Available online at www.sciencedirect.com
ScienceDirect
Lingua 120 (2010) 1436–1457
Lingua
www.elsevier.com/locate/lingua

Contrastive ellipsis: Mapping between syntax and information structure

Andreas Konietzko [a,*], Susanne Winkler [b,1]

[a] SFB 441/B13, University of Tübingen, Nauklerstrasse 35/3.05, 72074 Tübingen, Germany
[b] Seminar für Englische Philologie, University of Tübingen, Wilhelmstr. 50, 72074 Tübingen, Germany

Received 31 October 2007; received in revised form 23 August 2008; accepted 23 August 2008
Available online 21 July 2009

Abstract

Recent studies on ellipsis (e.g. Depiante, 2000; Hartmann, 2000; Kim, 1997; Merchant, 2004; Rooth, 1992b; Takahashi and Fox, 2005) have proposed that the characteristic feature of gapping and stripping is that the remaining constituents/elements are focused. We discuss the mapping between the syntax and information structure of contrastive ellipsis (CE) in German and English and show, on the basis of standard linguistic tests and experimental evidence, that a more fine-grained information structural analysis is needed which takes into consideration the parallelism requirement which holds for these constructions (Lang, 2004). While English, which is a configurational language, allows only one type of CE, we propose that there are two types of CEs in German which serve the function of realizing different types of contrast (cf. Molnár, 2006). Syntactic diagnostics indicate that one type leaves behind a contrastive topic (CT), the other a contrastive focus (CF). We will argue that in both constructions the gap is created by the same general mechanisms, namely movement of the contrastive remnants into a position at the left periphery of the phase and subsequent deletion of the given material. However, details of the syntactic derivations are different: In CT-ellipsis, the contrastive remnant moves to a left-peripheral position. In CF-ellipsis, the contrastive remnant moves to a position below the sentential adverb. Rating studies show that the acceptability of the resulting construction is influenced by the complexity of the syntax-information structure mapping relation. The paper adds further support to the proposal that the syntax of contrast involves movement of the contrastive constituent (cf. Frey, 2006) and provides evidence for language specific differences in the syntax-information structure mapping.

Keywords: Contrast; Topic; Focus; Information structure; Parallelism; Contrastive ellipsis

1. Introduction

In this paper, we will discuss the syntax and information structure (IS) of *contrastive ellipsis* (CE) in German and English. The term CE defines instances of ellipsis in which the remnants are contrastively focused, such as in gapping (1a, b), bare argument ellipsis (BAE) with negative polarity (2a–c), and BAE with positive polarity (3a–c). Accents are signalled by capitalization.

* Corresponding author. Tel.: +49 7071 29 77163.
E-mail addresses: andreas.konietzko@uni-tuebingen.de (A. Konietzko), susanne.winkler@t-online.de (S. Winkler).
[1] Tel.: +49 7071 29 74276.

0024-3841/$ – see front matter
doi:10.1016/j.lingua.2008.08.009

(1) a. Sandy plays SOCCER and ANNA TENNIS.
b. SANDY spielt FUSSBALL und ANNA TENNIS.

(2) a. Sandy plays SOCCER but not TENNIS.
b. Sandy spielt FUSSBALL, aber nicht TENNIS.
c. Sandy spielt FUSSBALL, aber TENNIS NICHT.

(3) a. Sandy plays SOCCER and TENNIS, too.
b. Sandy spielt FUSSBALL, und TENNIS, AUCH.
c. Sandy spielt FUSSBALL, und auch TENNIS.

CE in English and German shares a set of syntactic, semantic and prosodic features. First, it involves deletion of given material of variable size in the second conjunct. Second, it leaves one or more remnants which are marked with a high pitch accent and occur in a contrastive relationship with their correlates. However, the English and the German examples also differ from each other in very specific ways. In addition to the English-like word order in the b-examples, German also allows one which changes the position of the object relative to the negative or positive assertion particle (2c, 3c).[2]

The present investigation shows that there are different cases of CE depending on the instantiation of the parallelism requirement. We will argue that in German at least two types of remnant structures must be differentiated: one in which the remnant functions as a contrastive topic (referred to as CT-ellipsis) and one in which it functions as a contrastive focus (referred to as CF-ellipsis). We will propose that in both constructions the gap in the second conjunct is created by the same general mechanisms, namely movement of the contrastive remnants into an A'-position at the left periphery of the clause, as proposed by Molnár and Winkler (2010) or to a smaller domain, with subsequent deletion of the given material. However, the syntactic derivations differ in detail. In CT-ellipsis (2c, 3b), the contrastive remnant moves to a left-peripheral position. In CF-ellipsis (2b, 3c), the contrastive remnant moves to a position which has all the characteristics of a focus position below the sentential adverb. The schematic structures are given in (4a) and (4b), respectively.

(4) a. [CP TOP [vP Neg [vP FOC [~~vP~~]]]] *CT-ellipsis*
b. [vP Neg [vP Foc [~~vP~~]]] *CF-ellipsis*

We provide evidence for this claim from standard syntactic arguments and from empirical investigations. On the basis of two experimental studies, we argue that contrastive highlighting of the correlate(s) in the English and German examples (1)–(3) facilitates processing of the second conjunct, at least in the marked order. We take these findings as evidence that the relevant set of alternatives is built up incrementally when a contrastive accent on the antecedent is encountered in the first conjunct, and show that the contrastive interpretation follows from the *Parallelism Constraint* – a well-formedness principle formulated in terms of information-structural notions. That is, by default the order of remnant constituents in the second conjunct is such that their information-structural status matches the information-structural status of their correlates. The Parallelism Constraint allows identical parts of the second conjunct to be deleted under an appropriate syntactic licensing mechanism. The remaining constituents are syntactically and information-structurally marked as contrasts (cf. Molnár and Winkler, 2010).

The paper is organized as follows: in section 2, we discuss the information-structural notions of givenness, focus and topic and show that they play a crucial role in the definition of parallelism in elliptical constructions. In section 3, we discuss the syntax of bare argument ellipsis in German. We argue that in German the remnant moves to an edge position in the C-domain in the unmarked elliptical cases. Furthermore, there is a second remnant position available in which the contrastive focus can be realized. This claim is in line with the assumption that the left periphery of the vP-phase is parallel to the CP periphery (cf. Molnár and Winkler, 2010). In section 4, we provide experimental

[2] Although the structures in (2c, 3c) are attested in corpora they are judged to be marked by some speakers if presented with neutral intonation or without an appropriate context. This intuition was confirmed by our judgement studies (cf. section 4).

evidence for the claim that the Parallelism Constraint is an information-structural well-formedness constraint which facilitates processing.

Our analysis is couched within the *Minimalist Program* (Chomsky, 1995). We assume familiarity with a syntactic framework in which functional categories can be syntactic heads, and with the notions of *merge*, *attract*, *delete*, as defined in Chomsky (1995).

2. Information structure and contrastive ellipsis

2.1. Contrast and parallelism

In this section, we discuss the notion of *contrast* (C) in ellipsis and concentrate on its relation to other core IS notions, such as focus, topic, givenness and parallelism in reduced constructions. Long-standing research on IS and CE (Kuno, 1976:309; Sag, 1976:280–281; Pesetsky, 1982:640–659; Klein, 1993; Johnson, 1996; Kim, 1997; Lang, 2004; Winkler, 1997, 2006; Hartmann, 2000; Winkler and Schwabe, 2003) shows that there are two complementary syntax-IS mapping processes, namely givenness marking and contrast management (Winkler, 2005), as stated in the following hypotheses[3]:

(5) i. Givenness Marking Hypothesis (GMH)
Given material is deaccented or deleted at Phonological Form.
ii. Contrast Management Hypothesis (CMH)
Given or redundant information licenses a contrastive interpretation of the remnant(s) with respect to their correlates.

The Givenness Marking Hypothesis in (5i) states that syntactically derived material is deaccented or deleted at Phonological Form (PF) if the material is either given or redundant (see e.g., Chomsky and Lasnik, 1993; Tancredi, 1992; Klein, 1993; Depiante, 2000; Hartmann, 2000, 2003; Merchant, 2003, 2004; Johnson, 2004; Takahashi and Fox, 2005; among others). The term *given material* in its original definition by Halliday (1967:206) refers to ''recoverable information'' that ''tends to be represented anaphorically, by reference, substitution or ellipsis.'' The hypothesis in (5ii) concentrates on the interpretation of the remnants. It suggests that the function of given or redundant material is to assign a contrastive interpretation to the remnants. In contrast to Schwarzschild (1999), who suggests that grammar only makes reference to givenness and not to focus, we propose that in CE grammar makes reference to the Parallelism Constraint (PC) which is defined over both givenness and contrast. The Parallelism Constraint, stated in (6), is a discourse well-formedness condition which must be satisfied in order for CE to be licensed.

(6) Parallelism Constraint for CE
CE satisfies the Parallelism Constraint if the elliptical clause receives the same semantic and information structural interpretation as its antecedent clause, observing (5i, ii).

The Parallelism Constraint in (6) is a strong information-structural requirement on the discourse appropriateness of CE. Applied to the English example (1a) it states that CE is licensed if the elliptical clause *and ANNA TENNIS* receives the same semantic and information-structural interpretation as *SANDY plays SOCCER* with respect to the entities that are contrasted after the application of (5i) which deletes the main verb *play* as redundant information in the second conjunct. The contrasts are realized on the topics and the foci, answering an implicit multiple *wh*-question such as *Who plays what?* in a pairwise fashion, as originally observed by Kuno, 1982; Repp, 2005, 2008; Kuno (1982; cf. also Repp, 2005, 2008; Winkler, 2005).

The contrasts in CE are a consequence of the Parallelism Constraint in (6). That is, the correlate clause and the elliptical clause are semantically and information-structurally parallel, expressing contrast on those information-structural notions that are not redundant. More concretely, contrast in CE is expressed by using four devices: (i)

[3] The term *management* stems from the Berlin School (cf. Krifka, 2006). We use it here to express the dynamics of information-structural devices as they apply to the notion of contrast, topic and focus in discourse.

creating a semantic opposition between the remnant and its correlate in the antecedent clause; (ii) prosodic highlighting of the remnant and its correlate, (iii) semantic intensification of contrast by the use of a negative or affirmative particle and (iv) strengthening the contrastive effect by deleting the deaccented and redundant material.[4] Under the assumption that contrast can be manipulated independently (cf. Molnár, 2006), the contrast on the topics *Sandy* and *Anna* in (1a) is referred to as a contrastive topic, the one on the foci *soccer* and *tennis* as a contrastive focus. If the multiple *wh*-question *Who plays what?* is answered by the sequence *Sandy plays soccer and tennis Anna*, the Parallelism Constraint in (6) is violated. The parallel ordering of the contrastive topic before the contrastive focus in both conjuncts is interrupted and an information-structural mismatch results.

