Choosing additive particles in *wh*-questions

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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) **derive the distributional properties** of *also* and *else*; (ii) 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).

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

2.2 Summoning questions

– Umbach's generalization is too strong: **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:

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

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

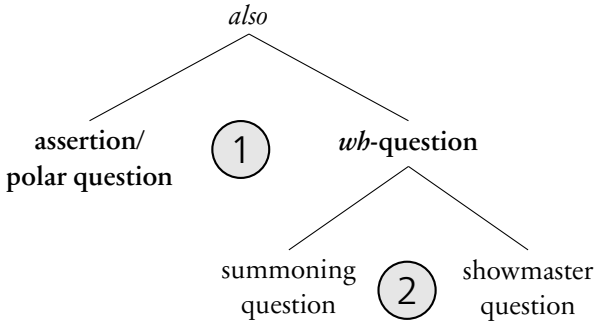
– Summoning questions can host *also*/*auch* **without showmaster effect**. E.g., in (8-a)/(9-a), the question of who wants an ice cream is genuine: the speaker does not have anybody particular in mind.

– 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*:

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

2.3 The puzzle

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



3 Background on additivity presuppositions

3.1 Focus sensitivity

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

(11) 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

3.2 Focus sensitivity via Current Question

– Beaver and Clark (2008) suggest a way of capturing this focus sensitivity in a **QUD-based framework**.[1]

– They assume that every assertion addresses 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.

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

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

– This allows B&C to capture the EXISTENCE condition 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 (14), *also* marks that a positive partial answer to *What did John read?* has saliently been established.

(14) [CQ: **What** did John read?]
John also read [**Middlemarch**]$_F$.

4 Lifting the additivity presupposition

– 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.

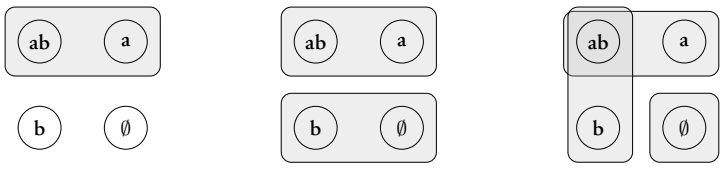
– In inquisitive semantics, declaratives and interrogatives are taken to denote **the same kind of semantic object**, namely a set of propositions.

– 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?

[1] This also captures the anaphoric nature of additive particles, not discussed here (see Kripke 2009).

– 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.

    (15) 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 entailing the *yes*-reply. A positive partial resolution of a *wh*-question is a non-empty partial resolution entailing a *somebody*/*something*-reply.

    (16) 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**:

(17)	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***. Unlike classical NON-IDENTITY, it will be formulated in terms of **logical independence**.[2]

[2] For discussion of this point, see the longer version of this talk at `www.nadinetheiler.net/papers/LUSH_handout.pdf`, as well as Jasinskaja and Zeevat (2009); Beaver and Clark (2008).

– **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 (18).

(18) John also read [Middlemarch]$_F$.

– Recall that the **CQ** associated with (18) is *What did John read?*.

– So, EXISTENCE* requires there to be a saliently established positive partial resolution p of *What did John read?*.

– The **positive partial resolutions** of (18) are the proposition that John read Middlemarch and all subsets of this propositions.

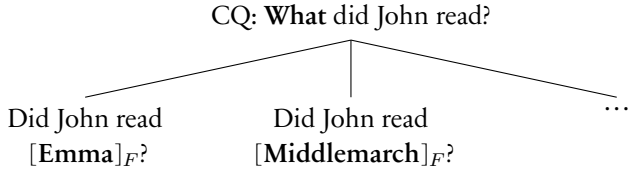
– So, NON-IDENTITY* requires that p is **logically independent** from the proposition that John read Middlemarch.

4.5 Polar questions

– Let's consider the example in (19).

(19) Did John also read [Middlemarch]$_F$?

– (19) can be part of a strategy for for finding an answer to the *wh*-question *What did John read?*. I will assume that this *wh*-question is the CQ of (19).[3]



– A principle similar to question-answer congruence is 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**. This means:

> For polar questions the generalized additivity presupposition amounts to exactly the **same as for assertions**.

