

Sophie Repp: *Negation in Gapping*

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1. Overview

Several factors, including non-syntactic ones, play important roles in creating a sentence which contains a negation marker in the first conjunct and a gapping in the second conjunct, where a negation marker seems to be elided along with other items. There are three possible interpretations for these:

- (1) a. distributed scope of the negation: $(\neg A) \wedge (\neg B)$
 b. wide scope for the negation: $\neg (A \wedge B)$
 c. narrow scope of the negation: $(\neg A) \wedge (B)$

The following sentences in (2) are the examples for (1) respectively:

- (2) a. Pete hasn't got a video and John _ a DVD.
 = [It is not the case that Pete has a video] and [it is not the case that John has a DVD].
- b. Pete didn't clean the whole flat and John _ laze around all afternoon.
 = It is not the case that [Pete cleaned the whole flat and John lazed around all afternoon].
- c. Pete wasn't called by Vanessa but John _ by Jessie.
 = [It is not the case that Pete was called by Vanessa] and [it is the case that John was called by Jessie].

The interpretation possibilities, however, are not always available for these

constructions. The author utilizes extensive data, especially those from German, and claims that a gapping is created by copying implemented in sideward movement proposed in Nunes (2004), which first appeared in his 1995 PhD dissertation. She argues that the differences of the interpretation rise from differences in creating the conjuncts, distribution and categorical difference of negation markers, and distribution difference of stress, along with other pragmatic factors.

Chapter 1 is mainly allotted for displaying basic facts about gapping sentences in general and previous research, and presenting her proposal. Chapter 2, 3, and 4 each investigates the above mentioned scope readings and presents a few crucial arguments: 1) a gapping is created by copying with sideward movement, 2) there must be a balanced contrast between the two conjuncts, and 3) the position of the negation marker at LF creates the difference of the scope, where the highest possible position of the negation marker affects utterance aspects. Then Chapter 5 looks into the finiteness and gapping, and Chapter 6 is the brief summery.

2. Gapping Construction and Negation

Through the observation of gapping construction in Chapter 1, several syntactic characteristics of gapping constructions are illustrated, and along with them several conditions in speech are observed when each reading should be interpreted correctly. One of the intonational examples is that non-clause-final correlates and remnants are marked by a rising pitch and clause-final correlates and remnants, with falling accents. Moreover various prosodic characteristics for the different interpretations are examined in detail.

With these basic facts in mind, author discusses what the most plausible explanation for constructing a sentence with gapping is. To categorize previous research on the derivation of gapping constructions, there have been three major types of theories for the analysis of gapping: i) deletion and copying accounts, ii) accounts that assume gapping to be the coordination of

conjuncts smaller than clause-level, that is vPs or TPs, and iii) three-dimensional or sharing accounts. The author investigates the approaches and points out their merits and problems.

Deletion approaches vary in their process in deletion. Some assume deletion without any movement, and others assume deletion with elements moved to the right peripheral or the left peripheral. The author points out that it is unclear how the identity between two conjuncts is established in any type of deletion approach. She states that syntactic matching operations are quite different from what is required for gapping coordination, and that PF deletion theory proposed by Merchant (2001) cannot capture the negation data in gapping.

However, the author states that there are a few significant observations made in deletion approaches, which she adopts in her theory. Wilder (1995) proposes that there is *head condition*. The definition of the condition is quoted as follows: ‘an ellipsis site may not be c-commanded by an overt (non-deleted) head in its domain (= conjunct).’ Wilder’s suggestion that morpho-syntactic and phonological identities are sometimes required is also taken into account. The author agrees with the Hartmann (2000)’s proposal: i) there is a strong connection between removing stress and gapping and ii) that the information structure of a coordination plays a role in the availability of deletion. Concerning negation, both accounts can handle distributed scope reading, but the contrast between English and German is unexpected, and they cannot capture how the narrow scope readings come about.

Copying accounts also face the similar difficulties that deletion approaches do: it is quite unclear how the various interpretation possibilities arise, how the negation could not be copied into the second conjunct, or how the wide scope reading could be established. At the same time, this approach can provide the best explanation for gapping constructions with negation.

Deletion and copying with movement theory does not offer any better account for negation data than “simple” deletion approach or copying approach does. One of the approaches that consider gapping as small

conjunct coordination uses across-the-board (ATB) movement with small conjunct coordination, which correctly predicts that gapping will be absent in languages that don't have verb movement, such as Chinese. There are gapping constructions in Chinese but their availability is highly restricted because of the proper formation of contrast. This also points to the fact that gapping interacts with semantic and pragmatic factors as well as syntactic factors. On the other hand, this approach cannot account for any data of the gapping constructions with negation.

