UNARTICULATED CONSTITUENTS, VARIADIC FUNCTIONS AND RELATIVISM*

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One of the debates that has taken center stage in contemporary philosophy of language is that between *Truth-Conditional Semantics* (TCS) — roughly, the thesis that the literal, linguistic meaning of a sentence is enough to determine the truth-conditions of an utterance of that sentence in a context, and *Truth-Conditional Pragmatics* (TCP) — the thesis that besides the linguistic meaning of a sentence there are other — contextual, pragmatic — factors that contribute to the truth-conditions of an utterance of that sentence in a context. According to TCP, there could thus be a gap between the truth-conditions of the sentence taken independently of any of its uses in a context and the truth-conditions of an utterance of that sentence in a context. In most cases, the contribution that context has to the truth-conditions of an utterance of a sentence consists in providing *unarticulated constituents* that enter in the utterance's truth-conditions, without being part of the truth-conditions of the sentence taken independently.

In this paper I will have a close look on one aspect of this debate, exemplified by the exchange between Jason Stanley and François Recanati — with particular focus on the semantics of meteorological sentences such as "It is raining". After analyzing the criteria for unarticulatedness that the two authors put forward, I present the main challenge to TCP and Recanati's answer. I will then move to another position in logical space — namely, *relativism* — and show how an application of a technical device employed by Recanati to answer the challenge to TCP could be used to support relativism about a number of domains.

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Unarticulated constituents and the debate over locations

The exchange I will be focusing on revolves around the issue whether in
an utterance of a sentence like "It is raining" the location of rain is part of
the logical form of the sentence or is an unarticulated constituent provided by
the context. As widely known, Recanati defends an unarticulated constituent
analysis, whereas for Stanley "any contextual effect on truth-conditions that
is not traceable to an indexical, pronoun, or demonstrative (. . .) must be
traceable to a structural position occupied by a variable" (Stanley, 2000:
401). Stanley's position is quite radical in that context's effect on the truth-
conditions of utterances is reduced to a minimum, from which follows that
actually there are no unarticulated constituents. Now, it is important to be
clear about what exactly an unarticulated constituent is, and although the
terminology here needs a bit of disentangling, I'm not going to do that here.
Despite their disagreement about the existence of unarticulated constituents
in the "It is raining" case, something that the two authors agree on is the for-
mulation of an unarticulated constituent, formulation which I'm also going
to use throughout the paper. Here is what it means to be an unarticulated
constituent, according to Stanley:

> x is an unarticulated constituent of an utterance u iff (1) x is an el-
> ement supplied by context to the truth-conditions of u, and (2) x is
> not the semantic value of any constituent of the logical form of the
> sentence uttered. (Stanley, 2000: 410)

However, even if armed with this definition, it is not clear when a given x is
an unarticulated constituent or not, for clause (2) of the definition is actually
at the heart of the very debate. Therefore, both authors have been keen to
provide alleged criteria for unarticulatedness. Thus, Recanati has provided
what he has called

> The Optionality Criterion: Whenever a contextual ingredient of con-
> tent is provided through a pragmatic process of the optional variety,
> we can imagine another possible context of utterance in which no
> such ingredient is provided yet the utterance expresses a complete
> proposition. (Recanati, 2004: 101),[1]

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[1] Stanley (2005a) argues that the criterion, as it stands, is ill-formulated, in that
it is a conditional with the wrong direction. He proposes the following correction:
The Optionality Criterion∗: Whenever a contextual ingredient of content is provided, and
we can imagine another possible context of utterance in which no such ingredient is provided
yet the utterance expresses a complete proposition, then the contextual ingredient of content

whereas Stanley has proposed

> The Binding Criterion: A contextually provided constituent in the interpretation of a sentence S is articulated whenever the argument role it fills can be intuitively "bound", that is, whenever what fits that role can be made to vary with the values introduced by some operator prefixed to S. (Stanley, 2005a)

