Perspectival plurality, relativism, and multiple indexing[1]

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Abstract. In this paper I focus on a recently discussed phenomenon illustrated by sentences containing predicates of taste: the phenomenon of "perspectival plurality", whereby sentences containing two or more predicates of taste have readings according to which each predicate pertains to a different perspective. This phenomenon has been shown to be problematic for (at least certain versions of) relativism. My main aim is to further the discussion by showing that the phenomenon extends to other perspectival expressions than predicates of taste and by proposing a general solution to the problem raised by it on behalf of the relativist. The core claim of the solution ("multiple indexing") is that utterances of sentences containing perspectival expressions should be evaluated with respect to (possibly infinite) sequences of perspective parameters. While such a move sounds radical, I argue that the departure from the traditional Kaplanian framework is not as dramatic as it sounds.

Keywords: perspectival expressions, relativism, perspectival plurality, multiple indexing

It has recently been argued (Kneer, 2015; Kneer, Vicente and Zeman, 2017) that predicates of taste exhibit what these authors call "perspectival plurality": the phenomenon whereby sentences containing two or more such predicates have readings according to which each predicate in the sentence needs to be interpreted relative to a different perspective. In addition, the authors mentioned show that this phenomenon amounts to a serious problem for certain versions of relativism about predicates of taste. Despite the fact that neither the phenomenon itself nor the problem it raises have previously received much attention in literature, perspectival plurality is both interesting in its own right and has important consequences for the semantics of predicates of taste.

In this paper I aim to further the discussion in two directions. First, I want to show that the phenomenon of perspectival plurality is exhibited by more expressions than predicates of taste; second, I want to provide a general solution to the problem the phenomenon poses to relativism. In section 1 I introduce perspectival expressions, discuss their main traits, and sketch how relativism, as opposed to contextualism, treats them. In section 2 I illustrate the phenomenon at stake, starting with predicates of taste and then showing that it extends to other expressions as well. Accessing the relevant readings will require quite a bit of contextual set-up, so I will provide that for each of the examples offered. In section 3 I briefly present the problem perspectival plurality raises for certain versions of relativism, with focus on Lasersohn's view. In section 4 I present the outlines of a relativist solution to the problem,

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consisting in the introduction of sequences of perspectives in the circumstance of evaluation. In the final section I discuss how much of a departure my proposal is from the traditional Kaplanian framework. In the last section I summarize and mention some open questions.

1. Perspectival expressions, contextualism and relativism

If I ask you whether licorice is tasty, you will answer me immediately. Most probably, you will tell me that licorice is tasty or not *from your perspective*, even if talk of perspectives is not explicit in our exchange. Immediacy and implicitness, however, should not obscure the fact that, in answering my question, licorice is deemed tasty or not *with respect to a perspective*: yours. But your perspective is not the only one that can matter: licorice can be deemed tasty or not from another person's perspective – as when, for example, you talk from your child's point of view (such a use of "tasty" has been called "exocentric", in contrast to the first, "autocentric" or "egocentric" use – see Lasersohn (2005) and Stephenson (2007) for discussion). On the other hand, in a context in which it isn't clear which is the perspective that matters, asking whether licorice is tasty should be answered with another question: tasty to whom? All these cases seem to point to the same fact: that, in assessing whether licorice is tasty or not, a perspective needs to be supplied. "Tasty" is, in this sense, *perspectival*.

Expressions like "tasty", "fun", "delicious", "disgusting", "cool" are known as predicates of taste and constitute perhaps the paradigm of perspectival expressions. But they are not the only ones. Aesthetic predicates such as "beautiful", "ugly", etc. belong to this category too. According to some, moral predicates such as "good", "bad" or the moral "ought" are also perspectival in this sense. Furthermore, epistemic modals such as "might", "must" and the like, as well as epistemic terms such as "knowledge", "justification" and co. can be classified in this category too. Granted, the sense of "perspective" relevant for each type of expression is different: in the first case being dependent on a perspective is equivalent with being dependent on a standard of taste, in the second with being dependent on an aesthetic standard – a moral standard, a certain body of knowledge, an epistemic standard, in the other cases. Differences between these are surely important, but in what follows I will use "perspective" as an umbrella-term to refer to whatever it is that the semantic interpretation of the expressions at stake depends on. All the expressions mentioned are, in this sense, perspectival.[2]

Another characteristic of all the expressions mentioned, one that is intimately connected with their perspectivality, is that sentences in which they appear are *context-sensitive* – in the broad sense that utterances of the same sentence can vary in truth value across contexts. To illustrate, let's focus on predicates of taste for the moment. Suppose Johnny and Tony taste licorice for the first time. Johnny loves it, but Tony is repelled by its taste. Assuming that each utter

(1)   Licorice is tasty

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[2] "Perspective" has been used as a technical term to refer to a specific parameter in the circumstance of evaluation (see below) that is postulated by relativists as part of their semantic machinery (e.g., Kölbel, 2004b). Although I will talk about parameters shortly, at the moment I'm using the term in a neutral, intuitive sense – thus trying to be neutral between various semantic views on the expressions in question. "Perspective" also seems to have another, more self-locating use associated with personal pronouns like "I", adverbs like "here", "now" and "actually" – see footnote 7 for some discussion.

in separate contexts, intuitively Johnny's utterance of (1) is true in his context and Tony's utterance of (1) is false in her context. The truth value of (1) can thus vary with the context in which it is uttered.