Winkler (2005) derives gapping coordination by sideward movement with small conjuncts. This approach combines sideward movement operation with semantic, information-structural, and prosodic aspects of gapping. The difference in prosody between the distributed scope reading and wide scope reading of negation is attributed to the size of the phases available at LF to be sent to PF. This treatment enables this approach to avoid the difficulties ATB proposal has, while it loses the restriction that gapping appears in coordination construction and cannot account for several respects of negation data.

Sharing approaches utilize a three-dimensional structure, multiple dominance and factorization theories. This approach has an advantage that conjuncts seem to act as a unit on the one hand and to be independent from each other on the other hand. It also captures most of the parallelism observed among the various data in a simple and clear way. However, the narrow scope reading of the negation and the differences between English and German gapping sentences with negation cannot be explained.

3. Proposal

3.1 Derivation Mechanism of Gapping Construction

First, the author employs Chomsky (2000)'s assumption that there are sub-arrays for numerations. In Chomsky's framework, phases that have access to a given sub-array are assumed to be propositional, which are vP or CP. In

this book, the presence of the conjunction, which is a coordination head, makes the conjunct qualified as such. It is also assumed that the first conjunct has a separate numeration from the second. The separate numeration does not yet make these two sufficient to be fed into derivation of a structure which converges at LF. This is overcome by the application of sideward movement suggested by Nunes (2004). Within minimalist framework, movement has been transformed into an operation of copy-and-merge, where an element in a structure is copied and the new copy is merged higher up in the same structure. Following Nunes (2004), the latter operation is considered to be unnecessary here, as a copy is to be merged with a phrase marker that is assembled in parallel with the 'source' phrase marker. This is part of the essence of sideward movement. Another operation suggested in Nunes' theory, chain reduction, is also applied here, following Winkler's framework.

In order to derive a gapping construction, the author follows the suggestions in Nunes (2004). Nunes states that 'PF should reflect the number of occurrences of each lexical item specified in the initial numeration,' and also assumes that all copies are equally available for realization at PF. Thus, the author assumes the derivation mechanism of a gapping construction as follows: First the first conjunct enters in numeration. Then the second conjunct, which has conjunction and contrasted items such as subjects, objects and so on, enters numeration. To have the features of these elements checked, copying potential case checkers from the first conjunct arises. The author considers that 'copying takes place after phonological spell-out of the first conjunct but before the chain uniformity condition is applied and the chain(s) are uniformized.' The chain reduction operation takes place in the phonological component, so all the copies in the first conjunct are available for copying. As mentioned above, a conjunction makes the second conjunct qualified as a phase. To avoid unchecked features left in the derivation, chain reduction eliminates the offending features on PF side. The chain uniformity condition at LF side adapts lower copies with unchecked features so that they

take over the checked status from their higher chain members. The verb is copied from the first conjunct to merge with the vP in the second conjunct, which matches the thematic specification. Then v is copied to check the case of complement, if necessary. Then the subject of the second conjunct merges in the specifier position of vP, and then T gets copied. By assuming that copying takes place after phonological spell-out of the first conjunct but before the chain uniformity condition, the different ϕ -features on copied T are not realized phonologically. T has got its EPP and case features checked in the first conjunct, and there are two possibilities for the handling of checking features of the subject in the second conjunct. One is to assume copied T is 'invisible' but not erased, therefore available for subject case checking in the second conjunct, which the author followed as Nunes (2004) suggested. The other possibility is to consider copied T to have its features available again because the merged position does not constitute the specifier-head relation, which is required for feature matching. It is also a plausible approach, as for the cases that the subjects in two conjuncts are not identical, copied T's features do not cause any problem at all.

This copying mechanism can explain the different grammaticality observed between English gapping sentences with negation and German ones: when negation is not overtly expressed in the second conjunct in German gapping construction, the second conjunct is not likely to get an interpretation with negation. The difference arises from the type of negation marker in the two languages: English clausal negation marker is a head element, while German negation marker is an adverb adjoined to VP. The author states that heads and arguments are clausal core elements and enter derivation before adjuncts. English negation is the head of a NegP (PolP), which is one of the sentential functional categories, so it is copied to the second conjunct. On the other hand, the negation marker in German is an adverb adjoined to vP, so copying it is not required and it is not copied, as is prohibited by economy.

