constituents are truly unarticulated; they are so only in the modest sense. Moreover, neither of Recanati's tests can be taken at face value; what they do show need not be interpreted as evidence for the existence of truly unarticulated constituents.

To begin with, I offer an alternative explanation of the situation outlined in the previous section. Since the italicized part of the proposition that Jane took out her key and opened the door *with the key* was not mentioned explicitly, we may suppose the speaker did not pronounce the complete sentence; she left out a part of it that is easily recoverable from the situation. In particular, the speaker left unfilled one argument place in the word "opened"; this expression expresses, in what the speaker pronounced, a three-place relation. The context of utterance supplies an item filling the third argument place. So, there remains an unfilled slot in what the sentence used by the speaker literally expresses; the context of utterance supplies the missing constituent. This is so because the sentence used by the speaker in her utterance involved the three-place predicate "… opened … with …" rather than the two-place predicate "… opened …". There is no need for variadic functions because the empty slot is ready here for supplementation. This suggestion is pretty obvious. The whole point of Circ-operators is to add empty slots to be filled with new items; similarly, the whole point of variadic functions is to increase the adicity of relations. When we say that the empty places are already there to be filled with suitable items, we need neither Circ-operators nor variadic functions.

Is the new explanation preferable to Recanati's one? It seems that it can pass neither of Recanati's tests outlined above. Concerning the Optionality Test, if there is an empty slot in need of supplementation in (8), it would not be possible express propositions without mentioning the manner of door-opening. However, this is in stark opposition to what really happens. It should be taken as empirical datum that the speaker leaves undetermined the manner in which Jane opened the door. Concerning the Inadequate Response Test, A's second utterance is pretty sensible:

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9 In her paper Martí (2006), proposed an alternative explanation to the phenomena, which prompted Recanati to invoke free enrichment. She argues that there is "a phonologically null variable in the syntax of sentences with *rain*…, and that variable can be either free or bound" and that "these silent variables are adjuncts, i.e., they are optional. They can, but don't have to, be generated in the syntax of these sentences" (Martí 2006, 141). Thus every contextually determined supplementation is traceable to such a variable and, thus, no free enrichment is required. Anyway, I cannot adopt her strategy because a phonologically null variable, if there is one in the syntax of a sentence, is never optional.

(10) A: Jane took out her key and opened the door.
      B: How did she open the door?
      A: I have no idea.

Since A need not have any idea about the way the door was opened, she cannot express a proposition regarding manner. Consequently, there need not be a third empty slot in the relation expressed by "opened" which is reserved for ways of opening the door. So, both tests strongly suggest that "opened", as occurring in (8), is a two-place predicate rather than a three-place one.

Now I am going to show that neither the Optionality Test nor the Inadequate Response Test can be used to demonstrate what they are supposed to. I claim that "opened" can be a three-place predicate and still (8) can be used to express a proposition in which there is no hint at the manner of door-opening. I claim, similarly, that "opened" can be a three-place predicate and still the speaker may both utter (8) and reasonably retort "I have no idea" to the hearer's subsequent question about the manner of door-opening. If both points hold, the tests cannot be used to give preference to Recanati's explanation. To demonstrate this, I have to introduce certain more or less trivial observations.

First of all, certain syntactic features are essential to the identity of expressions. In particular, predicates involve empty slots to be filled with other expressions of suitable kinds; the number of empty slots is, to my mind, essential to the identity of a predicate. If a predicate, P, involves one empty slot and a predicate, P^*, involves two of them, P and P^* are different predicates regardless of any other differences there may be (or no matter how they resemble each other). The predicate "… is an author" differs from the predicate "… is an author of …"; the former involves one empty place reserved for the agent while the later has two such places reserved for the agent and the object. The two predicates form different sets of sentences. Consequently, if a sentence involves one of the two predicates, it cannot be taken as involving the other predicate in its stead. So, the adicity of a predicate is its essential property, which the predicate cannot lose. As a result, the single sequence of syllables "author" represents (at least) two predicates which differ in their adicity. This is the first claim in my reassessment of the problem of unarticulated constituents.