One central question is how to distinguish between contrastive focus and contrastive topic. The term *contrastive focus* is informally defined as evoking a suitable set of alternatives from which a subset is chosen (see e.g., Rooth, 1992b; Merchant, 2001; Schwabe, 2003; a.o.). The basic idea behind, for example, Rooth's (1992a,b) proposal is that the focused expression within a constituent is used in constructing a set of alternatives, which are also referred to as the focus semantic value of a sentence ($[[\alpha]]^{f}$). These alternatives consist of the maximal set of ordinary semantic values ($[[[\beta]]]^{0}$) that can be generated from the relevant constituent by replacing each focus in that constituent with an expression of identical semantic type.

If we apply Rooth's definition to CE in (2a), we first identify the remnant of the second conjunct *tennis* as the contrastive focus, compute the set of alternatives over the complete structure, namely λx [Anna plays x] and then search for the relevant correlate in the first conjunct and find the correlate *soccer*. Our experimental work, however, provides some initial evidence for the assumption that the contrastively focused element in the first conjunct triggers the construction of a set of alternatives the moment it is encountered.[5]

But what exactly is the difference between contrastive focus and contrastive topic? There has been an ongoing debate between those who analyze contrastive topic as a subtype of topic, for example, Kuno (1973:44–49), Kiss (1987), and Büring (1997), those who assume that contrastive topics are actually foci within a topic, for example, Krifka (1998) and those who assume that contrastive topics are actually foci (cf. Selkirk, 1984; for an overview cf. also the discussion in Büring, 2003). Our study on CE supports the proposal that contrast can be realized on both topics and foci. The crucial observation in the literature seems to be that contrastive topics can only occur in ''obligatory combination [. . .] with an additional focus in the sentence'' (Molnár, 1998:135). That is, the criteria for contrast in (i)–(iv) apply to both remnants in (1a). However, the criteria for topichood, namely, (i) rising intonation, (ii) occurrence in sentence-initial position, and (iii) the presence of a second focus (cf. Winkler, 2005:191) allows the characterization of the first remnant in the CE in (1a) as contrastive topic and the second as contrastive focus.

We propose that the interpretation of (1a) proceeds as follows: (i) the contrast on the topic *Sandy* and contrast on the focus-correlate *soccer* triggers the construction of the set of alternatives: **λ**x **λ**y [x plays y]; (ii) the conjunction *and* signals a parallel structure; (iii) the Parallelism Constraint in (6) applies and allows the deletion of the redundant information leaving only a contrastive topic and a contrastive focus remnant overt. The incremental analysis also applies to (2a): first, the contrastive focus on the correlate *soccer* triggers the construction of the set of alternatives: **λ**x [Sandy plays x]. Second, the negative marker in the second conjunct expresses an exclusion from – and not an addition to – the set. Finally, the contrastive focus on the remnant *tennis* explicitly specifies the member which is excluded from the set.

The concept of contrast in relation to topic and focus will be further developed in the discussion of German CT and CF-ellipsis as we go along (cf. section 3).

2.2. *Contrastive ellipsis and the Parallelism Constraint*

In this section we will investigate the mapping relation between the syntax of contrast and information structure in CE. We show how the Parallelism Constraint and CE are related. Finally we discuss some information-structural mismatches which constitute violations of the Parallelism Constraint.

[4] We do not claim, however, that all four devices are obligatory in all cases.

[5] If intonation is available to signal contrast then the relevant set of alternatives can be computed already in the first conjunct also under Rooth's account.

The central hypothesis of the syntax-IS-mapping of CE is expressed by the *Edges and Gaps Hypothesis* in (7), as stated by Molnár and Winkler (2010):

(7) The Edges and Gaps Hypothesis (EGH)
   i. Edge Hypothesis (EH):
      Syntactic displacement of a constituent to the edge of a phase (vP or CP) is associated with phonological prominence and contrastive interpretation of that constituent.
   ii. Formation of Gaps Hypothesis (GH):
      Deletion of given or redundant information licenses the phonological prominence of the remnant(s). The contrastive interpretation follows from the semantic/pragmatic properties of the clause.

The Edges and Gaps Hypothesis consists of two parts. (7i) establishes a relation between syntactic movement and phonological prominence. (7ii) captures the fact that the deletion of discourse-given constituents produces a highlighting effect on the contrastive remnant which must occur in its own intonational domain according to Selkirk (2005). The Edge Hypothesis in (7i) makes reference to the notion of phase which is defined as ''the closest syntactic counterpart to a proposition'' (Chomsky, 2001). Concretely, a phase is identified as the predicate phrase (vP, the constituent which encodes the full argument structure of the predicate) and the sentential constituent (CP, semantically a proposition). Dislocation in current syntactic theory is always leftward, either to the left edge of the sentence or the left edge of the predicate phrase. The Edge Hypothesis captures movement of constituents to the left edge of the smaller (vP) phase and the left edge of the clausal (CP) phase, and suggests that the moved constituents are associated with specific phonological prominence. The Gaps Hypothesis in (7ii) captures less well-understood phenomena in the region of the vP and establishes an association between the leftward movement of the contrastive remnant and the deletion of the constituent containing redundant or given material, as in CE.

The Edges and Gaps Hypothesis raises various empirical and theoretical questions. First, what kind of evidence do we have that contrast is associated with the edge of the phase? And what different kinds of edges are relevant? Second, in which sense are edges and gaps related? Many researchers have observed that a focused phrase in situ is not information-structurally equivalent to a phrase dislocated to the left periphery, as the English example by Prince (1981:259) in (8) shows.

(8) a. They named their dog [FIDO]
   b. [FIDO] they named their dog. (Prince, 1981:259)

Following Prince's initial account, Ward (1990) and Vallduví and Engdahl (1996:474) analyzed the preposed constituent in (8b) as a contrastive element using the notion of selecting a subset from a set of alternatives. This reading is not readily available in (8a) which answers a *wh*-question such as *What did they name their dog?* or *What did they do?* What exactly is the syntax of (8b)? We propose a movement analysis, à la Rizzi (1997), and many others, and assume the dislocation of the contrastive constituent to the left edge of the matrix clause. More concretely, in a first step the proposition *They named their dog FIDO* is built up in the TP. Next, the constituent *Fido* is moved to the left edge of the CP to the Contrast Phrase. The lower copy is deleted, as shown in (9).

(9) $[_{\text{ContrP}}$ FIDO $[_{\text{TP}}$ They named their dog ~~FIDO~~$]]$

The next question is: in what sense are edges and gaps related? They are related in two respects: (i) gap-formation, which deletes the redundant information, has a contrastive highlighting effect on the remaining constituents, and (ii) the Parallelism Constraint in (6) states that in parallel structures edges are symmetric and contrast, whereas non-edge-material is subject to the givenness-marking constraint. The observation that edges are associated with contrastive interpretations and ellipsis serves the function of highlighting the contrastive remnants is illustrated with respect to CE in (10).

(10) A: Wer hat die Buddenbrooks gelesen und wer den Zauberberg?
   who has the Buddenbrooks read and who the Zauberberg

B: [DIE BUDDENBROOKS] hat [SANDY] gelesen
the Buddenbrooks has Sandy read
und [DEN ZAUBERBERG] [ANNA].
and the Zauberberg Anna

One standard account of CE is the movement analysis. The central idea is to build a complete sentential structure for the proposition in (10) and *Den Zauberberg hat Anna gelesen* in the lower vP. Then the contrastive DPs are moved into stacked A'-positions at the edge of the phase, here CP. In a subsequent step the lower vP is deleted at PF. Thus, this analysis is based on the assumptions that (i) ellipsis and gap formation affect only phrases (e.g. Lobeck, 1995; Merchant, 2003; Johnson, 2004). The relevant structure for the CE in (10) is given in (11).

(11) [CP_{CT} den Zauberberg [vP_{CF} Anna [~~VP~~]]]

Example (10) shows that the edges of the matrix clause and the edges of the coordinate clause are related. The change in word order due to topicalization in the matrix clause is reflected in the elliptical clause: in (11), both contrastive remnants *den Zauberberg* and *Anna* are moved to an edge position. Canonical word order in the second conjunct of (10) would lead to an information-structural mismatch, an obvious violation of the Parallelism Constraint, as shown in (12).

(12) ?DIE BUDDENBROOKS hat SANDY gelesen
the Buddenbrooks has Sandy read
und ANNA DEN ZAUBERBERG.
and Anna the Zauberberg.

But sometimes mismatches are intended as in the English examples in (13) and the German examples in (14).

(13) a. MISTAKES were made, but not by ME. (book title)
b. Solar Power wins ENTHUSIASTS but not MONEY. (NYT, 2007/07/16)

(14) ER ist ihr TREU, SIE nicht IMMER.
He is her faithful she not always
'He is faithful to her, she isn't.'
(ZDF-Report on Humphrey Bogart, 14.01.07)

In (13a), the contrastive *by*-phrase in the CE does not have an overt parallel contrastive correlate. However, the passive antecedent clause implies an agent with which the agentive *by*-phrase contrasts in the elliptical clause. In (13b) the contrastive foci *enthusiasts* and *money* violate the requirement that the contrasting constituents be alternatives within a set. The German example in (14) also constitutes a violation of the Parallelism Constraint, since the CE *sie nicht immer* ('she not always') is neither semantically nor information structurally parallel to *er ist ihr treu* ('he is faithful to her'). The observation is that these mismatches do not result in ungrammaticality but lead to processing complexity.

In this section we have proposed that edges are associated with the concept of contrast and that CE is a prototypical construction for contrast marking. We have shown that CE may host one highlighted constituent (in BAE), or more than one (in gapping) in an A-bar position. We have claimed that the highlighted constituent in CE is a displaced constituent and is interpreted as a contrastive topic or contrastive focus. The Edges and Gaps Hypothesis has implemented the observation that the contrast on the remnants in CE is intensified by deleting the given or redundant material in the elliptical clause. The edges of the matrix clause and the elliptical clause are related, as is seen in the English topicalized gapping example in (10). We have interpreted this as indirect evidence for the assumption that edges are associated with the concept of contrast in English. The question whether the syntax for German CE, in particular for German bare argument ellipsis (BAE), follows the same mapping requirements from syntax to information structure, is discussed in the next section.

3. Bare argument ellipsis in German

Concentrating on the data in (2b–c) we will now discuss the syntax and information structure of BAE in German and provide further evidence for our assumption that contrast is read off of edge positions. We will proceed in the following way. First, we show that the remnant in CT-ellipsis is a contrastive topic. The question then is what position it occupies. Due to the lack of clear structural clues in BAE conclusive evidence is hard to come by. However, if the remnant's status as a topic is established then there are only two possibilities. It can occupy a left-peripheral position, i.e. a position in the C-domain. Alternatively, it could be in a topical position in the middle field (cf. Frey, 2004)[6] since it precedes sentential adverbs such as *vermutlich* ('probably'). However, we will show that the syntactic properties of possible remnants are not compatible with the second option. Moreover, we will argue that such an analysis presupposes an IP-coordination structure (Frey argues that the medial topic position is in the IP-domain) which would violate well-established syntactic constraints.

