Natural Language Semantics
https://doi.org/10.1007/s11050-025-09233-y

Additivity, accommodation, and alternatives

Flóra Lili Donáti · Yasutada Sudo[1]

Accepted: 11 April 2025

Abstract
Additive particles are generally infelicitous in out-of-the-blue contexts. Kripke (in *Linguistic Inquiry* 40(3):367–386, 2009) puts forward an influential idea that the additive presupposition they trigger has an anaphoric component that cannot be accommodated. Ruys (in *Linguistic Inquiry* 46(2):343–361, 2015) proposes an alternative analysis that the observation can be explained in terms of conditions on deaccenting, claiming that in light of exceptional cases where additive particles can be used felicitously out of the blue, it is better to analyse the additive presuppositions as existential presuppositions. However, such exceptional cases have not been given a systematic explanation so far. In this paper, we closely examine existing and novel examples where additive presuppositions are felicitously used out of the blue and argue that Ruys's existential analysis as well as the Kripkean anaphoric approach face empirical issues. We propose a new analysis, according to which the *sui generis* infelicity of additive particles in out-of-the-blue contexts is due to their focus sensitivity. Specifically, when an additive particle is used, two interpretive processes take place: (i) identification of a contextually relevant set of focus alternatives, and (ii) evaluation of the additive presupposition based on the focus alternatives so identified, which may result in accommodation. We claim that the felicity conditions on out-of-the-blue uses of additive particles emerge from the interplay between (i) and (ii).

Keywords Additive particles · Presupposition accommodation · Focus · Alternatives

We would like to thank the handling editor, Florian Schwarz, and three anonymous reviewers for *Natural Language Semantics*, who gave us constructive criticism and useful suggestions, which have contributed towards improving the paper. We also thank the audiences at New York University (18 February, 2022), TALKs at Keio University (3 March, 2022), and Humboldt-Universität zu Berlin (16 June, 2022), especially Chris Davis, Aron Hirsch, Bernhard Schwarz, Anna Szabolcsi, and Chris Tancredi, for their feedback on earlier versions of this work. The second author received funding from AHRC-DFG (AHRC: AH/V003526/1; DFG: EB 523/2-1, STE 958/12-1, STE 2555/3-1). The remaining errors are our own.

✉ Y. Sudo
y.sudo@ucl.ac.uk

[1] University College London Department of Linguistics London, London, UK

Published online: 20 May 2025

1 Introduction

Kripke (2009) claims that the additive presupposition of *too* is not existential but anaphoric.[1] His main arguments come from examples like (1) and (2).[2]

(1) If Katie and Berit come to the party, then [the linguist]$_F$ will come, too.

(2) Katie$_F$ is having dinner in New York right now, too.

Kripke's arguments against the purely existential analysis of the additive presupposition go as follows. Intuitively, (1) presupposes that neither Katie nor Berit is the linguist mentioned in the consequent. However, if the consequent of (1) only had an existential presupposition that someone other than the linguist will come to the party, the linguist mentioned in the consequent should be able to be either Katie and Berit, contrary to intuition. The argument from (2) is that if the additive presupposition were merely existential, saying that there is at least one more person having dinner in New York at the utterance time, then the presupposition should be satisfied as long as the utterance time is a reasonable time for having dinner, given the common knowledge that there are many people having dinner in New York on any given day, the sentence should be felicitously assertable out of the blue, contrary to fact.

Kripke's idea of anaphoric presuppositions has been very influential and several technically distinct implementations of it have been proposed (Soames 1989; Heim 1990, 1992; Geurts and van der Sandt 2004; Beaver and Zeevat 2007; Chemla and Schlenker 2012, for example).[3] Abstracting away from technical differences among them for now, the above data are explained roughly along the following lines. The disjointness effect of (1) arises because the additive presupposition is anaphoric to the antecedent of the conditional and requires the content of the consequent to be distinct from it. As for (2), the anaphoric additive presupposition cannot be satisfied out of the blue, because by assumption, the anaphoric component of the additive presupposition resists accommodation in an out-of-the-blue context, similarly to pronominal anaphora.

[1] Kripke (2009) only discussed *too* and never other additive particles like *also* and *as well*. We will likewise mostly discuss *too*, but as far as we can see, other additive particles behave identically in relevant respects, and we believe his theory is meant to be applicable to them as well. This is true for our theory as well.

[2] The original example of the second type in Kripke (2009) is *Sam$_F$ is having dinner tonight, too* (p. 373), which is ambiguous between a progressive and a futurate reading. This ambiguity is orthogonal to our interest, so we will use an unambiguous example that only has a progressive reading.

[3] Soames (1989) predates the talk version of Kripke (2009), which was delivered in 1990, but mentions (in n. 54) Kripke's first argument above, attributing it to Kripke. It should also be remarked that Soames's view is not completely identical to Kripke's, as we understand it. According to our reading of the relevant passage (on p. 604), the additive presupposition for Soames is *existential* but is crucially *de re* with respect to the presuppositional attitude. For instance, for him, (2) presupposes *of someone* that he or she is having dinner in New York. This is very close to our proposal to be presented below (except that for us, focus plays an important role). Soames also claims that such a *de re* presupposition is not compatible with certain theories of presuppositions, most notably the one put forward by Heim (1982, 1983), but see Heim's remark to the contrary in Heim (1990, fn. 11). Our theory is a concrete demonstration that *de re* presuppositions are indeed compatible with the Heimian theory of presuppositions, although it formulates the presuppositional condition in a way different from how Heim (1990) sees it. We thank Bernhard Schwarz (p.c.) for directing our attention to Soames (1989).

Ruys (2015) claims that Kripke's first argument based on (1) is flawed. We find this part of Ruys (2015) very convincing, so we will only review it briefly here, omitting certain details and additional evidence he offers. His key observation is that if the linguist mentioned in the consequent of (1) were identical to Katie or Berit, then the consequent would be trivial. The disjointness effect, therefore, can be explained solely by the reasonable assumption that such trivial interpretations are eschewed.

This leaves us with Kripke's argument from (2). Ruys (2015) argues that the existential analysis could be salvaged by independently motivated licensing conditions on deaccenting in order to explain the infelicity. Roughly, (2) is infelicitous because the post-focal material is most naturally read with deaccenting, but this deaccenting is unlicensed in an out-of-the-blue context. Ruys furthermore points out that there are exceptional examples of felicitous uses of additive particles in (more or less) out-of-the-blue contexts, which are problematic for the anaphoric approach and takes them as evidence for his existential analysis augmented with conditions on deaccenting. Since the purely existential analysis is no longer on the table, based on examples like (2), we will henceforth call Ruys's (2015) analysis of additive particles simply his existential analysis.

In this paper, we will first review Ruys's (2015) existential analysis in detail, together with one class of problems for it, which Ruys himself pointed out. We will also point out an additional problem coming from examples where an additive particle can be felicitously used out of the blue. We agree with Ruys (2015) that such examples are problematic for the Kripkean anaphoric approach because they show that the (in)felicity of additive particles does not correlate with the (im)possibility of anaphora, contrary to its prediction, but we will point out that his existential analysis is actually problematic, becuause what is accommodated is not an existential presupposition, but a stronger presupposition about a particular individual or individuals.

We will propose an entirely new analysis that builds on the following idea. Whenever an additive particle is used, two distinct interpretive processes take place, namely, (i) identification of contextually relevant focus alternatives and (ii) evaluation of the additive presupposition computed with the focus alternatives so identified, and depending on what the conversational context is like, (ii) may result in presupposition accommodation. The resulting theory bears some resemblance to the anaphoric approach, especially versions suggested by Soames (1989) and Heim (1990), but a crucial and novel feature of our proposal is reference to focus. Also, we maintain that neither of the two aforementioned processes are subject to constraints specific to additive particles. In particular, we do *not* assume that additive presuppositions have components that resist accommodation, contrary to the anaphoric approach. Rather, for us, the *sui generis* infelicity of additive particles in out-of-the-blue contexts, which is not observed with garden-variety presupposition triggers, comes from the focus-sensitivity of additive particles. We will present empirical motivation for this view from (a) additive particles associating with quantifiers and (b) the behaviour of other focus particles.

The rest of this paper is organised as follows. We will start with reviewing Ruys's existential analysis in Sect. 2 as well as an issue of it mentioned in Ruys (2015). We will then examine in Sect. 3 various examples where an additive particle can be used felicitously (more or less) out of the blue, and discuss challenges they pose for

Ruys's analysis, as well as for different versions of the anaphoric approach. In Sect. 4, we will present our own analysis, and show how it explains both the felicitous and infelicitous examples from the preceding section. After that, we will turn to examples involving an additive particle associating with a focussed quantifier in Sect. 5, and to other focus particles in Sect. 6. We will conclude in Sect. 7 with some remarks about consequences on the theory of presuppositions.

2 Ruys's existential analysis

Ruys (2015) proposes to account for the infelicity of (2) in out-of-the-blue contexts in terms of constraints on deaccenting, while maintaining the existential analysis of additive presuppositions. The essence of his idea is as follows. The example is most naturally read with a prosodic focus on the subject *Katie* and deaccenting of the rest of the sentence. It is independently demonstrated that deaccenting requires a discourse (or contextual) licensor or antecedent, and an antecedent for deaccenting generally resists accommodation. Consequently, (2) is rendered infelicitous out of the blue, due to the lack of a suitable antecedent for the deaccented VP.

In support of this analysis Ruys points out that even when *too* is removed, as in (3), the sentence remains infelicitous out of the blue with the same intonational pattern including deaccenting of the VP.

(3) Katie$_F$ is having dinner in New York right now.

Thus, according to Ruys, the unacceptability of (2) in an out-of-the-blue context has little to do with the additive particle *per se*, but more to do with the post-focal part of the sentence.

It should be emphasised, however, that it is not the case that an additive particle has no presupposition for Ruys. He correctly points out that if it had no presupposition, the unacceptability of *too* in examples like (4) would be unaccounted for.

(4) James didn't smoke, but Katie$_F$ smoked (#too).

Since the version of the sentence without *too* is acceptable, the deaccenting of *smoked* in the second sentence is licensed here. In fact, the verb could even be elided, which can be seen as an extreme case of deaccenting (Rooth 1992b; Tancredi 1992). Ruys points out that an existential presupposition is good enough to explain the infelicity of *too* in (4).

However Ruys himself mentions what seems to us to be a significant problem of his analysis, which remains unsolved in his paper. It has to do with examples where deaccenting is independently controlled for. There are two sub-cases to consider.

Firstly, Ruys's analysis predicts that when there is no deaccenting, a sentence like (2) should become acceptable out of the blue: the following example, which involves no deaccenting, can indeed be used without an explicit discourse antecedent.

(5) This$_F$, too, shall pass$_F$. (adapted from Ruys 2015, p. 356)

However, the sentence in question is arguably a fixed adage, so its semantic properties might differ from what is predicted from the compositional semantics of the sentence. We think examples like (6) are more telling (Ruys 2015, p. 356, fn. 18).