Before analyzing the two criteria in detail, let me connect this debate with an issue that has received a fair amount of attention in linguistics. One important distinction discussed by linguists is the distinction between *adjuncts* and *complements*. Although a consensus over what exactly this distinction amounts to is still pending, most authors agree that there are some pre-theoretical intuitions about this distinction that should constitute the starting point for any analysis. On this intuitive level the difference between adjuncts and complements can be summarized as follows: on the syntactical side, an adjunct is an "optional element", whereas a complement is an "obligatory element"; on the semantic side, an adjunct "modifies" the meaning of its head, whereas a complement "completes" the meaning of its head (Dowty (2003)). In light of those intuitive features, the notions of adjunct and complement could be given a more precise characterization (again, following Dowty (2003)):

- A constituent Y in a phrase [XY] is an *adjunct* iff
    - phrase X by itself (without Y) is also a well-formed constituent;
    - phrase X is of the same syntactic category as phrase [XY];
- A constituent Y in a phrase [XY] is a *complement* iff
    - phrase X by itself (without Y) is not well-formed or else
    - if it is grammatical, then X standing alone does not have the same category as in [XY] (and does not have exactly the same meaning it has in [XY]);
- If Y is an *adjunct* in a phrase [XY], the meaning of [XY] has the same kind of meaning (same logical type) as that of X, and Y merely restricts to a proper subset of the meaning/denotation of X alone.
- If Y is a *complement* in a phrase [XY],
    - the meaning of X by itself (without Y) is incomplete or incoherent; else
    - X must be understood elliptically — the hearer must imagine/infer some context-dependent or anaphoric meaning of the general

is provided by a pragmatic process of the optional variety. (Stanley, 2005a) However, although there's no textual evidence, one might interpret Recanati as proposing a criterion in the form of a biconditional. This would make the correction unnecessary.

kind of Y to "fill-in" the semantic slot that X requires semantically.

Assessing the two criteria

Let us now proceed to the analysis of the two criteria. Here is an example of how Recanati's Optionality Criterion is supposed to work. Consider the sentence "It is raining". According to the criterion, in order to establish that that there is no argument place for the location of rain in the logical form of this sentence (and, thus, that the location of rain is an unarticulated constituent of the truth-conditions of an utterance of it) all we have to do is to find a context in which the sentence could be uttered in such a way as to express a complete proposition, without the context providing the location. And here is such a context: Imagine that rain has become extremely rare on Earth, and humans have put rain-detectors all over the surface of the planet. One day, the bell in the monitoring room rings, signaling the presence of rain on the surface of Earth, and the weatherman on duty shouts: "It is raining!" (Recanati 2002, 2004). For this use of the sentence, Recanati claims, the context supplies no ingredient, yet the utterance expresses a complete proposition. Since there are uses in which the sentence expresses a complete proposition, yet no contextual ingredient is provided, according to the Optionality Criterion the sentence does not contain any argument place for the location in its logical form. Thus, whenever the location of rain is part of the truth-conditions of an utterance of the sentence "It is raining", it gets there through a process of the optional variety (e.g., free enrichment). In terms of the distinction above, Recanati treats the location of rain as an adjunct, and not as a complement.

Some authors have argued that in the case presented, contrary to what Recanati claims, context *does* provide a location that makes it into the truth-conditions of the utterance of the sentence: namely, a maximally large domain. According to Stanley (2005a), this maximally large domain is the whole Earth, whereas according to Luisa Marti (2006), it is "the territory". However, even if granting that context in the case considered does not provide a maximally large domain, it seems that the criterion does achieve too much. For it is easy to come up with similar cases in which the context (let's agree) does not provide any element, yet we won't be pushed to consider the sentence as not having in its logical form the missing element. Here is an example: take the verb "kiss". "Kiss" is a two-place predicate standing for a relation between a kisser and the object kissed. Nevertheless, we could construct a context in which someone would utter the sentence "He kissed", expressing a complete proposition and without the context providing the object kissed, as in Recanati's weatherman context. Suppose, for example, that

Danny, who is soon to become a teenager, has never kissed a girl. The parents, who are top scientist working for the Government, and who are away from home most of the time, are troubled that the absence of such a deed might affect Danny's maturation process. As a consequence, they install a microscopic device on Danny's lips that could easily detect the texture of (female) human lips. One day, when the parents are working in their laboratory, Danny makes the crucial step. The mother, looking at the flickering light on the monitor for the device implanted in Danny's lips, utters with great joy and relief: "He kissed!" Does this mean that "kiss" is really a one-place predicate? Certainly not. Recanati might want to argue that what we have here is a case of ambiguity between "kiss" as a two-place predicate and "kiss" as a one-place predicate. But, given that there are no regular uses of "kiss" as a one-place predicate, this reply would seem entirely ad-hoc.

