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Coordinate Ellipsis and Information Structure*

Departing from Rooth's focus interpretation theory the article discusses two types of (German) ellipsis phenomena: direct alternative and implicit alternative coordinative ellipsis. For the first type, which includes Stripping, Gapping, ATB, and RNR, it is characteristic that the semantic value of either conjunct instantiates the context variable of the respective focus operator in the other. For German Polarity ellipsis and Sluicing, which constitute the other type, it is characteristic that the semantic value, which instantiates the variable given by the focus operator in the second conjunct, must be derived from the semantic value of the first conjunct and that the second conjunct always hosts an alternative set inducing item which demands new information focus in the first conjunct.

1 Introduction

In recent studies, it has become increasingly obvious that information structure plays a crucial role in determining the syntactic and semantic structure of coordinative structures and the appropriateness of deaccented or elliptical constituents in them. It is the second conjunct in particular that gives insights into the syntactic, semantic and information structure of its antecedent. Thus coordination is similar to a text or discourse sequence in that the information structure of the second conjunct tells us how its preceding expression must be. The idea that the information structure of the second conjunct determines the information structure and thus the syntax and semantics of the first traces back to the works of Rooth (1992a, b, 1996) and has been taken up and partially extended by Fox (1998), Romero (this volume), Schwabe (1997, 1999) and Winkler (1997 and this volume).

The following paper will show how Rooth's focus semantic theory induces certain restrictions on the information structure and thus on the syntactic and semantic structure of the first conjunct. From his theory it follows that the first conjunct is either a direct alternative to the second or must be structured in such a way that it is possible to derive a proposition from it, which may then serve as an appropriate alternative for the second conjunct. Its being a direct alternative goes hand in hand with the nearly total information structural, syntactic and semantic parallelism of both conjuncts. If, on the other hand, the first conjunct is not a direct alternative but rather renders an alternative by implicational bridging, syntactic and semantic parallelism is not given such that both conjuncts are structured syntactically and semantically alike. This, however, does not mean that there is a total lack of parallelism. We will see that the conjuncts must be parallel with regard to some of their focused constituents and we will try to find an explanation for why this is so.

The paper is organized in such a way that we start in Section Two introducing Rooth's theory on the basis of constructions that are mutual alternatives. These include Gapping (1),

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Stripping (2), Right Node Raising (RNR) (3), and Across the Board (ATB) (4) constructions.¹

- (1) PETER liest ein BUCH und FRITZ ____ einen BRIEF.
 Peter reads a book and Fritz a letter
Peter reads a book and Fritz a letter
- (2) PETER liest ein Buch und auch FRITZ ____.
 Peter reads a book and also Fritz
Peter reads a book and so does Fritz.
- (3) HANS hat MARIA __ und PAUL hat ANNA seinen alten Lehrer vorgestellt
 Hans has Maria, Dat. and Paul has Anna, Dat. his old teacher introduced.
Hans introduced to Maria, and Paul to Anna, his old teacher.
- (4) Einen Gast hat SIE jedem MÄDCHEN und hat ER jedem JUNGEN vorgestellt
 a guest has she to every girl and has he to every boy introduced
She introduced a guest to every girl and he to every boy.

With regard to the RNR and ATB constructions we will see in Section Three that information-structurally determined regularities make it necessary to distinguish between pseudo RNR/ATB constructions and real ones in that the pseudo constructions will turn out instead to be elliptical configurations. In Section Four, we turn to Sluicing (5) and Polarity ellipsis (6), which are configurations where the first conjunct is not a direct alternative of the second, to discuss the focus parallelism of both conjuncts.

- (5) Peter möchte ein BUCH lesen, aber er weiß nicht, WELCHES ____.
Peter wants to read a book but he isn't sure which one.
- (6) Maria hat die PRÜFUNG bestanden und Anna AUCH ____.
Maria has passed the examination and Anna has too.

2 Direct Alternative Conjuncts

In this section we will set the preliminaries for an explanation for information structure and thus the syntactic and semantic parallelism of conjuncts. This parallelism follows from Rooth's (1992 a, b, 1996) *Focus Interpretation Theory*.

The information structure of a sentence is regarded as the syntactically indicated information packaging of a sentence. According to Eckardt (1996), Drubig (1994), Winkler (1997), Rooth (1992a, b), Reis&Rosengren (1997) and many others, we distinguish between contrastive and presentational focus. The former comprises the commonly known

¹ Capitals indicate the focus exponent, the item which bears the main accent.

foci, such as focus associated with particles, corrective focus and question-answer focus. As we will see below a third focus type is assumed – the completive focus – which is the interpretation of focused *wh*-Phrases – cf. Drubig (1998), Winkler (this volume).

All foci, whether contrastive, presentational or completive, seem to be realized by a certain accent and they allow focus projection. This accent goes to the most accentuable syllable of the focus constituent, or in other words, to the focus exponent. The focus exponent is a syntactic X^0 -category associated via focus projection with a focus feature. This focus feature is assigned freely to a syntactic constituent and thus forms a focus constituent. While in the case of narrow focus the focus exponent and the focus constituent match, where the focus is wide the focus feature projects to the focus exponent. As we will see below, the focus constituent checks its focus feature in the Spec-position of a focus phrase

Coming back to information structural symmetry in direct alternative coordination as Gapping, Stripping and ATB/RNR, this means that the conjuncts match with respect to their background information and the number of their focused constituents. Each focused constituent in one conjunct correlates to a focused alternative in another. This parallelism follows from Rooth's theory, according to which each focus feature is interpreted at LF by a focus operator written \sim . As to the examples to be handled here, the interpretation takes place at the level of the FocP-node which hosts the focused constituent. To show how Rooth's theory works, we examine now a stripping or bare noun phrase construction.

- (7) $[CP[FocP[FocP \text{ HANS schrieb einen Brief an seine Mutter}]_3 \sim \psi_4]]$ und
 Hans wrote a letter to his MOTHER and
 $[CP[FocP[FocP \text{ FRITZ } ___]_4 \sim \psi_3]]$
 Fritz

Hans wrote a letter to his mother and so does Fritz.

The focus operator has two arguments: As to the second conjunct, the left argument is the overt second conjunct *Fritz* <*wrote a letter to his mother*> (= p_4), whereas the second is non-overt and represented as a proposition variable ψ .² This variable corresponds to the proposition p_3 of the first conjunct *Hans wrote a letter to his mother*, which is indicated by coindexation. The semantics of the focus operator introduces two conditions. The first one demands that the proposition of the conjunct serving as the instantiation of the proposition variable ψ must belong to the same *focus semantic value* ($\|\alpha\|^f$) as the proposition of the conjunct which is the overt argument of the focus operator. The focus semantic value of a sentence is defined by Rooth as a set of propositions which is, informally speaking, derived from the semantic value of the sentence in such a way that the position of the sentence occupied by a focused constituent is substituted by a variable. For both conjuncts in (7) the focus semantic value is therefore:

- (8) $\{p \mid \exists x [\text{write a letter } x, x\text{'s mother}] \}$

To prevent the proposition variables from being instantiated identically in both conjuncts, the focus operator introduces a second condition. This condition demands that the instantiation of ψ_3, p_3 in (7), differs from the overtly expressed proposition. This second condition

² The expression in angled brackets results from copying the semantic content of the antecedent expression.

is fulfilled by the different meanings of the focused constituents. Thus, just as the first conjunct serves as an alternative to the second, the second conjunct serves as an alternative to the first.