Now, in the contemporary debate about the semantics of predicates of taste, relativism has recently become one of the main contenders. Relativism can be best understood in opposition to its main rival, contextualism, so in order to get clear on relativism's semantic commitments I will introduce the two views in tandem. Under one way of seeing the debate, both contextualism and relativism about predicates of taste are attempts to account for the context-sensitivity (in the broad sense illustrated above) of sentences like (1) via the perspectivality of the predicates themselves. In fact, the main difference between the two views can be expressed by saying that they situate perspectivality in different places in the semantic apparatus. Starting from the familiar Kaplanian framework in which the role of context is to provide both elements in the content of utterances *and* values for the parameters in the circumstance of evaluation (Kaplan, 1989: 525), the difference between contextualism and relativism consists in giving precedence to one of those roles of context over the other with respect to perspectives. Thus, for contextualism, the role of context is to provide the perspectives that enter into the semantic content of utterances like (1) above; for relativism, the role of context is to provide the perspectives that enter into the circumstance with respect to utterances like (1) are evaluated. This difference comes out both in *the type of semantic content the two views postulate* (perspective-specific contents for contextualism, perspective-neural contents for relativism) and in *the types of parameters that figure in the circumstance* (possible worlds and perhaps other parameters – but no perspectives – for contextualism; possible worlds and perhaps other parameters *plus* perspectives, for relativism). The same holds with respect to the other perspectival expressions mentioned above, for which the formal representation of the corresponding sentences is similar.[3]

There is a lot of variety within both contextualism and relativism. For example, versions of contextualism can differ by postulating different mechanisms by which context provides the perspectives that enter into the content of the relevant utterances. Thus, perspectives can be provided either as a result of satisfying the character of a perspectival expression (understood as in indexical), or as a result of saturating one or more variables for perspectives that such expressions come endowed with, or by means of unconstrained pragmatic processes of the kind appealed to by truth-conditional pragmatic analyses etc. Versions of relativism can differ by conceiving the context which provides the perspectives that enter into the circumstance differently: it could be either the context of use, as in the Kaplanian framework and more orthodox versions of relativism, or the context of assessment, as more radical

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[3] Contextualism about predicates of taste has been upheld by Stojanovic (2007), Glanzberg (2007), Cappelen and Hawthorne (2009), Schaffer (2011); contextualism about moral terms has been proposed by Dreier (1990), among others; contextualism (and relativism) about aesthetic terms is discussed in, e.g., Baker (2012); contextualism about epistemic modals has been defended by, e.g., von Fintel and Gillies (2008) and Schaffer (2011), while contextualism about epistemic terms like "know" has been one of the main contenders for a while now, supported by, e.g., DeRose (1992). On the other hand, relativism about predicates of taste has been defended chiefly by Lasersohn (2005, 2008, 2016) and MacFarlane (2014); relativism about moral terms has been defended by, e.g., Brogaard (2008); Kölbel (2004b) holds relativism about the entire evaluative sphere, including the aesthetic; relativism about epistemic modals is defended in Egan, Hawthorne and Weatherson (2005) and MacFarlane (2014); relativism about epistemic terms has been proposed by, e.g., Kompa (2005), MacFarlane (2014).

versions would have it. Finally, as suggested above, variation in both views can come from *whose* perspective is relevant in all contexts – that of the relevant person (usually the speaker), that of a group to which the speaker belongs to or not, or even a generic perspective. However, for the purposes of this paper most differences between contextualist views, as well as those between relativist views, won't matter and will thus be put aside. The only assumption I make concerns the issue of whose perspective is relevant: namely, that this is a matter that depends on the context. I think flexible versions of both contextualism and relativism are better suited to account for the data.

2. Perspectival plurality

In the preceding section I contended that one of the main and widely agreed upon features of the expressions investigated is their perspectivality: the fact that we appeal to perspectives for their interpretation. This feature, in turn, is responsible for the expressions' sensitivity to context (in the sense described). Recently, however, a related but much less discussed phenomenon involving such expressions has surfaced in the literature: namely, what Kneer (2015) and Kneer, Vicente and Zeman (2017) call "perspectival plurality". Perspectival plurality consists in the existence of certain readings ("plural readings") of sentences containing two or more perspectival expressions that make appeal to more than one perspective. Perspectival plurality has been brought to the fore by the authors mentioned in connection to predicates of taste; here my aim is to show that it is a more general phenomenon, exhibited by (most of) the perspectival expressions mentioned above, as well as by others. The phenomenon is interesting in its own right, but also relevant in connection to relativism about the relevant expressions because, as I will show in section 3, it is highly problematic for at least certain versions of the view.

As it happens, the plural readings that I want to put forward for consideration are not easily available without a certain amount of contextual setting. I will thus provide such a setting before presenting each example. Starting with predicates of taste, imagine the following scenario: Halloween has just passed, and several families from the neighborhood have gathered together to talk about how they spend the holiday. Naturally, at some point the conversation centers on what their kids did, with parents taking turns to tell the stories involving their offspring. Thus, one parent starts describing what his kid did, other parents following suit. When his turn comes, Johnny's father utters

(2)   Johnny played a silly prank and had a lot of tasty licorice.

In this context, the most natural interpretation of the sentence seems to be that, while "tasty" pertains to Johnny's perspective, "silly" doesn't (since Johnny himself thought that the prank was great and had a lot of fun playing it); instead, "silly" is most naturally interpreted as pertaining to the father's perspective. This reading of (2) is a combination of an egocentric use of a predicate of taste ("silly") with an exocentric use ("tasty"). Another interpretation of the sentence is that, while "tasty" pertains to Johnny's perspective, "silly" pertains to the perspective of the neighbor, the victim of the prank (to make this reading more palatable, assume, for example, that the victim has previously complained about Johnny's prank). This latter reading of (2) is a combination of two exocentric uses of the two predicates of taste. I take both readings of (2) to show that predicates of taste exhibit perspectival plurality.

