

## ***Besides* exceptives\***

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### **1. Introduction**

Exceptive constructions (like the one introduced by *except* in (1a)) have received a large amount of attention in the semantic literature (Hoeksema 1987, von Fintel 1994, Moltmann 1995, Gajewski 2008, Hirsch 2016, etc). The superficially similar ‘additive construction’ in (1b), however, has received very little discussion or attention<sup>1</sup>. This is despite the fact that it shares many features in common with exceptives.

- (1) a. Every girl except Ivy and Ann was there.
- b. Some girls besides Ivy and Ann were there.

Exceptives, like the one in (1a), have been established to come with the set of inferences shown in (2) (Keenan and Stavi 1986, von Fintel 1994).

- (2) *Inferences associated with exceptives:*
  - a. *The domain subtraction:* Every girl who is not Ivy or Ann was there.
  - b. *The containment inference:* Ivy and Ann are girls.
  - c. *The negative inference:* Ivy and Ann were not there.

The additive phrase introduced by *besides* in (1b) contributes the inferences shown in (3).

- (3) *Inferences associated with additives:*
  - a. *The domain subtraction:* Some girls who are not Ivy or Ann were there.
  - b. *The containment inference:* Ivy and Ann are girls.
  - c. *The positive inference:* Ivy and Ann were there.

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<sup>1</sup>*Besides* is discussed in (von Fintel 1993) and (Sevi 2008). In this paper I focus on contexts that were not discussed in those papers.

The sentence in (1b) can only be true if there are girls who are not Ivy or Ann who were there (this is domain subtraction). The containment inference is tested in (4a): the sentence is not felicitous because Mark is not a girl. The positive inference can be tested by embedding (1b) into a larger discourse where the first sentence contradicts the positive inference contributed by *besides*: the resulting discourse is not felicitous.

- (4) a. # Some girls besides Mark were there.  
b. Ivy and Ann were not there. # Some girls besides Ivy and Ann were there.

The first two of the inferences in (3) match the inferences contributed by *except* in (2). The last one differs: instead of the negative inference, *besides* in (1a) contributes the positive inference. (1b) can be paraphrased as 'in addition to Ivy and Ann some other girls were there'. I call elements that contribute this kind of positive inference *additive constructions*.

## 2. Empirical description of other additive contexts

*Besides* can occur in *wh*-questions and in such contexts it contributes the same set of inferences as the one we saw in (3).

- (5) Which girl besides Ivy and Ann was there?

The question in (5) is not requesting information about Ivy and Ann (the domain subtraction inference). The containment inference and the positive inference are tested in (6). Similarly to what we saw in (4), (6a) is infelicitous because Mark is not a girl and (6b) is infelicitous because this question takes it as given that Ivy and Ann were there.

- (6) a. # Which girl besides Mark was there?  
b. Ivy and Ann were not there. # Which girl besides Ivy and Ann was there?

The last additive context I will discuss in this paper is the one shown in (7).

- (7) Besides Italy, I visited Germany.

In this example *besides* contributes a positive inference similar to the one we saw with existentials and *wh*-questions. It does not seem that the containment and the domain subtraction inferences are present here because it is unclear what is the relevant quantificational element. Examples of this sort present a real challenge for a unified treatment of additive elements. This is because in the previously considered examples, *besides* operated on a quantificational phrase and had something to do with its domain.<sup>2</sup>

The observation that I would like to make about cases like this one, where *besides* contributes additivity without operating on any visible quantifier, is that it interacts with

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<sup>2</sup>Note that there is no exhaustivity in (7): the sentence does not require that Italy and Germany are the only two countries I visited. Thus, it is not the case that the relevant quantificational element here is a covert *only* or an exhaustifier.

focus in an interesting way. The two sentences in (8a) and (8b) do not have the same meaning: (8a), where the focus falls on John, means that the list of people who danced with Mary includes John and Ann; (8b), where the focus falls on Mary, means that the list of people John danced with includes Ann and Mary.

- (8) a. Besides Ann, John<sub>F</sub> danced with Mary.  
b. Besides Ann, John danced with Mary<sub>F</sub>.

Intuitively, these two sentences address different questions under discussion. The sentence in (8b) addresses the question in (9a), and the one in (8b) – the question in (9b).