Both conditions of Rooth's (1996a) focus interpreting operator are given below with (9). (9a) gives the condition for answers to questions with the latter being the instantiation of the context variable C :

(9) *Focus Interpretation Condition*

- a. Set case: Where ϕ is a syntactic phrase and C is a syntactic covert variable, $\phi \sim C$ introduces the presupposition that C is a subset of $\llbracket \phi \rrbracket^f$ containing $\llbracket \phi \rrbracket^o$ and at least one other element.
- b. Individual case: $\phi \sim \psi$ introduces the presupposition that ψ is an element of $\llbracket \phi \rrbracket^f$ distinct from $\llbracket \phi \rrbracket^o$.

In demanding the instantiation of C or ψ , the focus operator relates the overtly expressed syntactic phrase ϕ to the context, which should render at least one value for C or ψ . If the value for ψ in the second conjunct of (7) is overtly expressed e.g. by the first conjunct, we call the latter a directly expressed alternative. Then, the information structure of the first conjunct matches with the one of ϕ . The reason is that they have the same focus semantic value and thus share both the background and focused constituents the latter necessarily differing in meaning. As to the first conjunct, its information structure is again interpreted in such a way that the focus operator \sim establishes a relation based on a value for C which can be rendered by a contextually given question. The focus operator coincides with coordination if ψ is instantiated by an overt alternative preceding ϕ . This may happen when there is some need to express more than one alternative to a contextually given question.

Furthermore, in requiring a value of C or ψ , which share with ϕ the focus semantic value, and in finding this instantiation directly expressed with the preceding expression, the focus operator and/or the focus feature create semantic redundancy which can be avoided by ellipsis as in (7). Ellipsis is possible there because the missing material in ϕ is reconstructable from its overtly given antecedent. We will come back to this later.

The value for C and, as we will see in Section Four in connection with a certain type of Sluicing and Polarity ellipsis, the value for ψ , or to put it in other words, the alternative to ϕ need not be given overtly. They must, however, be derivable from an adjacent expression serving as context. If this adjacent expression is the first conjunct, this conjunct is not the alternative to the second but rather implicates the alternative.

Up to now we have seen on the basis of Stripping constructions how Rooth's focus interpretation theory anaphorically connects expressions to the context and that the anaphoric expression and its antecedent have the same information structure if the latter is a directly expressed alternative to the former. In the following, we will apply this theory to Gapping constructions. The second conjunct of this coordination type contains, in contrast to Stripping, two focused constituents.

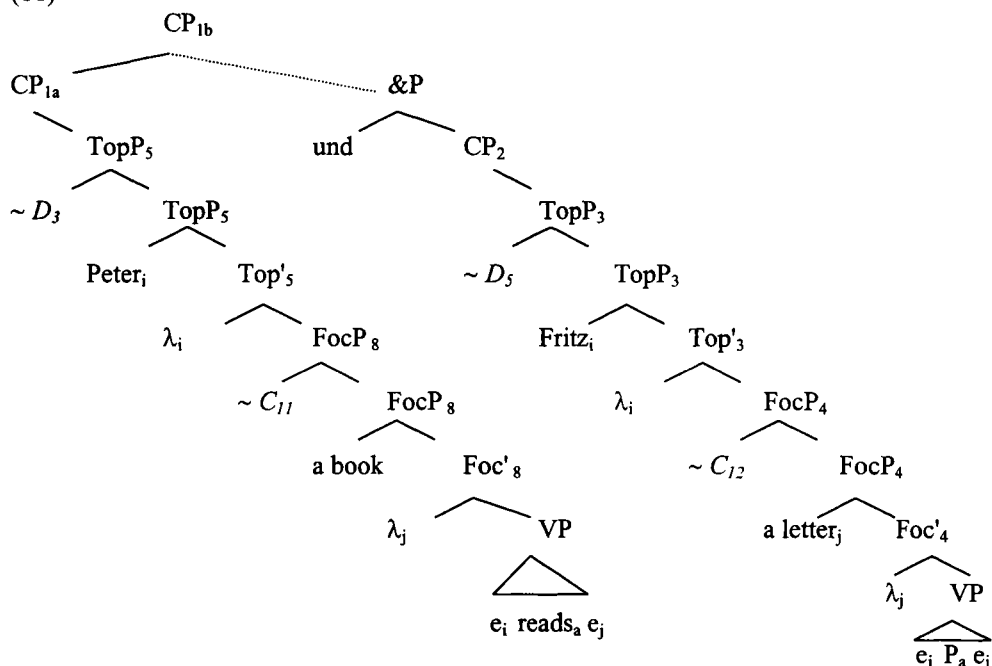
(10) PETER liest ein BUCH und FRITZ ____ einen BRIEF

Peter reads a book and Fritz a letter

Peter reads a book and Fritz a letter

Because the second conjunct contains these two focused constituents, two operators must be interpreted for its LF. The first, which is induced by the focus on *a letter* is the already known focus operator \sim . As we may see in (11), it is adjoined to FocP_4 , which Spec-position renders a place for the focused constituent. The second is induced by the focus on the topic *Fritz* and attached to TopP , a functional category which hosts in its Spec-position the topic constituent.³

(11)



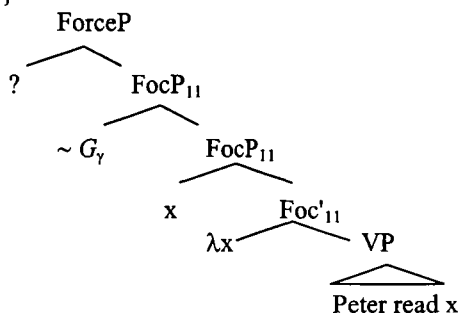
The idea here is that the focus or topic feature in Foc^0 or Top^0 are interpreted as operators that scope out the focused constituent and convert the propositional VP or FocP into predicates by lamda-abstracting. The predicates can then be applied to the respective focused constituent as well as to other individuals matching the focused constituent in type – cf. Rooth (1996a, b) for a similar representation.⁴

³ The coordination format here follows the ideas of Grootveld (1994) and te Velde (1996). Without going into detail, symmetric coordinative constructions are represented in a third dimension, which is indicated here by dotted lines. Like Büring/Hartmann (1998) and te Velde, we adjoin the coordination Phrase $\&P$ to a constituent of the first conjunct. Here the coordination Phrase $\&P$ is adjoined to CP_{1a} . The VP in the second conjunct contains the variable P instead of the verb. This variable denotes the same relation as its correlate *read* in the first conjunct – cf. Section Four below. As shown by Wilder (1994), the missing elements in second conjuncts cannot be seen as results of phonological deletion because in contrast to missing elements in the first conjunct, they need not agree morphologically with their antecedents.

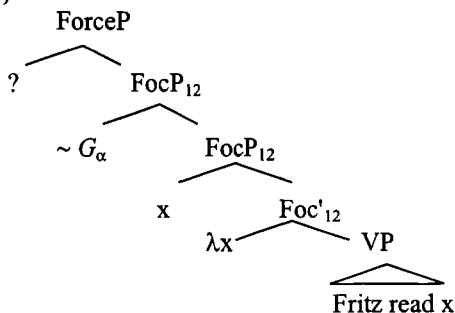
⁴ As Rooth (1996b) points out there is a close similarity between this representation and the structured meaning semantics for focus, since the scoped representation for focus could be considered a syntactic representation of a structured proposition – cf. also Stechow (1985/1989).

