Choosing additive particles in *wh*-questions

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Leiden Utrecht Semantics Happenings
May 22, 2018

1 Introduction

– ***Additive particles*** are expressions like *also*, *too* and *else* which trigger a so-called ***additivity presupposition***.

(1) a. John danced. Mary danced **too**.
b. John didn't dance. #Mary danced **too**.

(2) a. John danced. Who **else** danced?
b. John didn't dance. #Who **else** danced?

– In English and German the different additive particles differ in their **distribution across sentence types**.

– In **assertions and polar questions**, *also/too* and German *auch* are the standard additive particles:

(3) a. Mary **also** danced. / Maria hat **auch** getanzt.
b. Mary danced, **too**.

(4) a. Did Mary **also** dance? / Hat Maria **auch** getanzt?
b. Did Mary dance, **too**?

– By contrast, in ***wh*-questions**, *else* and German *noch* are prefered:

(5) a. #Who **also** danced? / #Wer hat **auch** getanzt?
b. #Who danced, **too**?

(6) Who **else** danced? / Wer hat **noch** getanzt?

– I will mostly focus on *also* and *else*.

– The aim of the talk is two-fold: (i) to **derive the distributional properties** of *also* and *else*; (ii) to understand how these properties **interact** with certain non-canonical questioning scenarios.

2 Data: showmaster questions and summoning questions

2.1 Showmaster questions

– Umbach (2012) maintains that, whenever German *auch* 'also' is used in a *wh*-question, this question receives a ***showmaster interpretation***: the speaker already **has a particular answer in mind**. Typically she only asks the question to prompt the hearer to **say the answer out aloud**.

– Umbach's example:

(7) [Little Lisa tells her mother what happened when she visited the zoo with Auntie.]
Auntie to Lisa: Und was ist im Zoo auch passiert?
Auntie to Lisa: And what also happened at the zoo?

– Umbach only discusses the German example, but just the **same showmaster interpretation** seems to arise with the **English translation** of (7).

– Other possible scenarios for showmaster questions include oral examinations like (8) or lively story-telling discourses like (9).

(8) [Examiner after student has given an incomplete answer to the question which important events took place in 1776:]
Good, but what ALSO happened in 1776?

(9) Ich stand vor dem Eingang, und wer stand da plötzlich auch?
I was standing in front of the entrance, and who also stood there all of a sudden?
(Reis and Rosengren, 1997, quoted from Umbach 2012)

– In these examples, the additive particles **follow** their associated phrases rather than preceding them.

– Krifka (1998) argues that whenever an additive particle appears in this position, it associates with a **contrastive topic**.

– So, since *auch* in these examples associates with the *wh*-phrase, Umbach concludes that the *wh*-phrase must be a contrastive topic.

– Topics need to be **referential**, but *wh*-phrases are not referential. Umbach suggests that *auch* coerces a referential interpretation of the *wh*-phrase, and that this causes the showmaster effect (also see Grubic, 2017, for an alternative account based on situation semantics).

– We are now going to see some new data challenging this account.

2.2 Summoning questions

– Contrary to what Umbach predicts, **not all** *wh*-questions with *also*/*auch* receive a showmaster interpretation.

– A case in point are a certain class of questions, to my knowledge not discussed in the literature. I will call them ***summoning questions***.

– A summoning question typically is **directly posed to a group of people** with the aim of finding out who of these people have a certain property:

(10) a. Who **also** wants an ice cream?
b. Who is **also** in favor of leaving?
c. Who of you is **also** on Snapchat?

(11) a. Wer will **auch** ein Eis?
b. Wer ist **auch** dafür zu gehen?
c. Wer von euch ist **auch** bei Snapchat?

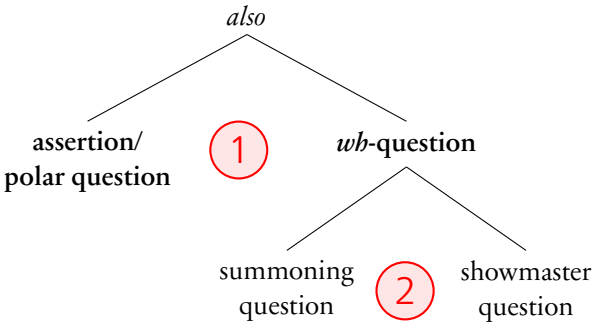
– Summoning questions can host *also*/*auch* **without showmaster effect**. E.g., in (10-a)/(11-a), the question of who wants an ice cream is genuine: the speaker does not have anybody particular in mind.