- (9) a. Besides Ann, who danced with Mary?  
b. Besides Ann, who did John dance with?

The idea I develop in this paper is that *besides* always restricts the domain of a quantificational element. This element can be overt or covert. The relevant quantificational element in (7), (8a), and (8b) is a silent question. The value of this question is restricted by the focus value of the clause that follows the *besides*-phrase. I build on an independent proposal relating the focus denotation of a sentence and a question salient in the discourse (Rooth 1992).

In this paper, I propose a unified approach that accounts for the interaction of *besides* with existentials, *wh*-questions and focus associates. In addition, the approach I propose captures the fact that *besides* is not compatible with the universal quantifier (10a)<sup>3</sup>, at least the additive reading is not available in this context. Note that there is nothing wrong with this meaning *per se*, it can be perfectly well expressed by (10b).

- (10) a. #Every girl besides Ivy and Ann was there.  
b. Ivy and Ann were there. Every other girl was there as well.

I start this discussion by offering an account of the interaction between *besides* and questions and later show how it naturally extends to the other two cases.

### 3. Additives in *wh*-questions

Following much of the literature, I adopt Hamblin's (1973) idea that a question denotes a set of propositions. If the list of girls includes just Ann, Ivy, Mary, and Kate, the question in (11a) denotes the set shown in (11b) (in functional terms this is expressed as (11c)).

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<sup>3</sup>(10a) is marked with #. This is the judgment that a group of English speakers has. There is another group of speakers who finds this sentence acceptable, however the reading they get is the exceptive one: it is the reading that comes with the negative inference that Ivy and Ann were not there. In other words, for this group of speakers (10a) and (1a) have the same meaning. This is not something that I will attempt to account for in this paper, but see Vostrikova (2019) for an account of the exceptive-additive ambiguity. Here I will only propose an explanation for why *besides* does not deliver the additive reading with universal quantifiers.

- (11) a. Which girl was there?  
 b.  $\llbracket (11a) \rrbracket^{g,w} = \{ \lambda w. \text{Ann was there in } w, \lambda w. \text{Ivy was there in } w, \lambda w. \text{Mary was there in } w, \lambda w. \text{Kate was there in } w \}$   
 c.  $\llbracket (11a) \rrbracket^{g,w} = \lambda p. \exists x [x \text{ is a girl} \ \& \ p = [\lambda w. x \text{ was there in } w]]$

I propose that adding *besides Ivy and Ann* to this question modifies it in two ways: it removes the first two propositions from the set in (11b) and adds the presupposition ‘Ivy and Ann are girls who were there’ into the remaining two propositions. Thus, I treat both the positive inference and the containment inference as the presuppositional content of a question. This seems to be on the right track given that the question with *besides Ivy and Ann* in (5) takes it as given that Ivy and Ann are girls and that they were there. Formally, the meaning of this question can be presented as shown in (12a) (in terms of set talk) and in (12b) (in terms of function talk). In what follows I show how to achieve this result in a compositional manner.

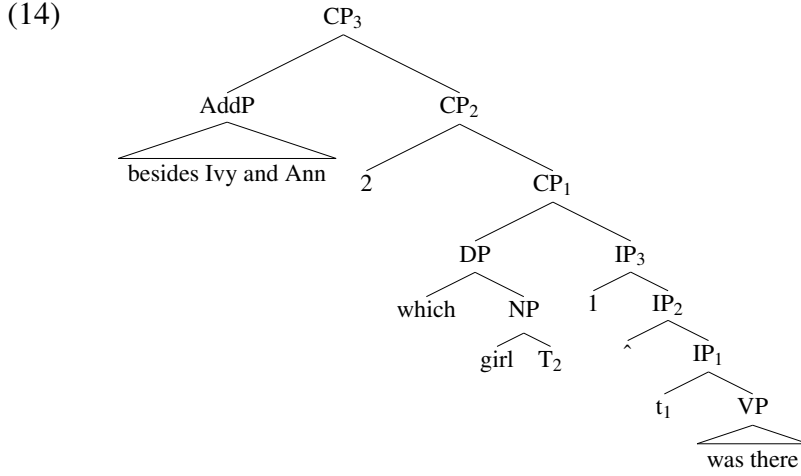
- (12) a.  $\llbracket (5) \rrbracket^{g,w} = \{ \lambda w: \text{Ivy \& Ann are girls who were there. Mary was there in } w, \lambda w: \text{Ivy \& Ann are girls who were there. Kate was there in } w \}$   
 b.  $\llbracket (5) \rrbracket^{g,w} = \lambda p. \exists x [x \text{ is a girl} \ \& \ x \notin \{ \text{Ivy, Ann} \} \ \& \ p = [\lambda w: \text{Ivy \& Ann are girls who were there in } w. x \text{ was there in } w]]$