Since the variable C given by the focus operator in FocP_4 cannot be instantiated by the semantic value of FocP_8 – the reason is that $[\text{FocP}_8]^0$ cannot be an element of $[\text{FocP}_4]^1$ – the focus operators relate $[\text{FocP}_4]^0$ as well as $[\text{FocP}_8]^0$ to a contextually given question like *What do Peter and Fritz read?* or *Who reads what?* In order to get the interpretation that Peter and Fritz read different things, we have to split the question into the two subquestions SQ1 and SQ2:

- (12) (i) SQ1: What did Peter read?
 $? \{p \mid \exists y [\text{read peter}, y]\} = ? \{\text{Peter reads a book, Peter reads a paper, ...}\}$



- (ii) SQ2: What did Fritz read?
 $? \{p \mid \exists y [\text{read fritz}, y]\} = ? \{\text{Fritz reads a book, Fritz reads a paper, ...}\}$



Following Hamblin (1973), Karttunen (1977), Groenendijk & Stokhof (1984), Büring (1999) and Rooth (1996b), we consider a question a set of propositions.⁵ To get this interpretation, the interrogative pronoun *what* is considered to be a variable. Additionally, we assume that this set of propositions is in the scope of the interrogative operator '?', which is in ForceP, the position where sentence mood is determined.⁶ The instantiation of the set variable G induced by the focus operator is not given by the context available to the speaker but has to be rendered by the hearer. Thus she or he may specify G with the semantic value of the first and/or second conjunct in (11).

⁵ As to a discussion of the proposition set approach, which is applied here, and the structured meaning approach – cf. Krifka (1999).

⁶ As to the interpretation of wh-phrases as (completive) focus constituents cf. Drubig (1998) and Winkler (this volume).

As to the focus interpretation of both conjuncts in (11), we can see that the focus operator in FocP in either conjunct is related to a contextually given subquestion. Since the SQ1 *What does Peter read?* ($= \llbracket \text{FocP}_{11} \rrbracket$ in (12)(i) and (13)) is a subset of $\llbracket \text{FocP}_8 \rrbracket^f$ and contains at least $\llbracket \text{FocP}_4 \rrbracket^0$ and $\llbracket \text{FocP}_8 \rrbracket^0$, the focus condition given in (9a) is met with respect to the first conjunct. The same holds true of the second conjunct. There, SQ2 ($= \llbracket \text{FocP}_{12} \rrbracket$ in (12)(ii) and (14)) is a subset of $\llbracket \text{FocP}_4 \rrbracket^f$ and contains at least $\llbracket \text{FocP}_4 \rrbracket^0$ and $\llbracket \text{FocP}_8 \rrbracket^0$.

- (13) CP1_a: (i) $\llbracket \text{FocP}_8 \rrbracket = a \text{ book } \lambda x [\text{read } y_i, x]$
 (ii) $\llbracket \text{FocP}_8 \rrbracket^f = \{p \mid \exists x [\text{read } y_i, x]\}$
 $= \{\text{'Peter reads a book'}, \text{'Peter reads a letter'}, \dots\}$
 (iii) $\llbracket \text{FocP}_{11} \rrbracket^0 = \{\text{'Peter reads a book'}, \text{'Peter reads a letter'}, \dots\}$
 (iv) $\llbracket \text{FocP}_{11} \rrbracket^0 \subset \llbracket \text{FocP}_8 \rrbracket^f$
- (14) &P: (i) $\llbracket \text{FocP}_4 \rrbracket^0 = a \text{ letter } \lambda x [\text{read } y_i, x]$
 (ii) $\llbracket \text{FocP}_4 \rrbracket^f = \{p \mid \exists x [\text{read } y_i, x]\}$
 $= \{\text{'Fritz reads a book'}, \text{'Fritz reads a letter'}, \dots\}$
 (iii) $\llbracket \text{FocP}_{12} \rrbracket^0 = \{\text{'Fritz reads a book'}, \text{'Fritz reads a letter'}, \dots\}$
 (iv) $\llbracket \text{FocP}_{12} \rrbracket^0 \subset \llbracket \text{FocP}_4 \rrbracket^f$

Turning to the topic interpretation of (11), recall that in each conjunct the focused topic is scoped by the operator into the respective Spec-TopP. Like the focus operator which is adjoined to FocP the operator which is attached to TopP relates its overtly given argument to a non-overt, contextually given, argument. The difference between both arguments is that the overt argument of the focus operator in FocP is a proposition and the overt argument of the operator in TopP is a set of propositions – cf. Büring (1999). Therefore the focus semantic value of the TopP is a set of sets – cf. (15)(i) and (ii). Since $\llbracket \text{TopP}_3 \rrbracket^0$ is a subset of $\llbracket \text{TopP}_3 \rrbracket^f$, $\llbracket \text{TopP}_3 \rrbracket^0$ is a subset of $\llbracket \text{TopP}_3 \rrbracket^f$, and $\llbracket \text{TopP}_3 \rrbracket^0$ and $\llbracket \text{TopP}_5 \rrbracket^0$ are distinct, we may say that TopP_5 and TopP_3 are mutual alternatives.

- (15) (i) $\llbracket \text{TopP}_3 \rrbracket^f = \{\{p \mid \exists x [\text{read fritz}, x]\}, \{p \mid \exists x [\text{read peter}, x]\}\}$
 $= \{\{\text{'Fritz reads a book'}, \text{'Fritz reads a letter'}, \dots\}, \{\text{'Peter reads a book'}, \text{'Peter reads a letter'}, \dots\}\}$
 (ii) $\llbracket \text{TopP}_3 \rrbracket^f = \{\{p \mid \exists x [\text{read peter}, x]\}, \{p \mid \exists x [\text{read fritz}, x]\}\}$
 $= \{\{\text{'Fritz reads a book'}, \text{'Fritz reads a letter'}, \dots\}, \{\text{'Peter reads a book'}, \text{'Peter reads a letter'}, \dots\}\}$
 (iii) $\llbracket \text{TopP}_3 \rrbracket^0 \subset \llbracket \text{TopP}_3 \rrbracket^f$
 (iv) $\llbracket \text{TopP}_3 \rrbracket^0 \subset \llbracket \text{TopP}_3 \rrbracket^f$

According to the focus interpretation condition given in (9) the instantiation of the context variable of the focus operator in TopP has to be a subset of the focus semantic value of TopP. We may realize that this condition is met with respect to (11) – cf. (15)(iii) and (iv). And, we may see that the focus semantic value of the TopP in one conjunct contains the alternative set for the FocP of the other.

So far we have seen with regard to Stripping and Gapping that the focus condition determines that within coordination, the conjuncts are direct alternatives if they share the focus

semantic values and if the semantic values of the respective focused constituents differ. We also find direct alternatives with respect to backward ellipses as in (3) repeated here as (16).

- (16) HANS hat MARIA ___ und PAUL hat ANNA seinen alten Lehrer vorgestellt
 Hans has Maria, Dat. and Paul has Anna, Dat. his old teacher introduced.
Hans introduced to Maria, and Paul to Anna, his old teacher.

This construction type is sometimes called Ride Node Rising because the shared constituent is seen as raised to the right of the construction. We will see that RNR is not an appropriate representation if the shared constituent is unfocused as in (16). There, the focus condition is met because the second conjunct renders a semantic value that is element of the respective focus semantic value of the first conjunct and vice versa. Because the non-focused parts are identical, the shared unfocused constituent can be deleted in the first conjunct.

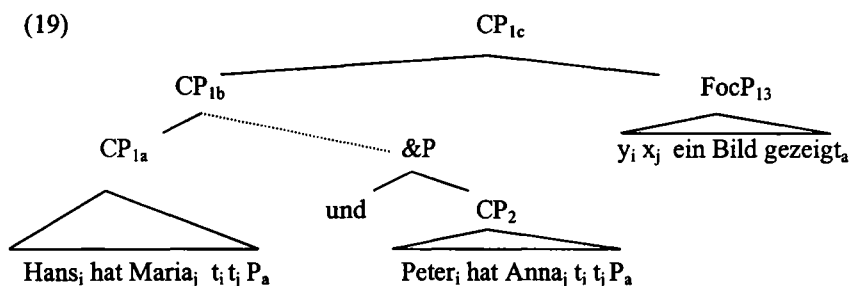
- (17) [_F HANS] hat [_F ANNA] ~~ein Bild gezeigt~~ und [_F PAUL] hat [_F FRIEDA] ein Bild gezeigt.
 Hans has Anna, Dat. and Paul has Frieda, Dat. a picture shown.
HANS showed ANNA, and PAUL showed FRIEDA, a picture.