Let us now have a look on Stanley's criterion. The main objection that the criterion has been subjected to is that of overgeneration of variables in logical form: if the Binding Criterion were right, we would end up postulating variables in a much bigger number of cases than expected. One attempt[2] to show this was Recanati's (2002) example

> John is an anorexic, but whenever his father cooks mushroom, he eats,

in which the intuitive truth conditions of the second sentence are that whenever John's father cooks mushrooms, John eats *the mushrooms his father has cooked*. According to the Binding Criterion, "eat" will need to have an argument place for the food eaten. But this cannot be, since "eat" is used here intransitively. Therefore, Stanley's criterion yields the wrong result.

However, Stanley has replied to this example by rejecting that the intuitive truth conditions are those that Reacanati claims to be, maintaining instead that the natural reading of "Whenever his father cooks mushroom, he eats" is that whenever John's father cooks mushroom, John eats *something*. To support this claim, Stanley appeals to a linguistic test proposed by Marti (2006), called "the negation test". The test functions by looking at how the negation of a sentence is performed, and then by drawing some conclusions from its (in)felicitousness. For the sentence we are concerned with, the test would be following:

> A: Whenever John's father cooks mushrooms, he eats.
> #B: No, he doesn't — he eats broccoli instead.

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[2] Another attempt was made in Cappelen and Lepore (2002). Stanley (2005a) contains a discussion and rejection of the examples put forward by the two authors.

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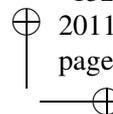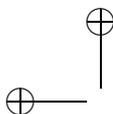
B's reply above is infelicitous, and this is enough to show that the intuitive reading of the problematic sentence cannot be that which Recanati had in mind: if it would, B's response would have been felicitous. So, Stanley avoids the charge that his criterion would postulate an argument place for the food in the intransitive verb "eat". Since Recanati's argument depended on the example having the reading he ascribed to it, and since this reading is rejected by Stanley, the example has no force and thus the Binding Criterion has not been shown to overgenerate.

Nevertheless, it seems that it is not that hard to come up with examples that pass the negation test and still give the wrong results. One such example belongs to Sennet (2008: 150):

Everywhere Janie went, she danced.

This sentence passes the negation test, as it is shown below:

A: Everywhere Janie went, she danced.
B: No, she didn't — she only danced in a few places.

The fact that the example passes the negation test precludes an answer from Stanley's part, as in the case before, that the intuitive truth-conditions of "Everywhere Janie went, she danced" are that Janie danced *in some place or another*. The intuitive truth-conditions of the sentence are that Janie dances *in all the places she went*. The example is conclusive, I think, because it is a generally agreed datum that the verb "dance" doesn't have an argument place for location (see Taylor (2001) for details). Another example involving location that might be used against Stanley's criterion is the following:

Wherever John goes, he wears a hat.

That this example also passes the negation test is shown below:

A: Wherever John goes, he wears a hat.
B: No, he doesn't — he wears a hat only when he goes to the cinema.

Although neither example is exactly analogous with the more complex examples of binding that Stanley has provided (see below), it seems that nevertheless binding does occur in these cases. In conformity with his proposed criterion, then, Stanley would have to say that the sentences "Janie danced" and "John wears a hat" have an argument place for location in their logical
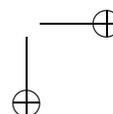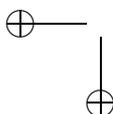
forms. Moreover, this conclusion is not limited to locations. There are examples that can be used against Stanley's criterion in which what is intuitively bound is something else than location. One such example, involving again "dance", is

> Whatever dress she wears, Janie dances.

Here the result will be (given that this example also passes the negation test, as can easily be verified) that "Janie dances" needs an argument place for Janie's dress. But this seems to be incorrect; the criterion does indeed achieve too much.