3.1. CE and topicality

In this section we will use standard tests to show that the remnant in CT-ellipsis indeed involves topicality. As discussed above, the notion of contrast is taken to be independently operative on the notions of topic and focus (cf. section 2.1). In the following discourse the contrast between the topics *Maria* and *Hans* in (15B) is forced by the context in (15A):

(15) A: Will both of your siblings go to France?
A': Will Maria go to France?
B: Maria wird wohl fahren, aber Hans vermutlich nicht. *CT-ellipsis*
Maria will PART go but Hans probably not
C: #Maria wird wohl fahren, aber vermutlich nicht Hans. *CF-ellipsis*
... but probably not Hans
C': Maria wird wohl nicht fahren, aber vermutlich Hans. *CF-ellipsis*
Maria will PART not go but probably Hans

The answers in (15B) and (15C) differ with respect to word order and discourse appropriateness. In (15B) *Hans* precedes the sentential adverb *vermutlich* and the negation *nicht*. It has been argued that in the middle field, elements directly preceding sentential adverbs are topics (Frey, 2004). Since the question in (15A) asks about a person's siblings which can be taken to be presupposed in this context, it allows a semi-congruent answer containing a contrastive topic as in (15B). In principle *Hans* could occupy either the medial topic position above sentential adverbs or a left-peripheral position; both of these positions are compatible with a topic interpretation. We will come back to the question of the exact position of contrastive topics in section 3.2. What is crucial at this point is that the topic cannot occur below the sentential adverb. This is shown by the deviance of (15C): Here *Hans* must be interpreted as focus, which causes a clash with (15A). The resulting question–answer pair violates the Parallelism Constraint in (6) since the remnant of the CE does not have the same information structural function as its correlate in the antecedent clause. By contrast, in (15C') as an answer to (15A') the Parallelism Constraint is respected, since the remnant *Hans* represents new information, hence focus.[7] Analyzing *Hans* as focus in (15C) is supported by the fact that it occupies a position which is even below negation. Negation in German is usually taken to be located above VP (cf. e.g. Bayer, 1990; Büring, 1994; Haftka, 1994; Repp, 2005;

[6] In principle, movement could also be to a position which is to the left of the middle field topic position, namely the one which is targeted by so-called T-scrambling (cf. Haider and Rosengren, 1998). Presumably, this position is also reserved for topical elements (cf. Reis and Rosengren, 1992). T-scrambling patterns with topicalisation and not with scrambling proper. This has led to the assumption that T-scrambling actually targets the C-domain. This is further supported by the fact that T-scrambling is only possible in subordinate clauses and is banned from V2-clauses.

[7] Following this kind of reasoning, the reader might expect (15C) to be also a felicitous answer to (15A'). We think that such a discourse would be incoherent for different pragmatic reasons not related directly to information structure.

but see Haider, 1993 and Frey, 2001 for a different view) Thus the data in (15) show that topics and foci occupy distinct positions in BAE.[8]

Another topicality test put forward by Frey (2004) are split-DP constructions in German, where the dislocated NP functions as a topic. The displaced constituent typically occurs in the prefield although it could also be in the middle field, as Frey shows. The following contrast is reported by Frey (2004:9):

(16) a. weil Paul Hemden$_1$ leider [nur blaue t_1] gekauft hat
since Paul shirts unfortunately only blue bought has
'since, as for shirts, Paul unfortunately only bought blue ones'

b. *weil Paul leider Hemden$_1$ [nur blaue t_1] gekauft hat
since Paul unfortunately shirts only blue bought has

A similar pattern can be found for both types of CE. The gapping cases are given in (17a, b) and the BAE cases in (17c, d). In both types of ellipsis we see a clear contrast between CT-ellipsis and CF-ellipsis:

(17) a. weil Paul Hemden leider nur blaue gekauft hat,
since Paul shirts unfortunately only blue bought has
aber KRAWATTEN zum Glück auch ROTE.
but ties fortunately also red

b. *. . .aber zum Glück KRAWATTEN auch ROTE.
but fortunately ties also red.

c. FAHRRÄDER hat Paul VIELE, aber *CT-ellipsis*
bicycles has Paul many but
AUTOS vermutlich NICHT.
cars probably not

d. *FAHRRÄDER hat Paul VIELE, aber vermutlich keine AUTOS.
bicycles has Paul many but probably no cars.
CF-ellipsis

The information structure of (17c) obeys the Parallelism Constraint, since both nominals are interpreted as topics. The semantic interpretation available for (17c) also observes the Parallelism Constraint and follows directly from the Edges and Gaps Hypothesis in (7). The interpretation of the second conjunct suggests the presence of a quantifier in the structure which is under the scope of negation, resulting in a reading where Paul owns few cars. By contrast, in (17d) the Parallelism Constraint is not observed, since the topicalized DP *Fahrräder* ('bicycles') occurs in opposition with the contrastive focus *keine Autos* ('no cars'). The elliptical clause only has the interpretation that Paul does not own any cars at all. The deviance of the example can thus be explained by the fact that different semantic interpretations have to be computed for the two conjuncts resulting in increased processing complexity.

In German some particles can have a topic marking function if they are right-attached to a nominal. This topicality test is due to Marga Reis, as quoted in Frey (2004). The topic marking function can be best observed in the prefield. The following examples illustrate the phenomenon:

(18) Peter jedenfalls/aber hat keine Zeitschriften gelesen.
Peter however has no magazines read.
'Peter, however, didn't read any magazines.'

Frey (2004) argues that topic marking particles can also appear in the middle field. Under neutral intonation they have to precede sentential adverbs thus providing evidence for a topic position. It seems that enclitic adverbs are possible in BAE as well, as example (19) demonstrates:

[8] There has been a long debate on the question whether contrastive focus can be interpreted in situ or has to move. For cross-linguistic evidence see Fox (2000), Chomsky (2001, 2002), López and Winkler (2003), Winkler (2005), Drubig (2007); for a discussion of German see Grewendorf (2005). We will leave this issue aside here since the crucial point for us is merely that the remnants in CF-ellipsis and CT-ellipsis occupy distinct positions.

(19) Peter hat Zeitschriften gelesen, Maria aber vermutlich nicht.
Peter has magazines read Maria however probably not.
CT-ellipsis

Another piece of evidence comes from cataphoric pronouns which are related to topical elements (cf. Kuno, 1972; Reinhart, 1981, 1995). Example (20) illustrates cataphoricity across sentence boundaries. Here, no reconstruction processes are available for establishing coreference. As the data show, elements linked to a cataphoric pronoun are only admissible in CT-ellipsis:

(20) Sie waren beide untrainiert. Nach dem Rennen war der Hans sehr erschöpft,
they were both untrained. After the race was the Hans very exhausted
a. aber der Peter offensichtlich nicht. *CT-ellipsis*
but the Peter obviously not
b. ??aber offensichtlich nicht der Peter. *CF-ellipsis*

Further support for our claim that the remnant in CT-ellipsis is a displaced element can be drawn from the phenomenon usually referred to as I-topicalization which involves scope inversion under the rise–fall contour. Slashes indicate the relevant intonation pattern:

(21) /ALLE Politiker sind NICHT\ korrupt.
all politicians are not corrupt
'Not all politicians are corrupt.'

The construction is often taken to be a main clause phenomenon (cf. Büring, 1997; Jacobs, 1997; Krifka, 1998; Molnár, 1998). However, there are also instances of I-topicalization in the middle field. The specific intonation with a rise on *alle* ('all') and a fall on *nicht* ('not') facilitates the intended reading:

(22) weil /ALLE Politiker vermutlich NICHT\ korrupt sind.
because all politicians probably not corrupt are

Interestingly, I-topicalization seems also to be possible in BAE, as long as the universal quantifier precedes a sentential adverb, as the contrast in (23a, b) shows[9]:

(23) Peter hat zwar viele Bücher von T. Mann gelesen,
Peter has however many books by T. Mann read
a. aber/ALLE Bücher vermutlich NICHT\. *CT-ellipsis*
but all books probably not
b. *aber vermutlich/ALLE Bücher NICHT\.
but probably all books not
'Peter did read many books by T. Mann, but probably not all of them.'

In (23a) the only available reading is the one where negation scopes over the universal quantifier. This provides direct evidence for our assumption that *alle Bücher* is a contrastive topic, as required by the Parallelism Constraint. The explanation for the scope facts is that the semantic interpretation is generated via reconstruction of the quantifier to its base position below negation (cf. Krifka, 1998). The marked reading of (23b) can then be explained as a violation of the Parallelism Constraint since the contrastive topic remnant is below the sentential adverb where topical material cannot occur.

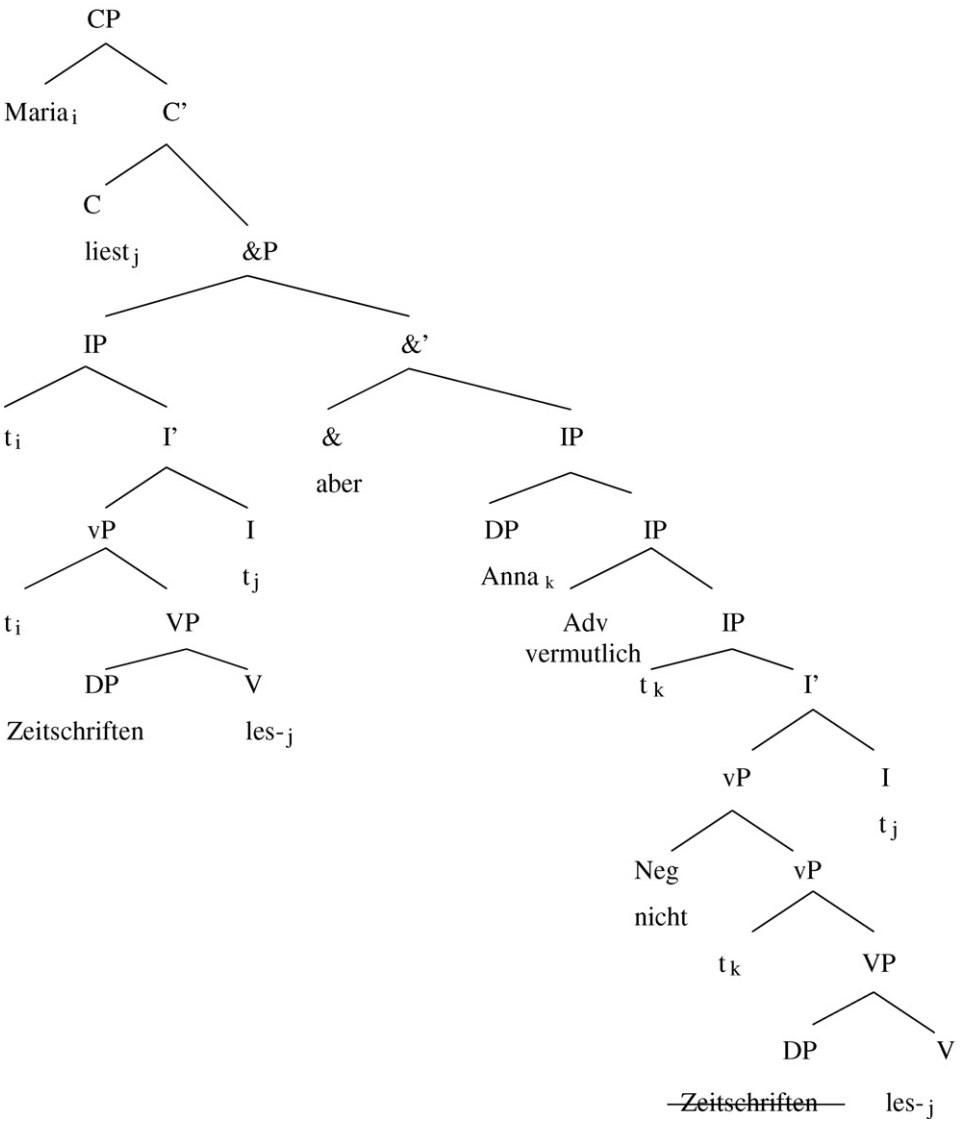
To sum up, we have provided evidence for two kinds of contrastive positions for CE: a topic position above the sentential adverb which can host a contrastive remnant in CT-ellipsis, and a focus position below the sentential adverb which hosts a contrastive focus remnant in CF-ellipsis.