(6) Sam$_F$, too, is having dinner$_F$ in New York$_F$.

This is essentially the non-deaccented version of (2). Since there is no deaccenting here, Ruys's account predicts that the existential additive presupposition should be simply satisfied—and not even accommodated—given that it is commonly known that many people are having dinner in New York in the evening on any given day. However, evidently, this prediction is not borne out: (6) is as infelicitous as (2) out of the blue. Ruys gives some comments on this issue in the footnote containing (6), but before discussing them let us look at the other sub-case of the problem.

Another prediction of Ruys's analysis is that if the deaccenting of the VP in (2) is independently licensed, then what is left will be just a purely existential additive presupposition, which should be satisfied given the common knowledge. This is also testable. Consider (7), which is mentioned in the same footnote as (6) in Ruys (2015).

(7) Who had dinner in New York last night?
— #Peter$_F$ had dinner in New York last night, too.
(adapted from Ruys 2015, p. 356, fn. 18)

Contrary to the prediction of Ruys's analysis, the additive presupposition here causes infelicity that is comparable to (2). Note also that without *too*, the sentence would be acceptable, with the intonation indicated, suggesting that the deaccenting of the VP is indeed licensed. The same issue is illustrated by the following example raised by Ruys himself.

(8) ??Peter did not have dinner in New York last night, but John$_F$ did, too.
(adapted from Ruys 2015, p. 359)

Ruys is aware of this issue, and in response, he suggests that there might be an additional factor that renders the above examples infelicitous. To quote his own words:

> Since *too* does not affect the assertion, but only adds an existential presupposition, I presume that the function of *too* must be to highlight the fact that the context admits this presupposition. If so, *too* would tend to be unacceptable unless the hearer can figure out why the presupposition is being highlighted.
> (Ruys 2015, p. 346, fn. 18)

Since presuppositions generally do not have such a 'highlighting' function—in fact, they are usually backgrounded—this essentially amounts to a claim that there is more than just the existential additive presupposition in the presuppositions of additive particles after all. Furthermore, our understanding of the above quote is that the relevant additional interpretive effect arises from the fact that additive particles do not change the assertive content, but such an additional pragmatic component of meaning does not seem to be a general property of 'pure presupposition triggers' that lack assertive contributions. Consider, for example, positive implicative verbs like *remember to VP* and *succeed in VPing*. They are also pure presupposition triggers in the sense that

they do not change the assertive content, but their presuppositions seem to be entirely banal with respect to accommodation. Concretely, the following examples do not trigger infelicity comparable to (2) when used out of the blue.

(9) a. Katie remembered to have dinner in New York.
b. Katie succeeded in having dinner in New York.

Importantly, these implicative verbs have negative counterparts, *forget to VP* and *fail to VP*, which do tamper with the assertion by negating it, but contrary to Ruys's idea, (9) and (10) do not seem to differ with respect to presupposition accommodation.

(10) a. Katie forgot to have dinner in NY.
b. Katie failed to have dinner in NY.

Furthermore, it seems to us that the proposed idea is insufficient in explaining the examples problematic for Ruys existential analysis to begin with. As written in the above quote, examples like (6)–(8) should be judged as unacceptable unless the hearer can figure out the reason for highlighting the presupposition. It is not entirely clear what 'highlighting' actually amounts to in empirical terms, but one could imagine a context where the speaker wants to highlight the fact that whoever the subject is not at all special among relevant individuals for having had dinner in New York on the previous day, for example. Then, (8) is expected to become more acceptable, but as far as we can see, there is no positive evidence supporting this prediction. In fact, Ruys concedes at the end of his paper that the issue we are discussing here is an open issue for his existential analysis.

In sum, Ruys's analysis faces challenges, but has empirical advantage over the Kripkean anaphoric approach in how it handles felicitous out-of-the-blue uses of additive particles. We will now turn to these cases.

3 When an additive particle is felicitous out of the blue

In this section, we will closely examine examples where an additive particle can be felicitously used (more or less) out of the blue. As mentioned already, Ruys (2015) regards such cases as providing empirical support for his existential analysis over the Kripkean anaphoric approach, and indeed, we will echo his criticisms against the latter. However, we will also point out that some of these cases actually pose additional problems for Ruys's existential analysis.

3.1 Indexical additive presuppositions

The first class of examples we will look at involves what we call indexical additive presuppositions. In particular, we submit the following empirical generalisation (see Heim 1990 for a similar remark):

(11) Additive particles that trigger indexical additive presuppositions are generally felicitous out of the blue.

Kripke's (2009) original observation regarding sentences like (2) is understood to be based on intuitions in a truly out-of-the-blue context, where nothing particular is presupposed about anything, including the interlocutors, and the intuitions are indeed very robust. However, suppose now that at least one of the interlocutors is commonly known to be having dinner in New York. In such a case, (2) becomes much more acceptable out of the blue.

One might think that the relevant contextual assumption about the speaker and hearer makes the context not truly out of the blue. However, if such contextual assumptions have this effect, any out-of-the-blue context will be extremely unrealistic, as we always make some assumptions in any natural conversation. Concretely, the intended context for Kripke's original example is one where the speaker and hearer are *not* having dinner in New York themselves (and hence it is not commonly known and cannot be easily accommodated that either of them is having dinner in New York), and that is as non-trivial a contextual assumption as the assumption that (it is commonly known that) they are having dinner in New York at the speech time.

We will present some more examples illustrating the generalisation in (11) below. However, we will not try to formalise the notion of indexical additive presupposition because we will eventually argue that the generalisation is part of a broader phenomenon that subsumes the second class of cases where additive particles are used felicitously out of the blue but the additive presuppositions are non-indexical. In other words, indexicality is only a sufficient condition and is not necessary for an additive particle to be used felicitously out of the blue. This fact suggests that a theory of the semantics and pragmatics of additive particles should actually *not* make reference to indexicality, but rather should derive the generalisation in (11) as an epiphenomenon. To this end, we will claim in the next section that the true generalisation has to do with which focus alternatives are likely to be relevant.

To convince ourselves that our generalisation in (11) is empirically sound, let us go through some more examples, e.g., the following from Ruys (2015), which does not require a discourse antecedent of the kind predicted by the Kripkean anaphoric approach.

(12) Hey, that kitten has feelings too, you know! (Ruys 2015, p. 359)

The most natural interpretation of (12) is one where the additive presupposition is about the speaker and/or the hearer. Either way, the additive presupposition is indexical.

For the following example from Grubic (2019), the intended additive presupposition is clearly about the hearer.

(13) *Two women are standing at a bus stop on a rainy day. A car drives by, through a puddle, splashing one of the women with muddy water. To the splashed woman:*

One splashed me$_F$ this morning, too. (Grubic 2019, p. 173)

Let us introduce a near minimal pair involving the same sentence but different contexts to further reinforce the observation. First, (14) is an example with an indexical presupposition.

(14) *Everyone in the department knows that it's the day of notification of acceptance for the conference SALT. It is common knowledge between you and your colleagues, including Katie, that the majority of the 10 semanticists in the department, including you and Katie, have submitted a single-authored abstract to SALT. She comes to your office and asks you:*

Did you get into SALT, too?

We observe that Katie's utterance is felicitous (though perhaps not very cooperative) in this context, and most naturally read as implying that Katie did get into SALT, so the additive presupposition is about the speaker, and hence indexical. The same sentence uttered by a different speaker, who the additive presupposition cannot be about, seems less felicitous than in (14).

(15) *In the same context as above, your phonologist friend, James, comes to your office and asks you:*

??Did you get into SALT, too?

Note that our one-way generalisation does not make direct predictions for cases like this where the intended additive presupposition is non-indexical, but it is worth noting that (15) is not entirely unacceptable, and does seem better, e.g., if they have been discussing Katie, a semanticist, as we will discuss later in more detail.

The generalisation in (11) is also valid in cases where the intended additive presupposition is about the location or the time of the current context of utterance as well. Below are examples with temporal indexical presuppositions. If the speaker and hearer are entering a cafe together sometime in the afternoon, the following sentences could be uttered out of the blue.

(16) a. I came here yesterday$_F$, too.
b. I was here [in the morning]$_F$, too.

In these cases, the additive presuppositions are understood as about today and now, respectively, and hence are indexical. Similarly, here is an example with a locational indexical presupposition. Suppose that the speaker and hearer are in a very busy Italian restaurant, waiting for their food. The speaker says to the hearer, pointing at a Mexican restaurant on the other side of the street:

(17) Look, there are a lot of people [in that Mexican restaurant]$_F$, too.

The sentence is much more marked when the additive presupposition is about a different location, as demonstrated by (18).

(18) ??There are many people [in this restaurant]$_F$, too.

3.2 Challenges for previous analyses

Having presented evidence for the generalisation in (11), let us now discuss its implications for Ruys's (2015) analysis and for the Kripkean anaphoric approach.

3.2.1 Challenges for Ruys's account

Recall that for Ruys, the additive presupposition is existential, and he argues that this is an advantage over the anaphoric approach concerning examples where the additive particle is used felicitously out of the blue because the existential additive presupposition is often simply satisfied, and even if not, it is typically easy to accommodate. For instance, consider (2) again. The existential presupposition would simply be satisfied under the mutually shared world knowledge that many people have dinner in New York in the evening on any given day. Therefore, those examples where an additive particle is felicitously used out of the blue themselves are not particularly problematic.

However, when exactly an additive particle can and cannot be used felicitously needs to be explained. As we reviewed in the previous section, Ruys (2015) proposes deaccenting as the main explanatory mechanism, but, as we pointed out, there are empirical reasons to doubt that constraints on deaccenting alone provide a complete account. This is already an issue, as Ruys admits himself, but here, we will point out further issues for his analysis.

Let us take (2) again. We observed above that it is judged acceptable if the speaker and hearer are having dinner in New York themselves, but unacceptable, if not. To explain this contrast, Ruys (2015) could assume that such contextual factors as what the speaker and hearer are doing could license deaccenting. This in itself is not at all implausible (e.g., see Rochemont 1986; Geiger and Xiang 2021), but this line of explanation cannot apply to cases where the deaccenting is independently licensed. We have already seen that such cases are anyway problematic for the analysis under consideration, but we moreover observe that whether the additive presupposition is indexical continues to matter for the felicity of an additive particle in an out-of-the-blue context, even when deaccenting is controlled for. Concretely, consider (19). We observe that B's utterance is felicitous out of the blue if the speaker and/or hearer are having dinner in New York themselves at the speech time (and so can afford dinner in New York), but infelicitous if neither of them can afford dinner in New York.

(19) A: Tell me, who can afford dinner in New York?
B: Katie can, too.

Thus, indexicality's role in this phenomenon goes beyond deaccenting conditions, but it should be pointed out that this in itself does not necessarily mean that Ruys's idea about deaccenting is on the wrong track, because there could potentially be another explanation for the generalisation in (11). However, other examples in this section pose a more serious challenge to Ruys's analysis.