The theory of additives that I propose is built on von Stechow’s (1994) proposal for exceptives. The key elements of his proposal is that an exceptive subtracts a set from the domain of a quantificational expression and adds the condition that is expressed in terms of quantification over other possible sets in the restrictor of the quantifier that is responsible for the containment and the negative inference as well as the restrictions on the use of exceptives. Similarly, I propose that an additive subtracts a set from the domain of a quantificational expression and adds the additivity condition that is expressed in terms of quantification over possible sets in the restrictor of this expression. This condition is responsible for the positive inference, the containment inference and for the restriction on the use of additives.

For simplicity of exposition, I give *which* the semantics that ensures that we get a set of propositions in the end. Nothing depends on this choice, we could have chosen a different way of getting the question denotation. For the same reason, I use  $\hat{\phantom{x}}$  as a way of getting an intensional meaning (13b) (Keshet 2011) .

- (13) a.  $\llbracket \text{which} \rrbracket^{g,w} = \lambda P_{\langle et \rangle}. \lambda Q_{\langle e \langle st \rangle \rangle}. \lambda p_{\langle st \rangle}. \exists x [P(x)=1 \ \& \ p=Q(x)]$   
 b.  $\llbracket \hat{\gamma} \rrbracket^{g,w} = \lambda w. \llbracket \gamma \rrbracket^{g,w}$

The LF I propose for the question in (5) with the *besides*-phrase is shown in (14). Following standard assumptions, the *wh*-phrase moves and leaves a trace of type  $e$  ( $t_1$ ), that is bound by the abstractor 1. The additive phrase starts in the position of the sister of the predicate in the restrictor of the *wh*-phrase (*girl* in this case). It undergoes QR leaving a trace of type  $\langle et \rangle$  (shown as  $T_2$ ). This trace is bound by the abstractor 2.



The denotation of the node  $CP_2$  (the sister of the additive phrase) is as shown in (15): this is a function from a restrictor of type  $\langle et \rangle$  to a question.

$$(15) \quad \llbracket CP_2 \rrbracket^{g,w} = \lambda X_{\langle et \rangle} . \lambda p_{\langle st \rangle} . \exists x [x \text{ is a girl} \ \& \ x \in X \ \& \ p = [\lambda w' . x \text{ was there in } w']]$$

The denotation of *besides* is shown in (16). Its first argument is a set (I follow von Steinhilber's proposal for exceptives and assume that a DP that follows *besides* is interpreted as a set of individuals<sup>4</sup>). Then it is looking for a function from a set of individuals to a question (the type the sister of the AddP has). It outputs a question. It subtracts the set it takes as its first argument from the domain of the question ( $\bar{Z}$  is a complement set of  $Z$ ). It goes through each of the remaining propositions in the question denotation and adds the following presupposition into them: take any set that has one of the individuals from the set following *besides* and restrict your question to that set, what you will find is that there is a true proposition in that question. As I show below, this presupposition is additivity.

$$(16) \quad \llbracket besides \rrbracket^{g,w} = \lambda Z_{\langle et \rangle} . \lambda M_{\langle \langle et \rangle \langle \langle st \rangle t \rangle \rangle} . \lambda q_{\langle st \rangle} . \exists m [M(\bar{Z})(m) = 1 \ \& \ q = [\lambda w : \forall Y [Y \cap Z \neq \emptyset \rightarrow \exists p [M(Y)(p) = 1 \ \& \ p(w) = 1]] . m(w) = 1]]$$

Putting together the AddP and its sister gives the set of propositions shown in (17).