[9] An anonymous reviewer points out that a more natural continuation in (23) would be . . .*aber vermutlich nicht ALLE*. It seems that both versions are possible, although the version in (23a) has been judged as colloquial by some of our informants.

3.2. The syntax of bare argument ellipsis

The final point to address concerns the nature of the landing site for CT-ellipsis. Frey (2004) argues that the topic position above sentential adverbs is best described as an A-position and movement to it is scrambling.[10] Although we have provided evidence that the remnant is a topic it would be premature to conclude that it occupies this particular position. Various arguments suggest the opposite. First, as Frey argues, the middle field topic position is located in the IP/TP domain. Under the standard CP treatment of German root clauses this would lead to a structure with coordinated IPs:

(24) *Maria liest Zeitschriften aber Anna vermutlich nicht.*



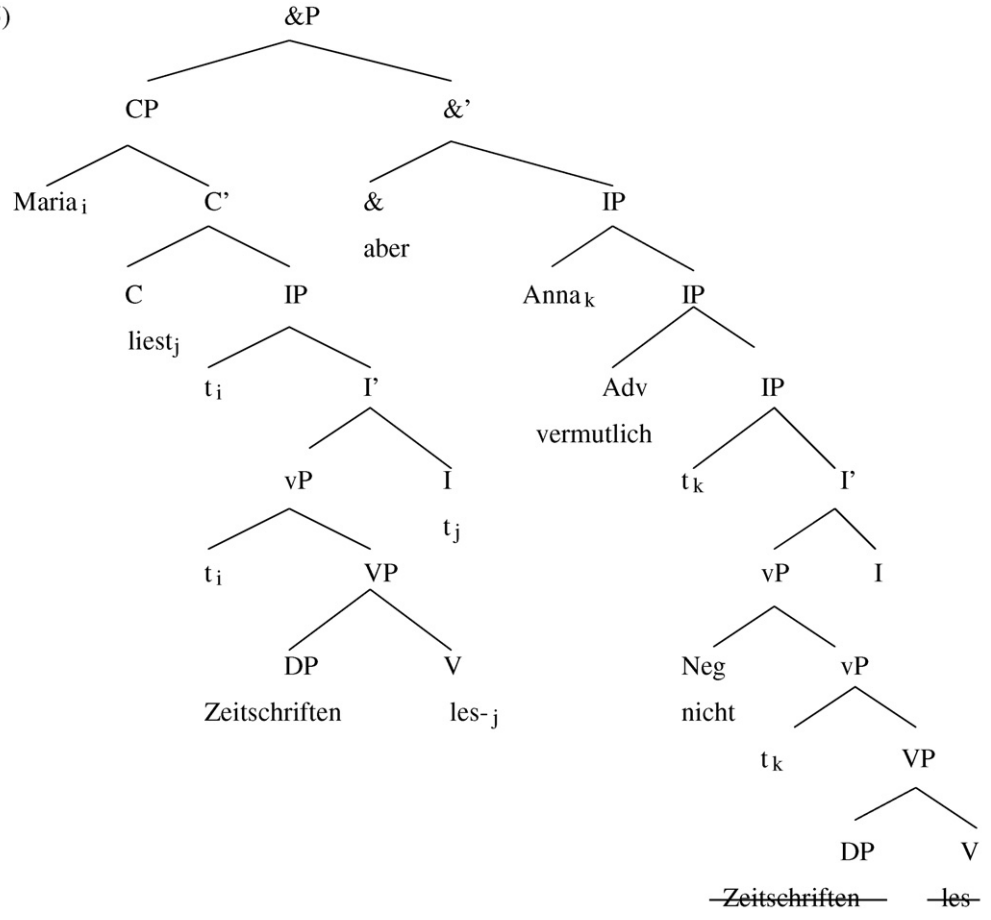
Under such an analysis the finite verb undergoes ATB-movement (Williams, 1978) to C. ATB-movement extracts an element out of both conjuncts and thus obviates the Coordinate Structure Contraint (CSC) formulated by Ross

[10] There has been a long-standing discussion on the actual movement type (A or A') involved in scrambling (Fanselow, 1990; Müller & Sternefeld, 1994; Haider and Rosengren, 2003; Webelhuth, 1989). We will follow Frey and others and assume that Scrambling involves A-movement.

(1967). However, in the analysis above the subject DP *Maria* has been moved only out of the first conjunct into the higher SpecCP position, which constitutes a violation of the CSC. Moreover, the second subject *Anna* can be raised locally within the second conjunct above the sentential adverb *vermutlich* resulting in an asymmetric structure with respect to the subject position in coordination. This is a clear violation of the syntactic parallelism requirement for coordinative ellipsis (Wilder, 1996, 1997; Reich, 2007) which has also been supported by psycholinguistic evidence (cf. section 4). However, Johnson (1996) indeed proposes a vP-coordination account of gapping in English with asymmetric subject positions. He suggests that the CSC may only hold for A'-movement and not for A-movement, consequently, raising the subject to SpecTP in English, which is an instance of A-movement, would not violate it under this view. However, such an analysis is not easily transferable to German, where movement to the prefield is traditionally considered an instance of A'-movement and would thus fall under the CSC.[11]

Another option for the derivation of CT-ellipsis may be to dispense with ATB-movement and consider a deletion approach as illustrated in (25) below.

(25)

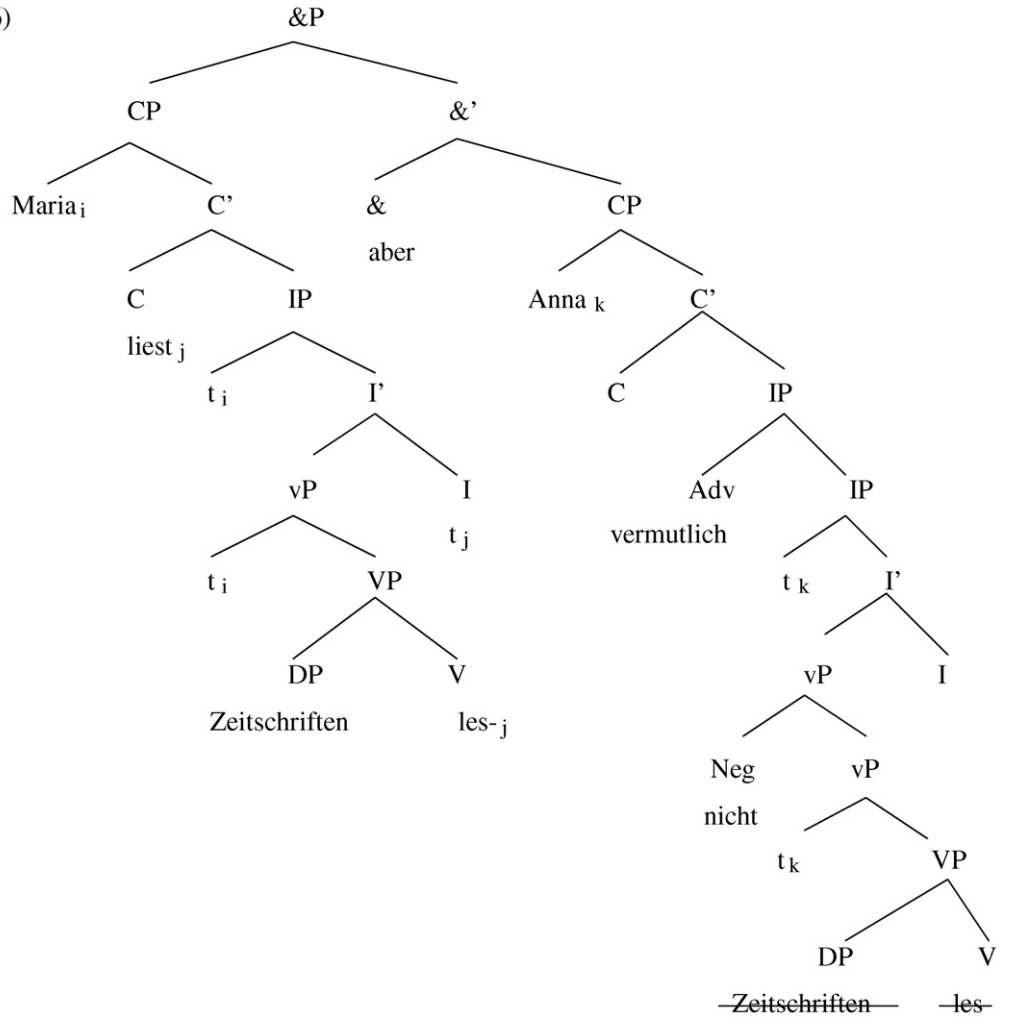


[11] However, recent approaches (Fanselow, 2002; Frey, 2006) assume that the prefield can be filled in two different ways. One is ''true A'-movement'', the other one an operation which Frey calls *Formal Movement* (FM). FM targets the highest element in the middle field and raises it in a purely formal way into the prefield without changing its semantic, pragmatic or phonological properties. This operation doesn't induce any contrasting or emphatic effects for the moved element whereas A'-movement usually does (cf. Frey, 2006). This differentiation, however, does not have any consequences for the argument since FM according to Frey is a subtype of A'-movement, as it targets SpecCP which is an A'-position. Further, elements which do not scramble cannot undergo FM. As such elements can show up in German gapping, such data are not easy to accommodate under Johnson's theory:

(i) Grün hat er den Zaun gestrichen und rot die Tür.
Green has he the fence painted and red the door
'He painted the fence green and the door red.'