Some readers will no doubt find the reading I'm claiming to be available hard, or even impossible, to get. One reason for that might be connected with finding it difficult to interpret "tasty" as pertaining to Johnny's perspective, and not to the father's or the neighbor's. I acknowledge the difficulty, but I think it can be easily alleviated by stipulating that situation is such that i) that the father in fact doesn't like licorice and ii) this is known to everyone in the audience. So the father couldn't use "tasty" egocentrically – that would amount to him saying something false. It seems to me that in such a situation (2) is clearly (and perhaps uniquely) felicitous. And such a situation doesn't strike me as incredibly far-fetched – in fact, I believe many real world scenarios are precisely like it.[4]

In the reminder of this section I will attempt to show that the same happens with other perspectival expressions. Take, for example, aesthetic predicates. Imagine the context to be similar to the one for the interpretation of (2), but that instead of discussing what their kids did on Halloween, the parents are discussing what they did on their school trip to the art museum. The visit comprised both seeing the main exhibition of the museum and a period of playing time in which kids were mostly drawing or painting. As before, one parent starts describing what his kid did, other parents following suit. When her turn comes, Johnny's mother – a sophisticated art lover – utters

(3)   Johnny drew a nice portrait of the teacher in the play time and saw an exquisite painting in the main exhibition.

In this context, the most natural interpretation of the sentence is such that, while "nice" pertains to Johnny's perspective, "exquisite" doesn't (since he is too little to have an understanding of good art); instead, "exquisite" is most naturally interpreted as pertaining to the mother's perspective. As the first reading of (2) above, this reading is a combination of an egocentric use of an aesthetic predicate ("exquisite") with an exocentric use ("nice"). Another interpretation of the sentence is that, while "exquisite" pertains to the mother's perspective, "nice" pertains to a third person – say, the art teacher who supervised the kids' playing time (to make this reading more palatable, assume, for example, that Johnny's mother has previously reported the teacher's evaluation of Johnny's drawing). This latter reading of (3) is a combination of two exocentric uses of the two aesthetic predicates. I take both readings of (3) to show that aesthetic predicates exhibit perspectival plurality.

Another type of expressions exhibiting perspectival plurality are moral terms. (4) below seems to easily lend itself to a plural interpretation. Imagine the context to be one on which a student is questioned about her knowledge of various moral theories, by having to respond to particular cases. For easiness, the cases are devised so that to involve (symbolic) characters. Thus, one such case involves Immanuel, a notorious Kantian, and Jeremy, a notorious utilitarian. The question in this particular case revolves around the permissibility of lying. So, asked about what the two characters should do, the student answers with

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[4] Two remarks. First, it is important to stress that the claim is *not* that (2) cannot have other readings in other contexts (say, one in which both predicates of taste pertain to the father's perspective) but that, *in the context described above* (with or without making the stipulations mentioned), the plural reading of (2) is the most natural one. Second, in making the case for the availability of the plural readings for (2) I'm not relying solely on my own intuitions: in a series of experiments, Kneer (2015) has shown that for similar sentences plural readings are not only available, but the preferred ones in contexts like the ones devised for (2). For many other examples of plural readings of similar sentences, see also Kneer, Vicente and Zeman (2016).

(4)   Jeremy should lie, but Immanuel shouldn't.

In this context, the most natural interpretation of the sentence is such that the first "should" pertains to Jeremy's perspective, while the second "should" to Immanuel's. This is an example in which both moral predicates are used exocentrically, each of them pertaining to a different perspective. I take this reading of (4) to show that moral terms exhibit perspectival plurality.

Sentences containing epistemic modals also seem to admit plural readings. Thus, imagine that Anne and Bob are playing Mastermind. Anne has hidden the pieces and Bob has made his first guess. Immediately after she has given Bob feedback about his guess, Anne departs from the board to get a glass of water. Seeing Bob hold a green piece in his hand and ponder whether to put it on the board or not, Anne comments on his predicament by saying "There might be a green one". Here the "might" pertains to Bob's perspective, since Anne knows very well whether a green piece is among the ones she has hidden or not. But suppose that while she is sure about the green piece, she doesn't remember very well whether a red piece is among the ones hidden too (being away from the board, she cannot currently see it, so she cannot check). She continues the sentence by saying (perhaps only to herself) "and there might be a red one too". This latter "might" doesn't pertain to Bob's perspective as the one before, but to her own instead. Thus, in such a context the most natural interpretation of

(5)   There might be a green one, and there might be a red one too,

is such that the first "might" pertains to Bob's perspective and the second "might" to Anne's. The example is thus one in which an exocentric use of an epistemic modal is combined with an egocentric use. Although the scenario is more complex than the ones before, I take this reading of (5) to show that epistemic modals exhibit perspectival plurality.[5,6]

Judging from the examples above, perspectival plurality seems to be a phenomenon exhibited by a wide range of expressions.[7] The reader might not have accessed the relevant readings of

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[5] For other examples, as well as for experimental studies involving epistemic modals that show the preponderance of the plural interpretation, see Kneer (2015).

[6] Plural readings of sentences containing epistemic terms like "know" seem harder to come by. One explanation might be based on Lewis' (1996) observation that once a stricter epistemic standard has been made salient in a context, it is hard to go back to a less strict one. This explanation, however, might not work for cases in which the stricter standard is made salient after the less strict one has. Be that as it may, I don't want to rule out that in suitably constructed contexts plural readings of such sentences are possible, but I also won't try to devise a scenario showing that they are here.

[7] On a broader understanding of "perspective", which captures the semantic dependence of sentences on more objective (self-locating) features of the context, such as time, location and possible world, perspectival plurality is manifest with other expressions too. The following sentences seem to allow plural readings:

(i)   Anne threw a party and Bob got drunk.
(ii)   Every time John visits a city in a foreign country, he goes to all the local bars.
(iii)   Claire like more the books she could have written than the books she wrote.

(i) is often given as an example of temporal anaphora, being interpreted such that the interval of Bob's getting drunk is contained in the interval of Anne's throwing of the party; but there is a reading of (i) according to which the events need not overlap (for example, consider (i) as an answer to the question "what did your friends do this weekend/lately?"). One reading of (ii) is that the countries are foreign with respect to John, while the

the sentences provided as *the most natural ones*, as described. This is fine, since the important fact is that the plural readings of the sentences *exist*, even if are not the most natural or default ones. The reader might also be wary to concede that the phenomenon is present in a particular domain or another. This is fine too, since its presence in some domains and absence in others is enough to establish its existence. Thus, even if plural readings are not perceived as the most natural ones, or are limited to certain domains, the examples above show that there is a phenomenon to be taken into consideration.