– By default, the speaker will act as the antecedent for the additive particle (*I'm getting an ice cream—who also wants one?*), but this doesn't seem to be necessary for licensing *also*/*auch*:

(12) I'm getting an ice cream for Lisa. Who of you also wants one?

2.3 The puzzle

– To summarize, this leaves us to grapple with the following pattern.



Remainder of the talk:

- What additivity presuppositions are and how to generalize them
- Puzzle (1)
- Puzzle (2)

– In what follows, I will focus only on English *also* versus *else*, and leave their German counterparts for future work.

3 Background on additivity presuppositions

– Additive particles are **focus-sensitive**: their presupposition depends on the focus structure of their containing sentence.

(13) a. John also gave a DOG to Mary.
⇝ John gave **something other than a dog** to Mary.
b. John also gave a dog to MARY.
⇝ John gave a dog to **somebody other than Mary**.

– We can easily implement this focus-sensitivity in a Roothian alternative semantics:

John also gave a dog to MARY.
⇝ There's a true $p \in [\![\text{John gave a dog to MARY}]\!]^F$ such that $p \neq [\![\text{John gave a dog to MARY}]\!]^0$
EXISTENCE NON-IDENTITY

– It has been suggested in the literature that this formulation falls short, though: both EXISTENCE and NON-IDENTITY have been argued to be **too weak** to capture the empirical picture.

3.1 Existence is too weak

– Kripke (2009) points out that additivity presuppositions are different from many other presuppositions: they can't be **accommodated** or **satisfied by common ground knowledge**.

(14) Sam is having dinner in New York tonight, too. (Kripke, 2009)

– (14) is not acceptable out of the blue.

– But if the additivity presupposition was simply an existential statement, it could easily be accommodated—after all, many people are having dinner in New York every day.

– Rather, additive particles are **anaphoric**: in (14), *too* seems to require that, of some particular individual other than John, it has been **saliently established in the discourse** that they are having dinner in New York tonight.

3.2 Capturing anaphoricity: focus sensitivity via Current Question

- One possible way of capturing this anaphoricity is suggested by Beaver and Clark (2008).
- They model the focus sensitivity of additive particles without directly making reference to focus semantic values.
- Instead, they use a QUD framework: every assertion is taken to address an (explicit or implicit) ***Current Question*** (CQ).
- By **question-answer congruence**, an assertion has focus marking on the constituent corresponding to the *wh*-phrase of the CQ.

(15) [CQ: **What** did Mary give John?]
Mary gave John a [**dog**]$_F$.

(16) [CQ: **Who** gave John a dog?]
[**Mary**]$_F$ gave John a dog.

- This allows B&C to capture the contribution of additive particles in terms of the CQ: they take an additive particle to signal that **a positive partial answer to the CQ has saliently been established** in the discourse.
- For example, in (17), *too* marks that a partial answer to *Who called?* has saliently been established.

(17) [CQ: **Who** called?]
[**Mary**]$_F$ called too.

3.3 Non-identity is too weak

- Jasinskaja and Zeevat (2009) as well as Beaver and Clark (2008) argue that the non-identity condition is too weak.
- In particular, Beaver and Clark (2008) base their criticism on discourses like (18).

(18) a. Sam is [happy]$_F$. #He's also [ecstatic]$_F$. (after Beaver and Clark, 2008)
b. [Sam]$_F$ is happy. #[Sam and Alice]$_F$ are happy too. (Beaver and Clark, 2008)

- These are all cases where the **prejacent of the additive particle entails the antecedent**.[1]
- But with entailment in the **opposite direction** the discourse is degraded too:

(19) a. [Alice and Mary]$_F$ called. #[Mary]$_F$ called too.
b. Sam has a [brother and a sister]$_F$. #He has [siblings]$_F$ too.
c. Sam is [ecstatic]$_F$. #He's also [happy]$_F$.