Under this analysis the subject DP in the second conjunct would occupy the topic position above sentential adverbs. However, such an analysis would constitute a clear case of cross-categorial asymmetric coordination which is usually taken to disallow coordinative ellipses such as BAE and gapping (cf. Reich, 2007). In the following we will therefore propose that CT-ellipsis involves the coordination of CPs and deletion of given material.[12]

(26)



One argument for this analysis comes from instances of CT-Ellipsis where the remnant phrase is of a category which does not scramble, such as participles and adjectives, and thus cannot occupy the topic position above sentential adverbs. In (27) the remnant *gelesen* ('read') has undergone so-called *remnant movement*.[13] As these elements do not scramble, CT-ellipsis is in (27) and (28) must be movement to the C-domain and not scrambling:

(27) Gekauft hat er das Buch bereits, aber gelesen noch nicht.
bought has he the book already but read yet not
'He has bought the book already but he has not read it yet.'

[12] An anonymous reviewer suggests that the verb in the second conjunct could be raised to C° and deleted under phonological identity with the form in the first conjunct. Here, we follow the practice of deleting syntactic phrases which requires the verb to stay in situ.

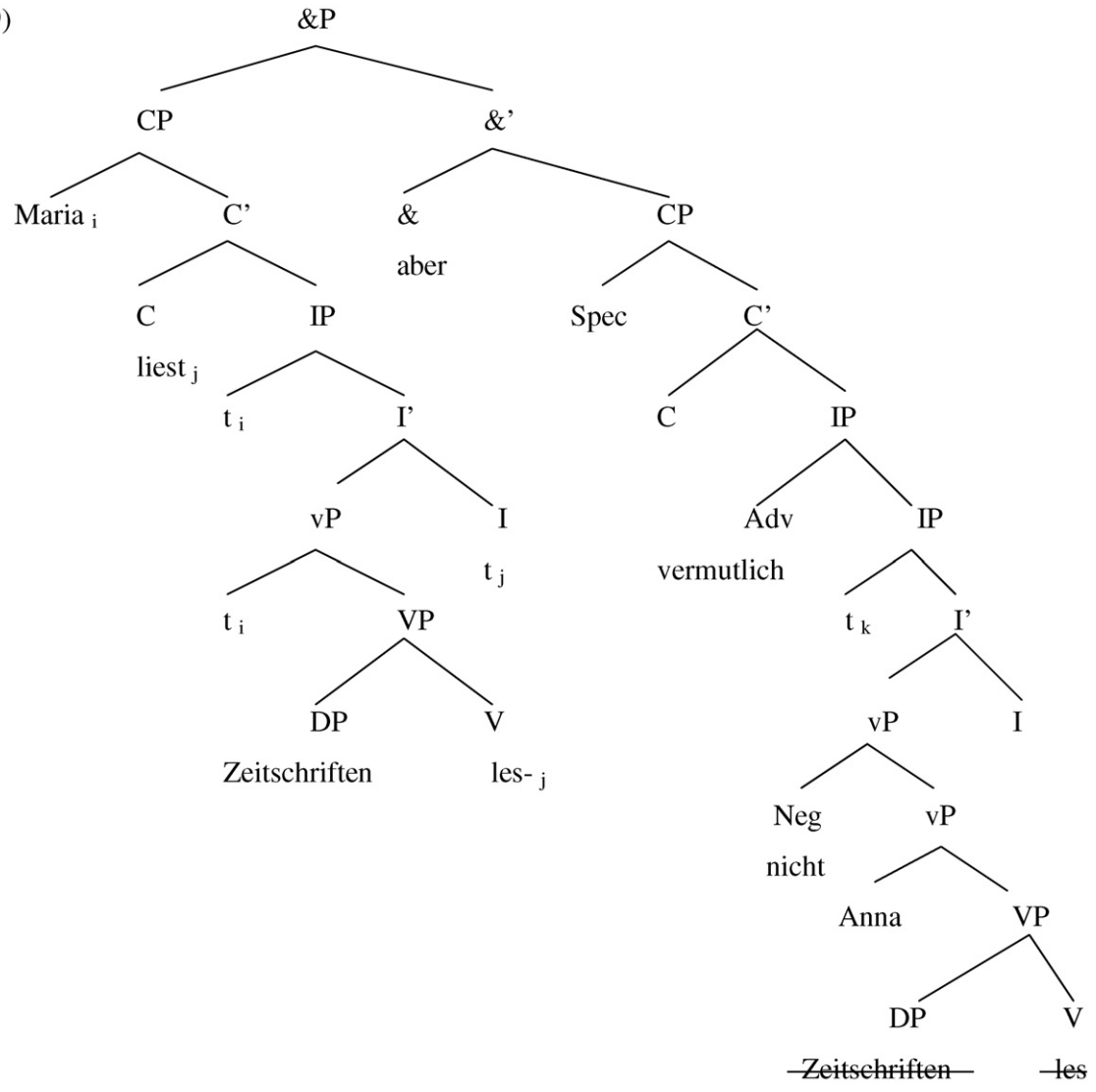
[13] The term "remnant movement" usually involves the topicalisation of a participle and has to be distinguished from the term "remnant" as used in the ellipsis literature which refers to elements in elliptical clauses.

(28) Grün könntest du den Zaun auf jeden Fall streichen,
Green could you the fence definitely paint,
aber rot eher nicht.
but red rather not
'You could definitely paint the fence green but red – rather not.'

These examples satisfy the syntactic parallelism requirement for CE since the participle *gekauft* ('bought') and the adjective *grün* ('green) in the first conjunct are topicalized as well. This analysis is also in line with recent approaches concerning the German prefield which differentiate between ''true A'-movement'' and Formal Movement (Frey, 2006). The first targets the C-domain directly and is associated with a contrasting or emphatic effect whereas the latter involves movement of the highest middle field element into the prefield and does not have any contrasting effect (cf. fn. 4). Under our view, CT-ellipsis must be an instance of ''true A'-movement''. This is supported by the data in (27) and (28) since elements which do not scramble are also banned from FM. Moreover, the fact that the remnants in CE are associated with a contrastive interpretation also supports an account in terms of ''true A'-movement''.

Let us now turn to the syntax of CF-ellipsis. As shown in section 3.1, the contrastive remnant in CF-ellipsis occupies a position located not only below sentential adverbs but also below negation. These facts suggest the following structure:

(29)



It is well-known that definite DPs can only occur below negation in German if they bear contrastive stress. Büring (1994) has suggested that these DPs have to be raised at LF to a left-peripheral position, following a proposal by Culicover and Rochemont (1983). This is also what seems to be the case in CF-ellipsis.

4. Experimental evidence

Recent studies on parallelism in ellipsis (cf. e.g. Frazier and Clifton, 1998; Carlson, 2002; Stolterfoht, 2005) have proposed that elliptical constructions, in particular those occurring in coordination, are subject to certain parallelism constraints. These constraints have mainly been formulated on syntactic and phonological notions. Looking at ambiguous cases of ellipsis, Carlson argues that processing of elliptical constructions is facilitated if DPs that share certain syntactic, prosodic, and semantic features appear also in similar syntactic positions. More specifically, Carlson found that in related constructions such as bare argument ellipsis, replacives and comparatives participants interpreted the remnant as a subject more often in cases like (30a) than they did in (30b) and (30c), with (30b) showing a greater proportion of subject interpretations than (30c). Carlson attributes this finding to the different strength of subject parallelism in (30a–b) and the object parallelism in (30c).

(30) a. Cecilia ran into a mailbox on Friday, not/but not Carol.
strong subject parallelism

b. Maude called a policeman for help, not/but not Marjorie.
weak subject parallelism

c. Maude called a policeman for help, not/but not a fireman.
object parallelism

An auditory study with comparatives points to the same direction. The remnant was interpreted as subject more often in (31a) than in (31b). Capitals mark high pitch accents.

(31) a. TASHA called Bella more often than SONYA.
b. Tasha called BELLA more often than SONYA.

However, as the result was graded, Carlson concludes that accenting alone is not sufficient to force a specific interpretation.

Investigating the impact of focus on the processing of replacives in German, Stolterfoht (2005) argues that the presence of a focus particle in the first conjunct facilitates processing of the elliptical second conjunct. She attributes this finding to a parallelism requirement on focus structure. Thus in (32b) processing of the second conjunct is facilitated since the presence of the focus particle in the first conjunct requires the associated object DP to have narrow focus. As the remnant also carries narrow focus the two conjuncts have a parallel focus structure.

(32) a. Am Dienstag hat der Direktor den Schüler getadelt,
on Tuesday has the principal the pupil criticized
und nicht den Lehrer.
and not the teacher
b. Am Dienstag hat der Direktor nur den Schüler getadelt,
on Tuesday has the principal only the pupil criticized
und nicht den Lehrer.
and not the teacher
'On Tuesday the teacher criticized (only) the pupil, and not the teacher.'

By contrast, in (32a), which lacks a focus particle, the first conjunct initially receives a default wide focus interpretation. This construal has to be reanalyzed when the second conjunct is encountered, which causes processing difficulty. These findings clearly show that focus plays a role in the processing of elliptical constructions. In what follows we will further elaborate on the role of information structure in processing ellipsis. In particular we present

experimental evidence providing additional support for our theory of syntax-information structure mapping. We conducted two experiments using the following BAE structures:

(33) a. Sandy spielt Fußball, aber Anna nicht. *‚subject < negation' order (s-neg)*
Sandy plays soccer but Anna not
b. Sandy spielt Fußball, aber nicht Anna. *‚negation < subject' order (neg-s)*
Sandy play soccer but not Anna

Using the Parallelism Constraint in (6) and the Edges and Gaps Hypothesis in (7) we formulate the following predictions:

(34) Prediction I: Since only (33a) obeys the Parallelism Constraint, it should be judged better than (33b).

(35) Prediction II: In line with the Parallelism Constraint and Edges and Gaps Hypothesis, (33b) should improve in acceptability if contrast is explicitly signalled in the first conjunct.

4.1. Experiment 1

Prediction I follows from the parallelism requirement on the assignment of information structural functions to constituents. In our analysis *Anna* is interpreted as a contrastive topic in (33a) and as a contrastive focus in (33b). Thus, presupposing neutral intonation, (33b) contains a clash in the mapping between syntax and IS: *Anna* is contrasted with *Sandy* which receives a topic interpretation by virtue of being the subject of the first conjunct and occupying sentence initial position (cf. section 2.1). By contrast, the mapping process converges in (33a) since both contrasted elements can easily receive a topic interpretation.

4.1.1. Stimuli

Thirty-two experimental items were constructed according to the scheme in (33). Each sentence appeared in two different versions. The items were counterbalanced such that a subject only saw a given item in one condition. We also included 52 distractor sentences. Thirty-two of them were experimental items from an unrelated study. The remaining 20 fillers were normed sentences representing 5 levels of grammaticality (see Appendix A).