3. The problem for relativism

Although examples like the above have not been present very much in recent relativist literature, there are a few places where similar examples with plural readings have been discussed.[8] The most comprehensive discussion can be found in Lasersohn (2008). However, Lasersohn doesn't think plural readings are problematic for (his brand of) relativism, because he doesn't think they are available for the sentences he discusses. I will first briefly go through Lasersohn's considerations and then show that he is mistaken.

The context of Lasersohn's discussion is the so-called "argument from binding", made famous by Stanley (2000), and which has prominently figured in the debate between truth-conditional semantics and truth-conditional pragmatics. The argument is used to show that the target expressions have a variable of a certain kind in their syntactic configuration. It is

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bars are local with respect to the (denizens of the) cities visited by John. Finally, for the interpretation of (iii), while the reference of the second "books" has to be determined with respect to a possible world in which Claire wrote books (as "could" demands), the reference of the first "books" has to be determined with respect to the actual world (see Creswell (1990) for many more examples like this.) I take these readings of (i)-(iii) to show that perspectival plurality (in the extended sense employed in this footnote) appears with other expressions than the ones focused on in section 2. Interestingly, although utterances of "I" in other languages than English (i.e., Amharic) can in the right environments be used to refer to someone else than the speaker (Schlenker, 2003), plural readings involving two occurrences of "I" in such languages are *not* available (Ninan, 2010). There are, however, examples in which various forms of the first person pronoun refer to different "aspects" of the speaker. For instance, imagine that after a certain outcome of a dice during a board game Mary utters:

(iv)   I'm going to move myself two fields ahead.

"I" in (iv) refers to Mary as a person, while "myself" to her representation in the game (say, some token of sorts). This seems to me also like an instantiation of the broad phenomenon under discussion here. Finally, the so-called "de se" interpretations of dream reports (Percus and Sauerland, 2005) seem to fall into this category too. In a sentence like

(v)   I dreamt that I was marrying my granddaughter

the second "I" refers to the speaker's dream-self, while "my" to the speaker's real self and thus (v) has, according to the two authors, a plural reading according to which the dream-self of the speaker marries his actual self's granddaughter. Importantly, Percus and Sauerland point out that (v) *cannot* have a plural interpretation according to which the real self of the speaker marries the dream-self's granddaughter. This example opens up further issues related to the scope of the phenomenon, its varieties, its presence in more complex constructions like embeddings under various verbs, as well as to the constraints on the interpretation of sentences that have plural readings. I hope to pursue these questions in further research. I thank an anonymous referee for *SuB21* for bringing dream reports to my attention.

[8] Earlier attempts to criticize relativism by appeal to plural readings of similar (but still importantly different) sentences belong to Cappelen and Hawthorne (2009) and Kissine (2012). See Kneer, Vicente and Zeman (2016) for more details.

both an argument that has been applied to a variety of expressions and against several views. Recently, it has been used against relativism about predicates of taste. To illustrate how it works, consider

(6)   Everyone got something tasty. (Schaffer, 2011: 194)

When uttered in a context in which each person from a group of people gets something tasty, (6) has a reading according to which the thing each person got is tasty *from the perspective of that person* – that is, a bound reading. Coupled with the principle that "there is no semantic binding without a syntactically bindable variable", this reading of (6) presumably yields the conclusion that "tasty" has a variable for perspectives in its logical configuration. Given that the presence of such a variable in the logical configuration of "tasty" amounts to a contextualist view, the argument shows that relativism about "tasty" and predicates of taste in general is incorrect.[9]

Lasersohn counters this argument by proposing a different account of binding he dubs "index binding". In essence, index binding replaces the relevant binding in the object language by binding in the meta-language. According to the proposal, quantifiers can bind both variables in the object language and variables in the meta-language. Although he illustrates how this works using meteorological sentences, in the case of (6) the claim would be that the quantifier "everyone" binds both a variable in the object language and one in the meta-language: the first is the subject variable of the verb "get", while the second is the variable for perspectives; the first belongs to the object language, the second to the meta-language. Index binding avoids the conclusion of the argument from binding by avoiding binding of perspectives in the object language altogether, and relegating it to the meta-language instead. Thus, there is no need to postulate variables for perspectives in the object language to account for bounds readings of sentences like (6). Presumably, a similar story can be told for other perspectival expressions for which the argument from binding can (or has) been devised.

Plural readings come in when Lasersohn worries about the expressive power of index binding. He admits from the outset that

> [b]inding the index in this way does not give us the full expressive power of standard variable binding. If, for example, we were to claim that predicates of taste have hidden argument places which can be filled by [variables for perspectives], we should expect to find cases where two of [those variables] both appear free inside the scopes of two different variable-binding operators, each of which binds just one of the [variables]. (Lasersohn, 2008: 325)

To illustrate the worry with an example, consider

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[9] For the argument to work against relativism, it has to be assumed that context cannot have both the role of providing elements in the content of a given utterance (in the present case, by providing a value to a variable) *and* that of providing elements into the parameters of circumstance. This claim is encapsulated in the principle Recanati (2007: 34) calls "Distribution" and is assumed by Schaffer and other contextualists mounting the argument.

