

## Contrasting Additives: On Obligatoriness, Coherence and the QUD<sup>†</sup>

### *Introduction (aka. the nutshell)*

**Starting point:** The contribution of additive particles like *also* and *too* is standardly treated as a(n anaphoric) presupposition that there is a salient, distinct alternative to the Focused constituent, as illustrated in (1).

- (1) a. [Marlijn]<sub>F</sub> is in Cologne **too**.  
b. [Marlijn]<sub>F</sub> is **also** in Cologne.  
*asserted:* Marlijn is in Cologne.  
*presupposed:* Someone (salient) other than Marlijn is in Cologne.

A representative algorithm for *too* from Abrusán (2016) to derive this contribution is shown in (2) (cf. Heim 1992, Beck 2007, Chemla & Schlenker 2012, Ahn 2015, Bade 2016).

- (2) The overall meaning of  $\varphi_{too_C}$  is  $\varphi \wedge \psi_C$ , where  
a. *too<sub>C</sub>* is coindexed with  $\psi_C$   
b.  $[[\psi]]^{g,w} \in [[\varphi]]^{g,w}_F$   
c.  $[[\psi]]^{g,w} \neq [[\varphi]]^{g,w}$

**The goal:** I want to argue for (the need for) a diversification of the standard view in the spirit of Beaver & Clark (2008) by discussing two and a half puzzles:

**Puzzle #1:** Inserting an additive in an otherwise infelicitous *but*-clause can rescue it from becoming infelicitous, resembling the use of negation (see Umbach 2005):

- (3) a. #Emma dances but she sings.  
b. Emma dances but she **also** [sings]<sub>F</sub>.  
c. Emma dances but she doesn't sing.

**Puzzle #1.5:** Occurrences of additive particles do not require a perfectly parallel proposition to be felicitous, despite what the algorithm in (2) suggests:

- (4) Thuy was having a great day. [Jon]<sub>F</sub> was happy **too**.  
*presupposed:* Someone (salient) other than Jon was happy.

**Puzzle #2:** While it is implicitly assumed that *too* and *also* are semantically equivalent, as supported by the data in (1), there are contexts in which they differ in acceptability:

- (5) Context:  
A & B are watching the TV-show *Hannibal* about the serial killer from *The Silence of the Lambs*. In one scene, Hannibal gives \$100 to a homeless person. A, touched by Hannibal's compassion, says: 'Ah, Hannibal's kindhearted.'  
Reasonably disturbed by this judgment given Hannibal's background, B says:  
a. B<sub>1</sub>: He's **also** [a murderer]<sub>F</sub>...  
b. B<sub>2</sub>: ??He's [a murderer]<sub>F</sub> **too**...

<sup>†</sup> For previous discussion and feedback on (parts of) the project, I'm indebted to Daniel Altshuler, Pete Alrenga and Maziar Toosarvandani, as well as audiences at WCCFL 36 at UCLA and the Spring 2018 Semantics Workshop at UMass.

### Puzzle #1 - Background on obligatory presupposition triggers

- it has been observed that the use of presupposition triggers is “obligatory” (= leads to decreased acceptability if omitted) in contexts when the presupposition is satisfied:

- (6) a. Thuy bought *a banana*. {#A/**The**} banana wasn't quite ripe.  
b. It is raining and Thuy {#believes/**knows**} that.  
c. Thuy bought a banana. Jon bought a banana #(**too**).<sup>1</sup>

- while this phenomenon has been viewed as falling into the realm of the pragmatic principle *Maximize Presupposition (Max PSP)* in (7), there have been (successful, I believe) attempts to relativize the application of the principle only to a subset of presupposition triggers and account for others by appealing to different mechanisms

- (7) Maximize Presupposition (Heim 1991)  
Make your contribution presuppose as much as possible!

- with respect to additives (and some other triggers), Bade (2016) argues that their obligatoriness is due to Obligatory Exhaustification of Focus, as illustrated below for (6c):

- (i) *Jon* receives Focus by virtue of being discourse new  
(ii) the Focus indicates the implicit QUD *Who bought a banana?* (Roberts 1996/2012)  
(iii) on the assumption that Focus needs to be “used” in some way, the covert Focus-sensitive exhaustification operator EXH gets inserted into the structure  
(iv) the exhaustification leads to the interpretation *Jon is the only one who bought a banana* which is contradictory given the first sentence and thus infelicitous  
(v)\* in contrast, inserting *too* makes use of the Focus, thus blocking exhaustification

- experimental evidence for this account – and against *Max PSP* – comes for instance from the effects of negation:
  - while *Max PSP* predicts that inserting a presupposition trigger should always be preferred whenever the presupposition is satisfied, *Obligatory Exhaustification* depends on the Focus structure of the sentence and the QUD it gives rise to
  - thus, for a context like (8), *Max PSP* predicts that inserting *too* should still be more acceptable than its omission, which Oesterle (2015) shows is not borne out experimentally: there was no preference for having *too* in negative contexts, while there was a preference in contexts without negation

- (8) Mary came to the party.  
It is not the case that [Susan]<sub>F</sub> came to the party ?(**too**).  
*presupposes*: somebody other than Susan came to the party  
QUD: Who was not at the party?