4.1.2. Procedure

To test Prediction I we conducted a judgement study using magnitude estimation (Bard et al., 1996) which has proven to be able to detect fine-grained differences in grammaticality (Featherston, 2007). This method requires participants to judge the grammaticality of sentences according to a reference item of medial grammaticality. After assigning an arbitrary value to the reference item every experimental sentence is assigned a value relative to the reference item. Each grammaticality judgement was elicited after reading the whole sentence. The experiment was conducted on the WWW using the WebEx software (Keller et al., 1998). The sentences were presented in isolation. First participants read the written instructions. This was followed by a practice session to familiarize participants with the task. The first set of 5 practice items consisted of lines which the subject had to rate with respect to a reference line. In a second step nine practice sentences were given which were rated with respect to a reference item. After the practice the 32 items and 52 distractors were presented in an individually randomized order.

4.1.3. Participants

Forty native German speakers (22 females and 18 males) participated in the experiment for a payment. They were all students at the University of Tübingen and had been recruited by flyers with a financial incentive.

4.1.4. Results and discussion

As Fig. 1 shows we found a significant difference between s-neg and neg-s with s-neg receiving higher ratings than neg-s ($t1(39) = 5.55$; $p < .01$; $t2\ (31) = 10.57$; $p < .01$). The inclusion of a set of normed sentences (represented

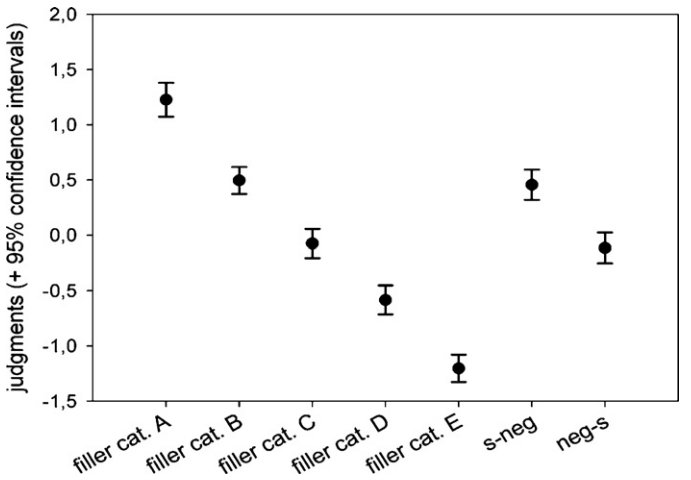


Fig. 1. Judgements of experimental sentences and standardized fillers.

as A–E in Fig. 1) among the fillers[14] allowed us to establish the degree of grammaticality of the BAE conditions. As we see in Fig. 1, s-neg is judged as well formed as Category B fillers, whereas neg-s is judged as marked as Category C fillers. Thus, it is not ungrammatical but definitely marked.

4.2. Experiment 2

Experiment 1 showed that without prosodic information neg-s is judged as marked. Matters are different when intonation comes into play. Here, the subject of the first conjunct is still considered topic due to its grammatical function and sentence initial position. However, according to the Edges and Gaps Hypothesis, strong contrastive stress on the subject and complete deaccentuation of the string *spielt Fußball* ('plays soccer') should produce a ''last resort'' corrective interpretation, resulting in increased acceptability. Nevertheless, the structure as a whole should still be marked, as it contains a mismatch in the mapping between syntax and information structure. In Experiment 2, we examined the role of contrast expressed by prosodic marking. We wanted to find out whether neg-s becomes more acceptable if presented auditorily using contrastive focussing. To test this we took 28 of the 32 sentences from Experiment 1 and presented them with two prosodies: (i) a neutral default contour with a rise and a fall on the subject in the antecedent and a rise–fall accent on the remnant (cf. Fig. 2). (ii) a contrastive contour with a fall on the subject constituents in both conjuncts (Fig. 3). Both constructions were presented with both contours. Thus, we arrive at the four following conditions:

(36)
1. Sandy spielt Fußball, aber Anna nicht. *(s-neg default contour)*
2. Sandy spielt Fußball, aber Anna nicht. *(s-neg contrast contour)*
3. Sandy spielt Fußball, aber nicht Anna. *(neg-s default contour)*
4. Sandy spielt Fußball, aber nicht Anna. *(neg-s contrast contour)*

4.2.1. Stimuli

Twenty-eight experimental items were constructed in four versions according to the scheme discussed above. Each sentence appeared in four different versions. We included 57 filler sentences containing various types of elliptical constructions such as gapping and comparatives and also fillers with a salient phonology such as I-topicalisation. Items and fillers were placed on four lists according to the latin square design.

[14] Kindly provided to us by Sam Featherston.

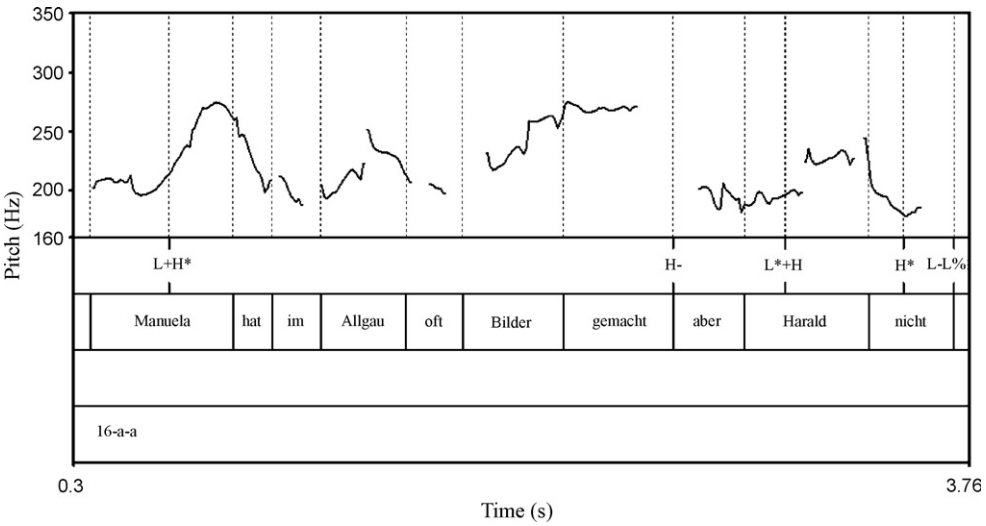


Fig. 2. Default contour.

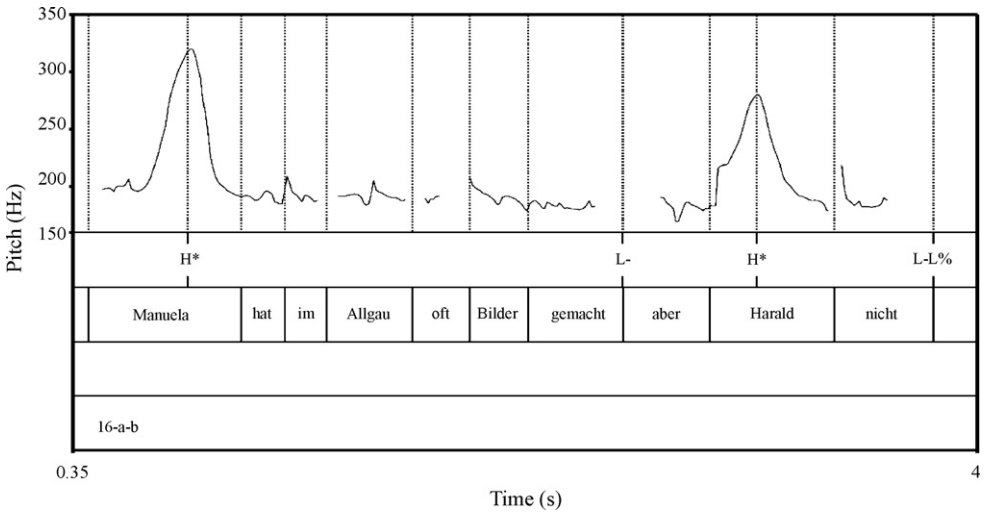


Fig. 3. Contrastive contour.

4.2.2. Procedure

As the magnitude estimation paradigm turned out to be too difficult for an auditory experiment, in this study we used a 7-point scale. Participants had to assign to each sentence a value from 1 to 7 representing their perceived well-formedness of the sentence. The experiment was carried out on a computer using the standard e-prime software. The stimuli were presented auditorily over headphones. First the participants read the written instructions. Then they received ten practice items to familiarize themselves with the task. After the practice the 28 items and 57 fillers were presented in an individually randomized order. The entire experiment lasted approximately 30 min.

4.2.3. Participants

Twenty native German speakers participated in the experiment for a payment of 5 €. They were all students at the University of Tübingen and had been recruited by flyers with a financial incentive.

4.2.4. Results

The results in Fig. 4 show that neg-s improves significantly with contrastive prosody ($t1(19) = 5.19$; $p < .01$; $t2(27) = 7.32$; $p < .01$). Condition 4 is judged as good as condition 2. The apparent difference is only numerical

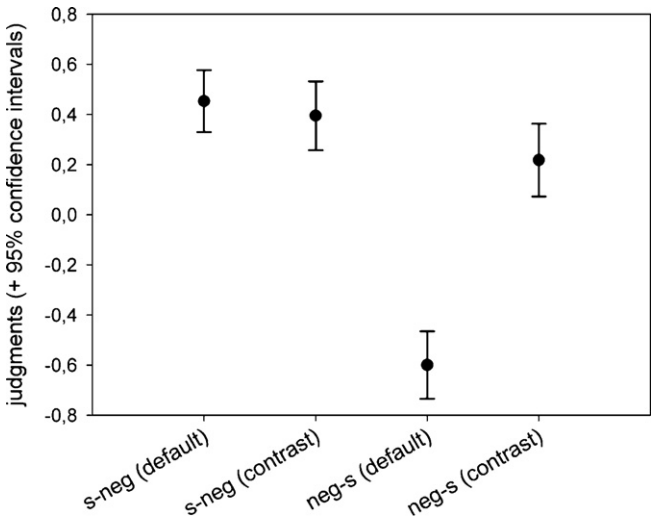


Fig. 4. Judgements for the experimental items.

($t1(19) = 1.27$; $p = 0.22$; $t2(27) = 1.51$; $p = 0.14$). There is still a significant difference between conditions 1 and 3, where default intonation is used ($t1(19) = 10.03$; $p < .01$; $t2\ (27) = 12.71$; $p < .01$). This difference replicates the result of the first experiment. S-neg with either contour is judged grammatical which indicates that intonation does not influence grammaticality here. The results confirm our prediction that neg-s indeed requires a strong contrast in the first conjunct to be fully acceptable.