(7)   Every man gave a woman a fun ride and a tasty dish. (Lasersohn, 2008: 325)

If standard variable binding were to apply to (7), it "should have a reading in which the hidden argument for *fun* is bound to *every man*, but the hidden argument for *tasty* is bound by *some woman*" (2005: 325). And, were such a reading available, that would be bad news for index binding. However, Lasersohn further claims,

> [(7)] does not have such a reading. It can be interpreted at least three ways: The speaker might be expressing his or her own opinion that the rides were fun and the dishes were tasty, or claiming that the each man gave a ride that was fun for him and a dish that was tasty for him, or that each woman received a ride that was fun for her and a dish that was fun for her; but *the sentence cannot mean that each man gave some woman a ride that was fun for him, and a dish that was tasty for her*. (2008: 325, my emphasis)

The reading Lasersohn claims (7) cannot have is precisely a plural reading, one in which one predicate is bound by a quantifier (thus pertaining to the perspectives of those in the domain of that quantifier), while the other predicate is bound by another quantifier (thus pertaining to the perspectives of those in the domain of the other quantifier). So, Lasersohn brings in plural readings in connection to sentences like (7) to show that, in fact, they are not available. This, in turn, allows him to put to rest worries related to expressive power, and thus to show that index binding yields the right results when it comes to predicates of taste.[10] Presumably, he would employ the same reasoning in connection to other perspectival expressions.

But, as we show in Kneer, Vicente and Zeman (2017), Lasersohn is too quick to dismiss plural readings. First, although it might be that a plural reading of (7) is unavailable in any context, such a reading seems to be available with similar sentences in certain contexts. To stick with predicates of taste for the moment, take the following example, uttered in the same context as that devised for (2):

(8)   Every neighbor let some kids play a silly prank on him and gave them a lot of tasty licorice.

In such a context, the most natural interpretation of (8) is such that, while "tasty" pertains to the perspective of each kid in the range of "some kids", "silly" pertains to that of each neighbor in the range of "every neighbor" (or to that of the speaker). If this is so, then Lasersohn's ban on plural readings of sentences like (7) is not mandated.[11] In the same vein, plural readings seem to be available for similar sentences containing the other expressions mentioned above. To illustrate with aesthetic predicates, uttered in the same context as that devised for (3), the most natural interpretation of

(9)   Every teacher showed some kid how to draw a nice portrait of himself and how to appreciate the exquisite paintings in the main exhibition.

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[10] He also takes the absence of such readings for (7) to provide an argument against contextualism about predicates of taste. I'm not interested in this aspect here, but see Kneer (2015) for developing this point.
[11] For more similar examples, see Kneer, Vicente and Zeman (2017).

is such that, while "nice" pertains to the perspective of each kid in the range of "some kid", "exquisite" pertains to that of each teacher in the range of "every teacher" (or to that of the speaker). It is of course possible that such readings are not available for all the expressions mentioned, but the availability of such readings for sentences like (8) and (9) clearly shows that Lasersohn's ban on plural readings at least for doubly-quantified sentences containing predicates of taste and aesthetic predicates is empirically incorrect.

Second, as I've shown in section 2, plural readings are clearly available for simple sentences containing the expressions at stake. True, Lasersohn doesn't consider such sentences, so a certain amount of speculation is present here. But assuming that Lasersohn is consistent, his ban on plural readings should extend to simple sentences too. One way to avoid this extension is to claim that the problem stems from the account of binding that he proposes. Although index binding has not been received with a lot of sympathy (see, for example, Snyder (2013) for several objections), this is not the case. As we observe in Kneer, Vicente and Zeman (2017), Lasersohn's ban on plural readings comes from more general considerations having to do with what he takes the commitments of a relativist framework to be. Thus, talking about the absence of plural readings of (7), he writes: "[t]he intuition behind this pattern can perhaps be expressed this way: In a relativist theory, in order to assess a sentence for truth or falsity, one must adopt a stance – that is, *truth assessment is always done from a particular perspective*" (Lasersohn, 2008: 326, my emphasis). Thus, Lasersohn takes this "one sentence – one perspective" principle (what in Kneer, Vicente and Zeman (2017) we call the "Uniqueness of Perspective Constraint") to be at the heart of a (or at least his) relativist theory. The claim is thus completely general and applies to *all* sentences, regardless of their complexity. For Lasersohn, then, plural readings should be banned across the board. Evidently, this doesn't bode well with the data.[12]

4. Towards a solution: multiple indexing

In previous sections I've shown that the phenomenon of perspectival plurality extends beyond predicates of taste (section 2) and, following previous work, that it poses a serious problem for at least certain versions of relativism (section 3). In this section I sketch a possible solution on behalf of the relativist.[13]

As we have seen in section 1, the main feature of relativism is that it introduces a parameter for perspectives in the circumstance of evaluation/index. Now, the problem posed by perspectival plurality shows that one such parameter is not enough. A natural move, then, would be to postulate more than one parameter for perspectives in the circumstance/index. This is an instance of a more general strategy I call "multiple indexing".

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[12] The extent to which the "one sentence – one perspective" principle is held in relativist quarters is hard to determine, given that not many relativists have addresses the issue. To my knowledge, Lasersohn is the only one who adheres to it explicitly. Kissine (2012) also seems to think that relativists are committed to it. In any case, I'm happy to contend that the problem raised by perspectival plurality is, at limit, only a problem for Lasersohn's view and for any other relativist view that upholds the principle as a core commitment of the framework.

[13] Due to limitations of space, I'm not able to consider here other possible solutions to the problem. See, however, Kneer, Vicente and Zeman (2017) for a short survey.

Multiple indexing thus consists in the introduction in the circumstance of evaluation/index of more than one parameter *of the same kind*. More precisely, the proposal is that each utterance should be evaluated with respect to *sequences* of such parameters. The idea of a sequence is that it provides an ordering of parameters that are systematically related to the expressions to which they correspond, so that the value of the first parameter of the relevant kind is used to evaluate the first (occurrence of the) expression it corresponds to, the value of the second parameter of the relevant kind is used to evaluate the second (occurrence of the) expression it corresponds to and so on.[14] It is thus a wholesale, global strategy to assess for truth complex sentences by (locally) providing values of the parameters used for the evaluation of each (occurrence of the) expression they correspond to. In our case, the sequence is composed of parameters for *perspectives*, with the result that each parameter will provide a value for the perspective used to evaluate each (occurrence of the) perspectival expression it corresponds to. The strategy helps with perspectival plurality because it allows that, in principle, each (occurrence of a) perspectival expression can be evaluated with respect to a different perspective. This is exactly what cannot happen if one upholds the "one sentence – one perspective" principle considered by Lasersohn to be at relativism's roots. But it also has no problem with what could be called, in contrast to plural readings, "singular readings": those that Lasersohn claimed are the only ones available in the case of (7), for example. What happens in such cases is that the values of all the parameters for perspectives are the same – that is, all the perspectival expressions are evaluated with respect to the same value, and, thus, the whole sentence itself.