$$(17) \quad \lambda q_{\langle st \rangle} . \exists m [\exists x [x \text{ is a girl} \ \& \ x \notin \{Ivy, Ann\} \ \& \ m = [\lambda w' . x \text{ was there in } w']] \ \& \ q = [\lambda w : \forall Y [Y \cap \{Ivy, Ann\} \neq \emptyset \rightarrow \exists p [\exists x [x \text{ is a girl} \ \& \ x \in Y \ \& \ p = [\lambda w'' . x \text{ was there in } w'']] \ \& \ p(w) = 1]] . m(w) = 1]]$$

This is the intended result that was given at the beginning of this section in (12). Specifically, this is a set of propositions that have the at-issue content 'x was there', where x is a girl who is not Ivy or Ann and the presuppositional content 'Ann and Ivy are girls who were there'. Here is why. It is a collection of propositions q, such that each q is built by the following method: take a proposition m that has the form  $[\lambda w' . x \text{ was there in } w']$ ,

<sup>4</sup>This can be a singleton set if a DP that follows *besides* is not a plural DP.

where  $x$  is a girl who is not Ann or Ivy, put it into the at-issue content of  $q$  and add the presupposition given separately in (18).

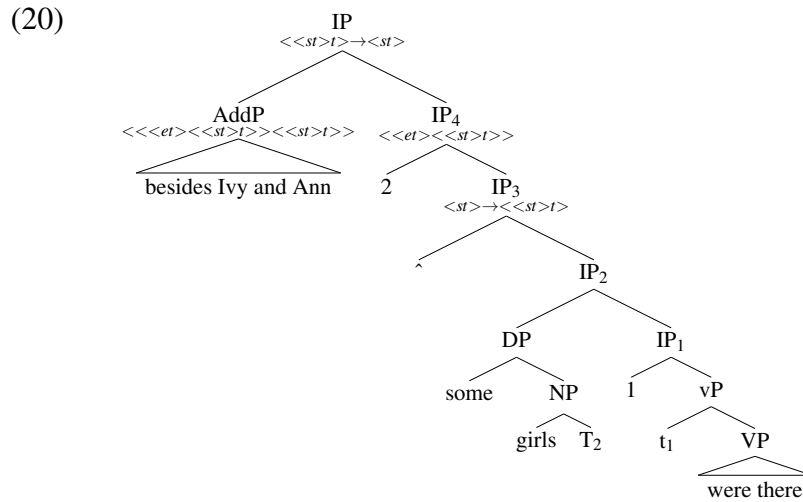
$$(18) \quad \forall Y[Y \cap \{Ivy, Ann\} \neq \emptyset \rightarrow \exists p[\exists x[x \text{ is a girl} \ \& \ x \in Y \ \& \ p = [\lambda w''.x \text{ was there in } w'']] \ \& \ p(w) = 1]]$$

This presupposition entails that Ann and Ivy are girls who were there. Let's take a singleton set containing Ann and nothing else. Since  $\{Ann\} \cap \{Ivy, Ann\} \neq \emptyset$ , according to (18), (19a) should hold. (19a) says that there is a true proposition of the form 'x was there' where  $x$  is a girl that belongs to the set that has Ann and nothing else. This can only be true if Ann is a girl and if she was there. The same reasoning applies to Ivy.

$$(19) \quad \begin{array}{ll} \text{a.} & \exists p[\exists x[x \text{ is a girl} \ \& \ x \in \{Ann\} \ \& \ p = [\lambda w''.x \text{ was there in } w'']] \ \& \ p(w) = 1] \\ \text{b.} & \exists p[\exists x[x \text{ is a girl} \ \& \ x \in \{Ivy\} \ \& \ p = [\lambda w''.x \text{ was there in } w'']] \ \& \ p(w) = 1] \end{array}$$

#### 4. Additive readings with existentials

In this section I will show how the approach suggested in the previous section for questions can be extended to cases where an additive phrase operates on an existential. The LF for (1b) is given in (20).



Again, in this LF the entire additive phrase undergoes QR leaving a trace of type  $\langle et \rangle$  (shown as  $T_2$ ). This trace is bound by the abstractor 2.