4.3. Discussion

Our experimental results confirm our hypothesis that parallelism and contrast as formulated in the Parallelism Constraint and the Contrast Management Hypothesis play a crucial role in the mapping between syntax and information structure. The results of Experiment 1 show that without prosodic marking neg-s is less acceptable than s-neg. We interpret this result as a mismatch between syntax and information structure violating the Parallelism Constraint which requires that the remnants in CE be assigned the same information-structural interpretation as their correlates. In Experiment 2 neg-s improved significantly if participants perceived a contrastive contour. This suggests that IS-syntax mismatches can be overridden if a constituent is associated with contrast. This suggests that contrast is a separate information structural notion which operates independently of the notions of topic and focus.

5. Conclusion

This paper has investigated CE and the mapping between syntax and information structure in German and English. The main claim is that the syntax-information structure mapping is systematic in CE in the sense that the contrastive constituents move to a position at the left edge. The results of our theoretical and experimental investigation provide support for the assumption that there are different types of CE and that they establish discourse coherence in different ways. We distinguish two types of CE: one where the remnant DP functions as a CT preceding the sentential adverb and the negative particle, and another one where the remnant DP is a CF and follows them. We have shown that in both constructions the syntax-information structure mapping follows from general syntactic mechanisms: movement of the contrastive constituent to the edge, and deletion of the given material. Furthermore, we argued that the difference in discourse appropriateness of CT or CF in a given construction follows from general discourse-functional principles such as the Parallelism Constraint on information structural-functions in the two conjuncts. Thus, the syntactic analyses correspond to the different kinds of semantic contrasts and to the different prosodic realization of the contrasted elements and their correspondents. Finally, results of our psycholinguistic experiments provide further evidence that there are two different types of CEs and that contrast is required between the correlate and the remnant.

Acknowledgements

This work was carried out in the project *Ellipsis and Coordination* of the *SFB 441 Linguistic Data Structures* supported by the Deutsche Forschungsgemeinschaft. We would like to thank the editors of the special issue, Sophie Repp and Philippa Cook, and two anonymous reviewers for their helpful comments and suggestions. We are also greatly indepted to Oliver Bott, Peter Culicover, Sam Featherston, Nele Hartung-Schaidhammer, Jason Merchant, Janina Radó, Ingo Reich, Marga Reis, Ilona Steiner, Britta Stolterfoht and Agelika Wöllstein for comments, discussions and technical support. The authors blame each other for any remaining errors.

Appendix A

Normed fillers representing five degrees of grammaticality (decreasing from A to E).

Level A:

Nur sehr selten hört man den leisen, krächzenden Ruf eines Schwans.
Das freche Mädchen hat es gewagt, ihrem Bruder zum Geburtstag ein Stück Seife zu schenken.
Der Patient hat den geldgierigen Zahnarzt überlistet.
In der fünften Klasse fangen die Schüler mit Englisch an.

Level B:

Er glaubt, der Komponist hat den Solisten in dieser Arie überfordert.
Sie hofft, das Finanzamt hat den Betrüger überlistet.
Es interessiert dich, ob der Kellner dem Kurgast den Sprudel gebracht hat?
Der Kaiser hat dem Fürsten den Maler empfohlen.

Level C:

Wen sagte der Arzt, hat der Pfleger vergessen?
Was ich wissen will, ist, wen wer in dieser Affäre betrügt.
Der Kardinal fürchtet er, hat den Theologen beleidigt.
In Rottenburg fürchtet er, hat der Händler den Politiker bestochen.

Level D:

Der Komponist hat dem neuen Tenor es zugemutet.
Wir lesen am liebsten die Süddeutsche, obwohl wir leben jetzt in Düsseldorf.
Wen hat der Bürgermeister zum Jubiläumstag an der Fahnenstange gehisst?
Schade, dass dieses Buch alle ohne zu lesen ins Regal gestellt haben.

Level E:

Beim Stammtisch die drei Freunde spielen mit Vorliebe Skat.
Den Sänger bedauert er, dass der Dirigent überfordert hat.
Der Waffenhändler glaubt er, dass den Politiker bestochen hat.
Natürlich hat, dass den Fritz alle mögen keiner bezweifelt.

Appendix B

1. Peter hat abends oft Zeitschriften gelesen, aber Maria nicht.
2. Hans hat an Wochenenden oft gute Restaurants aufgesucht, aber Lisa nicht.
3. Thomas hat nach der Schule oft Hamburger gegessen, aber Sabine nicht.
4. Andrea hat bei Kopfschmerzen oft Aspirin genommen, aber Jessica nicht.
5. Alfred hat vor Klassenarbeiten oft Nachhilfestunden gebraucht, aber Tanja nicht.
6. Dominik sind wegen Unaufmerksamkeit oft Missgeschicke passiert, aber Dennis nicht.
7. Melanie hat in Stuttgart oft Konzerte organisiert, aber Tim nicht.
8. Matthias hat beim Angeln oft Karpfen gefangen, aber Florian nicht.
9. Max hat zum Abendessen oft Butterbrote gemacht, aber Lena nicht.
10. Christian hat in der Kneipe oft Caipirinhas getrunken, aber Silke nicht.

11. Simone hat auf Städtereisen oft Kirchen besichtigt, aber Markus nicht.
12. Michael hat bei Diskobesuchen oft Designerklamotten getragen, aber Frank nicht.
13. Tina hat im Schullandheim oft Schmetterlinge gefangen, aber Kai nicht.
14. Beate hat im Urlaub oft Ausflüge gemacht, aber Veronika nicht.
15. Stefan hat auf dem Reiterhof oft Ponys geritten, aber Fredi nicht.
16. Manuela hat im Allgäu oft Bilder gemacht, aber Harald nicht.
17. Pia hat im Garten oft Äpfel gepflückt, aber Laura nicht.
18. Mia hat aus Langeweile oft Brettspiele gespielt, aber Carola nicht.
19. Sandra hat in der Schweiz oft 4000er erklommen, aber Gudrun nicht.
20. Eva hat beim Schreibmaschinenkurs oft Tippfehler gemacht, aber Clara nicht.
21. Maria hat fürs Studium oft Bücher gekauft, aber Sonja nicht.
22. Susanne hat im Herbst oft Pilze gesammelt, aber Hubert nicht.
23. Anja hat nachmittags oft Fernsehserien geschaut, aber Michaela nicht.
24. Der Jürgen hat im Park oft Vögel gefüttert, aber der Ulrich nicht.
25. Christine hat beim Floristen oft Lilien bestellt, aber Ilona nicht.
26. Ludwig hat in der Jugend oft Zigarillos geraucht, aber Wilhelm nicht.
27. Carsten hat bei der Bundeswehr oft Briefe geschrieben, aber Lukas nicht.
28. Sebastian hat im Internet oft CDs bestellt, aber Ines nicht.
29. Daniel hat an der Uni oft Referate gehalten, aber Richard nicht.
30. Steffi hat im Sommersemester oft Vorlesungen geschwänzt, aber Karl nicht.
31. Bettina hat in der Schule oft Verweise bekommen, aber Lola nicht.
32. Alexander hat vor dem Radrennen oft Anabolika geschluckt, aber Ben nicht.

References

Bard, E., Robertson, D., Sorace, A., 1996. Magnitude estimation of linguistic acceptability. Language 72, 32–68.

Bayer, J., 1990. What Bavarian negative concord reveals about the syntactic structure of German. In: Mascaró, J., Nespor, M. (Eds.), Grammar in Progress. Glow-Essays for Henk van Riemsdijk. Foris, Dordrecht, pp. 13–23.

Büring, D., 1994. Mittelfeldreport. In: Haftka, B. (Ed.), Was determiniert Wortstellungsvariation? Westdeutscher Verlag, Opladen, pp. 79–96.

Büring, D., 1997. The Meaning of Topic and Focus: The 59th Street Bridge Accent (Routledge Studies in German Linguistics 3). Routledge, London.

Büring, D., 2003. On D-trees, beans, and B-accents. Linguistics & Philosophy 26, 511–545.

Carlson, K., 2002. Parallelism and Prosody in the Processing of Ellipsis Sentences. Routledge, London.

Chomsky, N., 1995. The Minimalist Program (Current Studies in Linguistics 28). MIT Press, Cambridge, MA.

Chomsky, N., 2001. Derivation by phase. In: Kenstowicz, M. (Ed.), Ken Hale: A Life in Language (Current Studies in Linguistics 36). MIT Press, Cambridge, MA, pp. 1–52.

Chomsky, N., 2002. An interview on minimalism. In: Belletti, A., Rizzi, L. (Eds.), On Nature and Language. Cambridge University Press, Cambridge, pp. 92–161.

Chomsky, N., Lasnik, H., 1993. The theory of principles and parameters. In: Jacobs, J., Stechow, A., von, Sternefeld, W., Vennemann, T. (Eds.), Syntax: An International Handbook of Contemporary Research. Mouton de Gruyter, Berlin/New York, pp. 506–569.

Culicover, P.W., Rochemont, M., 1983. Stress and focus in English. Language 59, 123–165.

Depiante, M.A., 2000. The syntax of deep and surface anaphora: a study of null complement anaphora and stripping/bare argument ellipsis. Ph.D. Dissertation, University of Connecticut.

Drubig, H.-B., 2007. Phases and the typology of focus constructions. In: Schwabe, K., Winkler, S. (Eds.), On Information Structure, Meaning and Form (Linguistik Aktuell/Linguistics Today 100). John Benjamins, Amsterdam/Philadelphia, pp. 33–66.

Fanselow, G., 1990. Scrambling as NP-movement. In: Grewendorf, G., Sternefeld, W. (Eds.), Scrambling and Barriers. John Benjamins, Amsterdam, pp. 113–140.

Fanselow, G., 2002. Quirky subjects and other specifiers. In: Kaufmann, I., Stiebels, B. (Eds.), More than Words. Akademie Verlag, Berlin, pp. 227–250.

Featherston, S., 2007. Data in generative grammar: the stick and the carrot. Special Issue of Theoretical Linguistics 33, 269–318.

Fox, D., 2000. Economy and Semantic Interpretation (Linguistic Inquiry Monographs 35). MIT Press, Cambridge, MA.

Frazier, L., Clifton Jr., C., 1998. Comprehension of sluiced sentences. Language and Cognitive Processes 13, 499–520.

Frey, W., 2001. About the whereabouts of indefinites. Theoretical Linguistics 27, 137–161.

Frey, W., 2004. A medial topic position for German. Linguistische Berichte 198, 153–190.

Frey, W., 2006. Contrast and movement to the German prefield. In: Molnár, V., Winkler, S. (Eds.), The Architecture of Focus (Studies in Generative Grammar 82). Mouton de Gruyter, Berlin/New York, pp. 235–264.

Grewendorf, G., 2005. The discourse configurationality of scrambling. In: Sabel, J., Saito, M. (Eds.), The Free Order Phenomenon: Its syntactic Sources and Diversity. Mouton de Gruyter, Berlin/New York, pp. 75–135.

Haftka, B., 1994. Wie positioniere ich meine Position? In: Haftka, B. (Ed.), Was determiniert Wortstellungsvariation? Westdeutscher Verlag, Opladen, pp. 139–159.