To illustrate how the strategy is applied, let's once again focus on predicates of taste and consider the plural reading of (2) made salient in section 2, as well as one of its singular readings – say, the one according to which both "silly" and "tasty" pertain to the speaker's perspective. Before supplying values for the two parameters for perspectives employed, the template for the truth conditions of (2) looks something like this:

(10) $[[$Johnny played a silly^1 prank and had a lot of tasty^2 licorice$]]^{c, \, w, \, <p1, p2>} = 1$ iff Johnny played a silly prank in w according to the value of $p1$ and had a lot of tasty licorice in w according to the value of $p2$,

where $p1$ and $p2$ are the two parameters for perspectives in the sequence introduced, the superscripts on the two predicates of taste represents the order in which they appear and the co-indexing of the parameters with those superscripts signifies that they correspond to the predicates superscripted (pn corresponds to Φ^n, where Φ is a predicate). Once values are given to $p1$ and $p2$, we obtain the two readings of (2) mentioned above. Thus, the plural reading is represented as follows:

(11) $[[$Johnny played a silly^1 prank and had a lot of tasty^2 licorice$]]^{c, \, w, \, <p1[speaker], \, p2[Johnny]>}$ $= 1$ iff Johnny played a silly prank in w according to the speaker's perspective and had a lot of tasty licorice in w according to Johnny's perspective,

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[14] In other words, we define a kind of assignment function (similar to that defined in. e.g., Heim and Kratzer (1998), but on the circumstance side, as it were) that assigns to each occurrence of a perspectival expression the corresponding perspective parameter in the sequence.

where *pn[v]* should be read as "*v*'s perspective is the value of the *pn*-th parameter for perspectives", so that the value of *p1[speaker]* is the speaker's perspective and the value of *p2[Johnny]* is Johnny's perspective.[15] The singular reading of (2) mentioned above is represented as follows:

(12) [[Johnny played a silly[1] prank and had a lot of tasty[2] licorice]]$^{c,\ w,\ <p1[speaker],\ p2[speaker]>}$ = 1 iff Johnny played a silly prank in *w* according to the speaker's perspective and had a lot of tasty licorice in *w* according to the speaker's perspective.

The difference in readings is simply the result of giving different values to the sequence of perspectives in the circumstance/index. The framework is flexible enough to capture all the possible plural readings, but also all the possible singular readings of sentences like (2), as well as those of similar sentences comprising the other expressions mentioned.[16]

Now, in representing the abstract truth-conditions of (2) I have used a sequence of perspective parameters with only two elements for convenience. But given the existence – at least in principle – of sentences with an infinite number of perspectival expressions that might admit of plural readings, the two parameters are not enough. So the sequences I propose to introduce will have to be infinite as well. From a formal point of view, this poses no significant problem. Vlach (1973), as well as Cresswell (1990), discuss the possibility of adopting systems with infinite indexing, and the reasons they offer are very similar to whose presented in this paper (namely, the need to account for plural readings of sentences containing perspectival expressions, in the broader sense of "perspective" mentioned in footnote 7). Alternatively, one could employ a finite but non-limited sequence of perspective parameters, on the model of Vlach's system with times (Vlach, 1973, Appendix)). Certain authors (e.g., Rabern, 2012) show that a non-finite number of parameters is in fact *necessary* for semantics. Be that as it may, the point here is that although I have used a sequence with only two perspective parameters, there is no obstacle to using one with infinite parameters. In such a case, every sentence will be relative to an infinite sequence, but the majority of parameters will be idle, since in fact sentences with an infinite number of perspectival expressions will not be uttered. (The idleness of certain parameters is a move already familiar to the relativist, given that there are sentences that don't contain any perspectival expressions; see Kölbel (2009) for this point.) There is an alternative route, too: instead of taking semantic values to be functions from infinite sequences to truth-values, one can see them as *partial functions* from sequences with a number of parameters *n* to truth values, where the partial functions are obtained by imposing the condition that *n* is the same as the number of perspectival expressions in the sentence whose semantic value is evaluated for truth.[17]

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[15] The representation of the reading of (2) according to which "silly" pertains to the perspective of the neighbor, the victim of the prank, is obtained by replacing the first parameter in the sequence, *p1[speaker]*, with *p1[neighbor]*.

[16] An important question that can be asked at this point is how exactly are the values of the parameters for perspectives determined in a certain context. I cannot provide a detailed answer here, but the short one is: at least partially, *by the intentions of the speaker*. This has a certain "pragmatic" ring to it; I happily accept that. Providing values for parameters of circumstance has been deemed by several authors (including relativists: see MacFarlane's (2014) "post-semantics") as a pragmatic phenomenon.

[17] I'm indebted to David Rey for discussion and suggestions on this point.