Recall the pair of examples in (14)–(15) about SALT abstracts. We observed that the former is felicitous, despite the additive particle being used out of the blue, and one naturally draws the inference that the speaker, Katie, got into SALT. One crucial difference between this example and (2) uttered in a context where the speaker and hearer are having dinner in New York is that in this example, the information that Katie got into SALT is new to the hearer, which means that the additive presupposition needs to be accommodated. A parallel remark applies to (15). Recall that the acceptability of (15) improves with certain additional contextual assumptions, but

importantly, whenever it is acceptable, one draws an inference that James, who is the speaker, knows *of a particular person*, let's say from the department, that his or her abstract has been accepted. This inference does not require exact knowledge of the person's identity, but crucially, is stronger than a merely existential inference that he knows that there is someone or other whose abstract has been accepted (which would be simply common knowledge if the existential quantification is unrestricted, as a conference always accepts some abstracts). Thus, in examples like (14)–(15), the additive particle is used to introduce new information, and it is reasonable to think that this new information comes from accommodating the additive presupposition. This poses two issues for Ruys's existential analysis: how does accommodating the additive presupposition results in accommodation of something stronger than the existential presupposition, and why is it not enough to accommodate just the existential presupposition?

It should be pointed out that it is unlikely that the stronger inference is due to some mechanism that strengthens an existential presupposition because an out-of-the-blue utterance of a sentence triggering a *bona fide* existential presupposition like (20) only results in accommodation of the existential proposition itself.

(20) Does everyone here know that someone got into SALT?

We therefore take the above observations as showing that the additive presupposition is in fact not existential, contrary to Ruys's assumption. Rather, it is better characterised as either a singular proposition or at least existential but *de re* with respect to the presuppositional attitude, as previously suggested by proponents of the anaphoric approach like Soames (1989) and Heim (1990). Together with the problem discussed in the previous section, we think there are enough empirical reasons to be sceptical about Ruys's existential analysis.

3.2.2 Challenges for the anaphoric approach

The anaphoric approach handles the above issue better since it treats the content of the additive presupposition as a singular proposition. To be more precise, there are broadly two different versions of this theory that we need to consider (see Ruys 2015 and Grubic 2019 for more detailed overviews of different implementations): those that take the additive presupposition to contain a pronominal component in place of the focused material (Heim 1990, 1992; Geurts and van der Sandt 2004), which we call the *pronominal anaphora analysis*, and those that take the anaphora to be propositional in nature (Beaver and Zeevat 2007; Kripke 2009; Tonhauser et al. 2011), which we call the *propositional anaphora analysis*. To illustrate, these two theories would analyse (2) roughly as follows. Under the pronominal anaphora analysis, the additive presupposition will be "x is having dinner in New York now", where x is a (ϕ-neutral) anaphoric pronoun whose referent is distinct from Katie. The propositional anaphora analysis, on the other hand, will require an antecedent proposition that is salient in the context of utterance and is "parallel" to the proposition that the additive particle modifies, e.g., the proposition that James is having dinner in New York right now.

Under both versions of the anaphoric approaches, the additive presupposition is stronger than Ruys's existential presupposition, and consequently, they straightforwardly account for why a proposition stronger than an existential statement is accommodated when the additive presupposition is new information. Certainly, it needs to be explained why the additive presupposition could ever be new information, and indeed, this is where the anaphoric approach fails.

The anaphoric approach assumes that there are rather severe constraints on the accommodation of anaphoric antecedents, which can be given independent empirical motivation, and these constraints will dictate that additive particles cannot be felicitously used out of the blue unless the anaphoric component of their additive presuppositions can be somehow resolved. In other words, this approach predicts that constraints on accommodation of additive presuppositions should be parallel to constraints on accommodation of anaphoric antecedents. As Ruys (2015) argues previously, this prediction is in fact not borne out. We will now discuss specific cases of this problem concerning our generalisation about indexical additive presuppositions in (11).

Let us consider the pronominal anaphora analysis first. To account for our generalisation (11), a stipulation could be added that the pronominal anaphora in the additive presupposition can exceptionally be resolved to the speaker or hearer even in out-of-the-blue contexts. This idea is in fact not so far-fetched as it might sound, given that indexical pronouns like *I*, *you* and *we* can be used out of the blue, unlike third person pronouns (which is also true for null pronouns in Japanese). Therefore, the pronominal anaphora analysis can potentially account for the generalisation of indexical presuppositions, but as we will see later, it runs into more serious issues with felicitous uses of additive particles with non-indexical presuppositions.

Let us now discuss how the propositional anaphora analysis could account for the generalisation in (11). For the example in (14), for instance, the anaphoric additive presupposition must be resolved to the proposition that Katie's abstract has been accepted, and it needs to be assumed that this propositional antecedent can exceptionally be accommodated, unlike in the case of (15) where such accommodation must be impossible or at least more difficult. However, the accommodated antecedent could potentially be the same proposition between these two cases, so it should not be the content of the antecedent proposition that is responsible for the contrast.

One possible way to explain it is by assuming that accommodation of a propositional antecedent is constrained by how reliable the speaker is with respect to the truth of the proposition to be accommodated. In the case of (14), the speaker is obviously a reliable source as to whether she got into SALT, but the speaker of (15) is a different person, so he might or might not be. However, we think this account overgenerates. Suppose that you are walking with your friend who has a teenage son. As before, it would be infelicitous for your friend to utter (2) out of the blue. However, in this case, there is an obvious candidate proposition to accommodate, namely, that the speaker's teenage son is having dinner in New York because the speaker can safely be assumed to be a reliable source for whether and where their son is having dinner.

Admittedly, it is not entirely clear how grave this issue is for the propositional anaphora analysis, because the relevant constraint on accommodation could poten-

tially be more precisely characterised to differentiate indexical additive presuppositions from non-indexical additive presuppositions, so as to account for the contrast in question.

In what follows, we will discuss examples of felicitous out-of-the-blue uses of additive particles with non-indexical presuppositions. The nature of the issues they pose for Ruys (2015) is the same as before, but we argue that they are very difficult to explain under either version of the anaphoric approach.

3.3 Felicitous out-of-the-blue uses with non-indexical additive presuppositions

As mentioned above, indexicality is only a sufficient condition for an additive particle to be used felicitously in a more or less out-of-the-blue context. Concretely, Ruys (2015) raises the following example.

(21) Sam used to be really poor, which made him feel ostracized and lonely. But now that Sam has struck it rich, he no longer feels alone. Now he too can drive a Mercedes, and have dinner in fancy restaurants in New York.
(Ruys 2015, p. 356, fn. 18)

This is not a case of a truly out-of-the-blue use of the additive particle, but its felicity is nonetheless theoretically relevant. In fact, it constitutes a serious challenge for the anaphoric approach. Specifically, according to the pronominal anaphora analysis, the additive presupposition of (21) refers to an alternative individual or individuals to the referent of *he*, and intuitively, it refers to people in Sam's circle, or perhaps other rich people in New York more generally. Either way, the pronominal anaphora analysis predicts that pronominal anaphora should succeed in the same context. However, this prediction is not borne out, as illustrated by the infelicity of (22).

(22) Sam used to be really poor, which made him feel ostracized and lonely. But now that Sam has struck it rich, he no longer feels alone. #Now he hangs out with *them* in Manhattan all the time.

A parallel issue arises for the propositional anaphora analysis. It predicts that propositional anaphora should be licensed when *too* is felicitous, but consider the following example.

(23) Dean of students: Do PhD students even have families to take care of?
Student rep.: Yes, PhD students have families, too. (Ruys 2015, p. 359)

Intuitively, the additive presupposition is about professors and potentially both academic and professional staff of the university. To make this example a non-indexical case, let us suppose that the dean is commonly known to not have a family. Even with this assumption, the example remains felicitous. To explain this, the propositional anaphoric analysis must assume that the antecedent proposition that the relevant people have families is salient in this context and can be referenced. Contrary to this prediction, such propositional anaphora is not possible with *that* in (24); rather, it can only be resolved to the proposition that PhD students have families to take care of.

(24) Dean of students: Do PhD students even have families to take care of?
Student rep.: Clearly, that's all you care.

The example in (23) also poses an issue for the pronominal anaphora analysis, according to which the additive presupposition contains a pronominal anaphora referring to professors (and/or professional staff) of the university. The following example shows that such a reading is impossible to obtain with an overt *they*. Rather, it can only be resolved to PhD students.

(25) Dean of students: Do PhD students even have families to take care of?
Student rep.: Do you think only *they* have families?

Perhaps a more striking example of this kind is (26), which is the heading of an online article.[4]

(26) Your 'Fresh' Fish Was Probably Frozen, Too.

This is a truly out-of-the-blue utterance, but the intended additive presupposition is fairly easy to recover, namely, it is about frozen fish. These examples show that the constraints on additive particles in out-of-the-blue contexts cannot be reduced to the constraints on accommodation of anaphoric antecedents. The latter is generally more tightly constrained than the former.

3.4 Section summary

In this section, we examined Ruys's existential analysis and two versions of the anaphoric approach in light of various examples where additive particles are felicitously used (more or less) out of the blue and argued that none of them offers a satisfactory account of when additive particles can and cannot be used felicitously out of the blue.

In the next section, we will propose a novel explanation of when additive particles can and cannot be felicitously used out of the blue, and why.

4 Additivity and focus

The starting point of our theory of additive particles is the assumption that additive particles like *too* exhibit sensitivity to focus, and focus evokes focus alternatives. It bears emphasising that within a sentence containing an additive particle, the intended focus alternatives are not linguistically specified, which means that the use of an additive particle necessitates some guesswork on the hearer's part about the speaker's intention. This interpretative process can be likened to pronominal anaphora resolution, but as we will argue below, there are several crucial differences between them with respect to what information can be leveraged.

What we have just pointed out perhaps strikes you as self-evident, and we in fact believe all contemporary analyses of additive particles assume it, explicitly or implicitly. Yet we think it is useful to be clear about the interpretative processes involved

[4] https://lifehacker.com/your-fresh-fish-was-probably-frozen-too-1848983328.

in understanding a sentence containing additive particles, namely, (i) identification of the relevant focus alternatives the speaker intends, and (ii) evaluation of the additive presupposition computed with the focus alternatives so identified. In case the additive presupposition is not satisfied in the conversational context, the possibility of accommodation is considered.

In what follows, we will claim that with certain natural assumptions about how these interpretive processes are constrained by general pragmatic considerations, we can explain the felicitous and infelicitous uses of additive particles we saw above, without recourse to ideas like anaphoric presuppositions or deaccenting.