---

<sup>1</sup> I am excluding list-readings here on which the additive would not be obligatory.

- more evidence of a similar kind comes from the interaction of additives with other connectives, such as *and*:

➤ since *and* renders the structure more complex and thereby offers multiple attachment sites for EXH, the contradictory interpretation can be avoided

- (9) Thuy is happy and [Jon]<sub>F</sub> is happy (**too**).
- a. EXH [Thuy is happy and Jon is happy]  
→ The only happy people are Thuy and Jon *no contradiction!*
- b. Thuy is happy and EXH [Jon is happy]  
→ Thuy is happy and the only happy person is Jon *contradiction!*

### **Puzzle #1 - A tiny note on Coherence**

- more generally, the obligatoriness of additives seems to be restricted to only a few environments when taking more connectives and corresponding Coherence relations into account (Kehler 2002):

- (10) Resemblance<sup>2</sup>
- a. Thuy is happy and [Jon]<sub>F</sub> is happy (**too**). PARALLEL
- \* b. Thuy is happy but [Jon]<sub>F</sub> is happy #(**too**). CONTRAST
- c. Housemates are often happy for each other's success.  
For instance, [Thuy]<sub>F</sub> is happy for Jon's success (**too**). EXEMPLIFICATION
- d. Housemates are often happy for each other's success.  
However, [Emma]<sub>F</sub> is happy for Jon's success (**too**). EXCEPTION
- (11) Cause-Effect
- a. Thuy is happy. As a result, [Jon]<sub>F</sub> is happy (**too**). RESULT
- b. Thuy is happy because [Jon]<sub>F</sub> is happy (**too**). EXPLANATION
- c. Thuy is happy but she's [crying]<sub>F</sub> (**too**). VIOLATED EXPECTATION
- d. Thuy is happy although [Jon]<sub>F</sub> is happy (**too**). DENIAL OF PREVENTER
- (12) Contiguity
- Thuy was happy. Then, Jon was happy (**too**). OCCASION

- the picture that emerges here is that additives only seem to be obligatory across a sentence boundary in the absence of some sort of connective or discourse marker, and with CONTRAST relations (10b)
- while this picture is compatible with Bade's account since the additional structure allows insertion of EXH in a position that does not lead to a contradiction, as we have seen with *and*, it might also suggest a deeper connection between the QUD that an additive is indirectly sensitive to and Coherence relations (Kehler & Rohde 2017, Hunter & Abrusán 2017; see also Jacobson & Gibson 2014)

---

<sup>2</sup> The remaining relations GENERALIZATION and ELABORATION are not testable because their definitions are incompatible with the use of an additive.

## Puzzle #1 - Zooming in on but

- coming back to our first puzzle, it seems that Bade’s account is insufficient to explain why additives are able to license *but*, since *but* should allow for the same attachment sites as *and*
  - consequently, the effect has to be due to an interaction of *but* and the additive, which is unexpected on the standard view of additives
- to account for the puzzle, I will adopt the analysis of *but* by Toosarvandani (2014) below, which (simplified) requires the two conjuncts to be of opposite polarity<sup>3</sup>:

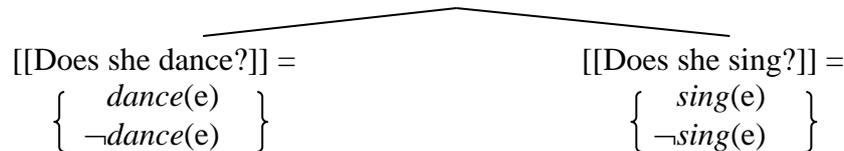
(13) For a sentence *S* of the form  $\phi$  *but*  $\psi$ , *S* must answer the QUD using a strategy of inquiry such that:

- it contains a polar question  $\{\sigma, \neg\sigma\}$  and  $\phi \rightarrow \sigma$ , and
- it contains a possibly distinct polar question  $\{\tau, \neg\tau\}$  and  $\psi \rightarrow \neg\tau$ .

- this analysis captures the simple negation case in (14c)<sup>4</sup>, repeated from (3c)

- (14) a. #Emma dances but she sings.  
 b. Emma dances but she **also** [sings]<sub>F</sub>.  
 c. Emma dances but she doesn’t sing.

(15) What does Emma do?