Haider, H., 1993. Deutsche Syntax – generativ. Narr, Tübingen.

Haider, H., Rosengren, I., 1998. Scrambling. Sprache und Pragmatik, Arbeitsberichte 49, 1–104.

Haider, H., Rosengren, I., 2003. Scrambling – non-triggered chain formation in OV languages. Journal of Germanic Linguistics 15, 203–267.

Halliday, M.A.K., 1967. Notes on transitivity and theme in English, Part 2. Journal of Linguistics 3, 199–244.

Hartmann, K., 2000. Right Node Raising and Gapping: Interface Conditions on Prosodic Deletion. John Benjamins, Amsterdam/Philadelphia.

Hartmann, K., 2003. Background matching in right node raising constructions. In: Schwabe, K., Winkler, S. (Eds.), The Interfaces: Deriving and Interpreting Omitted Structures (Linguistik Aktuell/Linguistics Today 61). John Benjamins, Amsterdam/Philadelphia, pp. 121–151.

Jacobs, J., 1997. I-topikalisierung. Linguistische Berichte 168, 91–133.

Johnson, K., 1996. Gapping: In search of the middle field. Ms., University of Massachusetts, Amherst.

Johnson, K., 2004. How to be quiet. Paper presented at the 40th Regional Meeting of the Chicago Linguistic Society.

Keller F., et al., 1998. WebExp: A java toolbox for web-based psychological experiments. Technical Report HCRC/TR-99, Human Communication Research Centre, University of Edinburgh.

Kim, J.-S., 1997. Syntactic focus movement and ellipsis: a minimalist approach. Ph.D. Dissertation, University of Connecticut.

Kiss, K.É., 1987. Configurationality in Hungarian (Studies in Natural Language and Linguistic Theory 3). Reidel, Dordrecht.

Klein, W., 1993. Ellipse. In: Jacobs, J., Stechow, A., von Sternefeld, W., Vennemann, T. (Eds.), Syntax: An International Handbook of Contemporary Research. Mouton de Gruyter, Berlin/New York, pp. 763–799.

Krifka, M., 1998. Scope inversion under the rise-fall contour in German. Linguistic Inquiry 29, 75–112.

Krifka, M., 2006. Association with focus phrases. In: Molnar, V., Winkler, S. (Eds.), The Architecture of Focus (Studies in Generative Grammar 82). Mouton de Gruyter, Berlin/New York, pp. 105–136.

Kuno, S., 1972. Functional sentence perspective. Linguistic Inquiry 3, 269–320.

Kuno, S., 1973. The Structure of the Japanese Language (Current Studies in Linguistics 3). MIT Press, Cambridge, MA.

Kuno, S., 1976. Gapping: a functional analysis. Linguistic Inquiry 7, 300–318.

Kuno, S., 1982. The focus of the question and the focus of the answer. In: Schneider, R., Tuite, K., Chametzky, R. (Eds.), Papers from the Parasession on Nondeclaratives, Chicago Linguistic Society, April 17, 1982. Chicago Linguistic Society, Chicago, pp. 134–157.

Lang, E., 2004. Schnittstellen bei der Konnektoren-Beschreibung. In: Blühdorn, H., Breindl, E., Waßner, U.H. (Eds.), Brücken Schlagen. Grundlagen der Konnektorensemantik (Linguistik – Impulse und Tendenzen 5) Mouton de Gruyter, Berlin/New York, pp. 45–92.

Lobeck, A., 1995. Ellipsis: Functional Heads, Licensing and Identification. Oxford University Press, New York/Oxford.

López, L., Winkler, S., 2003. Variation at the syntax-semantics interface: evidence from gapping. In: Schwabe, K., Winkler, S. (Eds.), The Interfaces: Deriving and Interpreting Omitted Structures (Linguistik Aktuell/Linguistics Today 61). John Benjamins, Amsterdam/Philadelphia, pp. 227–250.

Merchant, J., 2001. The Syntax of Silence: Sluicing, Islands, and the Theory of Ellipsis (Oxford Studies in Theoretical Linguistics 1). Oxford University Press, Oxford.

Merchant, J., 2003. Subject-auxiliary inversion in comparatives and PF output constraints. In: Schwabe, K., Winkler, S. (Eds.), The Interfaces: Deriving and Interpreting Omitted Structures (Linguistik Aktuell/Linguistics Today 61). John Benjamins, Amsterdam/Philadelphia, pp. 55–77.

Merchant, J., 2004. Fragments and ellipsis. Linguistics and Philosophy 27, 661–738.

Molnár, V., 1998. Topic in focus: on the syntax, phonology, semantics and pragmatics of the so-called ‘‘Contrastive Topic’’ in Hungarian and German. Acta Linguistica Hungarica 45, 89–166.

Molnár, V., 2006. On different kinds of contrast. In: Molnár, V., Winkler, S. (Eds.), The Architecture of Focus (Studies in Generative Grammar 82). Mouton de Gruyter, Berlin/New York, pp. 197–233.

Molnár, V., Winkler, S., 2010. Edges and gaps: the role of contrast in the theory of grammar. Lingua 120, 1392–1415.

Müller, G., Sternefeld, W., 1994. Scrambling as A-bar movement. In: Corver, N., Riemsdijk, H.v. (Eds.), Studies on Scrambling. Movement and Non-Movement Approaches to Free Word-Order Phenomena. Mouton de Gruyter, Berlin, pp. 331–386.

Pesetsky, D., 1982. Paths and categories. Ph.D. Dissertation, Massachusetts Institute of Technology, Cambridge, MA.

Prince, E.F., 1981. Toward a taxonomy of given-new information. In: Cole, P. (Ed.), Radical Pragmatics. Academic Press, New York, pp. 223–255.

Reich, I., 2007. Asymmetrische Koordination im Deutschen. Habilitationsschrift, Universität Tübingen.

Reinhart, T., 1981. Definite NP anaphora and C-command domains. Linguistic Inquiry 12, 605–635.

Reinhart, T., 1995. Interface strategies (OTS Working Papers). Research Institute of Language and Speech, Utrecht.

Reis, M., Rosengren, I., 1992. What do wh-Imperatives tell us about wh-movement? Natural Language & Linguistic Theory 10, 79–118.

Repp, S., 2005. Interpreting ellipsis: the changeable presence of the negation in gapping. Ph.D. Dissertation, Humboldt-University, Berlin.

Repp, S., 2008. When the negative g goes missing: the role of the information structure in gapping coordinations with but. In: Steube, A. (Ed.), The Discourse Potential of Underspecified Structures: Event Structure and Information Structure. Walter de Gruyter, Berlin.

Rizzi, L., 1997. The fine structure of the left periphery. In: Haegeman, L. (Ed.), Elements of Grammar (Kluwer International Handbooks of Linguistics 1). Kluwer, Dordrecht, pp. 281–337.

Rooth, M.E., 1992a. Ellipsis redundancy and reduction redundancy. In: Berman, S., Hestvik, A. (Eds.), Proceedings of the Stuttgart Ellipsis Workshop 1992, Arbeitspapiere des Sonderforschungsbereichs 340 ‘Sprachtheoretische Grundlagen für die Computerlinguistik’ 29. Universität Stuttgart/Universität Tübingen.

Rooth, M.E., 1992b. A theory of focus interpretation. Natural Language Semantics 1, 75–116.

Ross, J.R., 1967. Constraints on Variables in Syntax, Ph.D. dissertation, MIT, Cambridge, MA.

Sag, I., 1976. A logical theory of verb phrase deletion. In: Mufwene, S., Walker, C.A., Steever, S.B. (Eds.), Papers from the 12th Regional Meeting of the Chicago Linguistic Society, April 23–25, 1976. Chicago Linguistic Society, Chicago, pp. 533–542.

Schwabe, K., 2003. F-marking and specificity in sluicing constructions. In: Schwabe, K., Winkler, S. (Eds.), The Interfaces: Deriving and Interpreting Omitted Structures (Linguistik Aktuell/Linguistics Today 61). John Benjamins, Amsterdam/Philadelphia, pp. 301–320.

Schwarzschild, R., 1999. Givenness, AvoidF and other constraints on the placement of accent. Natural Language Semantics 7, 141–177.

Selkirk, E., 1984. Phonology and Syntax. MIT Press, Cambridge, MA.

Selkirk, E., 2005. Comments on intonational phrasing in English. In: Frota, S., Vigário, M., Freitas, M.J. (Eds.), Prosodies: With Special Reference to Iberian Languages. Mouton de Gruyter, Berlin/New York, pp. 11–58.

Stolterfoht, B., 2005. Processing Word Order Variations and Ellipses: The Interplay of Syntax and Information Structure during Sentence Comprehension (Max-Planck-Series in Human Cognitive and Brain Sciences 55). Max-Planck-Institut für Kognitions- und Neurowissenschaften, Leipzig.

Takahashi, S., Fox, D., 2005. Max elide and the re-binding problem. In: Georgala, E., Howell, J. (Eds.), SALT 15, pp. 223–240.

Tancredi, C., 1992. Deletion, deaccenting and presupposition. Ph.D. Dissertation, MIT, Cambridge, MA.

Vallduví, E., Engdahl, E., 1996. The linguistic realization of information packaging. Linguistics 34, 459–519.

Ward, G.L., 1990. The discourse functions of VP preposing. Language 66, 742–763.

Webelhuth, G., 1989. Syntactic saturation phenomena and the modern Germanic languages. Ph.D. Dissertation, University of Massachusetts.

Wilder, C., 1996. V2-Effekte: Wortstellung und Ellipse. In: Lang, E., Zifonun, G. (Eds.), Deutsch – Typologisch. IdS Jahrbuch 1995. Mouton de Gruyter, Berlin, pp. 142–180.

Wilder, C., 1997. Some properties of ellipsis in coordination. In: Alexiadou, A., Hall, T. (Eds.), Studies in Universal Grammar and Typological Variation. John Benjamins, Amsterdam, pp. 59–107.

Williams, E., 1978. Across-the-board rule application. Linguistic Inquiry 9, 31–43.

Winkler, S., 1997. Focus and Secondary Predication (Studies in Generative Grammar 43). Mouton de Gruyter, Berlin/New York.

Winkler, S., 2005. Ellipsis and Focus in Generative Grammar (Studies in Generative Grammar 81). Mouton de Gruyter, Berlin/New York.

Winkler, S., 2006. Ellipsis. In: Brown, K. (Ed.), The Encyclopedia of Language and Linguistics. 2nd edition. Elsevier, Oxford, pp. 109–113.

Winkler, S., Schwabe, K., 2003. Exploring the interfaces from the perspective of omitted structures. In: Schwabe, K., Winkler, S. (Eds.), The Interfaces: Deriving and Interpreting Omitted Structures (Linguistik Aktuell/Linguistics Today 61). John Benjamins, Amsterdam/Philadelphia, pp. 1–26.