[1] Note that some but not all of these data can be given an explanation independent of the additive particle: e.g., in (18-a), the prejacent contradicts the implicature of the antecedent. *Sam is happy* implicates that he is nothing more than happy—which means, in particular, that he isn't ecstatic. Indeeed, if the implicature gets **canceled** or **suspended**, entailment is permissible:

(i) Sam is [happy]$_F$. But I don't mean to imply he's not more than that. In fact, he's [ecstatic]$_F$, too.
(ii) [Warning sign in front of roller coaster indicating a minimum height of 1.20m and an optimum height of above 1.30m.] Ah, good. Sam is taller than 1.20. He's also taller than [1.30]$_F$.

Other examples don't seem to improve even when the implicature is absent, but do improve if the additive particle is left out. This suggests that in these cases the unacceptability is due to the additive particle.

(iii) [Sam]$_F$ is happy. But I don't mean to imply he's the only one. In fact, [Sam and Alice]$_F$ are happy (#too).

– One might think that these data can be explained as cases of **redundancy**. But the degradedness seems to **persist** even if we take care to **construct non-redundant discourses**:

(20) a. [Alice and Mary]$_F$ called. This means in particular that [Mary]$_F$ called (#too).
b. Sam has [a brother and a sister]$_F$. That means that Sam has [siblings]$_F$ (#too).
c. Sam is [ecstatic]$_F$. That means that he is (??also) [happy]$_F$.

– Leaving out the additive does seem to improve acceptability though—suggesting that the problem is indeed caused by the additive.

– I conclude that the non-identity condition needs to be **strengthened "into both directions"**: prejacent of the additivity particle and antecedent need to be **logically independent**.

Preview:

- The **non-identity condition** will be work horse of the account.
- **Assertions and polar questions** make exactly one proposition "available", and the non-identity condition requires that the antecedent is logically independent of this proposition. This is easy to satisfy!
- But not for ***wh*-questions**: they make several propositions "available". The non-identity condition requires that the antecedent is independent of all of them. Sometimes this is impossible.
- **Showmaster and summoning questions**, though, make fewer propositions "available" and do so in a way that makes it easy to satisfy the non-identity condition.

4 Lifting the additivity presupposition

– Taking the above findings into account, we will now formulate a **generalized additivity presupposition** that is applicable to additive particles in **assertions as well as in questions**.

– To do so, we will borrow some notions from **inquisitive semantics**.

4.1 Inquisitive semantics

– Why inquisitive semantics? It's not essential here, but it makes it easy to **treat assertions and questions in a uniform way**—which is just what we want.

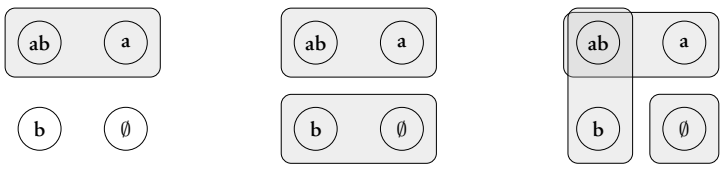
– In inquisitive semantics, declaratives and interrogatives are taken to denote **the same kind of semantic object**, namely a set of propositions.

– These propositions are exactly those pieces of information that **resolve the issue** raised by the sentence. We call them *resolutions*.

– Sentence meanings are always **downward closed**: if a sentence meaning P contains a proposition p, then it also contains all $q \subseteq p$.

– Note that **declaratives** are also taken to raise an issue, namely a **trivial issue**: the information conveyed by the declarative itself is enough to resolve the issue.

– **Examples:**



Ann left. Did Ann leave? Who left?

– What will be relevant for the additivity presupposition are **positive partial resolutions**:

  – A **partial resolution** doesn't have to resolve the issue completely; it's enough if it rules out some alternatives.

    (21) a. **John or Mary will come.** Alice will come too.
    b. **Someone from your soccer team called.** Mary called too.

    For instance, take the issue  . Among its partial resolutions are  ,  and  .

  – A **positive partial resolution** of a polar question is a non-empty resolution corresponding to the *yes*-reply. A positive partial resolution of a *wh*-question is a non-empty partial resolution that entails a *somebody*/*something*-reply.

    (22) a. **John won't come.** #Alice will come too.
    b. **Nobody called.** #Mary called too.