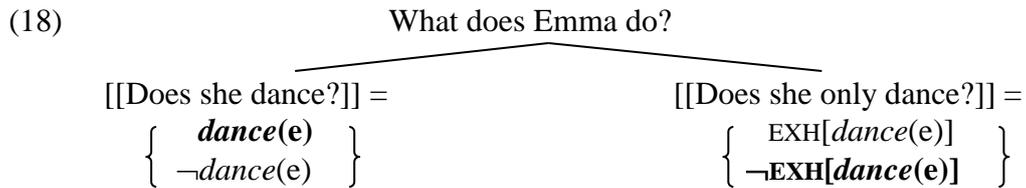
- leaving out negation would result in choosing a positive answer in both cases, thus violating (13), while including negation changes the second conjunct to a negative answer

- regarding the contribution of *also*, I propose that *also* carries negation in that it – aside from the division between assertion and presupposition – corresponds to the negation of the exhaustification operator EXH (see also Grubic 2017):
- (16)  $[[\text{EXH}]](Q)(p)(w) \Leftrightarrow p(w) \ \& \ \forall q[q \in Q(w) \ \& \ p \not\Rightarrow q \rightarrow \neg q(w)]$   
*≈ the prejacent proposition is true and all other propositions in the question set that aren’t entailed by the prejacent are false*
- (17)  $[[\text{ALSO}]](Q)(p)(w) \Leftrightarrow \exists q[q \in Q(w) \ \& \ p \not\Rightarrow q \wedge q(w)]. p(w)$  ( $\approx \neg(16)$ )  
*≈ the prejacent proposition is true (=asserted) and there is another true proposition in the question set that isn’t entailed by the prejacent (=presupposed)*

<sup>3</sup> There are some issues here with not taking into account the order of the polarity, since *but* seems to be asymmetrical (e.g. *He’s lazy but he’s very intelligent* vs *He’s very intelligent but he’s lazy* seem to suggest different conclusions to the question *Should I hire Frank?*) and in some way the counterpart to *although*.

<sup>4</sup> I will focus on *also* here in anticipation of the issues regarding *too* in similar contexts discussed later.

- by virtue of being QUD-sensitive, the use of *also* affects the respective QUD, and by virtue of the semantics in (17) licenses the condition in (13):



### **Puzzle #1.5 – Experimental Study on the implicit Parallelism Requirement**

- rendering additives QUD-sensitive might also help us understand their flexibility when it comes to the implicit Parallelism Requirement illustrated in (19) – repeated from (4) – given that (20) shows that having a great day does not *semantically* entail being happy

(19) Thuy was having a great day. [Jon]<sub>F</sub> was happy **too**.  
*presupposed*: Someone (salient) other than Jon was happy.

(20) Thuy was having a great day but she wasn't happy.

- this flexibility becomes even more apparent when considering real-life examples like the one in (21):

(21) *Pedagogical Recommendations (Corpus Example)*  
 Diaries may be used as prewriting before group work to structure conversation with peers. [...] Teacher collaboration can be a powerful strategy, **too**.  
*presupposed*: Something other than teacher collaboration can be a powerful strategy.

- moreover, lack of parallelism does not seem to decrease acceptability:

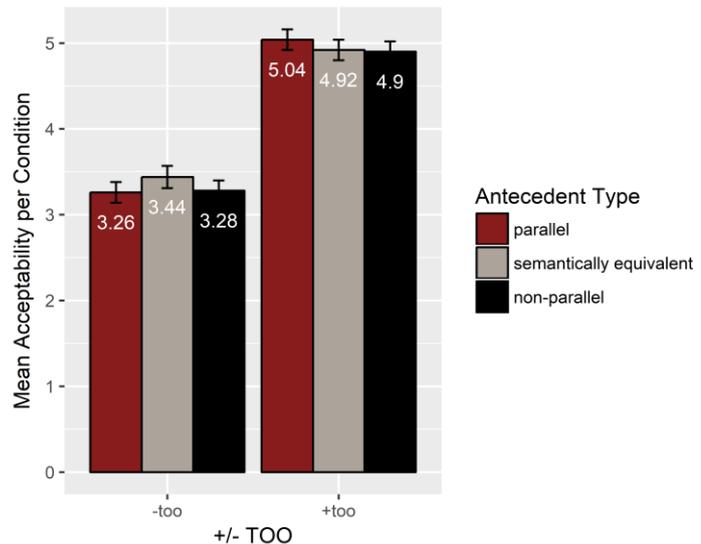
- I ran a 7-point scale acceptability judgment study where I compared the acceptability of three different structures in short three-sentence mini-discourses and additionally varied the presence or absence of *too*:

(22) Sample Item (out of 24)

$\left\{ \begin{array}{l} \textit{parallel} \\ \textit{syntactic non-parallel} \\ \textit{semantic equivalence} \end{array} \right.$	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">At dinner, the butler <u>disobeyed</u> the countess.</td> <td rowspan="3" style="font-size: 3em; vertical-align: middle; padding-left: 10px;">}</td> </tr> <tr> <td>At dinner, the countess <u>was disobeyed</u> by the butler.</td> </tr> <tr> <td>At dinner, the butler <u>defied</u> the countess.</td> </tr> </table> <p style="text-align: center;">The other staff were worried about bad consequences for him.</p> <p>TARGET: Surprisingly, he disobeyed the count (<b>too</b>).</p>	At dinner, the butler <u>disobeyed</u> the countess.	}	At dinner, the countess <u>was disobeyed</u> by the butler.	At dinner, the butler <u>defied</u> the countess.
At dinner, the butler <u>disobeyed</u> the countess.	}				
At dinner, the countess <u>was disobeyed</u> by the butler.					
At dinner, the butler <u>defied</u> the countess.					