There are, however, cases as (18) which seem to contradict the focus semantic theory applied here.

- (18) [_F HANS] hat [_F ANNA] und [_F FRITZ] hat [_F PAULA] [_F ein BILD gezeigt]
 Hans has Anna, Dat. and Fritz has Paula, Dat. a picture shown
Hans showed Anna, and Fritz Paula, a PICTURE.

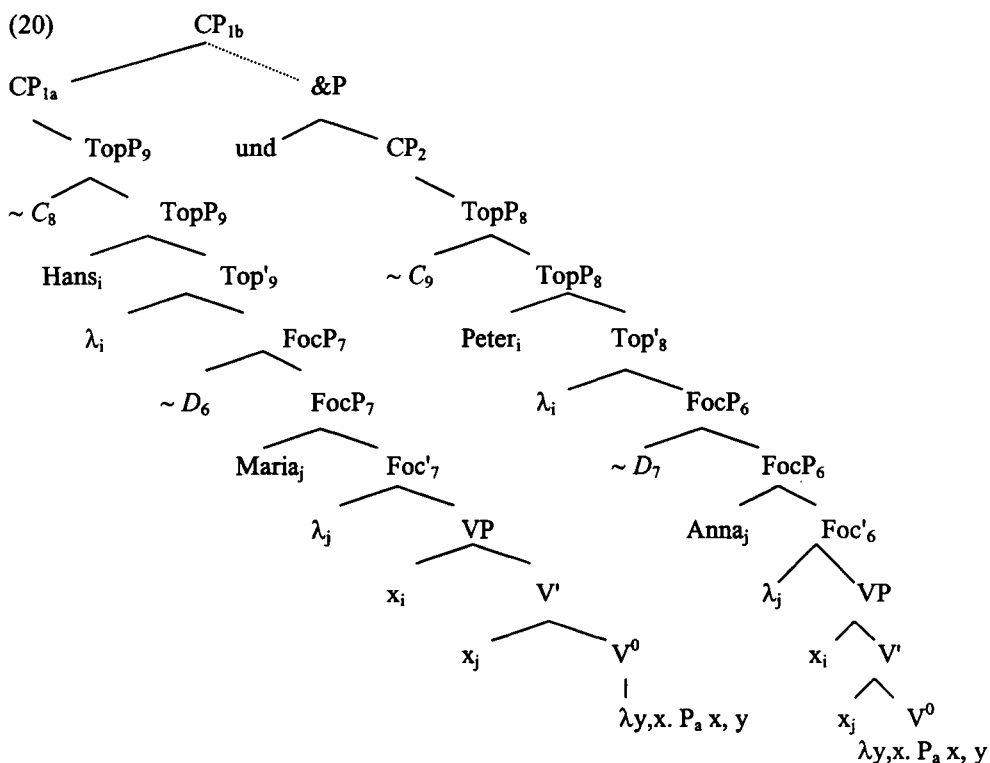
3 Apparent Asymmetries

If constructions like (18) above consisted merely of two conjuncts, they would be asymmetric with regard to their information structure. Thus the first conjunct *Hans hat Anna ___* has two focused constituents, namely *Hans* and *Anna*, and the second conjunct *Fritz hat Paula ein Bild gezeigt* contains three focused constituents, *Fritz*, *Paula* and *ein Bild gezeigt*. Because both conjuncts differ with respect to their focus semantic values, such configurations should be ruled out. But these constructions are fully acceptable. It is therefore necessary to find a syntactic representation that fits the focus semantic theory. This can be achieved if we imagine the shared focus constituent *ein Bild gezeigt* as being beyond the actual coordination.



Due to the threatening information structural mismatch, the focus constituent FocP₁₃ *ein Bild gezeigt* is generated beyond the actual coordination, i.e., beyond the so-called third dimension. Let us assume that each conjunct contains a variable $P (= \lambda x \lambda y [Py, x])$ that corresponds to $VP' (= \lambda x \lambda y [\text{show a picture } y, x])$ in FocP₁₃ – cf. (19) and (25). FocP₁₃ is a proposition that contains the two contextually bound variables y_i and x_j . As we will see below, the variable y may be instantiated by a set consisting of the individuals Maria and Anna and x may be substituted by the set formed by Peter and Hans.

Let us now turn to the focus interpretation of (19) and there first to the focus interpretation of CP_{1b}. We will notice that it is well formed with regard to its focus structure.



The focus condition in (9) is met with respect to FocP_7 or FocP_6 if there are contextually given sets that can be subsets of their focus semantic values. Similar to the Gapping example (10), we may imagine a question *What did Hans and Peter do with whom?* The latter can be splitted into the two subquestions *What did Hans do with whom?* and *What did Peter do with whom?* with the first instantiating D_{20} and the second specifying D_{21} in (20).

- (21) (i) $\llbracket \text{FocP}_7 \rrbracket^0 = \{p \mid \exists P [P \text{ hans, maria}]\}$
 (ii) $\llbracket \text{FocP}_7 \rrbracket^f = \{\{p \mid \exists P [P \text{ hans, maria}]\}, \{p \mid \exists P [P \text{ hans, anna}]\}\}$

- (22) (i) $\llbracket \text{Foc}_6 \rrbracket^0 = \{\{p \mid \exists P [P \text{ peter, anna}]\}\}$
 (ii) $\llbracket \text{FocP}_6 \rrbracket^f = \{\{p \mid \exists P [P \text{ peter, anna}]\}, \{p \mid \exists P [P \text{ peter, maria}]\}\}$

The focus condition (9) is also met with respect to TopP_9 in (20) because $\llbracket \text{TopP}_8 \rrbracket^0$ is a subset of $\llbracket \text{TopP}_9 \rrbracket^f$ and $\llbracket \text{TopP}_8 \rrbracket^0$ and $\llbracket \text{TopP}_9 \rrbracket^0$ are distinct – cf. (23). And, we may realize that the focus condition is also fulfilled with respect to TopP_8 since TopP_9 gives the appropriate subset, which is demanded by the focus operator – cf. (24).

- (23) (i) $\llbracket \text{TopP}_9 \rrbracket^f = \{\{\{p \mid \exists P [P \text{ hans, maria}]\}, \{p \mid \exists P [P \text{ hans, anna}]\}\}, \{\{p \mid \exists P [P \text{ peter, maria}]\}, \{p \mid \exists P [P \text{ peter, anna}]\}\}\}$
 (ii) $\llbracket \text{TopP}_8 \rrbracket^0 = \{\{p \mid \exists P [P \text{ peter, anna}]\}, \{p \mid \exists P [P \text{ peter, maria}]\}\}$
 (iii) $\llbracket \text{TopP}_8 \rrbracket^0 \subset \llbracket \text{TopP}_9 \rrbracket^f$

- (24) (i) $\llbracket \text{TopP}_8 \rrbracket^f = \{\{\{p \mid \exists P [P \text{ peter, anna}]\}, \{p \mid \exists P [P \text{ peter, maria}]\}\}, \{\{p \mid \exists P [P \text{ hans, maria}]\}, \{p \mid \exists P [P \text{ hans, anna}]\}\}\}$
 (ii) $\llbracket \text{TopP}_9 \rrbracket^0 = \{\{p \mid \exists P [P \text{ hans, maria}]\}, \{p \mid \exists P [P \text{ hans, anna}]\}\}$
 (iii) $\llbracket \text{TopP}_9 \rrbracket^0 \subset \llbracket \text{TopP}_8 \rrbracket^f$

Proceeding to the focus interpretation of the whole construction as shown in (25), it should become clear that the actual coordination phrase CP_{1b} can be seen as the background to the extraposed, focused FocP_{13} . This means that the focus structure of CP_{1b} is overwritten by the new information focus phrase.