    For instance, take again the issue  . Examples of positive partial resolutions are  ,  and  , but **not**  or  .

4.2 Formal details

– To give a formal definition of positive partial resolution, we need an additional notion, namely that of **highlighting** (see, e.g., Roelofsen and Farkas 2015).

– This notion is used to capture the **semantic objects that a sentence makes salient**:

(23)	a.	Ann watched Psycho.	$\rightsquigarrow \lambda w.W(p)(a)(w)$	0-place property
	b.	Did Ann watch Psycho?	$\rightsquigarrow \lambda w.W(p)(a)(w)$	0-place property
	c.	What did Ann watch?	$\rightsquigarrow \lambda x.\lambda w.W(x)(a)(w)$	1-place property
	d.	Who watched what?	$\rightsquigarrow \lambda y.\lambda x.\lambda w.W(x)(y)(w)$	2-place property

– To **generalize** over these different cases, we view propositions as 0-place properties. A sentence then highlights an ***n*-place property**, where $n \geq 0$ is the number of *wh*-elements in the sentence.

– Let S be a sentence with highlighted property f mapping n-tuples of individuals to propositions. Then the set of positive partial resolutions of the issue expressed by S can be defined as follows (where $^{\downarrow}$ stands for downward-closure):

$$\{\, f(\vec{d_i}) \cup \cdots \cup f(\vec{d_j}) \mid \vec{d_i}, \ldots, \vec{d_j} \in D^n \}^{\downarrow} \setminus \{\emptyset\}$$

4.3 A generalized additivity presupposition

– For implementing the **EXISTENCE condition**, we simply adopt Beaver and Clark's CQ-based solution. I will label the relevant condition **EXISTENCE***.

– Our generalized version of the **NON-IDENTITY condition** will be labeled **NON-IDENTITY***.

– **Generalized additivity presupposition:**

> If an additive particle occurs in a sentence S, this presupposes that:
> – a positive partial resolution p of the CQ has saliently been established, and — **EXISTENCE***
> – there is no positive partial resolution q of S such that $q \subseteq p$. — **NON-IDENTITY***

– Sentence S can be a declarative, a polar interrogative or a *wh*-interrogative. Let's check which predictions the presupposition makes for these different cases.

4.4 Assertions

– Let's consider the example in (24).

(24) [Mary]$_F$ also called.

– Recall that the **CQ** associated with an assertion can be deduced from the assertion's focus structure:

(25) [CQ: **Who** called?]
[**Mary**]$_F$ also called.

– So, EXISTENCE* requires there to be a saliently established positive partial resolution p of *Who called?*.

– The **positive partial resolutions** of (24) are the proposition that Mary called and all subsets of this propositions.

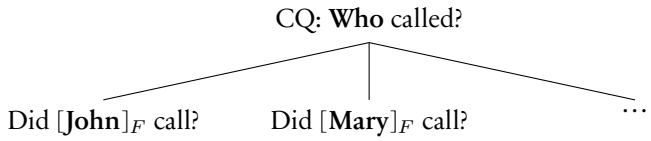
– So, NON-IDENTITY* requires that p is **logically independent** from the proposition that Mary called.

4.5 Polar questions

– Let's consider the example in (26).

(26) Did [Mary]$_F$ also call?

– Observe that (26) is a **subquestion** of the *wh*-question *Who called?*. For this reason, (26) is commonly assumed to be part of a **strategy** for finding an answer to *Who called?*.



– Note that a principle similar to question-answer congruence seems to be in place here: the **focus-marked constituent in the polar questions** corresponds to the *wh*-phrase in the CQ.

– So, an assertion and its corresponding polar question have the **same CQ**.

– An assertion and its corresponding polar question also have the **same set of positive partial resolutions**.

– So, for polar questions the generalized additivity presupposition amounts to the **same as for assertions**.

– That is, (26) presupposes that there's a saliently established positive partial resolution p of *Who called?*, and p is logically independent of the proposition that Mary called.

4.6 *wh*-questions

– The CQ often remains implicit and can only be deduced from the focus structure of assertions. But the CQ *can* also be **asked explicitly**—and it makes sense to assume that this is what (unrestricted) *wh*-questions usually do.