The denotation of the node  $IP_2$  is as shown in (21a). The result of applying  $\wedge$  to this node is shown in (21b). This is a proposition. The additive phrase is looking for an argument of type  $\langle\langle et \rangle \langle\langle st \rangle t \rangle\rangle$  - a function from a set of individuals to a set of propositions. For this reason, before the additive phrase can combine with its sister the node  $IP_3$  has to undergo type-shifting from type  $\langle st \rangle$  to type  $\langle\langle st \rangle t \rangle$ . The type-shifter we need here is IDENT (Partee 1986) (adapted for the domain of propositions): it takes a proposition and returns a set of propositions that contains just that one proposition. This is shown in (21c).

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- (21) a.  $\llbracket IP_2 \rrbracket^{g,w} = \exists x[x \text{ is a girl} \ \& \ x \in g(2) \ \& \ x \text{ was there in } w]$   
 b.  $\llbracket IP_3 \rrbracket = \llbracket \wedge IP_2 \rrbracket^{g,w} = \lambda w. \llbracket IP_2 \rrbracket^{g,w} = \lambda w. \exists x[x \text{ is a girl} \ \& \ x \in g(2) \ \& \ x \text{ was there in } w]$   
 c.  $\text{IDENT}(\llbracket IP_3 \rrbracket) = \text{IDENT}(\lambda w. \exists x[x \text{ is a girl} \ \& \ x \in g(2) \ \& \ x \text{ was there in } w]) = \lambda p_{\langle st \rangle}. p = [\lambda w. \exists x[x \text{ is a girl} \ \& \ x \in g(2) \ \& \ x \text{ was there in } w]]$

Given all of this, the denotation of the sister of the additive phrase is as shown in (22).

$$(22) \quad \llbracket IP_4 \rrbracket^{g,w} = \lambda X_{\langle et \rangle}. \lambda p_{\langle st \rangle}. p = [\lambda w. \exists x[x \text{ is a girl} \ \& \ x \in X \ \& \ x \text{ was there in } w]]$$

The denotation of the additive phrase remains the same. Just like in the case with a *wh*-question considered above, it subtracts the set containing Ivy and Ann from the domain of *some*, goes through the set of propositions and adds the additive presupposition into each of them. In this case the set contains only one proposition, so the presupposition will be added to that proposition. The resulting denotation is shown in (23).

$$(23) \quad \lambda q_{\langle st \rangle}. \exists m[m = [\lambda w'. \exists x[x \text{ is a girl} \ \& \ x \notin \{Ivy, Ann\} \ \& \ x \text{ was there in } w']]] \ \& \ q = [\lambda w: \forall Y[Y \cap \{Ivy, Ann\} \neq \emptyset \rightarrow \exists p[p = [\lambda w'. \exists x[x \text{ is a girl} \ \& \ x \in Y \ \& \ x \text{ was there in } w']]] \ \& \ p(w) = 1]]. m(w) = 1]] = \lambda q_{\langle st \rangle}. q = [\lambda w: \forall Y[Y \cap \{Ivy, Ann\} \neq \emptyset \rightarrow \exists x[x \text{ is a girl} \ \& \ x \in Y \ \& \ x \text{ was there in } w]]. \exists x[x \text{ is a girl} \ \& \ x \notin \{Ivy, Ann\} \ \& \ x \text{ was there in } w]]$$

This is a set of propositions: a question denotation. What we want as the denotation of the sentence is a proposition. In order to get that, I propose to apply the IOTA operator from (Partee 1986) adapted for the domain of propositions. This is an operation that applies to a singleton set and returns the unique object from that set. This is shown in (24).

$$(24) \quad \text{IOTA}((23)) = \iota q_{\langle st \rangle}. q = [\lambda w: \forall Y[Y \cap \{Ivy, Ann\} \neq \emptyset \rightarrow \exists x[x \text{ is a girl} \ \& \ x \in Y \ \& \ x \text{ was there in } w]]. \exists x[x \text{ is a girl} \ \& \ x \notin \{Ivy, Ann\} \ \& \ x \text{ was there in } w]] = \lambda w: \forall Y[Y \cap \{Ivy, Ann\} \neq \emptyset \rightarrow \exists x[x \text{ is a girl} \ \& \ x \in Y \ \& \ x \text{ was there in } w]]. \exists x[x \text{ is a girl} \ \& \ x \notin \{Ivy, Ann\} \ \& \ x \text{ was there in } w]]$$