3.2 Various Interpretations with Negation

The author considers that the distributed scope readings of negation seem to be the default interpretation for gapping construction with negation, and thus their interpretations are obtained rather straightforwardly.

For the narrow scope reading of negation, she considers the structure to have slightly smaller conjuncts with the negation scoping over them, and that there is a positive morpheme and not any negation in the second conjunct. Through the effort of capturing how the narrow scope readings of negation arise, it becomes clear that parallelism is required between the two conjuncts. Thus, the author proposes the principle of balanced contrast (PBC) to eliminate the defective constructions. This principle suggests that for narrow scope reading, both conjuncts must make the same kind of contribution to a discourse topic for the gapping with *and*. The interpretation of the sentences with conjunct *but* leads to the conclusion that the informational structure of a gapping sentence takes on a crucial role. *But* in this type of construction has two possible meanings: contrastive *but* or correction *but*. This difference is overtly captured by the alteration of conjunction in German: *aber* is contrastive, while *sondern* is used for correction. The first conjunct establishes its contrastive topic and focus along with its intonational make-up. Interacting with the semantics of *but*, the second conjunct acquire the appropriate meaning. For the negation in corrective meaning, the author considers that the negation must c-command at least one of the correlates. The interpretation of the focus is the principal factor in the interpretation of gapping constructions with focus participles.

In a gapping construction which has a wide scope reading of negation, negation takes the widest scope, which is named “outer negation” or “illocutionary negation.” This is examined with the gapping constructions with modals and interrogative sentences with gapping. The scope relation between a modal verb and negation is created through the interaction of their respective positions, intonation, types of modality and so on. It is obligatory to put stress on the negation when it has a wide scope reading. A general

prerequisite for the negation to take a wider scope over a modal is that the negation is located in the higher position in the sentence. The interpretational difference between epistemic modals and root modals arises from their syntactic position: root modals are in \bar{V} or Asp, while epistemic ones are in higher position. To allow negation to have a wider scope over any modal requires that it is located in a higher position than epistemic modals. In negative polar questions in English, the negation marker can either be in situ or move with the auxiliary. These different locations derive different interpretations. When the speaker checks his/her original assumption is false, the inference $\neg p$ is called into question. This is called inner negation. On the other hand, when the speaker checks that his/her belief expressed in proposition is actually true, the speaker's belief p is questioned. This is called outer negation. The author concludes that inner negation is proposition negation, and outer negation is illocutionary negation. Following some of previous research, the author assumes that there is an epistemic illocutionary operator VERUM, which is to affirm the speaker's belief that what she/he believes is true, often in making some contrary comment to the proposition presented by others. This operator itself expresses a very high degree of strength, and the author also considers it natural to assume that there should be an operator whose strength is very low. Thus she proposes that there is another epistemic illocutionary operator called FALSUM, which has zero degree of strength for adding proposition to the common ground. The C-system in her framework consists as follows:

- (3) [_{ForceP} FORCE [_{StrengthP} Strength [_{TopP} Top [_{FocP} Foc [_{FinP} Fin [IP ...]]]]]]]

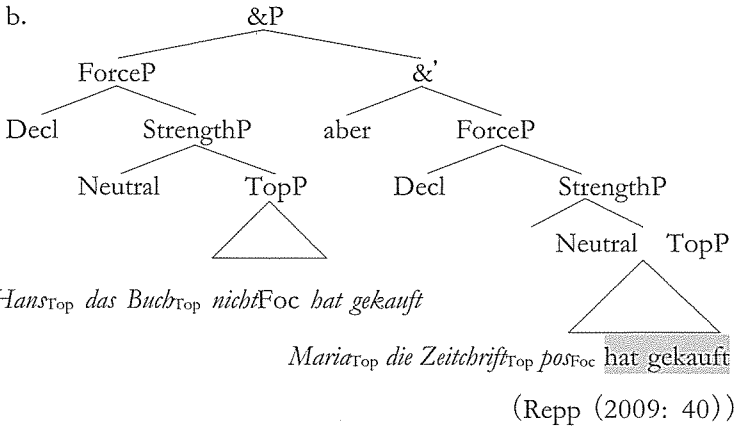
Each conjunct is considered to be TopP. FALSUM and VERUM are the operators which interact with the illocutionary force. These appear as the heads of StrengthP at LF in (3). The illocutionary operators in the StrengthP and negation marker in the lower position of the structure enter into a kind of negative concord, which functions as illocutionary negation, and

this creates a wide scope reading and other interpretations, depending on the assertion strength of the operator.