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As for plural readings of complex sentences with quantifiers like (8), I think there is more than one way to go, depending on the account of binding adopted. One option would be to keep Lasersohn's index binding[18], but give up the "one sentence – one perspective" principle that comes with it and allowing a quantifier phrase to bind *only* the *n*-th parameter for perspectives in the sequence, namely that corresponding to the *n*-th predicate in the sentence. Alternatively, the relativist could adopt the view put forward in Zeman (2015), according to which quantifier phrases like "every neighbor" contribute a "for *x*" phrase that is construed as a variadic operator of the kind proposed by Recanati (2002). Variadic operators are extensional operators that transform a predicate into another predicate with higher adicity, whose additional argument in a sentence like (8) gets bound by "every neighbor". Deciding which of these two alternatives ultimately serves best the relativist is no doubt important, but for the purposes of this paper such a decision need not be made. In principle, the multiple indexing strategy is independent of the account of binding adopted. To keep things simpler, however, I will illustrate how sentences like (8) are treated by using index binding. This time I will give the truth conditions for three readings of (8), the plural one made salient in section 3 and two singular ones, one in which both "silly" and "tasty" pertain to the speaker's perspective, the other in which they pertain to the range of neighbors quantified over by "every neighbor" (this latter case corresponding to both predicates of taste being bound by the quantifier phrase). Before supplying values for the two parameters for perspectives employed, the template for the truth conditions of (8) is (simplifying greatly)

(13)   [[Every neighbor let some kids play a silly[1] prank on him and gave them a lot of tasty[2] licorice]]$^{c, w, <p1, p2>}$ = 1 iff Every neighbor *x* let some kid *y* play a silly prank on *x* in *w* according to the value of *p1* and *x* gave *y* a lot of tasty licorice in *w* according to the value of *p2*.

Once values are given to *p1* and *p2*, we obtain the three readings of (8) mentioned above. Thus, the plural reading is represented as follows:

(14)   [[Every neighbor let some kids play a silly[1] prank on him and gave them a lot of tasty[2] licorice]]$^{c, w, <p1[x], p2[y]>}$ = 1 iff Every neighbor *x* let some kid *y* play a silly prank on *x* in *w* according to *x*'s perspective and *x* gave *y* a lot of tasty licorice in *w* according to *y*'s perspective,

where "every neighbor" and "some kids" quantify both over object language variables and over parameters for perspectives in the index, as Lasersohn's index binding requires, with each of them quantifying over one of the parameters in the sequence (the former over *p1*, the latter over *p2*).[19] The two singular readings mentioned above are represented by (15) and (16), respectively:

(15)   [[Every neighbor let some kids play a silly[1] prank on him and gave them a lot of tasty[2] licorice]]$^{c, w, <p1[x], p[x]>}$ = 1 iff Every neighbor *x* let some kid *y* play a silly prank on *x* in *w* according to *x*'s perspective and *x* gave *y* a lot of tasty licorice in *w* according to *x*'s perspective.

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[18] Assuming the problems that beset it (Snyder, 2013) are solved.
[19] The representation of the plural reading of (8) according to which "silly" pertains to the perspective of the speaker is obtained by replacing the first parameter in the sequence, *p1[x]*, with *p1[speaker]*.

(16)   [[Every neighbor let some kids play a silly^1 prank on him and gave them a lot of tasty^2 licorice]]$^{c, \ w, \ <p1[speaker], \ p2[speaker]>}$ = 1 iff Every neighbor x let some kid y play a silly prank on x in w according to the speaker's perspective and x gave y a lot of tasty licorice in w according to the speaker's perspective.

As before, the difference in readings is simply the result of giving different values to the sequence of perspectives in the circumstance/index. The framework is flexible enough to capture all the possible plural readings, but also all the possible singular readings of sentences like (8), as well as those of similar sentences comprising the other expressions mentioned.

5. How unorthodox is multiple indexing?

Naturally, the framework just put forward is liable to a number of objections. For reasons of space, I will address here perhaps the most obvious one: that it is highly unorthodox, in that it departs significantly from the Kaplanian framework in which the debate between relativism and contextualism has been, so far at least, framed. I will try to show that, while it is indeed a departure from the Kaplanian view, the departure is not dramatic.

One source for the feeling of oddness might be the very idea of countenancing *more than one parameters of the same kind* in one's semantic framework. However, this worry is easy to assuage. The Kaplanian framework in which the debate between contextualism and relativism has been cast (and which I take here to be the orthodox view[20]) *already* makes appeal to more than one contextual element of the same kind in the semantic apparatus. For Kaplan (1989), but also for Lewis (1980), many contextual elements are part both of the context of utterance (understood here in a formal sense as a tuple of contextual features – agent, time, location, world) *and* of the circumstance/index (world and time for Kaplan; world, time, location and standards of precision for Lewis). But the need to introduce more than one contextual element of the same kind has been noted even before that: as Kamp (1971), Vlach (1973) and others have shown (in the particular case of time), this is needed for the interpretation of complex sentences in natural language, like "One day, all persons alive now will be dead". The novelty brought by Kaplan and Lewis was to show that we need to distinguish clearly (on pain of conflating the logically valid with the necessary) between two roles such contextual features play: on one hand, we need them to fix the content of utterances ("context"); on the other, we need them to allow that such content is evaluated at different situations ("circumstance of evaluation"/"index"); no semantic theory is complete without one or the other. So, far from being objectionable, the introduction of two contextual elements of the same kind is, according to Kaplan and Lewis, a requirement for an adequate semantic theory.

Perhaps then one might think that multiple indexing is unorthodox because one might find the idea of introducing more than one parameter of the same kind in *any* side of the context-circumstance/index division odd. This worry is put to rest by attending to the fact that in the Kaplanian framework itself we need to postulate more than one contextual element of the same kind in the context (understood now formally as a tuple of elements, "context"). As

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[20] "Unorthodox" views that depart from the Kaplanian framework are not uncommon: for a recent view that reminds one of the old, pre-Kaplanian "index theory" of Lewis (1970), see Stojanovic (2012).

widely known, the focus of Kaplan's main work has been both on what he called "pure indexicals" and on demonstratives. When it comes to the latter, an element that gives the content of a demonstrative has to be introduced in the (formal) context, in the same way in which the speaker has been introduced in order to give the content of a pure indexical like "I". So, besides agent, time, location and possible world, the Kaplanian formal notion of context includes a demonstration[21] that would give the content of the demonstrative in a sentence like "That is a boat". But this cannot be the end of the story, since there are sentences containing two or more demonstratives, such as

(17)   That is on top of that,

where the first "that" is accompanied by a demonstration targeting one object and the second "that" by a demonstration targeting another object. In order for (17) to get a content, context has to provide not only one demonstration, but two. That is, we need two elements for demonstrations in the Kaplanian (formal) context. And, given that there are sentences with more than two demonstratives ("That is between that and that"), things are not likely to stop here.