- if comprehenders are sensitive to the parallelism of the sentence that serves as antecedent of *too*'s presupposition, we would expect decreased acceptability for a lack thereof, as well as a weaker obligatoriness effect, resulting in an interaction

- contrary to this expectation, a repeated measures ANOVA showed a main effect of TOO but no other significant effects<sup>5</sup>
- however, if we think of the supposed parallelism as holding not between propositions but as being mediated via reference to a common QUD, the flexibility that *too* shows may not be surprising



- moreover, “obligatoriness” effects are not restricted to classic presupposition triggers but occur with connectives as well, as illustrated below

(23) I couldn't find anything at the yard sale.  
Thanks for letting me know ??(though).

### Interim Conclusion

- additives seem to make a contribution that goes beyond a simple presupposition triggering view but may be better conceived of as resembling sentence connectives that structure the discourse by making reference to the QUD

### Puzzle #2 – Basic Data & Intuitions

- despite an implicit assumption that *also* and *too* are semantically equivalent, there are contexts – henceforth additive contrasts – when *too* isn't acceptable but *also* is:<sup>6</sup>

(24) Context:

A & B are watching the TV-show *Hannibal* about the serial killer from *The Silence of the Lambs*. In one scene, Hannibal gives \$100 to a homeless person. A, touched by Hannibal's compassion, says: 'Ah, Hannibal's kindhearted.'

Reasonably disturbed by this judgment given Hannibal's background, B says:

- B<sub>1</sub>: He's **also** [a murderer]<sub>F</sub>...
- B<sub>2</sub>: ??He's [a murderer]<sub>F</sub> **too**...

<sup>5</sup> STRUCTURE ( $F_1(2,94)=0.271, p=.763, F_2(2,46)=0.535, p=.589$ );  
TOO ( $F_1(1,47)=125.7, p<0.001^{***}, F_2(1,23)=91.88, p<0.001^{***}$ );  
STRUCTURE\*TOO ( $F_1(2,94)=0.693, p=.503, F_2(2,46)=1.364, p=.266$ ).

<sup>6</sup> A third related puzzle that I won't discuss here since I don't have anything smart to say about it (yet) concerns cases of double additives – sentences where two additives can felicitously co-occur:

- If you are doing anything that can be described as blowing the Holy Spirit into someone, you are very much doing kissing wrong. And, unless your idea of an exorcism is making the woman burp a lot, you're **also** doing exorcisms wrong **as well!** (from *Last Week Tonight*, Season 5, Episode 7)

(25) Context:

A is wearing a t-shirt displaying a chart of superheroes from the DC universe. B notices a picture of a dog on the chart and inquires about it. A replies: ‘This is Krypto the Superdog. He has all the superpowers Superman has.’ Skeptical about the idea of a Uber-Canine, B says:

a. B<sub>1</sub>: He’s also [a dog]<sub>F</sub>...

b. B<sub>2</sub>: #He’s [a dog]<sub>F</sub> **too**...

- notably, this effect is not restricted to inter-sentential occurrences but can also be found with the connective *but*:

(26) a. Dan may sensitive but he’s **also** [the quarterback]<sub>F</sub>...

b. ??Dan may be sensitive but he’s [the quarterback]<sub>F</sub> **too**...

- however, as we already saw earlier in (10b) – repeated in (27), any simple explanation targeting the incompatibility of *too* with *but* or a particular coherence relation would be insufficient

(27) Thuy is happy but [Jon]<sub>F</sub> is happy **too**.

(28) Thuy is happy now but she can be [mad]<sub>F</sub> **too**.

- moreover, this effect seems to be sensitive to the type of predicate involved, as stage-level predicates do not seem to show the same difference:

(29) A: I can’t understand how the Hillary supporters still complain about Bernie. He totally supported her!

a. B<sub>1</sub>: (raising an eyebrow) He [antagonized]<sub>F</sub> her **too**...

b. B<sub>2</sub>: (raising an eyebrow) He **also** [antagonized]<sub>F</sub> her...

- thus, the effect seems to be inherently pragmatic, that is, due to the meaning the speaker wants to convey in (24)-(26), given that the strings themselves can be felicitous in other contexts:

(24)’ Context:

A & B are watching the TV-show *Hannibal* about the serial killer from *The Silence of the Lambs*. In one scene, Hannibal gives \$100 to a homeless person. A, touched by Hannibal's compassion, says: ‘Ah, Hannibal's kindhearted.’

Not perceiving anything wrong with A’s statement, B adds:

a. B<sub>1</sub>: He’s **also** [a murderer]<sub>F</sub>...

b. B<sub>2</sub>: He’s [a murderer]<sub>F</sub> **too**...

- informally, we might think of the speaker’s contribution in (24)-(26) as conveying a *contrast*<sup>7</sup> in that the respective predicates seem to be intended to be incompatible with each other

---

<sup>7</sup> Unfortunately, ‘contrast’ is not a perfectly defined notion (but see Repp 2016). On the other hand, exploring the puzzle might tell us something about possible ways of conceptualizing its effect.