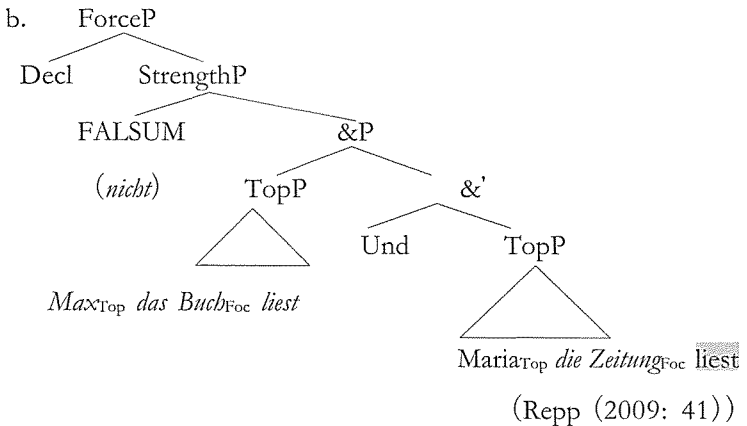
When a verb is not visible in the second conjunct, we can expect that a complementizer will be also missing if the latter c-commands the former, which is the case in English and German. The finiteness does not seem to matter in this gapping. However, following the idea of C-system suggested in Rizzi (1997), the author considers that finiteness is a function that anchors the propositional content of a clause in the factual world. Finiteness and complementizers in Verb-second languages show especially tight relationship in that either a verb moves to C or finiteness is lexicalized in the complementizer, which is base-generated in C. Following the suggestion in Roberts (2004) that some languages have complementizers that originate in FIN and move up to FORCE, while others have them stay in FIN, it is considered that a complementizer functions to anchor its proposition in a factual world. A complementizer for an embedded clause anchors its proposition via matrix clause, and a finite verb anchors a root clause directly or via previous discourse. These differences give rise to scopal difference for negation in gapping constructions.

The following German examples provide outcomes of the author's proposal. The trees in (4) and (5) are simplified LF representations for the narrow and distributed scope readings and for the wide scope readings:

- (4) a. Hans has das Buch nicht gekauft, aber Maria die Zeitschrift.
 Hans has the book not bought but Maria the magazine
 'Hans didn't buy the book but Mary bought the magazine.'



- (5) a. Max liest nicht das Buch und Maria die Zeitung.
 Max reads not the book and Maria the paper
 ‘It’s not the case [that Max is reading the book and Mary the paper].’



(4a) is an example with a narrow scope reading, and (4b) is its LF representation. (5a) is an example sentence with a wide scope reading and its LF representation (5b). *pos* in (4b) stands for ‘a positive morpheme which is silent.’ This morpheme is suggested based on the observation in intonational

differences seen in the conjuncts with contrastive *but*. The shadowed material in each tree is present at LF but is not pronounced in PF, as the copying from the first conjunct occurs after the PF spell-out of the first conjunct. The sentences with narrow and distributed scope readings consist of coordinations of large conjuncts, while the sentences with wide scope readings are made up of small conjuncts, as contrasted in (4b) and (5b). (5b) has only one StrengthP and one ForceP, which generates the scopal difference: the negation in (4) is propositional negation and the negation in (5) is illocutionary negation.

4. Concluding Remarks

As is mentioned above, analyzing semantic derivation of gapping constructions is a very complicated task as well as giving plausible syntactic explanation for the derivation of the structure. It is because so many different factors, both syntactic and non-syntactic, are involved there. Thus there are sentences that need to be inquired into further more.

There are a few crucial assumptions that seem somewhat ad hoc or require more investigation in order to see if they are truly plausible. To conclude the category of negation markers in English and German, the author employs the Jespersen cycle along with other observations by various researchers. English negation marker is considered to have developed further in this cycle than German negation marker, thus it has become a head. The presence of conjunction makes the phrase qualified as a phase just as CP and vP, which is assumed in order to have the second conjunct to enter numeration. In order to use copied T for feature checking, the features on copied T, which has already been used for checking in the first conjunct, get activated again, by assuming that invisibility does not mean its disappearance from T.

Even with the little things above, the research has been done in detail with wide-ranging data and detailed investigation in previous research. This book

provides us with insightful analyses for the gapping constructions with negation, focus particles, and other factors. Moreover the extensive data given throughout the book alone are quite remarkable and provide us with inspiration for research in other linguistic phenomena.

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