- (25)
-
- $\{p \mid \exists P [P \text{ hans, maria \& P peter, anna}]\}$
 \downarrow
 $\{p \mid \exists P [P \{ \text{hans, peter} \}, \{ \text{maria, anna} \}]\}$
- (i) $\llbracket \text{FocP}_{13} \rrbracket^0 = \exists_k [\text{show } x_i, x_j, \varepsilon_k z \text{ picture } z]$
 (ii) $\llbracket \text{FocP}_{13} \rrbracket^f = \{p \mid \exists P [P x_i, x_j]\}$
 (iii) $\llbracket \text{CP}_{14} \rrbracket^0 \subset \llbracket \text{FocP}_{13} \rrbracket^f$

We assume that the variable x_i refers to the set {peter, hans} and that x_j denotes the set {maria, anna}. As shown in Schwabe (1999), this set formation becomes possible if all agents and patients are involved in one event, which itself is divided in subevents.

As we may remember, the focus operator demands an instantiation for its second argument – here the set variable C_{14} – and the focus condition requires that the contextually given set must be a subset of the focus semantic value of FocP_{13} . This subset is rendered by CP_{1b} . Beyond the semantic value of FocP_{13} it has to contain at least one other element – cf. (9a).

Imagine a discourse where the following sentence could be a suitable alternative to (25):

- (26) Die beiden Jungs haben den Mädchen [einen FREUND vorgestellt]_{FocP}
 Both boys have Dat. the girls Acc. a friend introduced
Both boys introduced a friend to the girls.

As we have seen, constructions like (25) on the one hand contain coordinated clauses which are mutual alternatives, and, on the other, behave like configurations which do not contain coordination because the coordinate phrase serves as the background to the new information focus FocP_{13} . The alternative to the whole construction must be found in the discourse. In contrast to this extrapositional construction type, coordinations where the shared constituent is unfocused do not require the shared constituent to escape the actual coordination. These constructions can be represented syntactically as ellipses – cf. (17). As shown in Schwabe (1999), the extrapositional construction type accounts for the unique interpretation of a shared indefinite as well as for plural anaphorical pronouns and plural verb morphology in the extraposed FocP . The idea there is that the information structural status of the actual coordination as CP_{1b} in (25), which is overwritten by the new information focus FocP_{13} to a certain extent and thus in the background of the whole construction, allows that the agents *Hans* and *Peter* and the patients *Maria* and *Anna* both form a set. These sets may be referred to by a plural pronoun as in (27). This implies that coreference between a plural set and a singular pronoun in FocP_0 is ruled out as can be seen in (28). Further, the plural set of the agents agrees in number with the finite verb as in (29). And because the plural sets may be involved in one event, an indefinite expression may get a unique reading as shown in (25). There the existential operator, which is adjoined to CP_{1c} , binds the index k of the epsilon term ' $\epsilon_k x$ Picture (x)'.⁷

- (27) (i) Hans_i hat Anna und Paul_j hat Maria [_{FocP} ihr_{i+j} BILD gezeigt]
 Hans has Acc. Anna and Paul has Acc. Maria their picture shown
Hans showed Anna, and Paul Maria, their picture.
 (ii) Hans hat Anna_i und Paul hat Maria_j [_{FocP} überredet, daß sie_{i+j} mit ins
 Hans has Anna, Dat. and Paul has Maria, Dat. persuaded that they along to the
 KINO gehen
 movies go
Hans has persuaded Anna, and Paul Maria, that they should go along to the movies.

⁷ As to the representation of indefinite expression as indexed epsilon terms cf. Heusinger (1997) and Schwabe (1999), who follows him in this respect.

- (28) Hans_i hat Anna und Paul_j hat Maria [_{FocP} *sein_{ij} BILD gezeigt]
 Hans has Dat. Anna and Paul has Dat. Maria his picture shown
Hans showed Anna, and Paul Maria, his picture.

- (29) A: Bist du sicher, daß Hans den Saft und Fritz [_{FocP} den Wein GESTOHLLEN haben]?
 Are you sure that Hans Acc. the juice and Fritz Acc. the wine Pl. stolen have?
Are you sure that Hans STOLE the juice and Fritz the wine?
 B: Ich glaube eher, daß Hans den Saft und Fritz den Wein [_{FocP0} GEKAUFT haben]
 I believe rather that Hans the juice and Fritz the wine Pl. bought have
I rather believe that Hans BOUGHT the juice and Fritz the wine.

If, on the other hand, there is no shared FocP, sloppy identity (30), singular verb morphology (31) and only the distributive reading of the indefinite (32) are possible. This results because the first conjunct in such constructions is elliptical.

- (30) [HANS_i]_{FocP2} hat [ANNA]_{FocP1} sein_i Bild-gezeigt und [FRITZ_j]_{FocP2} hat [PAULA]_{FocP1}
 Hans has Anna, Dat. his picture shown and Fritz has Paula, Dat.
 sein_j Bild-gezeigt.
 his picture shown
Hans showed Anna, and Fritz Paula, his picture.

- (31) A: Bist du sicher, daß [HANS]_{TOPP} [BIER]_{FocP} gekauft hat und [FRITZ]_{TOPP} [WEIN]_{FocP}
 Are you sure that Hans Acc. beer and Fritz Acc. wine SG.
 gekauft hat?
 bought has?
Are you sure that Hans bought beer and Fritz wine?

- B: Na, ich glaube eher, daß [HANS]_{TOPP} [SAFT]_{FocP} gekauft hat und [FRITZ]_{TOPP}
 I believe rather that Hans juice Sg. bought has and Fritz
 [MILCH]_{FocP} gekauft hat.
 milk Sg. bought has
Well, I rather believe that Hans bought juice and Fritz milk.

- (32) [HANS]_{TOPP} hat MARIA_{FocP} ein Bild-gezeigt und [PAUL]_{TOPP} hat ANNA_{FocP1} ein Bild
 Hans has Maria, Dat. a picture shown and Paul has Anna, Dat. a picture
 gezeigt]
 shown
Hans showed Maria, and Paul Anna, a picture.

To conclude, the focus operator which is induced by focusation and thus adjoined to a FocP sets up a context relation in that it demands the instantiation of its second argument, the variable ψ or C . The proposition or set variable can be instantiated by a proposition or set, which are available to the speaker. Then the variables are coindexed with the syntactic category of their antecedent. Or, C is instantiated by a set not given in her or his context, and thus indexed with an index variable as γ . The relationship that holds between the proposition variable and its instantiation can be anaphorical or cataphorical, conversely.

- (33) a. *Anaphoricity Condition*
 Given the sequence $\Phi \Psi$,
 Ψ is anaphorical w.r.t. Φ if $[\llbracket \Phi \rrbracket]^0$ instantiates ψ or C in Ψ .
- b. *Cataphoricity Condition*
 Given the sequence $\Phi \Psi$,
 Φ is cataphorical w.r.t. Ψ if $[\llbracket \Psi_i \rrbracket]^0$ instantiates ψ or C in Ψ .

According to this definitions the second conjunct is anaphorical with respect to the first one and all conjuncts are anaphorical with respect to a question if the conditions in (a) are met. And, the first conjunct is cataphorical with respect to the second one and a question is cataphorical with respect to all conjuncts forming an answer if (b) is fulfilled. The difference between the relationship holding between conjuncts on the one hand and questions and answers on the other is that the conjuncts are propositions that belong to one set of alternatives caused by a contextually given question. If alternatives of this set are overtly expressed by Φ and Ψ as in the examples handled so far, we may call them mutual alternatives. Their focused constituents are then interpreted as contrastive foci. The relation between a question and an answer, on the other hand, does not hold between propositions that are alternatives but between a set of propositions which is a subset of the focus semantic value of the answer.