The other claim is that whenever the speaker produces an utterance by using a sentence, he or she uses a particular sentence rather than any other one. To put it differently, the speaker cannot use a sentence that is not determinate either syntactically or semantically (whatever that may mean). In particular, for every sentence the adicity of its predicate(s) have to be determined. So, if the speaker uses a sentence to produce an utterance he or she uses a sentence with a particular predicate (having a certain number of empty places) rather than any other predicate. For example, if the speaker uses a sentence with the term "author", she uses either the sentence with the one-place predicate or the sentence with the two-place one. She cannot use a sentence with an indeterminate predicate. Otherwise the speaker cannot be taken as knowing what he or she is saying. And it is to be assumed that when the speaker deliberately and seriously engages in communication, he or she knows what he or she says. This is the second claim I wish to highlight.

Consider, again, the case in which the speaker produces an utterance by using (8). In so doing, the speaker used a particular sentence. To be more specific, he or she used either the

sentence with the two-place predicate corresponding to the term "opened" or the three-place predicate corresponding to the term "opened". To disambiguate things a little, let us say that the speaker either uses sentence (8') in which "opened" is a two-place predicate, or she uses sentence (8'') in which "opened" is a three-place predicate.[10] If the former is the case, the speaker's utterance cannot convey that Jane opened the door *with the key she took out*. Rather, her utterance says that Jane took out her key and opened the door without implying the manner in which the door was opened. If the latter is the case, the speaker uses the three-place predicate and (at least) implicitly mentions also the manner in which the door was opened. So the speaker says that Jane took out her key and opened the door *with the key she took out*. In the former case, there is no unarticulated constituent while in the later case there is one. I find it crucial to determine which sentence was used in producing the speaker's utterance. There are two sentences, (8') and (8''), that are indistinguishable at first glance. Anyway, when we look behind the shape of the words, we have to see that they differ in the adicity of one of its predicates.

To sum up, there are at least two predicates corresponding to the sequence of syllables "opened". As a result it is possible to admit that "opened" is a three-place predicate while allowing that the speaker has not expressed a proposition in which the manner of door-opening is included. The reason is that the sentence the speaker used in producing his or her utterance did *not* involve the three-place predicate; it involved, rather, the two-place predicate which is phonetically and orthographically indistinguishable from the three-place one. The same explanation can be offered for justifying the claim that the speaker can both utter (8) and reasonably retort "I have no idea" to the hearer's subsequent question about the manner of door-opening. In that case, the speaker used the sentence in which "opened" is a two-place predicate; of course, had she used the sentence with the three-place predicate in its stead, her retort would not be proper. As a result, what both tests show is that the speaker produced her utterance by using the sentence with the two-place predicate instead. It is, of course, possible to use the sentence with the three-place predicate; in such a case it is to be expected that the manner of door-opening is involved in the proposition expressed.

Given this interpretation, Recanati's tests need not be taken as demonstrating that propositions expressed by certain utterances involve, as their parts, constituents supplied by free enrichment. They can be taken, instead, as demonstrating that there are different expressions in the language that are phonologically indistinguishable. Since it is possible to express the proposition that Jane took out her key and opened the door as well as the proposition that Jane took out her key and opened the door with the key, the Optionality Test shows that there are both the two-place predicate "… open …" and the three-place predicate "… open … with …". The Inadequate Response Test shows the same thing—if it is permitted to respond "I have no idea" to the question concerning the manner of door-opening, there has to be the predicate "… open …"; if, however, such a response makes no good sense,

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[10] More precisely, there is one complete sentence corresponding to (8) and involving the two-place predicate and one *in*complete sentence involving the three-place predicate. Since there is an empty slot to be filled with a suitable argument term, what I label (8'') is not, strictly speaking, a sentence after all. Anyway, for the sake of simplicity, I put aside this complication.

the sentence involves the predicate "… open … with …". If this interpretation is viable, all phenomena invoking unarticulated constituents can be explained in terms of saturation.[11]

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