4.1 Focus alternatives

Let us start with the semantics of additive particles. As mentioned above, they are focus-sensitive. In our explanation, we crucially adopt Fox and Katzir's (2011) idea that focus alternatives are linguistic expressions, rather than model-theoretic objects, and we will remark on the importance of this assumption in our analysis as we go along. Other than this, the rest of our assumptions about focus sensitivity are standard. For instance, it is commonly assumed that the set of relevant focus alternatives for a given occurrence of a focus-sensitive operator like an additive particle is constrained by the focus structure of the sentence it occurs in, as well as by contextual factors. To illustrate, suppose that the speaker and hearer are in New Jersey at 7 pm. Consider the utterance of (27), which contains (2).

(27) James must be having dinner in an Italian restaurant in Manhattan right now. Katie$_F$ is having dinner in New York now, too.

Principles of focus semantics require that the relevant set of focus alternatives be a subset of the following set of sentences. Each value of the metalinguistic variable ξ here is a focus alternative to the focussed element of the sentence, i.e., the proper name *Katie*$_F$.

(28) $\{\ulcorner \xi \text{ is having dinner in New York now} \urcorner \mid \xi \in \text{FocAlt}(\text{Katie}_F)\ \}$

More often than not, the contextually relevant set of focus alternatives is a much smaller proper subset of this set. For (27), for example, we can assume that the contextually relevant set of alternatives is simply the following singleton.[5]

(29) $\{\ulcorner \text{James is having dinner in New York} \urcorner\}$

With this notion of focus alternatives at hand, we analyse the presupposition that the additive particle triggers as in (30).[6] We assume that a given occurrence of the additive particle is associated with a covert variable C denoting the set of contextually relevant focus alternatives (cf. Rooth 1992a; von Fintel 1994).

[5] It is often assumed that the prejacent—the sentence that *too* modifies—is in the set of alternatives itself. We do not assume so here, as it simplifies the exposition, but our analysis could be restated with this assumption without significant changes.

[6] For expository purposes, we assume that the additive particle takes a propositional scope, but one could type-generalise (30).

For expository purposes, we adopt a bi-dimensional representation of meaning where $[\![\alpha]\!]^g$ consists of an at-issue proposition and a semantic presupposition but nothing crucial hinges on it.[7]

(30) The semantic presupposition of $[\![\text{too}_C\ \phi]\!]^g$ is the grand conjunction of the following propositions, for some $\psi \in g(C)$:

a. The conjunction of the at-issue meaning and semantic presupposition of $[\![\psi]\!]^g$
b. That ψ does not contextually entail and is not contextually entailed by ϕ
c. $g(C) \subseteq \text{FocAlt}(\phi)$ and $\phi \notin g(C)$
d. The semantic presupposition of $[\![\phi]\!]^g$

Let us explain these clauses one by one. (30a) is the additive presupposition. Note that the existential quantification over contextually relevant focus alternatives takes scope over the presupposition, and consequently, when the semantic presupposition in (30a) is mapped onto a pragmatic presupposition, the additive presupposition will be *de re* about some particular alternative expression ψ with respect to the presuppositional attitude (see Soames 1989; Donáti and Sudo 2021 for related discussion). That is, the pragmatic presupposition will require for some ψ, that it be common ground that ψ is true, rather than requiring it to be common ground that there is an alternative ψ that is true. It is important to notice that this is different from *de re* about an individual, as ψ is an expression by assumption.

(30b) is the presupposition that the meaning of ψ is independent from the meaning of ϕ. This condition prevents a trivial use of *too*, and plays a particularly crucial role in Sect. 5, so we will come back to it then.

(30c) requires that C be a subset of structurally defined alternative expressions of ϕ, which is viewed as a general condition on focus alternatives (and as such should ultimately be stated separately from the lexical semantics of additive particles). We largely follow Fox and Katzir (2011) here (see also Katzir 2007), and define $\text{FocAlt}(\phi)$ as follows.

(31) a. $\text{FocAlt}(\phi)$ is the smallest set containing all expressions ψ that can be derived from ϕ by successive replacements of F-marked subconstituents of ϕ with elements of the substitution source for ϕ.
b. The substitution source for ϕ is the smallest set containing everything in the lexicon, all the sub-constituents of ϕ, and contextually salient constituents.

[7] There are further theoretical choice points here. Firstly, we could assume that $g(C)$ is always a singleton set for *too*. In our opinion, it is difficult to decide on this question on an empirical basis, so anticipating the discussion in Sect. 6 about other focus particles, we assume no restriction. Secondly, (30) involves existential quantification over alternatives. If $g(C)$ is singleton, it can be replaced with universal quantification, but even when it is not singleton, one could maintain that the quantificational force is always universal because if the size of $g(C)$ is unclear, the two versions of the analysis are actually difficult to distinguish. As far as we can see, the particular analytical choice we made in (30) is inconsequential for the purposes of this paper.

Essentially, focus alternatives need to be derived by substitution or deletion of subconstituents. This often means that focus alternatives cannot be structurally more complex, except that including contextually salient expressions in the substitution source could lead to structurally more complex focus alternatives. We are mostly interested in accounting for felicity judgments in out-of-the-blue contexts with no contextually salient expressions, but as we will see in some cases, it will be crucial to refer to contextually salient expressions.

Lastly, (30d) specifies the presupposition projection property of *too*. It basically passes up all the semantic presuppositions of ϕ. This should be derived from some general principle of presupposition projection and removed from the lexical semantics of additive particles, but this question is orthogonal to our main interest in this paper (see Schlenker 2008, 2009; Rothschild 2011, among others, for relevant discussion).

4.2 Pragmatic constraints on interpreting additive particles

Having presented the semantics of additive particles, let us now turn to their pragmatics. Recall in particular, whenever an additive particle is used, two things need to happen: (i) identification of the set of contextually relevant focus alternatives that the speaker intends and (ii) evaluation of the additive presupposition computed with the focus alternatives so identified. Formally, (i) amounts to finding the assignment function (or functions, if a framework like File Change Semantics of Heim 1982 is assumed) that assigns the intended value to the free variable C. As for (ii), assuming the Stalnaker-Heim view of presuppositions, it amounts to checking whether the additive presupposition is satisfied in the current conversational context, i.e., whether it is entailed by the current common ground, and if not, the possibility of accommodation may be considered.[8]

Importantly, for neither of the two processes, we assume any specific constraints beyond what can be reasonably attributed to general pragmatic principles. Broadly, for (i), the speaker should only intend a value of C that the hearer is likely to be able to infer, and for (ii), when presupposition accommodation is necessary, the speaker should make sure that the hearer is likely to conclude that presupposition accommodation is intended, and furthermore, the hearer can take for granted that the speaker is a reasonable conversational partner in this regard.

Note that in characterising the processes of interpreting an additive particle above, we spoke as if the identification of contextually relevant focus alternatives happens before the computation of the additive presupposition. This certainly must be the order for the semantic computation of the additive presupposition, but in the pragmatic reasoning, the hearer may consider multiple possibilities, before settling on one, taking into consideration what additive presuppositions the different possibilities would give rise to. For example, in an extreme case where only one possibility gives rise to an additive presupposition that is already satisfied in the current conversational context, that is likely to be the one that the speaker intends, because the pragmatically

[8] We only talk about *global accommodation* (Stalnaker 1999, 2002; von Fintel 2008, and are not concerned with *local accommodation* (Heim 1982; Beaver and Zeevat 2007), which might or might not be the same phenomenon.

competent speaker should be aware that the hearer would go through this reasoning.

Thus, under our account, the pragmatic reasoning involved in interpreting the use of an additive particle proceeds on the assumption that both (i) and (ii) need to happen and that the speaker and hearer are pragmatically competent language users with the shared knowledge of pragmatics, and we claim that the pragmatic interplay between the reasoning about (i) and (ii) is what is responsible for the puzzling properties of out-of-the-blue uses of additive particles. That is, additive particles seem to behave differently with respect to presupposition accommodation, in comparison to garden-variety presupposition triggers, not because additive presuppositions have special properties (as the anaphoric approach assumes), but because (i) is involved, which often fails in out-of-the-blue contexts. Furthermore, the mechanism used in (i), which is formally an assignment function, is the mechanism that is used for resolution of pronominal anaphora, but pragmatically, there are crucial differences between them. In the case of additive particles, certain additional grammatical facts can be leveraged to achieve resolution, namely, that the focus alternatives are structurally constrained relative to what is uttered, as explained above, and also that they are used to give rise to an additive presupposition, which can be assumed to be either already satisfied in the conversational context or at least accommodatable. Thanks to this additional information, identification of contextually relevant focus alternatives sometimes succeeds even in out-of-the-blue contexts, even when pronominal anaphora cannot succeed. Let us go through some specific examples to see how this analysis works.

Let us start with (2). Upon receiving the message, the hearer needs to identify the set C of focus alternatives the speaker intends. Given that both the speaker and hearer are competent speakers, the structural constraints on focus alternatives are common knowledge, so it is commonly known that:

$$C \subseteq \{ \ulcorner \xi \text{ is having dinner in New York now} \urcorner \mid \xi \in \text{FocAlt}(\text{Katie}_F) \}$$

What is $\text{FocAlt}(\text{Katie}_F)$? It is reasonable to assume that other proper names are in this set, but it is less clear if definite descriptions like *the boy* or *the president* should be. If one adopts the description theory of proper names (Matushansky 2008, among others), according to which proper names are definite descriptions with a hidden definite article (in English, at least), then at least such simple definite descriptions should be in $\text{FocAlt}(\text{Katie}_F)$, because they can be derived by (reducing and) replacing the description part of the definite description with a common noun and the implicit definite article with an overt one. On the other hand, under the view that proper names have a relatively simple structure, then one might not expect full-fledged definite descriptions to be focus alternatives to proper names (unless they are contextually salient). Luckily, for the examples we will discuss, we need not settle on this question. However, it will be crucial for us that pronouns are alternatives to proper names. If one adopts the description theory of proper names as well as the description theory of pronouns where pronouns are disguised definite descriptions (e.g., Postal 1966; Elbourne 2005), pronouns should count as focus alternatives to proper names, as they are structurally at least as simple, but even if one doesn't take these theories, pronouns are structurally very simple and it does not seem to us to be too far-fetched

to assume that they are always legitimate focus alternatives to proper names (and to definite descriptions).

Now, we will first consider cases where (2) can be felicitously uttered out of the blue, e.g., when the speaker and hearer are having dinner in New York themselves. Given the grammatical constraint on focus alternatives, there are several theoretical possibilities for what C might be, but any of the following will do.

(32) a. {⌜We are having dinner in New York right now⌝}
b. {⌜I am having dinner in New York right now⌝}
c. {⌜You are having dinner in New York right now⌝}
d. The union of any two or all of the above sets.

Let's assume that (32a) is what is intended and tentatively disregard the other possibilities mentioned here for the sake of discussion. We claim that in the given context, the hearer is likely to succeed in identifying it. Firstly, a pronominal expression like *we* is not only a member of FocAlt(Katie$_F$) but also is a highly frequent expression and it should be common knowledge that frequent expressions are more likely to be contextually relevant. Secondly, the hearer can easily see that the additive presupposition computed with (32a) will be simply satisfied with respect to the current common ground. Therefore, the speaker is entitled to utter (2) with an expectation that the hearer could identify (32a) as the intended value of C.