Having the focus operator with its condition (9) and the definition of anaphoric relation as well as an economy principle, which demands the least amount of effort, we may now formulate a condition for ellipsis:

- (34) *Ellipsis Condition*
 Constituents in Ψ can be elliptical if Ψ holds an anaphoric relationship with Φ .

As we will see below, this condition leaves unexplained all such cases of deaccentuation and ellipsis where ellipsis and deaccentuation is possible in the second conjunct although the semantic value of the first conjunct does not instantiate the respective context variable of the focus operator in the second. Or to put it in other words, we will see that conjuncts need not always be mutual alternatives.

4 Implicit Alternatives

Coordination types in which the conjuncts cannot be seen as mutual alternatives are Sluicing and German Polarity ellipsis. To start with Sluicing, we will first sketch some of its properties that will become relevant later. It is known that Sluicing constructions consist of two conjuncts where the second one contains a *wh*-phrase which has an anaphoric relation to an element in the first conjunct.⁸ This element is either an overt indefinite expression as in (35) or an unspecified variable provided by the semantics of the respective verb as *read* in (36)(i) which has the semantic form ' $\lambda y, x$ [eat x , y]' or by the semantics of the VP – cf.

⁸ In the following we will use the following labels: *sluicing construction* for the whole construction, *sluicing clause* for the second conjunct, and *sluice* for the embedded clause in the second conjunct.

Chung-Ladusaw-McCloskey (= CLM) (1995), Fox (1995), Merchant (1999), and Romero (this volume).

- (35) (i) John met a girl but I do not know which one.
 (ii) John met somebody but I do not know whom.
- (36) (i) John is eating but I do not know what.
 (ii) John is eating but I do not know where.

As to the indefinite in the first conjunct, the *wh*-phrase in the second asks for a further specification of the discourse subject denoted either by the indefinite expression or the unspecified variable given by the verb semantics as by *eat* in (36), or it looks for the identification of the subject with an individual in the real world.⁹ The indefinite expression as well as the unspecified variable is indeterminate with respect to the subject anchoring – cf. Schwabe (1999). If the subject becomes more specified or identified with an individual by an answer to the question, it gets anchored in the discourse. In demanding the anchoring of a subject in the first conjunct by a subsequent answer, the *whP* establishes an anaphoric relationship to its correlate in the first conjunct and a cataphoric one to its correlate in the answer. Thus the semantics of the *whP* presupposes that the subject denoted by the indefinite in the first conjunct must not be anchored in the discourse and that the further anchoring of this subject must not be blocked. The first presupposition prevents the subject from being expressed by a definite expression. The second prohibits its expression from being in an embedded clause as in (37), or in the scope of certain quantificational or modal phrases as in (38).¹⁰

- (37) (i) * Tony sent Mo a picture that he has painted, but it is not clear with what.
 (ii) * Agnes arrived after John ate, but it is not clear what.
 (iii) * She regrets that we talked about it, but I don't remember to whom.
 (iv) * Susi asked whether you had eaten, but I don't remember which meal.
- (38) (i) * Few kids ate, but I don't know what.
 (ii) * Nobody went out for dinner, but I don't know to which restaurant.
 (iii) * John never cooks himself when he has guests, but I don't know what.
 (iv) * John rarely cooks himself when he has guests, but I don't know what.
 (v) * It is unlikely that he'll cook, but it's unclear what.

It goes without saying that the *wh*-phrase can only provide the anchoring of some subject in the first conjunct if this subject has not been anchored there before. It is not anchored when it is new or when it was mentioned but not anchored in some preceding context. The latter

⁹ Following Dekker (1997, 1999), we use the term 'subject' to refer to epistemic representatives of individuals. He points out that individuals exist in the world and are therefore total objects, subjects, on the other hand, are partial objects because the entity they represent need not be identified. They may, however, become total objects at which point they correspond to real individuals.

¹⁰ The examples are taken from Romero (this volume: (10), (11), (17), (18)(b), (49)(a), (b), (65)(c), (d), and (66)(b)). She shows that Sluicing becomes possible if the quantifier can be replaced by an E-type pronoun in the sluice – cf. her examples (51) through (53) – and if there is an upward-monotone instead of a downward-monotone adverb – cf. (65)(a), (b) and (66)(a).

occurs when the subject's anchoring is not relevant for the subsequent discourse. From this it follows that the indefinite expression the whP relates to is normally contained in a constituent representing new information focus – cf. (39).^{11, 12}

(39) John [_{FocP} met a GIRL] but I DON'T know WHICH one.

Further properties of Sluicing have, strangely enough, for the most part been neglected – cf. for instance CLM (1995) and Romero (this volume). They are that the sluicing clause must be connected to the first conjunct by adversative conjunctions as *but* or *however* that indicate the contrastive function of the sluice clause. Because of this contrastive function the sluice embedding clause must have a matrix predicate that is either an alternative set inducing polarity expression or is in the scope of an alternative set inducing adverbial. Dependent on their lexical meaning, all these expressions induce a certain set of alternative propositions of which the sluicing clause is an element. Polarity matrix predicates are verbal expressions as for instance *hesitate to say*, *be afraid of saying* or *be too shy to admit* and alternative set inducing adverbials are for instance *not*, *even* and *even not*.

- (40) (i) Peter told us that he has married but he hesitated to say whom.
induces: {Peter hesitated to say whom, Peter hastened to say whom, ...}
(ii) Peter has married and he is afraid of saying whom.
induces: {Peter is afraid of saying whom, Peter is happy to say whom, ...}
(iii) Peter has married and I do not know when.
induces: {I know when, I do not know when}
(iv) Peter has married and I even know where.
induces: {I know where he has married, I know when he has married, ...}
(v) Peter wants to marry and he even doesn't know when.
induces: {he doesn't know when, he doesn't know whom, ...}

As to the meaning of *even*, notice that the proposition which is in its scope is the least expected alternative of the set of alternatives.

Turning to the focus interpretation of a Sluicing construction, let us have a look at its syntactic and information structural representation.¹³