Troubles for TCP and the Binding Argument

The conclusion of the preceding sections was that both the Optionality Criterion and the Binding Criterion yield wrong results. But the debate between TCS and TCP is not reduced to providing a criterion that is adequate; after all, coming up with a criterion that is infallible is a very hard task. What is more important in the debate I'm considering is the main challenge that Stanley has raised for TCP: namely, to account for cases in which implicit binding occurs. As Stanley has famously pointed out, sentences like

> Every time John lights a cigarette, it is raining,

spawn trouble for TCP, since the resources of the theory are too poor to yield the required reading. Given that the semantic clause for "rain" is something along the following lines:

> Den("rains") relative to a context c = that function f that takes $<t, l>$ to True if it is raining at t in l, where l is the contextually salient location in c, takes $<t, l>$ to False if it is not raining at t in l, where l is the contextually salient location in c, and it undefined otherwise,

the analysis of the sentence "It is raining" under TCP is

> "It is raining (t)" is true in a context c iff the denotation of "rains" takes $<t, l>$ to the True, where l is the contextually salient location in c.

But this analysis doesn't have enough resources to handle a more complicate sentence like "Every time John lights a cigarette, it is raining". One reading of this sentence (and the relevant one here) is that for every time t at which John lights a cigarette, it rains at t at the location in which John lights a cigarette at t. But, the only available rendering of the sentence by TCP is

> For every time t at which John lights a cigarette, the denotation of "rains" takes <t, l> to the True, where l is the contextually salient location in the context of utterance of "Every time John lights a cigarette, it is raining",

which is *not* the required reading. Since an analysis according to which the location of rain is part of the logical form of such sentences has no problem with such examples, it should be preferred over an unarticulated constituent analysis.

This conclusion has far-reaching consequences. For once Stanley has established that the location of rain must be part of the logical form of a sentence like "Every time John lights a cigarette, it is raining", it also must appear in the unembedded sentence ("It is raining"). The argument, known as *the Binding Argument*, can be put as follows:

1. Unarticulated constituent theorists say that in the simple statement "It is raining", the location of rain is unarticulated.
2. In "Every time John lights a cigarette, it is raining", binding occurs: the location of rain varies with the values introduced by the quantifier "every time John lights a cigarette".
3. There is no binding without a bindable variable.
4. Therefore, "It is raining" involves a variable for the location of rain.
5. It follows that the unarticulated constituent theorist is mistaken: in the simple statement "It is raining", the location of rain is articulated. It is the (contextually assigned) value of a free variable in logical form, which variable can also be bound (as in the complex sentence "Every time John lights a cigarette, it is raining").

Variadic functions: escaping the Binding Argument

The anti-TCP argument provided above can be escaped. Recanati has answered the challenge posed by Stanley by employing *variadic functions* (functions from predicates to predicates having the role of decreasing or increasing the adicity of the input predicate), which allow him to avoid the conclusion of the Binding Argument. The idea is to find a technical trick

that will mimic binding in a way that is consistent with not having to posit a variable for location in the logical form of the sentence embedded by the binder when the sentence appears unembedded. The formal machinery involves defining a general variadic operator, Circ, and a host of specific operators of the same kind, for specific circumstances (like location, time, etc.). Variadic operators are of two kinds: additive and recessive. As examples of recessive variadic operators, Recanati mentions *passive alternation* (the operation that takes us from "John kisses Mary" to "Mary is kissed") and *intransitive alternation* (the operation taking us from "John eats the apple" to "John eats"). For our purposes, however, we need additive variadic operators. Additive variadic operators have a twofold role: on one hand, they increase the adicity of the predicate they operate on; on the other hand, they provide a value for the newly-created argument place. The effect of an additive *locational* variadic operator on a predicate P could be represented as follows (where X represents the arguments taken by P):

$$[\text{Circ}_{\text{location: } l} (\text{P})](X) = \text{P\_in} (X, l).$$

Let us see how this works with a concrete example. In the sentence "John eats in Paris", the phrase "in Paris" is treated as a additive locational variadic operator operating on the predicate "eat", transforming it from a one-place predicate into a two-place predicate; formally,

$$[\text{Circ}_{\text{location: Paris}} (\text{eats})](\text{John}) = \text{eats\_in} (\text{John, Paris}).$$

The twofold effect of the variadic operator is easily seen: on one hand, it increases the adicity of the predicate applied to ("eat"); on the other, it provides the value for the newly-created argument place (the value in this case being Paris).