Let us now turn to a slightly more complex case, where the additive presupposition is not yet satisfied and needs to be accommodated. Recall (14), where Katie, who is known to have submitted an abstract to SALT, comes to your office and asks, "Did you$_F$ get into SALT, too?" In this context, there are only two salient individuals in the context, Katie (the speaker), and you (the hearer). Since the question is about you, the only reasonable candidate for the intended set C of focus alternatives is {⌜I got into SALT⌝}.

Having identified C, the hearer also needs to deal with the additive presupposition that Katie's abstract has been accepted, as this is new information for them. We do not see why the accommodation of the additive presupposition in this context should be impossible.

Having accounted for felicitous out-of-the-blue uses of additive particles, let us now discuss the infelicitous use of (2), which we started out with. Recall that in the intended context, it is neither commonly known nor can be accommodated that the speaker and/or the hearer are having dinner in New York at the speech time. In such a context, it is evident that none of the options in (32) will yield an additive presupposition that is consistent with the context, and the hearer should be aware of it. Thus C must be some other set. One group of candidate values involve other proper names like (33a), or perhaps a bigger set like (33b), or any subset of it.

(33) a. {⌜James is having dinner in New York⌝}
b. {⌜ξ is having dinner in New York⌝ | ξ is a proper name distinct from *Katie*}

However, the hearer has no way of identifying a unique set of alternatives among these options (up to the current conversational goal). Firstly, by assumption, no proper name is particularly salient in the out-of-the-blue context, meaning the likelihood of

the speaker intending something like (33a), or any specific subset of (33b), is extremely low. How about the bigger set in (33b)? In this case, the additive presupposition will cause an issue, namely, it will contradict the assumption that not everyone in the world is having dinner in New York. Consequently, it is unreasonable for the speaker to assume that the hearer is able to find any specific subset of (33b) that they intend.

In addition to (33), there is another class of focus alternatives to (2) we should consider. Above we mentioned that first and second person pronouns are good candidates for intended alternatives, thanks to their high frequencies and the prominence of their referents in the utterance context. For the same reason, we should also consider the pronominal focus alternatives to (2) in (34), which contain third person pronouns.

(34) a. {⌜He is having dinner in New York right now⌝}
b. {⌜She is having dinner in New York right now⌝}
c. {⌜They are having dinner in New York right now⌝}
d. The union of any two or three of the above sets.

However, these are unlikely to be the intended sets of focus alternatives in the out-of-the-blue context, because these pronominal expressions need to find an appropriate antecedent, but by assumption, no such antecedents exist in the out-of-the-blue context. Since this is common knowledge, it would be unreasonable for the speaker to utter (2) expecting the hearer to conclude that one of (34) is the intended set of focus alternatives. Consequently, in the Kripkean out-of-the-blue context, there is no reasonable set of focus alternatives that the speaker can expect the hearer to identify, and as a consequence, (2) is judged to be infelicitous.

Additional support for this account comes from contexts where specific proper names are salient and contexts where pronominal anaphora would be licensed. An example of the former case is in (15), where your phonologist friend, James, who didn't submit an abstract to SALT, comes to your office and asks you "Did you$_F$ get into SALT, too?" Suppose that it is common knowledge between you and James that Katie is the only other person in the department who submitted an abstract to SALT and that this information is somehow salient, e.g., as you two discussed it recently. Then, James' utterance becomes acceptable, at least to some extent, and it is not impossible to accommodate the additive presupposition that Katie got into SALT. Our account allows us to make sense of this: in such a context, the hearer could make a reasonable guess that the proper name *Katie* is the intended focus alternative to *you*, and it is legitimate for the speaker to expect the hearer to be able to do so.[9] On top of this, the additive presupposition needs to be accommodated, since it is new information, but we assume this is possible in a context like this, as in the case of (14).

[9]Note that depending on the syntax of proper names and pronouns, *Katie* can or cannot be derived from a pronoun like *you* by deletion and lexical substitution, but by assumption, contextually salient expressions are also in the substitution source. Typically, contextually salient expressions are ones that have been used in immediately preceding utterances, but we think it is not unreasonable to assume that this is only a sufficient condition. Then, we could assume that in this example the context contains *Katie* as a 'contextually salient expression'. This might also explain the fact that the example under question sounds a bit more marked than the indexical version of the example where Katie herself is the speaker. We will discuss below other examples that involve such contextually salient expressions that have not been uttered.

Furthermore, we claim that the following examples from Grubic (2019) are cases where a reasonable pronominal focus alternative can be identified, which received high acceptability scores in her acceptability experiment. The original stimuli of the experiment were in German, but we will only present the English translations here (see Grubic 2019, p. 188 for the original sentences). We place *too* right after the focussed expression in (35), following Grubic's placement of *auch* in the original German sentences.

(35) Philip goes out for breakfast alone. Nobody is talking to him. But he doesn't care, since he$_F$, too, has a newspaper.

Grubic points out that the quantifier *nobody* enables pronominal anaphora to its domain of quantification, as demonstrated by (36) for (35).

(36) Philip goes out for breakfast alone. Nobody is talking to him. They are all looking at their newspapers. (Grubic 2019, 188)

Under our analysis, the felicity of (35) is explained by the possibility of identifying the singleton set containing "They have a newspaper" as the value of C with *they* referring to the domain of *nobody*. Note importantly that the presupposition is *de re* about the expression as a whole, rather than about the individual that the pronoun refers to, and as such it does not require that the conversational participants necessarily know who they are.

Let us take stock. The core intuition behind our explanation for the infelicitous uses of additive particles in out-of-the-blue contexts is that there are no reasonable focus alternatives, and, in felicitous cases, we can expect the hearer to identify the focus alternatives intended by the speaker. We do not have space to go through our analyses of each and every example we have seen in this paper, but let us demonstrate how our account explains a couple of more cases. First, consider (26):

(26) Your 'Fresh' Fish Was Probably Frozen, Too.

Since this is a genuine out-of-the-blue use of *too*, the reader has essentially no other information than this sentence itself in identifying contextually relevant alternatives. Nonetheless, they can fairly easily recover the intended one, namely, "Your frozen fish was frozen", thanks in part to the scare quotes around *fresh* and to the fact that this alternative is tautological and hence the additive presupposition it would give rise to is trivially satisfied.[10] In fact, that is the only alternative that would give rise to an innocuous additive presupposition and could be relevant in this context at the same time, so the reader can infer that is what the writer intended. The writer is aware that the reader can perform this reasoning, so they can go ahead and use (26) out of the blue.

Second, (21) was used to show that pronominal anaphora is more constrained than out-of-the-blue uses of additive particles.

[10]To be a bit more precise, we analyse the scope of *probably* to be higher than that of *too* in this sentence, and the additive presupposition projects out through *probably*, which can be independently shown to be a presupposition hole.

(21) Sam used to be really poor, which made him feel ostracized and lonely. But now that Sam has struck it rich, he no longer feels alone. Now he too can drive a Mercedes, and have dinner in fancy restaurants in New York.
(Ruys 2015, p. 356, fn. 18)

The advantage of our theory over the anaphoric approach is that it has just enough flexibility to rule in this example. In particular, the first two sentences of this example include words like *ostracized*, *lonely* and *alone*, from which it is naturally inferred that this narrative is about Sam's social group, perhaps his friends who are rich. Then, it is not too outlandish to assume that the expression *his rich friends* or *his circle* counts as a 'contextually salient expression' here, although the expression itself has not been used (see also fn. 9). Then using this expression, the following alternative "His rich friends can drive a Mercedes, and have dinner in fancy restaurants in New York" can be constructed. The additive presupposition amounts to the truth of this alternative, which can easily be accommodated in this context.

One might object that this explanation is a bit too *ad hoc*. Acknowledging this potential criticism, as well as the need for further research in order to construct a more precise theory of contextual relevance, we would like to underscore that our analysis is the only one on the market that can deal with this example as well as the others. Also, it is at this point an open empirical question for future research whether an expression like *his rich friends* counts as a salient expression in this context for the purposes of constructing alternatives.

4.3 Focus alternatives as expressions

Having presented our analysis, we would like to give an additional remark on our assumption that focus alternatives are linguistic expressions, rather than semantic objects, as it is a natural question whether our analysis could be restated in terms of the latter. The crucial difference between the two versions of the theory is in the focus alternatives, so we will zoom in on this aspect. Notice that this alternative version of the theory is more economical in that focus alternatives would carry less information, given that a linguistic expression carries its meaning under its sleeve. In other words, the focus alternatives we assumed could be understood as carrying two pieces of information, propositions and how they are linguistically encoded. We will argue below that this extra information encoded in the focus alternatives is crucial in understanding the restrictions on identification of focus alternatives, so as to motivate our official version of the analysis. The alternative formulation under question is generally less constrained with respect to identification of focus alternatives than the official version of our theory, so it predicts examples like the above to be felicitous, which the original formulation also predicts to be felicitous. In order to adjudicate between the two formulations, we ought to look at examples that the original formulation predicts to be infelicitous.

A case in point is the very first example. Assuming the speaker and hearer are not having dinner in New York, (2) is infelicitous out of the blue. Our original explanation is that since no alternative proper names particularly stand out and third-person pronominal alternatives are unusable without discourse antecedents, the hearer cannot find the intended set C of alternatives. In the current alternative formulation, the

hearer knows that C is a subset of (35). In the absence of any further information, one could say that the hearer fails to identify C. Then, the observation that (2) is infelicitous out of the blue seems to be explained. However, what if there is some additional information?

Let us add a piece of information to the out-of-the-blue context and see what happens. For example, suppose that it is common knowledge between the speaker and hearer, that the speaker lives with their partner (and no one else). Call her Dora, but to keep the context as neutral as possible, let's also assume that the hearer doesn't know her name. Observe that even with this change to the context, (2) stays infelicitous. However, this infelicity is not straightforwardly explained by the alternative formulation under discussion. Recall that for (14), we assumed that the hearer can make use of the fact that the speaker is very likely to be knowledgeable about whether or not their abstract has been accepted, which singles out one member of (36). Then, similar reasoning should be available in the current example too. It is already known in the context that the speaker is not having dinner in New York, so the proposition that the speaker is having dinner in New York is definitely not a relevant focus alternative. However, there is one proposition that the speaker is very likely to be knowledgeable about, namely, the proposition that Dora is having dinner in New York. Then the hearer should be able to reason that this presupposition is the intended focus alternative.