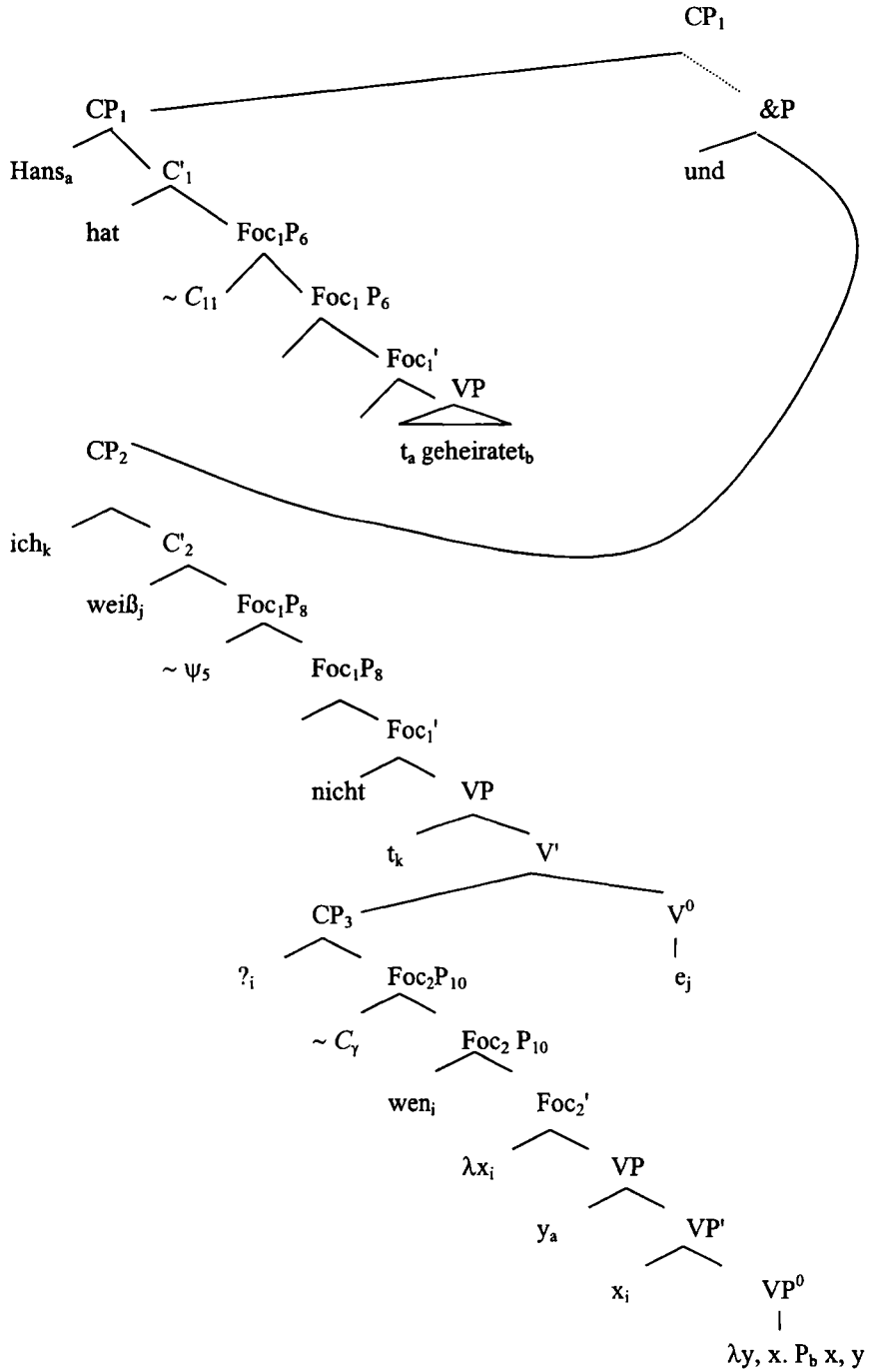
¹¹ If we assume that the whP presupposes that the indefinite in the first conjunct must not be blocked from context anchoring as it happens in (37) and (38), we have an explanation for CLM's (1995) and Romero's (1999) observation w.r.t. (37) that the wh-phrase of a sluice cannot escape islands if its correlate is covert. Because, we do not share their approach in that the sluicing clause is a total copy of the antecedent clause the island violation problem is irrelevant for our purpose.

¹² If a previously irrelevant and thus non-anchored subject becomes somehow relevant, it can be retrieved from the context. This may happen for instance by topicalization – cf.:

(i) PETER bought a book but WHICH one I do not know.

¹³ Foc₁P corresponds in (41) to Drubig's (1998) PolP₁, which hosts presentational focus, and Foc₂P refers to his PolP₂ being the position for contrastive focus.

- (41) Hans hat geheiratet und ich weiß nicht wen.
 Hans has married and I know not whom
 Hans has married and I don't know whom



As we may notice in the representation of the second conjunct (CP_2), the VP of the sluice is generated as a structure that contains, instead of the (syntactical) subject and verb, the contextually bound variables y and P . These variables copy the semantic content of their antecedents. Thus, y denotes the subject named and identified with 'Hans' and P denotes the relation ' $\lambda y, x. \text{ marry } x, y$ '. The correlation is indicated by coindexation. The entire VP cannot be a variable because the whP *wen* (*whom*) must be licensed syntactically by V^0 . Notice that the VP is structured in such a way that it licenses the overt material in the sluice and that its variables have the same type as their correlates in the antecedent clause.

To assume such a minimally necessary VP structure with variables instead of a copy of the whole antecedent IP has the advantage of getting rid of Ross's (1969) and CLM's (1995) problem that sluiced wh-phrases with overt correlates escape islands but wh-phrases in the corresponding full-fledged version do not – cf. (42), Romero (this volume) and fn. 11.

- (42) (i) The administration has issued a statement that it is willing to meet with one of the student groups, but I'm not sure which one <it has issued a statement that is willing to meet with >.
 (ii) *The administration has issued a statement that it is willing to meet with one of the student groups, but I'm not sure which one it has issued a statement that is willing to meet with.

If we assume instead of (i) ..., *but I'm not sure which one_i it is willing to meet with*, which does not contain an island, and compare it with its corresponding full-fledged version ..., *but I'm not sure which one_i it_a is willing to meet with x_i*, which does contain an island, the island problem does not play a role anymore.

The variable insertion also accounts for cases like (43) where copying of the whole antecedent IP would lead to semantic inconsistency.

- (43) (i) Hans promised to pick me up but he didn't.
 (ii) *.... but he didn't promise to pick me up
 (iii) but he didn't pick me up.

Coming to the focus interpretation of Sluicing constructions, we soon realize that the semantic value of the first conjunct cannot be an element of the focus semantic value of the second.

- (44) (i) $[[Foc_1 P_8]]^f = [[I \text{ do not know whom } \langle \text{Hans has married} \rangle]^f$
 = { 'I know whom Hans has married', 'I don't know whom has Hans married' }
 (ii) $[[Hans \text{ has married a girl}]]^0 \notin$
 { 'I know whom Hans has married', 'I do not know whom Hans has married' }

This means neither that such Sluicing constructions are not well formed with respect to the focus interpretation theory nor that this theory does not explain Sluicing. What happens here is that a proposition is derived from the semantic value of the first conjunct that can be an element of the focus semantic value of the second and that differs from the semantic value of the second conjunct as demanded by the focus condition (9). As to the example

(41), the proposition 'Hans has married' allows the accommodation of the alternative set {'I know whom he has married', 'I do not know whom he has married'}. There seems to be no doubt that this process is not determined semantically but that it is a conversational implicature. The positive alternative of the accommodated proposition set instantiates the context variable ψ_5 in (41) because the negative item *nicht* excludes the negative alternative. It is easy to realize now that the focus condition given in (9) is met because the positive alternative differs from the semantic value of the second conjunct and is an element of the latter's focus semantic value. With this roughly described accommodation process we now have the appropriate focus interpretation for (41).

- (45) (i) proposition set implicated by the first conjunct in (41):
 {'I know whom Hans has married', 'I do not know whom Hans has married'}
- (ii) 'I know whom Hans has married' \in
 {'I know whom Hans has married', 'I do not know whom Hans has married'}
 (= $[[\text{Foc}_1\text{P}_8]]^f$)

For a suitable expression that succeeds the sluicing construction, it is worth noting that it cannot be like the answer to an ordinary question in that only the constituent is expressed that fits the wh-Phrase. This constituent must be embedded in an attitudinal matrix clause as the whP in the sluice clause is.

- (46) A: Hans has met a girl and he does not know which one.
 B: (i) *A beautiful one.
 (ii) A beautiful one, I hope.

To sum up, the first conjunct of sluicing constructions must contain new information focus and an indefinite or an unspecified variable that render the antecedent for the wh-element. The embedding clause of the sluicing conjunct induces a set of converse alternatives of which the sluicing clause is an element. This converse alternative set must be derivable from the first conjunct. In asserting only the sluicing clause and leaving unexpressed its alternative, sluicing constructions merely express contrast. Contradiction or correction, on the other hand, happen if it is necessary to express that an alternative is considered to be not true.

- (47) (i) Hans likes Maria but not Anna.
 (ii) Hans doesn't like Maria but Anna.
 (iii) Hans is not busy but lazy.
 (iv) Hans is busy and not lazy.