Now, in answering the challenge posed by Stanley, the suggestion is to treat quantifiers on a par with expressions like "in Paris", as additive variadic operators. Before getting to the problematic case, let us see how this works in a simpler case, also provided by Recanati. According to the suggestion, in the sentence "Everywhere I go, it rains", the expression "everywhere I go" is treated as an additive locational variadic operator, functioning similarly to "in Paris" in the case before (with the notable difference that instead of providing a *specific* location as the value for the newly-created argument place, it provide a *range* of locations):

$$\text{Circ}_{\text{location: everywhere I go}} (\text{rain}) = \text{rain\_in} (\text{everywhere I go})$$

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This treatment, in turn, renders the truth-conditions of the whole sentence as follows:

[For every place l such that I go to l](in l (it rains)).

Returning to the problematic case — the sentence "Every time John lights a cigarette, it is raining", the treatment will be more complex, but the basic mechanism is the same. The complexity comes from the fact that the expression "every time John lights a cigarette" binds both the time and the location of the raining. Recanati's favorite treatment of the case is to claim that the expression "every time John lights a cigarette" should be treated both as an additive temporal variadic operator (which is articulated), and as an additive locational variadic operator (which is unarticulated) — the first creating an extra argument place for times in the predicate it applies to ("rain") and then binding it, and the second creating an extra argument place for locations in the predicate it applies to (again, "rain") and then binding it.[3] Leaving aside the temporal case, the important idea here is that "every time John lights a cigarette" is treated as an additive locational variadic operator which functions in a similar fashion to "in Paris" and "everywhere I go". The effect of the locational variadic operator can be represented as follows:

$\text{Circ}_{\text{location: every time John lights a cigarette}}\ (\text{rain})\ =\ \text{rain\_in}$ (the place at which John lights a cigarette every time),

this, in turn, rendering the truth-conditions of the whole sentence as

[For every time t such that John lights a cigarette at t] (at t, <in location $f(t)$> (it is raining)).[4]

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[3] This treatment of the expression "every time John lights a cigarette" as an additive temporal variadic operator is in line with Recanati's suggestion to treat tense and temporal expressions as variadic operators as well. See his defense of temporalism in Recanati (2007), especially chapter 8 of part 2.

[4] Note that this treatment is akin to Stanley's own treatment of the case, in that it uses a function $f(t)$ to provide the connection between the time at which John lights a cigarette and the location in which the lighting takes place. In Stanley's view, the truth-conditions of the sentence "Every time John lights a cigarette, it is raining" are captured as Every time t at which John lights a cigarette, it is raining $<f(t), g(t)>$, where $f(t)$ is a function from times to times (the identity function, in this case) and $g(t)$ a function from times to the locations in which John lights a cigarette. The crucial difference between the two views is, of course, that while on Stanley's account $f(t)$ is articulated at the level of logical as an argument place of the predicate "rain" whereas on Recanati's view <in location $f(t)$> is an unarticulated constituents provided by a pragmatic process "of the optional variety".

The upshot is thus that the employment of variadic operators allows Recanati to resist the dim conclusion of the Binding Argument. Specifically, the account permits the denial of the step from premises 1–3 to conclusion 4 of the argument. For, as Recanati says, that steps requires a further supposition, namely

> (SUP) In "Every time John lights a cigarette, it is raining", the sentence on which the quantifier "every time John lights a cigarette" operates is the very sentence "It is raining" which can also uttered in isolation (and whose usual interpretation is said by some to involve an unarticulated location constituent).

Since the sentence the quantifier "every time John lights a cigarette" operates on is "at t, <in location $f(t)$> (it is raining)", which is different from the unembedded sentence "it is raining", Stanley commits "the binding fallacy". My conclusion is, then, that even if his criterion for unarticulateness is flawed, Recanati's rejection of the conclusion of the binding argument gives him a dialectical advantage over Stanley. The unarticulated constituents analysis seems to have been saved from Stanley's objection that it cannot handle cases of implicit binding like the one just investigated.