– For instance, I assume that the unrestricted *also*-marked question in (27) is part of a strategy to answer the CQ *Who called?*

(27) [CQ: Who called?]
Who **also** called?

– So, for (unrestricted) *wh*-questions, the **CQ is identical to the question itself**. (We'll get to restricted *wh*-questions in a bit.)

– That means that NON-IDENTITY* is **impossible to satisfy** for these questions.

– To see this, observe that (27) presupposes there is a proposition p such that:

  – p is a saliently established positive partial resolution of *Who called?*, and

  – there is **no** positive partial resolution q of *Who called?* such that $q \subseteq p$.

– There can't be a p satisfying these two requirements.

– **Taking stock:** this explains why *also* in *wh*-questions is degraded. But why is it not degraded in summoning questions? And why is *else* acceptable in *wh*-questions?

– I will argue that in these cases, the overtly asked question and the CQ are **not identical**, but that rather the CQ is a superquestion of the overtly asked question.

5 *else*-questions

5.1 *else* removes the witness

– I suggest that the relevant difference between *also* and *else* is that only *else* is a **modifier of *wh*-/quantificational phrases**: it **removes the witness** of the additivity presupposition from the *wh*-/quantificational domain (Romero, 1998; Harris, 2014; Schwarz, 2017).

– For instance, in (28), Mary gets removed from the *wh*-domain. The resulting question is what Eckardt (2006) calls a ***remnant question***.

(28) A: Mary called.
B: **Who else** called? = **Who other than Mary** called?

– Evidence for this difference comes from the contrast in (29):

(29) I can juggle…
  a. Who else of **us/#you** can juggle?
  b. Who of **#us/you** can also juggle?

– Here, the speaker is the witness. In (29-a), the 'of you'-restriction is bad because the **witness is not in the *wh*-domain** and thus can't be removed by *else*.

– In contrast, the 'of you'-restriction is fine in (29-b) since *also* doesn't remove the witness from the *wh*-domain.

5.2 Witness removal guarantees non-identity

– Let's return to the generalized additivity presupposition:

> If an additive particle occurs in a sentence S, this presupposes that:
> – a positive partial resolution p of the CQ has saliently been established, and — EXISTENCE*
> – there is no positive partial resolution q of S such that $q \subseteq p$. — NON-IDENTITY*

– How does an *else*-marked *wh*-question **relate to the CQ**?

– Since an *else*-question is a subquestion of the **corresponding question without *else***, it is also part of a **strategy** to answer the latter (cf. Eckardt, 2006).

– So, we take an *else*-question to have the corresponding non-*else* question as its CQ:

(30) [CQ: Who called?]
Sam called.
[CQ: Who called?]
Who **else** called?

– So, for *else*-restricted *wh*-questions, the **CQ is different from the question itself**. This means it is possible to satisfy NON-IDENTITY*.

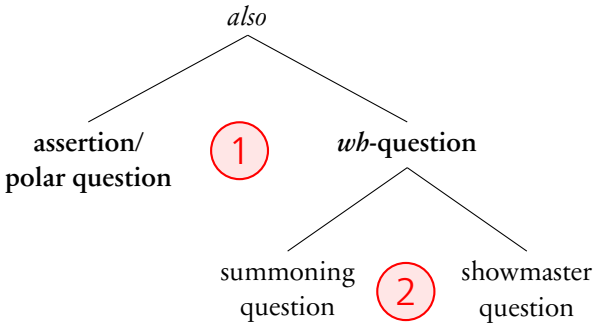
– To see why, consider (30) again, assuming that the domain consists of Mary, John and Sam. The *else* in (30) signals that there is a proposition p such that:

  – p is an already established partial resolution of *Who called?* (=*Who of Mary, John and Sam called?*), and

  – there is **no** positive partial resolution q of *Who else called?* (=*Who of Mary and John called?*) such that $q \subseteq p$.

– A proposition p satisfying these conditions is, e.g., the proposition that Sam called.

To summarize, so far we have accounted for part (1) of the puzzle: the fact that *also* is acceptable in assertions and polar questions, but degraded in *wh*-questions, while *else* in acceptable in *wh*-questions. We move on to part (2).