In our original formulation, too, this overgeneration problem could potentially arise, because, again, the propositional contents of the focus alternatives are in principle available in both versions of the theory, and the focus alternative "Dora is having dinner in New York now" could be made more salient than other possible focus alternatives for the same reason. However, crucially, we have a way to prevent it. If the hearer does not know the name of the person in question is Dora, then the speaker certainly cannot expect the hearer to identify the alternative containing *Dora* as the relevant one. Furthermore, even if the hearer knows the name and that is common ground, in the context under discussion, Dora has not been mentioned at all, and thus the proper name *Dora* is no more likely to be relevant than other proper names. Furthermore, if this expression is known to be very frequently used in conversation between the speaker and hearer, identification is predicted to be possible, and it is, as we discussed for (15).

4.4 Comparisons with the previous theories

Lastly, we would like to highlight aspects of our proposal that distinguish it from the previous analyses we discussed in the first half of the paper.

Recall that one major issue for Ruys (2015) is that the additive presupposition is plainly existential, which is problematic given that accommodation of the additive presupposition results in accommodation of a stronger proposition. For us, the additive presupposition involves *de re* existential quantification over alternatives, which typically express singular propositions, so we do not run into the same issue. Also, for Ruys (2015), the crucial constraints that explain infelicitous out-of-the-blue uses of additive particles have to do with deaccenting, but this was shown to be empirically problematic. For us, the constraints have to do with the identifiability of intended focus alternatives.

The anaphoric approach postulates an anaphoric component in the additive presupposition to account for infelicitous out-of-the-blue uses of additive particles. As we saw in the previous section, however, anaphora is more heavily constrained than out-of-the-blue uses of additive particles. In certain parts of our analysis, anaphora plays a role, namely, for alternatives that involve third-person pronouns, but not all alternatives do. This flexibility was shown to explain why additive particles can be sometimes used felicitously out of the blue.

5 Additive particles associating with quantifiers

In this section, we will discuss an interesting class of examples where the focus associate of the additive particle is a quantifier. An anonymous reviewer raised related examples as a challenge specifically for our theory, but as we will argue immediately below, they are in fact problematic for all the theories of additive particles. We cannot provide a full solution to this problem in this paper, but we will propose a novel empirical generalisation and suggest the possibility that the generalisation stems from a general constraint on focus alternatives that applies equally to all focus-sensitive phenomena, and hence is not specific to additive particles. If this idea is on the right track, our account would offer a particularly natural explanation of the puzzle, given the central role of focus in our theory. That being said, it should be remembered that the discussion in this section is not meant to be an argument for our theory over its alternatives, as we have already discussed our main criticisms in previous sections.

5.1 Cross-categorical additivity

Let us start with the undeniable fact that an additive particle can associate with all sorts of words and expressions. For instance, (37) is a case where the focus associate is a verb (phrase).

(37) James danced, and he sang$_F$, too.

We can analyse (37) with the relevant focus alternatives involving different verbs, rather than DPs.

Examples like (37) need to be accounted for under any theory of additive particles, and the theories we have discussed can all deal with them. For instance, if we are to extend Ruys's existential analysis to it, the existential presupposition will be over verb denotations, and if we are to extend the pronominal anaphora analysis to it, the pronominal component will refer to a predicate (or property). Similarly, the propositional anaphora analysis will postulate a propositional anaphora to a proposition that is 'parallel' to the proposition that James sang, e.g., the proposition that James danced in the case of (37).

Similarly, there are examples where the additive particle associates with a quantifier and the relevant focus alternatives are other quantifiers. For instance, consider (38).

(38) You can make this dessert with one egg. You can make it with [no animal product]$_F$, too.

Since *no animal product* is irreducibly a quantifier, its focus alternatives are expected to be quantifiers too. In fact, if its focus alternatives were individuals in this example, the additive presupposition would require there to be a particular individual that you can make the dessert with, but the example stays felicitous even if we expect there to be no such individual. We therefore take this example as showing that the additive presupposition of the second sentence can be computed based on other quantifiers as alternatives.

Note that we are not excluding the possibility that the additive presupposition can also be about an individual, although this reading would perhaps not be very natural for this particular case. It will be convenient to give labels to these (purported) readings of the additive presuppositions, so let us call them a *quantificational additive presupposition* and an *individual additive presupposition*.

Under our theory, these two types of additive presuppositions for this example can be characterised as follows. The quantificational additive presupposition would involve a focus alternative derived from the second sentence of (38) by replacing *no animal product* with another quantifier. In this particular case, the quantificational additive presupposition computed with the focus alternative "You can make it with one egg" will simply be satisfied in the utterance context of the second sentence, thanks to the assertion of the first sentence. This accounts for the most natural interpretation of the example, at least in contexts where nothing else is assumed. The individual additive presupposition, on the other hand, would involve a focus alternative derived by replacing *no animal product* with some referring DP. Since we did not provide contextually salient DPs in this example, one possibility is to use a pronoun *it* and derive the additive presupposition "You can make it with it". In order to resolve the pronominal anaphora, it would be necessary to read the first sentence while *one egg* taking scope over *can*. It seems to us that this reading does exist, but it is arguably not a very natural interpretation for this example. However, as we will discuss below, for other examples, such an individual additive presupposition is the only available reading, and they will therefore provide more convincing evidence for this reading.

It should also be pointed out that the other theories we discussed can account for (38) as well. Specifically, under Ruys's existential analysis, one could assume that the existential quantification in the presupposition can be over quantifiers. For the example at hand, the existential presupposition will be that for some quantifier Q distinct from the denotation of *no animal product*, the dessert in question can be made with Q, which is simply satisfied when the second sentence is uttered, thanks to the first sentence. The individual additive presupposition could potentially be derived if we assumed that the existential quantification can also be over individuals. Turning now to the pronominal anaphora analysis, all one would have to assume in order to explain a quantificational additive presupposition is that the anaphoric presupposition would contain an anaphora to a quantifier. In the case of (38), the pronominal anaphora can be resolved to the salient quantifier denoted by *one egg*, and the additive presupposition will be satisfied. The propositional anaphoric analysis will be able to account for (38) without any additional assumption: the additive presupposition will require another proposition parallel to the one that the additive particle modifies, and there is indeed a suitable antecedent for it in (38), namely the proposition the first sentence expresses.

5.2 A remark on distinctness

Before discussing the puzzle, we would like to make a technical remark. Recall that according to our analysis, the additive presupposition of ϕ *too* is computed with respect to a particular focus alternative ψ to ϕ such that ψ does not contextually entail and is not contextually entailed by ϕ, rather than ψ that is merely distinct from ϕ. This stronger distinctness condition is necessary, in order to account for the infelicity of additive particles in examples like (39).

(39) Viola ordered the only vegetarian dish on the menu. She ordered [a cauliflower steak]$_F$ (#too).

Since *a cauliflower stake* is distinct, both syntactically and semantically, from *the only vegetarian dish on the menu*, if what is required were simply that the focus alternative be distinct in some way, "She ordered the only vegetarian dish on the menu" should be able to be a legitimate, contextually relevant focus alternative here, and the additive presupposition it gives rise to should be simply satisfied. Our formulation, on the other hand, correctly predicts the additive presupposition to fail here. Specifically, if the only vegetarian dish on the menu were in the domain of quantification of *a cauliflower steak* in the second sentence (and this dish was a cauliflower steak), then the focus alternative "She ordered the only vegetarian dish on the menu" would contextually entail the sentence "She ordered a cauliflower steak", violating our distinctness presupposition. By contraposition, if the additive presupposition is to be satisfied, it must be the case that the only vegetarian dish on the menu is excluded from the domain of quantification of the indefinite *a cauliflower steak*. However, this would entail that Viola ordered two vegetarian dishes, which contradicts what the first sentence says. Hence the infelicity of the example.[11]

[11] It should also be remarked that the argument here for the distinctness condition based on contextual entailment is independent from our theory of additive particles and a comparable condition would be required under any theory to correctly rule out the use of *too* in (39). Take Ruys's existential analysis, for example. If the existential additive presupposition of this sentence were simply "There is a quantifier Q distinct from the denotation of *a cauliflower steak* that maps the predicate of having been ordered by Viola to truth", then it should be satisfied by the first sentence, because the quantifier denotation of *the only vegetarian dish on the menu* should be able to serve as a witness for this existential statement, and the additive presupposition is wrongly predicted to be satisfied (note that the deaccenting should also be licensed here). Thus, under this analysis, too, the additive presupposition needs to mention a stronger distinctness condition, as in "There is a quantifier Q that does not contextually entail and is not contextually entailed by the denotation of *a cauliflower steak* and that maps the predicate of having been ordered by Viola to truth". Essentially the same remarks apply to the anaphoric approach: the anaphora needs to be resolved to a quantifier or a proposition that does not contextually entail and is not contextually entailed by what is uttered. We would like to thank the same anonymous reviewer we alluded to above for pressing us to explain this point.

They also pointed out a potentially problematic example from Ruys (2015, p. 346):

(i) Surely, if all members of A are divisible by x, then the smallest member of A is divisible by x, too.

In a discourse context where it is commonly known that $A \neq \emptyset$, the relevant focus alternative "they are divisible x" where *they* refers to the members of A, would contextually entail "the smallest member of A is divisible", but arguably that is the intended focus alternative here. Why this is allowed in this case, but arguably not in other cases, remains an open question here, but we should note that this is an issue for all

5.3 The puzzle of quantificational focus alternatives

As we saw above, (38) clearly has a reading with a quantificational additive presupposition, and all the theories we have been discussing can accommodate such cases (with or without minor modifications). However, an interesting puzzle arises examples like (40).[12]

(40) No girls are hungry. #[Some boys]$_F$ are (hungry), too.

The use of the additive particle here is comparable to (2) in that out of the blue, the sequence of sentences in (40) is infelicitous, which indicates that the first sentence cannot give rise to an intermediate context that licenses the use of the additive particle. The observed infelicity of (40) poses an issue for all the theories under consideration: roughly, given the way they derive quantificational additive presuppositions for cases like (38), they have nothing that prevents them from assigning to (40) a reading with a quantificational additive presupposition, but then they will wrongly predict it to be felicitous, given the first sentence. Let us discuss this issue in more detail for each theory in turn.

First, under our theory, *no girl* should be a legitimate focus alternative to *some boys* in this context, not only because the former is derivable from the latter by lexical substitution alone, but also because it is fairly easy to identify it as a salient and contextually relevant alternative in this context. With the focus alternative, "No girls are hungry", the quantificational additive presupposition will simply be satisfied, due to the first sentence, so the example is wrongly predicted to be felicitous.

Second, for Ruys's existential analysis, the quantificational additive presupposition will be simply that there is a quantifier Q distinct from the denotation of *some boys* that maps the predicate of being hungry to truth. Since this presupposition is satisfied, with the denotation of *no girl* being the witness for it. Also, there should be no issue with deaccenting, thanks to the first sentence, so this theory also wrongly predicts the example to be felicitous.

Third, for the pronominal anaphoric analysis, the quantificational additive presupposition has an anaphoric component to be resolved to a salient quantifier, and there is indeed a contextually salient quantifier that should satisfy the additive presupposition, namely, the denotation of *no girls*.