Variadic functions and relativism

The claim I want to substantiate in the remainder of the paper is that the employment of variadic functions could be useful for *relativism* about a series of discourses, such as predicates of personal taste, knowledge attributions or epistemic modals. Relativism, as I use the term in the paper, is the view that the truth-value of a sentence varies with the circumstances of evaluation against which the sentence is to be evaluated in such a way that the sentence could be true as uttered in one context and false in another — without any change in the proposition expressed by the utterances of the sentence in the two contexts. This view goes hand in hand with the idea that context has not only a *content-determinative* role, but also a *circumstance-determinative* role (in the terms of MacFarlane (2009)); in other words, context's role in not only to provide elements that end up in the content of sentences uttered, but also to provide the circumstances against which such sentences have to be evaluated.

It is worthy to note in this connection that since "Unarticulated Constituents" Recanati himself has changed his view about locations: he now holds

the view that the location in which a sentence such as "It is raining" is ut-
tered does not get into the content of the utterance (not even through prag-
matic processes), but instead is part of the circumstances of evaluation of
that utterance. Thus, his view counts as a relativist view in my sense. Now,
the idea that locations should be part of the circumstances of evaluation is
not new: it has been explicitly defended by Lewis (1998); Kaplan (1989)
also has toyed with the idea, although eventually in his formal system loca-
tions are not included in the circumstances. In the case of meteorological
sentences such as those under analysis in this paper, the view that locations
are part of the circumstance rather than elements in the content of utterances
has been brought to the fore by John Perry's (1993) Z-landers story. How-
ever, my interest here is not so much in relativism about locations, but in
relativism about the other kinds of expressions mentioned at the beginning
of this section. The question I want to raise is whether relativism about those
expressions could benefit from appeal to variadic functions. My answer is
positive.

The relativist's appeal to variadic functions is motivated by the follow-
ing considerations. Suppose the Binding Argument for locations is correct.
Then, its conclusion will compel us to posit an argument place for locations
in simple meteorological sentences such as "It is raining", treating locations
not as adjuncts, as Recanati would have it, but as complements. Now, if
this were the case, not only would the Binding Argument have a bite against
TCP, but it will also count as an argument against relativism about locations:
since on the latter view locations are not part of the content of simple sen-
tences such as "It is raining" (and, hence, not part of their logical form), any
argument to the effect that locations must be part of their logical form should
be met. Now, I don't see any reason why a relativist about locations should
not appeal to variadic functions to respond to the Binding Argument. But
the Binding Argument could also apply to cases involving the other kinds of
expressions I mentioned. To take an example, on which I will focus in what
follows, the same strategy can be used to show that in the case of predicates
of personal taste such as "tasty", "fun" and the like, the relevant[5] subject
must be part of the logical form of sentences containing them. This clearly
contradicts relativism about such predicates, according to which the relevant
subject (or the relevant standard of taste, on other versions) is part of the
circumstances of evaluation.

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[5] The qualification "relevant" is needed for the cases in which a predicate of personal taste
is used "exocentrically" — that is, from someone else's perspective than that of the speaker.
For the distinction between *autocentric* and *exocentric* uses of predicates of personal taste,
see Lasersohn (2005).

The threat to relativism just presented depends on the existence of bound readings of predicates of personal taste. Although some might contest the existence of bound readings for such predicates, it doesn't seem hard to come up with at least *prima facie* bound readings involving these expressions — sentences in which the person for which something is said to be tasty or fun varies with a quantifier. Thus, the following examples might be used against the relativist:

    a. The zoo keeper brought the food. Every animal got something tasty.[6]
    b. The nanny took us to Disneyland. Everyone did something fun,

whose second sentences have the following logical form:

    c. Every animal from the zoo x got some food y such that y was tasty for x.
    d. Everyone who was taken to Disneyland by the nanny x performed some action y such that y was fun for x.