– That is, (19) presupposes that there's a saliently established positive partial resolution p of *What did John read?*, and p is logically independent of the proposition that John read Middlemarch.

[3] More work needs to be done to determine when polar questions are part of a strategy to answer a *wh*-CQ, and when they are simply "their own CQ".

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 (20) is part of a strategy to answer the CQ *What did John read?*

(20) [CQ: What did John read?]
What did John **also** read?

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

NON-IDENTITY* is **impossible to satisfy** for unrestricted *wh*-questions.

- To see this, observe that (20) presupposes there is a proposition p such that:
  - p is a saliently established positive partial resolution of *What did John read?*, and
  - there is **no** positive partial resolution q of *What did John read?* 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?
- In these cases, the overtly asked question and the CQ are **not identical**, but 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 (21), Mary gets removed from the *wh*-domain. The resulting question is what Eckardt (2006) calls a ***remnant question***.

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

- Evidence for this difference comes from the contrast in (22):

(22) 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 (22-a), the 'of you'-restriction is bad because the **witness is not in the *wh*-domain** and thus can't be removed by *else*.
- By contrast, the 'of you'-restriction is fine in (22-b) since *also* doesn't remove the witness from the *wh*-domain.

5.2 Witness removal guarantees non-identity

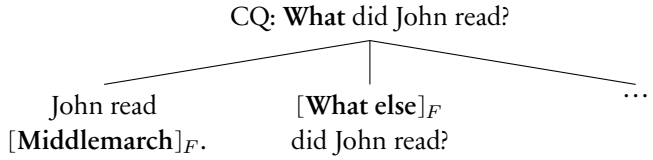
– Let's return to the generalized additivity presupposition:

> If an additive particle occurs in a sentence S, this presupposes that:
> – a positive partial resolution p of the CQ has saliently been established, 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).

– We therefore take an *else*-question to have the corresponding non-*else* question as its CQ:



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

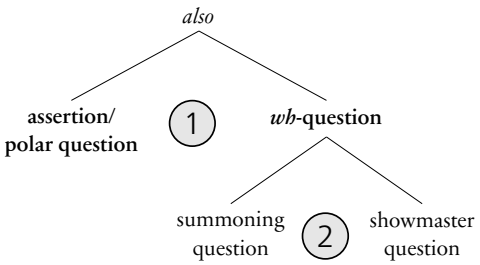
– To see why, consider the question *What else did John read?* again. Assume that the domain consists of Middlemarch, Emma and Frankenstein. The *else* signals that there is a proposition p such that:

  – p is an already established partial resolution of *What did John read?* (=*Which of Middlemarch, Emma and Frankenstein did John read?*), and

  – there is **no** positive partial resolution q of *What did John read?* (=*Which of Emma and Frankenstein did John read?*) such that $q \subseteq p$.

– A proposition p satisfying these conditions is, e.g., the proposition that John read Middlemarch.

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. 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 whose domain doesn't contain the witness to be acceptable as well.

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

(23) 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:

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

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

– But the acceptability of *also* seems to **improve more** through certain restrictions than others. E.g., the restriction in summoning questions seems to work better than the one in (23).

– 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 will base my account of showmaster questions on that of George (2011), who treats similar questions as cases of **extreme domain restriction**:[4] the speaker restricts the domain to a **singleton set** containing only that entity she has in mind as an answer.

– (We might want to allow for restriction to a larger-than-singleton domain. We might also want to implement the domain restriction as a presupposition. I leave this open for now).

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

(25) 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 [(25-a)] as a question about which activity or activities in some suitably restricted domain was or were considered sinful (...) 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:

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

– Then, the generalized addivity presupposition **boils down** to the same as for the **assertion** *A giraffe stole Lisa's hat* or the **polar question** *Did the giraffe steal Lisa's hat?*.

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

[4] 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** NON-IDENTITY*.
- 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

- On closer examination, *else* doesn't look much like an additive particle. E.g., it doesn't trigger an additivity presupposition when it appears in assertions or polar questions:

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

- Additives are not the only elements that are licensed in showmaster, but not in ordinary *wh*-questions. We seem to get a similar effect with **speaker-oriented adverbs** such as *fortunately*.

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

  (29) [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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