Fourth, for the propositional anaphoric analysis, the propositional anaphora is to be resolved to a proposition that is parallel to the proposition that there are hungry boys. Whether the denotation of the first sentence should qualify as a parallel proposition depends on one's definition of 'parallel', but it would not be easy to rule it out on this basis, it seems to us. That is, unlike in the case of, say, "#James is not hungry, but Katie$_F$ is, too", which is infelicitous out of the blue, the two sentences are

theories of additive particles, given the discussion above. Also, we think that solving this issue will only come about by understanding why this whole conditional does not (always) sound trivial. Perhaps in some discourse contexts, but not in others, triviality is computed with respect to some notion of 'implication' such that the antecedent of (i) does not 'imply' the consequent, despite the contextual entailment that holds when $A \neq \emptyset$. Once we have such a notion of implication, we could use it to state the distinctness condition for additive particles, but this is an issue for another occasion.

[12] We thank the aforementioned anonymous reviewer for drawing our attention to this puzzle. To the best of our knowledge, the puzzle has never been previously discussed in published work.

identical except for the focussed phrase in the second sentence, so (40) is closer in structure to "James is hungry, but Katie$_F$ is, too", which is felicitous out of the blue. Some versions of this theory (e.g., Beaver and Zeevat 2007; Tonhauser et al. 2011) are more explicit about the parallel relation, and require the antecedent proposition to be a partial answer to the same question under discussion (QUD) in the discourse that the sentence that the additive particle modifies is a partial answer to. According to this idea, too, one can think of a QUD that both sentences in (40) are partial answers to, e.g., the question about which quantifiers map the predicate of being hungry to truth. Certainly, this is not the only QUD that the second sentence of (40) can be a partial answer to, but the point is that this problematic QUD needs to be somehow ruled out, in order to account for the infelicity of (40) under this theory, and that is not trivial.

Note that essentially the same issue arises with examples like (41).[13]

(41) No girls are hungry. #James$_F$ is (hungry), too.

Under our theory, there is a contextually salient expression, namely *no girls*, that we can use to form an alternative sentence to the second sentence here and the additive presupposition it gives rise to will simply be satisfied. For Ruys's (2015) existential analysis, on the other hand, one might wonder if it predicts a quantificational additive presupposition for this example at all, given that what is in focus is a referring term. If not, there will certainly not be an issue, as the individual additive presupposition will not be satisfied by the first sentence. Unfortunately for Ruys, however, there are independent reasons to believe that proper names can have quantificational denotations. For instance, proper names and quantifiers can be conjoined as in *no girl and James*, *no boy or Katie* (see, e.g., Winter 2001), which suggests that the denotations of quantifiers and proper names are of the same type. Furthermore, a case that is more directly relevant for us is given in (42).

(42) You can play this game with a friend from school, but remember, you can play it with [James]$_F$, too.

As in the case of (38), let us focus on the interpretation of the first sentence where *a friend from school* takes scope below *can* and is understood non-specifically, in order to rule out the reading with an individual additive presupposition. We observe that even with this understanding of the first sentence, the sentence does not incur infelicity comparable to (41). This must be because the second sentence here can receive a reading with a quantificational additive presupposition.[14] Then, there is no reason why the second sentence of (41) cannot receive a quantificational additive reading, and in that case, the theory will fail to capture its infelicity. The problem for

[13]The same anonymous reviewer that we mentioned above raised a case like this as a problem for our theory, but as we argue here, it is equally problematic for the other theories we are considering as well.

[14]The standard account of these facts makes use of the fact that the domain D_e of individuals ($a \in D_e$) is isomorphic to the domain of ultrafilters on D_e ($\{ S \subseteq D_e \mid a \in S \}$), and ultrafilters can be seen as generalised quantifiers ($\lambda P_{\langle e,t \rangle}.\ P(a)$). This means that model-theoretically, individuals ($a \in D_e$) and their 'Montague-lifts' ($\lambda P_{\langle e,t \rangle}.\ P(a) \in D_{\langle \langle e,t \rangle,t \rangle}$) can be seen as the 'same thing', and one could even assume that proper names and other 'referring expressions' always have quantificational denotations, as in Montague (1973) (although his quantifiers are intensionalised).

the anaphoric approach will be analogous to this, but to save space, we will omit the details.

Even if one is not completely convinced by the discussion on proper names here, (40) will remain as an issue to be accounted for and more straightforwardly illustrate the puzzle we are after, so we will only consider below examples where quantifiers are in focus. Also, we will only discuss our theory from now on, as we have now achieved the goal of presenting the puzzle as a general problem for all theories of additive particles, and we already raised independent criticisms against the previous theories earlier in the paper.

5.4 A generalisation

To restate the main puzzle, (38) shows that readings with quantificational additive presuppositions exist, but (40) only receives a reading with an individual additive presupposition, despite the fact that both cases involve quantifiers in focus. This means that there are two types of cases with additive particles associating with quantifiers with respect to the availability of quantificational additive presuppositions. We cannot provide a full explanation in this paper, but we propose the following descriptive generalisation.

(43) Let ϕ contain a focussed quantificational DP Q that associates with the additive particle *too* in $\ulcorner \phi$, *too*$\urcorner$. $\ulcorner \phi$, *too*$\urcorner$ has a reading with a quantificational additive presupposition if there is a scopal phrase taking scope between Q and *too*.

We say that a phrase is scopal if there is at least one quantifier whose meaning does not commute with it, i.e., the overall truth conditions change depending on whether the quantifier takes narrow or wide scope with respect to it.

Let us first see how the generalisation in (42) applies to (38) and (40). In (38), there is a scopal element, namely, the modal *can* between the focussed quantifier *no eggs* and *too*. As our generalisation says, in such a case, the sentence can receive a reading with a quantificational additive presupposition. By contrast, in (40) there is no scopal element occurring between the quantifier and *too*.

One prediction of our generalisation is that by inserting an operator between the quantifier and the additive particle should improve the acceptability of (40). This prediction is borne out, as demonstrated by the examples in (44).[15]

(44) a. Katie thinks that some girls are hungry. She thinks that [no boys]$_F$ are (hungry), too.
b. Katie doubts that no girls are hungry. She also doubts that [some boys]$_F$ are (hungry).

[15] Here and the following, we avoid *either* as an additive particle, because Rullmann (2003) presents convincing evidence that *either* takes scope under the negative operator that licenses it, rather than above it, and proposes to analyse it with a different lexical entry from *too*. In some cases, there seems to be a strong preference for *either* over *too*, and such examples are excluded from the discussion here. Also, we use *also* in (44b) and (44c), in order to better control for its scope, as postposed *too* could take scope within the embedded clause, unlike in (44a), where an analogous low scope reading would be blocked by the strong preference for *either*.

That these sentences have readings with quantificational additive presuppositions can be argued for in the same way as for (38), but we will omit discussion here to save space.

5.5 Other focus-sensitive particles

To repeat, we cannot provide a theoretical explanation as to why the restriction on the availability of quantificational additive presuppositions as stated in the above generalisation exists. Nor do we mean to use this generalisation to construct an argument for our theory of additive particles. However, we would like to point out that the generalisation about the availability of quantificational additive presuppositions can be seen as part of a more general phenomenon that constrains focus alternatives, which is particularly harmonious with our theory.

First, let us consider (45), which contains an exclusivity particle, *only*, whose semantic function is to negate the contextually relevant focus alternatives (see Sect. 6 for detailed discussion).

(45) Katie doubts that no girls but some boys failed. Berit only doubts that [some boys]$_F$ failed.

The second sentence of this example can be read as entailing that Berit does not doubt that no girls failed, i.e., she thinks all girls passed. This is naturally explained with the focus alternative that *only* negates being "Berit doubts that no girls failed", which can be derived from the prejacent by lexical replacement of the phrases in focus.

A comparable reading is, however, absent in (46).

(46) Last year, no girls but some boys failed. #This year, only [some boys]$_F$ failed.

The second sentence of this example cannot be read as entailing that some girls failed this year, but this should be a possible reading if the focus alternative that *only* negates could be "(This year) no girls failed". Rather, the actually observed reading for the second sentence entails that the other people did not fail, and hence all the girls did pass. This, however, would render the second sentence unacceptable, arguably due to the lack of an additive particle like *again*, given that the two sentences would mean essentially the same thing, except for the time adverbial, and indeed, the acceptability of the sentence improves with an additive particle. This reading could be derived by negating two quantificational alternatives "(This year) all boys failed" and "(This year) some girls failed" but that would leave unexplained why "(This year) no girls failed" cannot be a relevant focus alternative in this example. On the other hand, the lack of this reading would follow if we assumed that the alternatives to *some boys* in this example have to be referring expressions, similarly to the case of examples that only have individual additive readings.[16] We thus take the infelicity of the second

[16]We cannot negate alternatives with proper names, as the uttered sentence does not identify the students. Rather the relevant alternative expressions would have to be expressions like *the other boys*, *the girls*, *the other students*, etc. However, one might find the use of *other* a bit dubious, as it is not particularly salient in this context and it increases the structural complexity. In a syntactic framework that assumes

sentence of (46), as well as the improved acceptability of the version of the example with *again*, as evidence that this quantificational focus alternative is blocked in this example, unlike in (45).

The above observation suggests that there is a constraint on the availability of quantificational focus alternatives for *only*, similarly to what we observed with *too*. We in fact suggest that it is the same constraint that is responsible for this observation about exclusivity particles like *only* and the earlier observation about additive particles like *too*. The primary motivation for this proposal comes from the fact that in examples containing additive particles that allow for quantificational additive presuppositions, replacing the additive particle with *only* will yield a reading that negates a focus alternative with a quantifier, but not in examples that do not have quantificational additive presuppositions. This is illustrated by the examples in (47), which are of the former kind, and those in (48), which are of the latter kind.[17]

(47) a. You can only make this dessert with [no egg]$_F$.
b. There is only a cage with [two dogs]$_F$.

(48) a. Only [some boys]$_F$ are hungry.
b. This cage only has [two dogs]$_F$.

We will therefore re-state our descriptive generalisation in such a way that it applies to all cases of focus-sensitive particles:

(49) Let ϕ contain a focus-sensitive particle α and a focussed quantificational DP Q that associates with α in ϕ. ϕ has a reading where α operates on focus alternatives containing quantificational alternatives in place of Q if there is a scopal phrase taking scope between Q and α.