## Puzzle #2 – *Some Cross-linguistic Data*

- interestingly, this difference in acceptability between additive particles is not specific to English but occurs in a range of other languages as well (data wrt to (24)):

- (30) a. ku-**to** (kyelkwuk) salinca-ya. *Korean*  
he-ADD eventually murderer-COP  
b. #**ttohan** ku-nun salinca-ya.  
ADD he-TOP murderer-DECL
- (31) a. Bet jis **taip pat** yra nusikaltėlis. *Lithuanian*  
but he.NOM ADD be.PRS.3 murder.NOM.M.SG  
b. #Bet jis **irgi** yra nusikaltėlis.  
but he.NOM ADD be.PRS.3 murder.NOM.M.SG

- particularly the data in (31) serves as suggestive evidence that the difference isn't purely structural and due to the difference in the syntactic position of *also* and *too* in English<sup>8</sup>

## **Puzzle #2** – *Tangent: Non-Additive Uses of also & too in English*

- aside from the additive contrast, there are other environments where *also* and *too* differ in acceptability such as (32):

- (32) a. Obama supported Hillary, but Comey **also** opposed her.  
b. #Obama supported Hillary, but Comey opposed her **too**.

- for these cases, I want to argue that *also* isn't used as an additive particle here but resembles the discourse particle use of *auch* in German, which – loosely – marks the proposition it occurs in as providing an explanation for a previously mentioned or inferable proposition (Karagjosova 2004):

(32)‘ Obama hat Hillary unterstützt, aber Comey hat sie **auch** sabotiert.

- the main argument for treating this usage of *also* as distinct from its additive use is that it does not seem to be Focus-sensitive in the same way, as supported by the fact that there is no constituent that it could associate with in (32a) such that its presupposition would be satisfied – which is responsible for the infelicity of *too* in (32b)
- moreover, there seem to be cases when only *too* is acceptable, where it also seems to be hard to reconstruct a licit Focus-structure:

- (33) *Jimmy Kimmel interviewing Kristen Bell*  
JK: How did you survive the flu epidemic?  
a. KB<sub>fake</sub>: Nobody's gotten the flu. ??And we've **also** been traveling a lot.  
b. KB<sub>actual</sub>: Nobody's gotten the flu. And we've been traveling a lot **too**.

---

<sup>8</sup> I'm assuming here that *also* is most natural in – but not restricted to – the preverbal position and can associate leftward and rightward, whereas *too* is most natural sentence-finally and can only associate leftward.

(34) *At a restaurant, waiting for the food*

A: I'm very hungry.

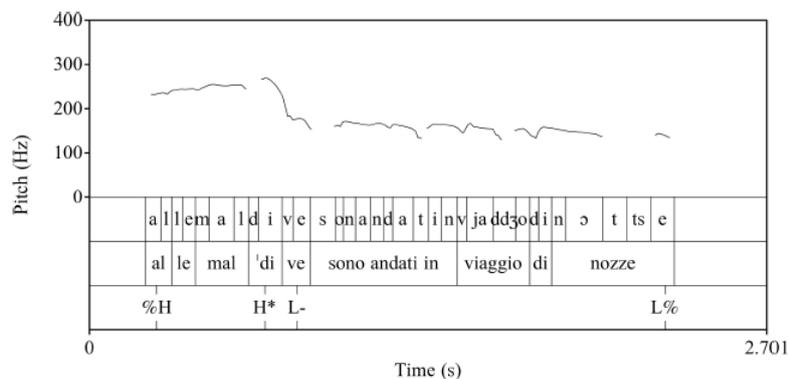
a. B<sub>fake</sub>: #Apparently their portions are **also** big.

b. B<sub>actual</sub>: Apparently their portions are big **too**.

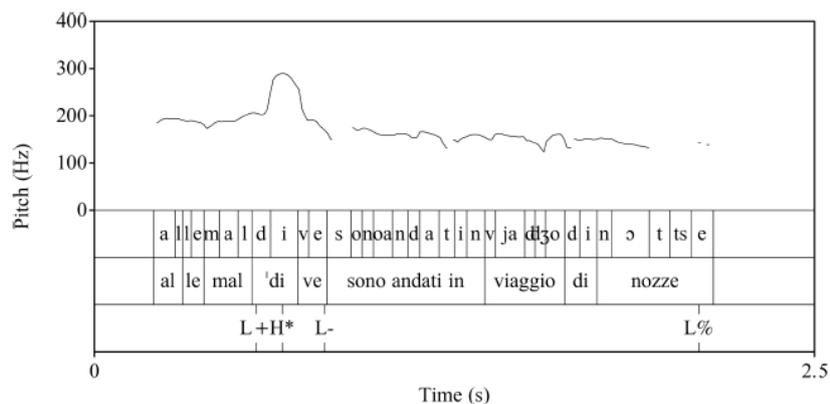
- I won't have to say much about these cases, but particularly the discourse particle use of *also* should be kept in mind for the following discussion

### Puzzle #2 – A Prosodic Perspective

- coming back to our initial puzzle, I want to pursue the hypothesis that the difference arises due to an interaction with prosodically conveyed meaning that *also* is compatible with but *too* isn't, given that (24)-(26) require a particular intonation
- precedence for this idea comes from Bianchi et al. (2016), who show for Italian that different kinds of Foci correlate with distinct prosodic features:



**Figure 1** Pitch contour of an utterance produced after the stimulus (8) in the mirative condition: *Alle Maldive sono andati in viaggio di nozze!*



**Figure 2** Pitch contour of an utterance produced after the stimulus (9) in the corrective condition: *Alle Maldive sono andati in viaggio di nozze!*

- to provide an empirical basis for the prosody hypothesis, I conducted a pilot production study (one speaker) where I compared utterances with *also* and *too* in contexts that should show the contrast in (24)-(26) with those that should not

(35) *Sample Item (out of 8)*

Context: You're watching the TV-show *Hannibal* about the serial killer from *The Silence of the Lambs* with your roommate Jon.