Applying the Binding Argument, the conclusion will be that unembedded sentences such as "Avocado is tasty" or "The ride was fun" will have an argument place for the relevant subject in their logical form whose value will be contributed by the context in which such sentences will occur. For the predicate "tasty", the Binding Argument could be reconstructed as follows:

    $1'$. Relativists say that in the simple statement "Avocado is tasty", the subject for which the avocado is tasty is part of the circumstance of evaluation.
    $2'$. In "Every animal got something tasty", binding occurs: the subject for which the food given is tasty varies with the values introduced by the quantifier "every animal".
    $3'$. There is no binding without a bindable variable.
    $4'$. Therefore, "Avocado is tasty" involves a variable for the subject.
    $5'$. It follows that the relativist is mistaken: in the simple statement "Avocado is tasty", the subject is articulated. It is the (contextually assigned) value of a free variable in logical form, which variable can also be bound (as in the complex sentence "Every animal got something tasty").

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[6] Schaffer (2011) uses a similar example to employ the Binding Argument against relativism about predicates of personal taste. The solution given below is meant to apply to Schaffer's argument as well.

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The answer from the relativist's part will parallel the answer given by Recanati in the case of locations. Thus the relativist could treat the quantifiers in the above examples as additive variadic operators that both increase the adicity of the predicate they apply to and provide a range of values for the newly-created argument place. What the relativist about predicates of personal taste has to do, first, is to define a specific additive variadic operator — call it a *subjectual* variadic operator — that would account for the semantic behavior of expressions like "for x", where x is the relevant subject. Thus, in a sentence like "Avocado is tasty for John", the expression "for John" is treated as an additive subjectual variadic operator which functions as follows:

$$[\text{Circ}_{\text{subject: John}}\,(\text{tasty})]\,(\text{avocado}) = \text{tasty\_for}\,(\text{avocado, John}).$$

Second, and moving to the problematic cases, the relativist will treat the expression "every animal" in the sentence "Every animal got something tasty" as an additive subjectual variadic operator, which functions similarly to "for John" (with the notable difference, again, that it is not specific subjects that are provided as values for the newly-created argument, but a range of subjects):

$$[\text{Circ}_{\text{subject: every animal}}\,(\text{tasty})]\,(\text{something}) = \text{tasty\_for}\,(\text{something, every animal}).$$

"Fun" and the sentence "Everyone did something fun" is treated in the same way. The account thus accounts for the required readings of the problematic cases and renders unembedded sentences comprising "tasty" or "fun" as not having an argument place for the relevant subject in their logical form. The conclusion of the Binding Argument for predicates of personal taste is avoided, as before, by blocking the step from premises $1'$–$3'$ to conclusion $4'$. Similar results are available to epistemic modals and knowledge attributions, although in these cases bound readings are harder to generate. (The expressions that will be construed as additive variadic operators will probably include "according to x" or "by x's standards".)[7]

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[7] Kölbel (2009) proposes to treat the expression "for x" as a sentential operator. I don't have the space to engage here with this proposal, but I submit that, although technically possible, his treatment will have troubles accounting for the bound cases my view handles easily.

Let me close with making it clear what I take myself to have proved in this last section of the paper. Given the results above, and given a fairly uncontroversial principle, formulated by Recanati as

> Distribution: The determinants of truth-value distribute over the two basic components truth-evaluation involves: content and circumstance. That is, a determinant of truth-value (. . .) is either given as an ingredient of content or as an aspect of the circumstance of evaluation. (Recanati, 2007: 34),

one might be pulled towards claiming that what we have here is a direct argument in favor of relativism. But this conclusion would be mandated only if the Binding Argument would be the *only* argument against relativism. Unfortunately, the debate between relativism and its competitors is far more complex than this, and it involves the assessment of certain patterns of data which I haven't considered in this paper. Nevertheless, while claiming to have provided a direct argument for relativism would be too hasty, I take myself to have cleared the way to a relativist treatment of predicates of personal taste and other expressions by providing a way to answer to a prima-facie powerful argument against it. This, in turn, will allow the relativist to safely appeal to the data that she thinks supports her view — especially data about disagreement and the like. My proposal should thus not be thought of as closing off the debate between relativism and its competitors; on the contrary, it opens it up, giving the relativist the right tools to enter the debate.

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