This generalisation predicts that the interpretations of other focus particles like *at least* and *even* will also be constrained in the same way, and we believe so, but there are some additional complications with these particles that makes it difficult to obtain straightforward evidence. For reasons of space, we will omit details.

covert movement of quantifiers, there is another way of deriving the non-quantificational reading, which is to associate *only* with the trace of the covertly moved *some boy* (cf. Erlewine 2014; Erlewine and Yoshitaka 2018). The trace for quantifiers are (or can be) referring expressions, and their focus alternatives will be simply variables that refer to other contextually relevant people (including the girls in the case of the example under discussion). In this connection, it should be noted that the second sentence of (45) presumably may receive a reading that involves referring expressions in the negated focus alternatives as well. This reading, however, would obligatorily involve a specific reading of *some boys* (cf. the same example with *most* in place of *some*, which lacks such a specific reading). Theoretically, this is either because the anaphoric component of the meaning of *other* in the focus alternative "Berit doubts that the other students failed" would require that, or because in order for *only* to operator on the focus alternatives of the trace of *some boy*, the former needs to be in the scope of the latter.

[17] Note that readings involving quantificational focus alternatives should abide by the same pragmatic conditions as for readings involving referring focus alternatives, which we amply discussed in the preceding sections. In particular, we do not expect the former to be felicitous out of the blue, so (47) should be judged at least against contexts where identification of contextually relevant quantificational focus alternatives succeeds. Specific examples are omitted here, to save space. In addition, the focus alternatives obviously must be compatible with the inference that *only* generates, which often has a scalar flavour (see Coppock and Beaver 2014; Alxatib 2020).

5.6 Section summary

To summarise this section, we discussed the puzzle of focus alternatives involving quantifiers, which we argued is a puzzle for all theories of additive particles, and is part of a more general restriction that constrains the range of legitimate focus alternatives. We did not provide a theoretical explanation as to why such a restriction exists, but we put forward a descriptive generalisation in (48). Importantly for the present paper, with the restriction behind this generalisation, the puzzle ceases to be an issue for our theory of additive particles; or for its competitors, for that matter, as long as they make reference to focus alternatives (as they should).

6 Other focus-sensitive particles

In this section, we will provide further empirical support for our idea that the conditions on out-of-the-blue uses of additive particles have to do with identifying contextually relevant focus alternatives by examining other focus particles, whose interpretation should also involve the same interpretive process.

6.1 Only

The semantics of *only* is standardly characterised as follows (see, e.g., Fox and Katzir 2011; Coppock and Beaver 2014; Alxatib 2020 for more sophisticated analyses). To keep the exposition simple, we treat *only* as a sentential operator (cf. Horn 1969).

(50) a. The semantic presupposition of $[\![\text{only}_C\ \phi]\!]$ is the grand conjunction of the following propositions.
   (i) $g(C) \subseteq \text{FocAlt}(\phi)$ and $\phi \notin g(C)$.
   (ii) $|g(C)| > 0$.
   (iii) the conjunction of the at-issue meaning and semantic presupposition of $[\![\phi]\!]^g$.
   (iv) the semantic presupposition of $[\![\psi]\!]^g$, for each $\psi \in g(C)$ that is (Strawson) non-weaker than ψ.

   b. The at-issue meaning of $[\![\text{only}_C\ \phi]\!]$ is that the at-issue meaning of $[\![\psi]\!]^g$ is false for each $\psi \in g(C)$ that is (Strawson) non-weaker than ψ.

Since the technical details are not so important for us, we will not explain or motivate all these aspects of the meaning of *only* here. Rather, what is important is that it is crucial to identify the correct value of C in order to understand a statement like (51).

(51) Only Katie_F is having dinner in NY now.

Note that this example seems to be much more felicitous than (2) in an out-of-the-blue context. One crucial difference from (2) is, however, this time, that the reading computed with the following set of focus alternatives will yield a presupposition that is satisfied in a context where the speaker and the hearer are *not* having dinner in New York.

(52) {⌜We are having dinner in New York now⌝}

Additionally, the presupposition that Katie is having dinner in New York needs to be accommodated, but that shouldn't cause any issue. The assertive meaning is predicted to be not informative here, but such non-informative utterances are arguably not always infelicitous (Sudo 2017). Also whether the truth of the prejacent is really a presupposition, as in (50a-i), or not, has been very controversial (von Fintel and Iatridou 2007; Beaver and Clark 2008; Ippolito 2008; Coppock and Beaver 2014; Panizza and Chierchia 2019; Alxatib 2020; Alonso-Ovalle and Hirsch 2022). Therefore, that (51) sounds more felicitous out of the blue than (2), against the assumption that the speaker and hearer are not having dinner in New York is as expected under our theory.

Rather, what is crucial for the discussion here is the context where the speaker and hearer *are* having dinner in New York now. In that case, we observe that (51) is infelicitous. We can explain this as follows. In this context, the value of C in (52) cannot be what the speaker intends, because the reading derived with it is false. The hearer needs to find another value, but in the absence of further information, this is not possible, similarly to (2). In fact, it seems to us that the nature of infelicity is very similar between these two examples, as expected under our theory.

Incidentally, when associating with scalar items, as in (53), *only* generally is felicitous out of the blue.

(53) a. Only some$_F$ of the linguists are rich.
b. Only three$_F$ abstracts were rejected.

We can explain this observation as well. These scalar items are (very likely to be) associated with particular scales, namely, *some* naturally contrasts with *all* (and perhaps also with *most*) and *three* with other numerals, and since this is common knowledge among competent speakers, it is reasonable for the speaker to assume that the hearer can identify relevant alternatives even in out-of-the-blue contexts.

6.2 Even

Roughly "Even ϕ" has a scalar presupposition that "ϕ" is less likely or more noteworthy than its alternatives (see Karttunen and Peters 1979; Rooth 1985; Kay 1990; Wilkinson 1996; Herburger 2000; Crnič 2011; Francis 2018; Greenberg 2018). In addition, *even* often also triggers an additive presupposition. There is a debate as to whether or not the additive presupposition can be absent at all, and if yes, when (Rullmann 1997; Crnič 2011; Francis 2018. We will not be able to solve this question here, but the fact that (54) is not so infelicitous out of the blue suggests that its additive presupposition can be absent (but see Francis 2018), since if it had to have an additive presupposition, it should be as infelicitous as (2).

(54) Even Katie$_F$ is having dinner in New York now.

There is still a scalar presupposition to be accommodated, but intuitively, the indexical one that is computed with respect to (52) seems to be naturally accommodated when (54) is used out of the blue. Notice importantly that the inference is not about the truth of an alternative, so whether the speaker and/or hearer are actually having

dinner in New York is not relevant, but it should be noted that this example perhaps sounds less straightforwardly acceptable out of the blue than (2) if the speaker and hearer are having dinner in New York, but that is in line with our account. That is, there is a non-trivial scalar presupposition to accommodate in the cases of (54), whereas the additive presupposition of (2) is already satisfied and needs no accommodation.

To give further credence for this analysis, it is instructive to look at other languages. For instance, Hungarian has a scalar particle, *még...is* that is always associated with an additive presupposition. As expected, (55) is as infelicitous as the Hungarian translation of (2) in (56) in out-of-the-blue contexts where the speaker and hearer are not having dinner in New York.

(55) Még Katie is New York-ban vacsorázik.
Even Katie too New York-in has.dinner
'Even Katie is having dinner in New York.'

(56) Katie is New York-ban vacsorázik.
Katie too New York-in has.dinner
'Katie, too, is having dinner in New York.'

Conversely, *-(de)sae* in Japanese does not seem to be associated with an additive presupposition, and the following sentence is not as infelicitous out of the blue as the Japanese translation of (2) in (58), and its most natural interpretation of the scalar presupposition is about the speaker and/or hearer (or a more general group that could be referred to by *we*), as predicted by our analysis.

(57) Katie-desae Nyuu Yooku-de yuuhan-o tabeteimasu.
Katie-even New York-in dinner-ACC is.eating
'Even Katie is having dinner in New York.'

(58) Katie-mo Nyuu Yooku-de yuuhan-o tabeteimasu.
Katie-too New York-in dinner-ACC is.eating
'Katie, too, is having dinner in New York.'

6.3 At least

Finally, *at least* also triggers a scalar inference but its scalar inference is about the opposite end of the scale, in comparison to *even* (Krifka 1999; Coppock and Brochhagen 2013; Schwarz 2016; Mendia 2018; Donáti and Sudo 2021). We observe that the sentence in (59) is infelicitous out of the blue if the speaker and hearer are having dinner themselves at the utterance time, similarly to (51).

(59) At least Katie$_F$ is having dinner in New York now.

Our analysis can account for this observation as follows. A sentence like this has an epistemic reading and a concessive reading (Grosz 2011, 2012; Biezma 2013). Under the concessive reading, the scalar inference amounts roughly to that there is a relevant focus alternative that is actually false, but it would have been better than what is asserted, had it been true. Since "We are having dinner in New York now"

is true, this is clearly not a relevant focus alternative. In the absence of any other information, the hearer won't be able to identify relevant focus alternatives, and hence infelicity ensues. Likewise, under the epistemic reading, the scalar inference is about the speaker's ignorance about the truth of relevant focus alternatives and says that the asserted proposition is the one that the speaker is most sure about. In the context under consideration, the speaker clearly knows that "We are having dinner in New York now" is true, so this is not a relevant focus alternative. Then, again, the hearer cannot identify relevant focus alternatives for the same reasons as in the case of (51).

What about a context where the speaker and hearer are not having dinner in New York? Then the sentence becomes much more acceptable out of the blue. We can explain this as well. In this case, the same alternative containing *we* in place of *Katie* would give rise to a reasonable scalar inference under the concessive reading, although the epistemic reading should stay infelicitous, as the alternative is known to be not true. That is, the concessive inference would amount to that "We are having dinner in New York now" is false, but it would have been better, had it been true. This inference is not impossible to accommodate in the given context, and it seems to us that the acceptability is indeed comparable to the case of *even* discussed above.

Lastly, we observe that when *at least* associates with scalar items, accommodation is generally possible, and our explanation is parallel to the case of *only* with scalar associates. That is, since the intended focus alternatives are obvious in such cases, no difficulty in accommodation in out-of-the-blue context is expected for (60).

(60) a. At least some$_F$ of the linguists are rich.
b. At least three$_F$ abstracts were accepted.

7 Conclusions

Kripke's (2009) idea of anaphoric presupposition has been influential, but as Ruys (2015) points out, it is not without empirical problems. In particular, it tends to undergenerate, as it predicts that the conditions on uses of additive particles to mirror the conditions on pronominal anaphora, which are very strict. On the other hand, Ruys's (2015) existential analysis tends to overgenerate, as its existential additive presupposition is supposed to be easy to accommodate and the prosodic condition it assumes can be taken care of independently. We put forward a novel theory that strikes a better balance. The innovative aspect of the theory is that an additive particle used out of the blue requires two kinds of interpretive processes, (i) identification of contextually relevant focus alternatives and (ii) evaluation of an additive presupposition based on the focus alternatives so identified, which might result in presupposition accommodation.

Note that our analysis of additive particles does not mean that no presuppositional phenomena involve anaphoric presuppositions. We discuss some relevant cases in the supplementary material.

Supplementary information The online version contains supplementary material available at https://doi.org/10.1007/s11050-025-09233-y.

Declarations

Competing interests The authors declare no competing interests.

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