We now have two types of contrast: first the conjunction of overtly expressed alternatives – this is Gapping, Stripping, and contradiction – and second an alternative the contrast partner of which is derived from the first conjunct – this is Sluicing. As to the overtly expressed alternatives, we may distinguish between conjoined alternatives which are considered to be true and conjoined alternatives where one alternative is assumed to be not true.

Another case of semantic mediation can be observed with respect to Polarity ellipsis.

- (48) HANS_{TopP1} [liest ein BUCH]_{FocP1} und FRITZ_{TopP2} AUCH ____.

Hans reads a book and Fritz too

Hans is reading a book and Fritz is too.

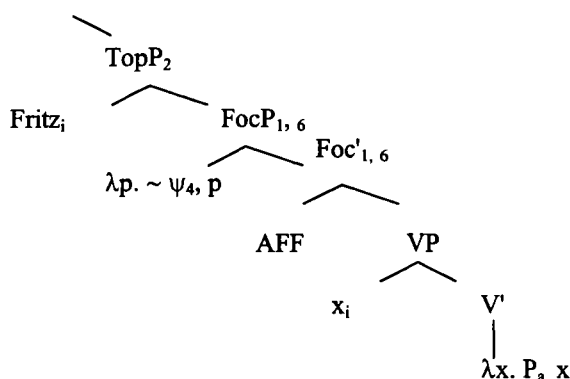
Leaving details aside, we consider the adverbial *auch* to be an overt expression of the focus operator, which is located in the Spec-Position of the Foc₁P – cf. (49)(ii). The semantics of *auch* is like that of this operator – cf. (49)(i). This means that it introduces the focus interpretation conditions as formulated in (9) and repeated below. It can be paraphrased in such a way that *auch* connects two propositions in that it contains two variables, one specified by the affirmative proposition to which *auch* is attached and the other by a negative proposition which is not overtly expressed but given by the most adjacent context.¹⁴

(9) *Focus Interpretation Condition*

- a. Set case: Where ϕ is a syntactic phrase and C is a syntactic covert variable, $\phi \sim C$ introduces the presupposition that C is a subset of $\llbracket \phi \rrbracket^f$ containing $\llbracket \phi \rrbracket^o$ and at least one other element.
- b. Individual case: $\phi \sim \psi$ introduces the presupposition that ψ is an element of $\llbracket \phi \rrbracket^f$ distinct from $\llbracket \phi \rrbracket^o$.

- (49) (i) $\llbracket \text{auch} \rrbracket^0 = \lambda p. \sim \psi_i, p$

- (ii) HANS_{TopP1} [liest ein BUCH]_{FocP1, 8} und FRITZ_{TopP2} AUCH_{FocP1, 6} ____.



As with Gapping, Stripping and Sluicing, we assume the empty VP to be structured and to contain a variable P which is a semantic copy of its antecedent, here 'λ_x read a book, x'.

Like Winkler (this volume) we assume that the focus accent on *auch* actually marks the focused affirmative polarity item, which is phonologically not given and thus unable to bear stress.

¹⁴ For a very thorough and detailed syntactic and semantic analysis of German *auch* cf. Reis & Rosengren (1997).

must always be derived from a proposition being new information focus. The antecedent must be new information because rejecting a proposition with affirmative or negative clauses like the *AUCH*- and the sluicing clauses only makes sense if the contradicted proposition is derived from a proposition that has just been asserted.¹⁶

To come back finally to the licensing condition on ellipsis (34), which is repeated as (51) and the Anaphoricity Condition (33) repeated as (52) below, we may realize that the Anaphoricity Condition is too strong in that it does not cover the cases handled in this section

(51) *Ellipsis Condition*

Constituents in Ψ can be deaccented or elliptical if Ψ holds an anaphoric relation with Φ .

(52) *Anaphoricity Condition*

Given the sequence $\Phi \Psi$, Ψ is anaphorical w.r.t. Φ if $\llbracket \Phi \rrbracket^0$ instantiates ψ or C in Ψ .

Thus, it has to be modified in such a way that it also defines the relation between $\llbracket \Psi \rrbracket^0$ and the proposition derived from $\llbracket \Phi \rrbracket^0$.

(53) *Anaphoricity Condition*

Given the sequence $\Phi \Psi$, Ψ is anaphorical w.r.t. Φ if $\llbracket \Phi_i \rrbracket^0$ or q implicated by $\llbracket \Phi_i \rrbracket^0$ instantiate the context variable ψ in Ψ .

With these conditions, which are both derived from Rooth's focus interpretation theory, we now have a device to license ellipsis and, we haven't mentioned it, deaccentuation. In arriving at this point we will have invariably neglected any number of syntactic restrictions. But as we have seen, it is the focus structure of the second conjunct that tells us what characteristics the focus structure of the first conjunct must display. Because focused constituents, at least in German, occupy the Spec-position of a focus phrase and a focus phrase is restricted to certain positions, the syntactic structure of the first conjunct is pre-determined to a certain extent. The details of how this works must be left to further research.

5 Conclusion

With this paper we have taken up the challenge of applying Rooth's focus interpretation theory to German coordination types and to find out how this theory restricts their syntactic and semantic structure and determines ellipsis or ellipsis-like phenomena.

It turned out that there are two types of coordinative ellipsis. The first type, we called *direct alternative coordination*. Its characteristic is that both conjuncts are mutual alternatives. That they are mutual alternatives follows from the focus theory applied here in that the value of either conjunct instantiates the context variable of the respective focus operator in the other. As for the other type, which we labeled *implicit alternative coordination*, the value which instantiates the context variable given by the focus operator in the second

¹⁶ As to the connection between assertion and new information focus cf. Eckardt (1996).

conjunct is either derived from the semantic value of the first conjunct (Sluicing) or from the focus semantic value of the Topic phrase of the first conjunct (Polarity ellipsis).

In connection with implicit alternative coordination, we made two interesting observations. First, it only arises if there is an alternative set inducing item in the second conjunct, as the negative polarity item in the attitudinal matrix clause of the sluicing construction in (41) and the affirmative in the *AUCH*-clause (49). Regarding the latter, the affirmative polarity item is not overt, therefore the *AUCH*, here considered to be the expression of the focus operator located in an adjoined position of FocP, takes over the focus accent.

If there is a polarity item in a clause, then it is not sensible for the speaker to assert its alternative. This explains why the alternative of the second conjunct must be derived from the semantic value rendered by the first conjunct. The latter introduces a proposition into the discourse by asserting it. The fact that what is rejected by the second conjunct must be derived from a proposition and that this proposition is asserted explains the second observation connected with implicit alternative coordination. The proposition in the first conjunct, which renders the alternative, must be new information focus.

Because focus theory enables the definition of an anaphoricity relation and this relation allows deaccentuation and/or ellipsis of the common material, we could formulate an *Ellipsis Condition*, which also accounts for deaccentuation. As to deaccentuation and ellipsis, they are, on the one hand, linguistic devices to mark focus. This means that the more the background material is phonologically reduced, the more the focused material becomes clear. On the other hand, ellipsis and deaccentuation result from some economy principle that demands the least amount of effort.

As to ellipsis, we discussed two types of coordinations. The first one is deletion in the first conjunct. It only occurs with direct alternative coordination – cf. (21). The second one is variable insertion and found in direct as well as implicit alternative coordination. Variable insertion always happens in the second conjunct – thus in Sluicing, Polarity ellipsis, Gapping, and Stripping. And we find variable insertion with respect to constructions where the shared constituent is focused. To be interpretable, these variables must be coindexed with an antecedent whose semantic content is then, so to say, the same as that of the variable. It was shown that variable insertion and interpretation prevent problems such as island constraint violations which would arise if the second conjunct were considered to be a copy of the syntactic structure of the first but with background constituents lacking phonological form.

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