The presupposition of the proposition in (24) can only be satisfied if Ivy and Ann are girls who were there. Let's take  $\{Ann\}$ . Since  $\{Ann\} \cap \{Ivy, Ann\} \neq \emptyset$ , the presupposition requires that there is a girl in this singleton set who was there. This means that Ann is a girl and that she was there. The same reasoning applies to  $\{Ivy\}$ . Thus, Ivy also has to be a girl who was there. The at-issue content of this proposition is that there is a girl who is not Ivy or Ann who was there. This correctly captures the meaning this sentence intuitively has.

## 5. No additive readings with universal quantifiers

One question naturally occurring at this point is why we need to express the additivity via a complex quantification over sets instead of simply saying that an additive introduces a

set that it subtracts from a domain of a quantifier and states that every element of this set is such that it is in the restrictor set and the main predicate holds of it. The reason for this is that such an approach predicts that (10a) (repeated here as (25)) could have the additive meaning, specifically, it could mean that every girl who is not Ivy and Ann was there, Ivy and Ann are both girls and they were there. This reading is not available.

(25) #Every girl besides Ivy and Ann was there.

If we substitute *some girls* by *every girl* in the LF in (20), we get (26) as the meaning of the entire sentence (under the assumption that the same type-shifting principles (IDENT and IOTA) apply here).

(26)  $\llbracket (25) \rrbracket^{g,w} = \lambda w: \forall Y[Y \cap \{Ivy, Ann\} \neq \emptyset \rightarrow \forall x[x \text{ is a girl} \ \& \ x \in Y \rightarrow x \text{ was there in } w]]. \forall x[x \text{ is a girl} \ \& \ x \notin \{Ivy, Ann\} \rightarrow x \text{ was there in } w]$

The problem with (26) is that the presupposition is stronger than the assertion. Let's consider  $U$ , the universal set containing all entities of the universe. Since  $U \cap \{Ivy, Ann\} \neq \emptyset$ , the presupposition in (26) requires that (27) has to be true. This means that the sentence is defined only if every girl in the world was there. The at-issue content in (26) is that every girl who is not Ivy or Ann was there. Whenever the proposition is defined, it is true. Following (Gajewski 2002), I assume that sentences that have a tautological or contradictory meaning due to the combination of their functional elements are perceived as ungrammatical.

(27)  $\forall x[x \text{ is a girl} \ \& \ x \in U \rightarrow x \text{ was there in } w]$

## 6. Additive readings with focus associates

I adopt Rooth's (1992) proposal about focus interpretation, where the presence of focus introduces a covert variable of a question type into LF. The value of this free variable has to be pragmatically fixed in the context – there has to be a salient question that the sentence containing a focused element addresses. According to (Rooth 1992), a sentence with focus (like the one in (28a)) has a structure shown in (28b), where  $B_4$  is a free variable of a question type ( $\langle \langle st \rangle t \rangle$ ). It gets its value from the assignment function  $g$  in a context. The value of this variable is restricted by the focus value of the sentence via  $\sim$ . A structure containing  $\sim$  is interpreted according to the rule given in (28c):  $\sim$  does not modify the at-issue content of the sentence. It adds the presupposition that the value of the silent variable has to be a subset of the focus value of the sentence. This is possible because the focus value of a sentence and a question have the same semantic type. The focus value of a clause is a set of propositions formed by making a substitution in the position corresponding to the focused phrase (this is shown in (29)). The superscript  $F$  on the interpretation function means that the focus value is computed).

(28) a. John danced with Mary<sub>F</sub>.  
b.  $[_{IP} [B_4 \sim] [_{IP} \text{John danced with Mary}_F]]$



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- c.  $\llbracket (\gamma \sim) \phi \rrbracket^{g,w} = \llbracket \phi \rrbracket^{g,w}$  and is defined only if  $\forall p[p \in \llbracket \gamma \rrbracket^{g,w} \rightarrow p \in \llbracket \phi \rrbracket^{g,w,F}]$
- (29)  $\llbracket \text{John danced with Mary}_F \rrbracket^{g,w,F} = \{ \lambda w. \text{John danced with Mary in } w, \lambda w. \text{John danced with Ann in } w, \lambda w. \text{John danced with Ivy in } w, \lambda w. \text{John danced with Bill in } w \} = \lambda q_{<st>}. \exists x[q = [\lambda w. \text{John danced with } x \text{ in } w]]$