In one scene, Hannibal gives \$100 to a homeless person. Jon, touched by Hannibal's compassion, says:

**"Ah, Hannibal's kindhearted."**

Neutral: Like your roommate, you are very impressed by Hannibal's nice gesture and realize how being a murdered does not mean you can't do nice things as well. You say:

Contrastive: However, you believe that doing one good deed doesn't absolve numerous murders. You say:

Target: **"He's {also} a murderer {too}"**

- a general feature of the CONTRASTIVE condition seemed to be a higher amplitude of the first pitch accent compared to a lower amplitude for the second, which could be captured either via a downstepped L+!H\* or a low phrase accent following the first pitch accent before an L\* or H\*:

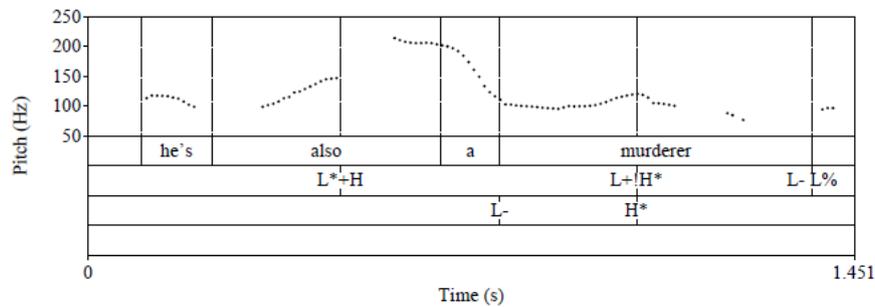


FIGURE 1: PITCH CONTOUR WITH ANNOTATION FOR ITEM #2 IN *ALSO+CONTRASTIVE* CONDITION

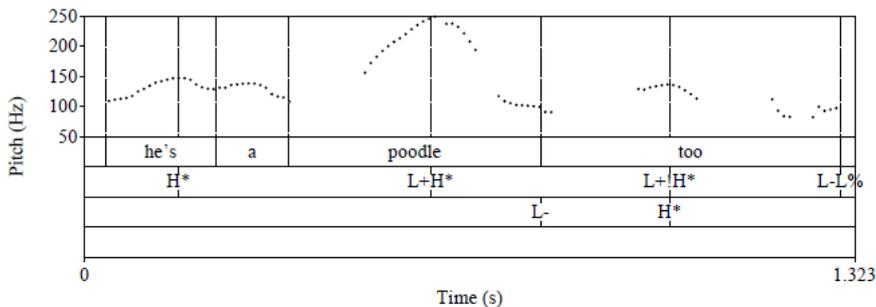


FIGURE 2: PITCH CONTOUR WITH ANNOTATION FOR ITEM #1 IN *TOO+CONTRASTIVE* CONDITION

- in comparison, the pitch accents in the NEUTRAL condition would be of a similar amplitude

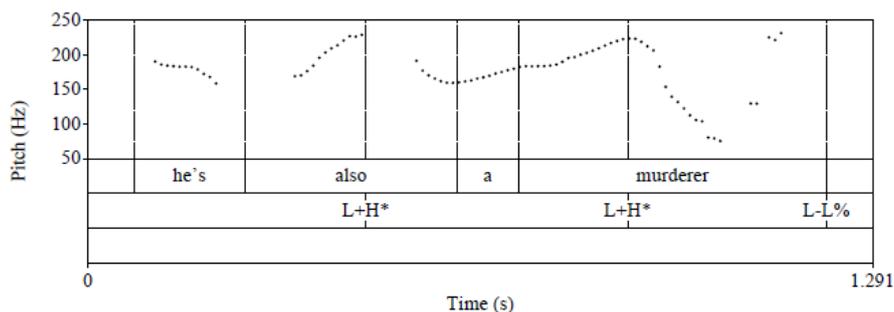


FIGURE 3: PITCH CONTOUR WITH ANNOTATION FOR ITEM #2 IN *ALSO+NEUTRAL* CONDITION

- one feature in which *also* and *too* seemed to differ on was the choice of the first pitch accent, which was mostly an L\*+H for *also* (Fig. 1) and an L+H\* for *too* (Fig. 2)

### **Puzzle #2 – The L\*+H Pitch Accent, the Rise-Fall-Rise & Scales**

- the L\*+H is usually associated with the so-called rise-fall-rise (RFR) contour (Ward & Hirschberg 1985, Constant 2012)<sup>9</sup>, “illustrated” below:

(36) A: Alan’s such a klutz. - B: He’s a good /BAD\minton player/

(37) A: I don’t like grasshoppers. - B: The /FRENCH\ eat them/

- the RFR has often been characterized as indicating some sense of uncertainty, which has been formalized as e.g. giving rise to alternatives, none of which can be safely claimed (Constant 2012)

- interestingly, there seems to be some connection between uses of the RFR and the additive contrast cases earlier:

➤ if we flip the direction of argumentation from (24), the RFR becomes natural:

(38) A: Hannibal is a terrible person. - B: He gives to /CHA\rity/

➤ similarly, if we flip and adjust (36)-(37), we get an additive contrast:

(39) A: Alan is incredibly agile.  
B: He’s **also** 300 pounds. // ??He’s 300 pounds **too**.

(40) A: Grasshoppers are amazing!  
B: They **also** have ears on their belly. // ??They have ears on their belly **too**.

❖ I propose that the effect of the L\*+H pitch accent is to invoke a scale, in line with ideas from Ward & Hirschberg (1985), but that the relation to that scale is different for the RFR and the contrastive use of *also*:

- the RFR takes a proposition *p* and indicates that *p* is higher on a salient scale than a previous proposition *q*
- the contrastive contour takes a proposition *p* and indicates that *p* is lower on a salient scale than previous proposition *q*

- a prediction that this proposal makes is that the RFR should not be felicitous in relation to a value at the top of a scale, and reversely the contrastive contour with a value at the bottom of a scale, which seems to be borne out:

<sup>9</sup> Despite the research on intonational meaning being relatively sparse, there’s a bit of a debate regarding the distinction between the L\*+H and the L+H\* pitch accent – the latter often being associated with Contrastive Topics (e.g. Büring 2003) – and the possibility of a unified account of both (see Constant 2014). While attractive, I will assume here that the L\*+H accent constitutes a distinct category, on the one hand because it isn’t obvious to me how to integrate the notion of Contrastive Topic here (but see Open Issues) and, on the other hand, because – naively – it is in accordance with my intuitions.

- (41) A: Hannibal is a great guy.  
 B<sub>1</sub>: #He gives to /CHA\rity/  
 B<sub>2</sub>: #He likes /MUR\dering people/
- (42) A: Alan is a real klutz.  
 B<sub>1</sub>: #He's **also** 300 pounds.<sup>10</sup>  
 B<sub>2</sub>: #He's **also** a great badminton player.

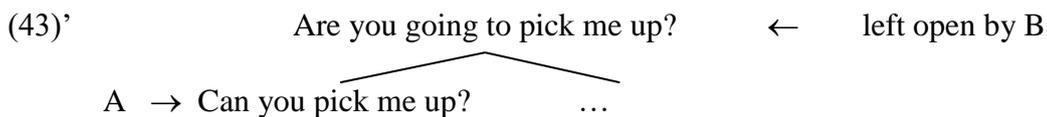
➤ thus, we can think of *also* as a (I believe) novel subtype of Focus-particle that has a scalar use like *even* but is also purely additive, while *too* seems to be restricted to purely additive contexts

**Puzzle #2 – Open Issues: Unifying RFR-responses to Assertions and Questions**

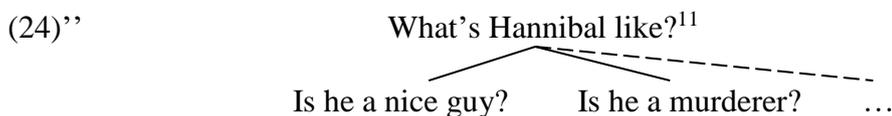
- while the proposed account of the RFR seems to fare well with respect to the data above and draws a connection between the L\*+H pitch accent in the RFR and the additive contrasts, there might be different picture emerging when taking into account RFRs in replies to questions:

- (43) A: Can you pick me up at 8am tomorrow? - B: I /CAN\  
 (44) A: Did you feed the pets? - B: I fed the /CAT\  
 (45) A: Do you own a VW? - B: I have an /O\pel/

- particularly with respect to (45) it seems hard to think of a scale that would relate *VW* and *Opel*, especially since it seems to be independent of the particular brands chosen
- rather, an account that would capture the contribution of the RFR in (43)-(45) could be as the RFR indicating the presence of an unresolved super-question in the QUD-structure:



- however, it seems unclear to what extent this account could capture the additive contrast since the assumed QUD-structure does not seem to be different from the neutral use:



- more specifically, while it may make sense to think of the super-question being unresolved in the additive contrast examples due to the previous utterance being challenged, we wouldn't want to think of *too* requiring the question to be closed, since it is perfectly fine to provide further answers after having used *too*:

<sup>10</sup> This sentence is actually fine on the discourse-particle use.

<sup>11</sup> This super-question is a simplification in that not any two answers to this question could make up a felicitous discourse:

(i) Thuy is very short. ??She is hungry **too**.

(46) Thuy likes movies. She likes [banh mi]<sub>F</sub> *too*. And she likes pad thai.