So, then, the remaining source of resistance to multiple indexing is that one finds the idea of introducing more than one parameter of the same kind *in the circumstance/index* side of the aforementioned division itself odd. While this is far from an argument, it pushes the question of the motivations for doing so. Of course, the main claim of this paper is that perspectival plurality is precisely such a motivation. But it is important to note that, in the end, perspectival plurality does very little on top of other arguments for relativism to embrace multiple indexing. In other words, any reason the relativist has to introduce *one* parameter of a certain kind in the circumstance/index can automatically be turned into a reason to introduce *more than one* such parameter by attending to perspectival plurality.

So, what about the actual arguments for introducing one parameter of a certain kind in the circumstance/index? To keep it close to orthodoxy, let's consider Kaplan and Lewis' main reason for drawing the distinction between context and circumstance/index in the first place: namely, the need to separate contextual elements that are *shiftable* from those that are not. Their reasoning was the following: if a contextual element is shiftable, then it becomes part of the circumstance/index; if it's not, then it becomes part of the context. To exemplify, the contextual element that gives the content of a pure indexical like "I" (the speaker) is considered not to be shiftable (in English, anyway). This is usually put by saying that "I" "scopes out" from under various embeddings and always refers to the speaker. However, no such "scoping out" seems to happen in the examples containing perspectival expressions considered in this paper.[22] If anything, perspectives can easily be shifted (the perspective to which "tasty" pertains to in "Licorice is tasty for Johnny" is clearly Johnny's) – and, if

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[21] Or a demonstrative intention. On this matter, Kaplan has changed his mind from "Demonstratives" to "Afterthoughts". I myself don't commit to any of these views; I mention demonstrations only to get my point across.

[22] This point is also made in Kneer, Vicente and Zeman (2017). The conclusion drawn there, however, is that multiple indexing is not viable, because the examples dealt with don't contain "reference-fixing expressions" like "now" in Kamp/Vlach sentences. This a mistake: what such considerations show is at best that a *certain* form of multiple indexing is not viable, one that is different from the present proposal. See the argument below.

perspectival plurality is a real phenomenon, such shifting can take place in more than one direction (a claim that can be further illustrated by making all the perspectives explicit, as in "Licorice is tasty for Johnny, but not tasty for Tony"). So, if one accepts a Kaplan/Lewis-style argument from shiftability to the introduction of parameters for perspectives in the circumstance/index, then perspectival plurality as illustrated in this paper justifies the further step of introducing more than one such parameter – in a way that is entirely coherent with the Kaplanian framework.[23]

Of course, not everyone accepts the argument from shiftabilty (a.k.a. "the operator argument"), for various reasons. Many authors have questioned its premises, based on considerations having to with the correct syntactic representation of the sentences at stake (see King (2003), among many others). What's more, even if the premises at stake are accepted, both their necessity (MacFarlane, 2009) and their sufficiency (Ninan, 2010) for the desired conclusion have been denied. However, the good news for the multiple indexing relativist is that she doesn't need to rely (and some relativists have explicitly advised against doing so – e.g., MacFarlane (2009)) on this argument. A variety of other motivations for relativism have been given in the literature, from phenomena like "faultless disagreement" (Kölbel, 2004a; Lasersohn, 2005, 2008, 2016), eavesdropping (Egan, Hawthorne and Weatherson, 2005), retraction (MacFarlane, 2014) to arguments of a syntactic nature (Lasersohn, 2009). Some of those arguments might move the reader more than others; discussing their efficacy has not been my purpose here. But the point made above remains: assuming one *already* has arguments, of whatever kind, for the introduction of a certain parameter in the circumstance/index, the phenomenon of perspectival plurality gives one a sufficient reason to introduce more than one such parameter. And given that none of the arguments mentioned is incompatible with the Kaplanian framework, if what I've said in this section is on the right track, then multiple indexing is not such a drastic departure from the Kaplanian orthodoxy as one might have initially thought.

6. Summary and open questions

I started this paper by focusing on a recently discussed phenomenon illustrated by sentences containing predicates of taste: perspectival plurality. I then showed, following previous work, that this phenomenon creates problems for at least certain versions of relativism. My main aim in the paper was to further the discussion by showing that the phenomenon extends to other perspectival expressions than predicates of taste and by proposing a general solution to the problem raised by it on behalf of the relativist. The core claim of the solution is that utterances of sentences containing perspectival expressions should be evaluated with respect to (possibly infinite) sequences of perspective parameters (that is, multiple indexing). This solution helps with perspectival plurality because, in principle, it allows each (occurrence of a) perspectival expression to be interpreted as pertaining to a different perspective. In the previous section I marshaled some considerations against seeing multiple indexing as a radical departure from the traditional Kaplanian framework.

Now, what I offered here is a mere sketch, rather than a full-fledged theory. But one gets a clear idea of the work to be further done. First, a more precise formalization of the apparatus is required. Second, shielding the view from more objections is crucial. Third, a thorough

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[23] I'm indebted to Adrian Briciu for discussion of these intricate issues.

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comparison with other possible solutions to the problem posed by perspectival plurality needs to be undertaken. Fourth, the implications for semantics in general and for the debate between contextualism and relativism will need to be made clear. For example, one important question is what type of semantic content we end up countenancing if we adopt such a view, so that to be able to tell what does it mean to assert, have attitudes and communicate such contents. This has obvious consequences for the debate between contextualism and relativism, on which I did not focus here. A key issue to be dealt with in this connection is to ascertain what readings of sentences containing perspectival expressions are allowed and which are not, and see which of the two views best account for the whole range of data. Admittedly, I have here only scratched the surface; progress will be made by a full investigation of the limits and constraints of perspectival plurality. These are all open question that the multiple indexing relativist will need to address.

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