I propose that (8b) (repeated as (30a)) has the LF shown in (30b). The additive phrase forms a constituent with a silent variable and directly modifies its value. One modification is required here: the additive phrase is looking for an argument of the type  $\langle\langle et \rangle \langle\langle st \rangle t \rangle\rangle$  (a function from a restrictor of type  $\langle et \rangle$  to a question) and not of type  $\langle\langle st \rangle t \rangle$  (a question). Since we choose the value of a free variable freely, in this case we assign  $B_4$  a value of the right type. Importantly,  $\sim$  requires that its sister has a question type and this is exactly the type resulting from putting together the additive phrase and its sister. Ultimately the value of Question Phrase (QP) has to match the focus value of *John danced with Mary<sub>F</sub>*. For this reason I have chosen the value for  $B_4$  shown in (30c).

- (30) a. Besides Ann, John danced with Mary<sub>F</sub>.  
b.  $[_{IP} [_{QP} [_{AddP} \text{besides Ann}] B_4] \sim] [_{IP} \text{John danced with Mary}_F]$   
c.  $\llbracket B_4 \rrbracket^{g,w} = g(4) = \lambda X_{\langle et \rangle}. \lambda q_{\langle st \rangle}. \exists x[x \in X \ \& \ q = [\lambda w. \text{John danced with } x \text{ in } w]]$

Putting together the additive phrase and the value of  $B_4$  results in (31a). Following the earlier discussion, it can be simplified and reduced to (31b). This is a set of propositions with the at-issue content of the shape ‘John danced with x’ where x is an individual who is not Ann and a presupposition that John danced with Ann. This is the value that corresponds to the question ‘Who besides Ann did John dance with?’.

- (31) a.  $\lambda q_{\langle st \rangle}. \exists m[\exists x[x \notin \{Ann\} \ \& \ m = [\lambda w'. \text{John danced with } x \text{ in } w']]] \ \& \ q = [\lambda w: \forall Y[Y \cap \{Ann\} \neq \emptyset \rightarrow \exists p[\exists x[x \in Y \ \& \ p = [\lambda w''. \text{John danced with } x \text{ in } w'']]] \ \& \ p(w) = 1]]. m(w) = 1]]$   
b.  $\lambda q_{\langle st \rangle}. \exists x[x \notin \{Ann\} \ \& \ q = [\lambda w: \text{John danced with Ann in } w. \text{John danced with } x \text{ in } w]]$

According to (29),  $\sim$  introduces the requirement that (31b) is a subset of the focus value of *John danced with Mary<sub>F</sub>*. As the reader can verify, this requirement does not hold: the propositions in (29) do not carry any presuppositions. However, if we modify the condition imposed by  $\sim$  in such a way that the presuppositions of the propositions in the denotation of the silent question are ignored and we only look at their at-issue content, this condition will hold. This modification is shown in (32). (32) also differs from the original denotation in (Rooth 1992) in explicitly stating that the sister of  $\sim$  is the question under discussion.

- (32)  $\llbracket (\gamma \sim) \phi \rrbracket^{g,w} = \llbracket \phi \rrbracket^{g,w}$  and is defined only if  $\llbracket \gamma \rrbracket^{g,w}$  is the QUD  $\ \& \ \forall p[p \in \llbracket \gamma \rrbracket^{g,w} \rightarrow \exists q[q \in \llbracket \phi \rrbracket^{g,w,F} \ \& \ \forall w[w \in \text{Dom}(p) \rightarrow q(w) = p(w)]]$

With these modifications we account for the fact that additive phrases interact with focus. (30a) presupposes that the current QUD is the one given in (31b) ('Who besides Ann did John dance with?'). This question carries the additive presupposition.

## 7. Conclusion

In this paper I observed that *besides* in English contributes the additive inference with *wh*-questions, existentials and focus associates. I proposed a unified account of those three cases. The proposal required using type-shifting principles since questions and regular propositions do not have the same semantic type.

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