- thus, I will for now assume that the effect the RFR (and indirectly the L\*+H) is different in responses to assertions from its use in questions

### Conclusions

- I have discussed two and a half puzzles featuring additive particles – primarily in English
- first, I have argued that rendering additives sensitive to a QUD that can be inferred from the Focus-structure can account for their licensing potential in *but*-clauses
- one additional advantage of this view is that the flexibility that additives can show with respect to the parallelism of their antecedent is no longer surprising by virtue of being mediated pragmatically
- second, I discussed novel data concerning a difference between *also* and *too* in English, in contrast to previous assumption about their equivalence
- I provided evidence from a pilot production study that semantically meaningful prosodic factors play a crucial role to explain the data, particularly the use of the L\*+H pitch accent
- by focusing on this pitch accent, I proposed a connection between the rise-fall-rise contour and the additive contrast, namely in that both make reference to a scale but in opposite ways
- while the rise-fall-rise indicates a relevant value to be lower on the scale, additive contrasts indicate a value to be higher
- this proposal adds a new piece to the typology of Focus-sensitive particles and the use of Focus more generally, by distinguishing purely additive particles (*too*) from additives with scalar uses (*also*)
- I hope to further develop how rise-fall-rise and additive contrasts can fit into a formal model of Focus and its connection to prosody, scales and QUDS

### *References*

- Abrusán, M. (2016). Presupposition Cancellation: Explaining the Soft-Hard Trigger Distinction. *Natural Language Semantics* 24 (2), 165-202.
- Ahn, D. (2015). The semantics of additive *either*. *Proceedings of Sinn und Bedeutung* 19.
- Bade, N. (2016). *Obligatory Presupposition Triggers in Discourse*. PhD Thesis, University of Tübingen.
- Beaver, D. & B. Clark (2008). *Sense and Sensitivity: How Focus Determines Meaning*. Oxford: Blackwell.

- Beck, S. (2007). Quantifier Dependent Readings of Anaphoric Presuppositions. In: U. Sauerland & P. Stateva (eds.), *Presupposition and Implicature in Compositional Semantics*. Palgrave.
- Bianchi, V., G. Bocci & S. Cruschina (2016). Focus fronting, unexpectedness, and evaluative implicatures. *Semantics & Pragmatics* 9, 1-54.
- Büring, D. (2003). On D-Trees, Beans, and B-Accents. *Linguistics and Philosophy* 26, 511–545.
- Chemla, E. & P. Schlenker (2012). Incremental vs. Symmetric Accounts of Presupposition Projection: An Experimental Approach. *Natural Language Semantics* 20 (2), 177-226.
- Constant, N. (2012). English rise-fall-rise: a study in the semantics and pragmatics of intonation. *Linguistics and Philosophy* 35, 407–442.
- Constant, N. (2014). *Contrastive Topic: Meanings and Realizations*. PhD Thesis, UMass, Amherst.
- Grubic, M. (2017). Two strategies of reopening QUDs -- evidence from German *auch* & *noch*. *Proceedings of Sinn und Bedeutung* 21.
- Heim, I. (1991). Artikel und Definitheit. In: A. v. Stechow & D. Wunderlich (eds.), *Handbuch der Semantik*, Berlin: de Gruyter, 487-535.
- Heim, I. (1992). Presupposition Projection and the Semantics of Attitude Verbs. *Journal of Semantics* 9, 183–221.
- Hunter, J. & M. Abrusán (2017). Rhetorical Relations and QUDs. In: M. Otake, S. Kurahashi, Y. Ota, K. Aotoh & D. Bekki (eds.), *New Frontiers in Artificial Intelligence*. Springer, 41-57.
- Jacobson, P. & E. Gibson (2014). Processing of ACD gives no evidence for QR. *Proceedings of SALT* 24, 156-176.
- Karagjosova, E. (2004). *The Meaning and Function of German Modal Particles*. PhD Thesis, University of Cologne.
- Kehler, A. (2002). *Coherence, Reference, and the Theory of Grammar*. CSLI Publications.
- Kehler, A. & H. Rohde (2017). Evaluating an Expectation-Driven Question-Under-Discussion Model of Discourse Interpretation. *Discourse Processes* 54 (3), 219-238.
- Oesterle, D. (2015). The Insertion of "auch" under Negation. B.A. thesis, Universität Tübingen.
- Repp, S. (2016). Contrast: Dissecting an elusive information-structural notion and its role in grammar. In: C. Féry & S. Ishihara (eds.), *OUP Handbook of Information Structure*. Oxford: Oxford University Press.
- Roberts, C. (1996/2012). Information structure in discourse: Towards an integrated formal theory of pragmatics. *Semantics and Pragmatics* 5, 1-69.
- Toosarvandani, M. (2014). Contrast and the structure of discourse. *Semantics and Pragmatics* 7 (4), 1–57.
- Umbach, C. (2005). Contrast and Information Structure: A focus-based analysis of *but*. *Linguistics* 43 (1), 207–232.
- Ward, G. & J. Hirschberg (1985). Implicating Uncertainty: The Pragmatics of Fall-Rise Intonation. *Language* 61, 747-776.