6 Other ways of guaranteeing non-identity

6.1 Summoning questions

– What saves the day in *else*-questions is the **witness removal**.

– So, we expect *also*-questions in which the witness in not contained in the *wh*-domain to be acceptable as well.

– Indeed, supplying a suitable **overt domain restriction** seems to improve the acceptability of *also*:

(31) John danced all night at Mary's birthday party. Who #(**from YOUR dorm**) also danced?

– In **summoning questions** a suitable restriction doesn't have to be spelled out overtly—it is supplied by the **setup of the context**.

– If a speaker addresses a group using a summoning question, she restricts the *wh*-domain to that group:

(32) I'm getting an ice cream. **Who** (**of you**) also wants one?

– And since that group doesn't contain the witness, NON-IDENTITY* can be satisfied and *also* becomes acceptable.

– But it seems that the acceptability of *also* **improves more** through certain restrictions than others. For instance, the covert restriction in summoning questions seems to work better than the overt one in (32).

– Those restrictions that "work best" have one thing in common: they **guarantee without relying on world knowledge** that the witness is not contained in the *wh*-domain.

– This can happen either through grammaticalized strategies for removing the witness (*else*) or through splitting up a situation into **speaker and hearers** (summoning questions).

6.2 Showmaster questions

– I follow George (2011) in treating showmaster questions as cases of **extreme domain restriction.**[2] The speaker restricts the domain to a **singleton set** containing only that entity she has in mind as an answer.

– (We might want to implement this domain restriction as a presupposition; I leave this open for now).

– George uses a **trivia question** to argue for this treatment:

(33) a. What was considered a sin in the 16th and 17th century?
b. Eating chocolate.

> [T]here are certainly many other things that were considered sins in the centuries in question. (…) we understand [(33-a)] as a question about which activity or activities in some suitably restricted domain was or were considered sinful in the centuries in question. (...) the question becomes a game not of testing our trivia knowledge, but of asking us to guess which sin the author of the question was thinking of.
> (George, 2011, pp.208f)

– Now, what happens if a speaker uses *also* in a question with a thus restricted domain?

– For instance, assume the particular answer Auntie has in mind is that a giraffe stole Lisa's hat:

(34) $[\![\text{What also happened at the zoo?}]\!] = \{\textbf{giraffe-stole-lisa's-hat}\}^{\downarrow}$

– Then, satisfying the generalized addivity presupposition boils down to the following:

  – there's a saliently established positive partial resolution p of the CQ what happened at the zoo, — EXISTENCE*
  – p is logically independent of the proposition that a giraffe stole Lisa's hat. — NON-IDENTITY*

– Satisfying NON-IDENTITY* is **unproblematic** here. So, *also* is acceptable in showmaster questions.

[2] George doesn't explicitly mention the term 'showmaster question,' but discusses special cases of these questions: trivia questions as well as examples like (i), where the speaker has a particular answer to the embedded question in mind.

(i) Do you know what's awesome?

7 Conclusion

7.1 Summary

- Additive particles presuppose that there is a saliently established positive partial resolution of the CQ which satisfies the **generalized non-identity condition**.
- With **assertions and polar questions**, NON-IDENTITY* is satisfiable, while with **run-of-the-mill unrestricted *wh*-questions**, it is impossible to satisfy.
- In order to guarantee NON-IDENTITY* with *wh*-questions, the ***wh*-domain needs to be suitably restricted**. This is what happens, e.g., in summoning questions (domain restricted to hearers) and showmaster questions (singleton domain).

7.2 Future work

- Is *else* even an additive particle? In fact, it doesn't trigger an additivity presupposition when it appears in assertions or polar questions:

  (35) Mary didn't call.
  a. #**Who else** called?
  b. But **someone else** did.
  c. Did **anyone else** call?

- Showmaster questions are not unique to *also*. We seem to get a similar effect with **speaker-oriented adverbs** such as *fortunately* or *surprisingly*.

  (36) a. Fortunately, JOHN taught semantics.
  b. #Did JOHN, fortunately, teach semantics?
  c. #Who, fortunately, taught semantics?

  (37) [A, B and C are talking. A is telling C about something that B already knows. B isn't happy with the way A is reporting the events.]
  B to A: But you have to tell the whole story! What, unfortunately, happened next?

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