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Grammar and self-repair: Retraction patterns in German and Swedish prepositional phrases[☆]

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Abstract

This article presents the results of a German–Swedish comparative study on retractions in self-repair within prepositional phrases. Retraction, i.e., when a speaker returns to an earlier point within an unfolding grammatical structure, is a common resource used by both German and Swedish speakers when completing such actions as substituting, deleting, inserting, or repeating parts of an utterance. However, this resource is not necessarily used in the same ways in German and Swedish. Typological differences in the languages, such as word order and morphosyntactic characteristics, can affect the pattern of retraction (cf. [Fox et al., 2009a, 2010](#)). This paper examines whether grammatical differences in German and Swedish influence the retraction patterns in these languages.

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1. Introduction

At the beginning of the Interactional Linguistics undertaking, studies on spoken language focussed mainly on the description of single languages. More recently, however, a broader comparative perspective has been taken, which addresses questions such as the extent to which orality promotes specific characteristics beyond language-specific structural differences. Do universal conditions of spoken language, like on-line processing, synchronization of speaker and hearer, and the possibility of immediate feedback ([Auer, 2005, 2009; Lindström, 2008](#)) lead to a structural

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convergence of spoken languages even in genetically different languages? Research has been conducted on genetically vastly divergent languages (cf. Couper-Kuhlen and Ono, 2007 for English, German and Japanese; Hayashi, 1994; Fox et al., 1996 for Japanese and English; Fox et al., 2009a,b, 2010 for English, Hebrew and German; Fox et al., 2009a,b for Bikol, Sochiapam Chinantec, English, Finnish, Indonesian, Japanese, and Mandarin). These studies have revealed both similarities and differences regarding the syntactic structure of talk-in-interaction in the different languages. With respect to the syntactic structure of self-repair, a great difference exists, for instance, between Japanese and English. While in English, speakers regularly recycle entire clauses, only constituent-internal recycling is done in Japanese (Fox et al., 1996:207). On the other hand, there are interesting similarities between, for example, German and Hebrew; both languages show a low rate of subject pronoun recycling and a high number of retractions to the preposition (Fox et al., 2010:2502). Given these contrasting findings in comparative research on genetically divergent languages, interactionally informed researchers should also reinforce research on structurally and genetically more closely related languages, such as Swedish and German (or English and German, cf. Rieger, 2003), to discover whether a more homogeneous picture emerges concerning the syntactic structures of talk-in-interaction or not.

We focus on the prepositional phrase, a structure that exists in both German and Swedish. When a preposition is uttered in German or Swedish, it calls for a pragmatically or semantically suitable complement, usually a noun phrase (NP). While the preposition in German determines which case form the following NP will take, in Swedish, this complement is not strongly marked grammatically. In addition, prepositions and articles can be cliticized into one unit in German (e.g., *in dem* > *im*), while this is not the case in Swedish. The fact that German prepositional phrases are grammatically more specified with regard to case, number, and gender than in Swedish suggests that German prepositional phrases are grammatically “heavy” units which speakers and listeners need to pay special attention to (e.g., in the case of repair in a prepositional phrase, adjustments to form may frequently be necessary). In comparison, in Swedish there is less grammatical information projected by the preposition, although some studies have shown that prepositional phrases are treated as units in Swedish conversations as well (Bockgård, 2003:73; Lindström, 2008:170–171). Prepositional phrases in both German and Swedish usually include a noun phrase, but the morphosyntactic marking of definiteness in the noun phrase differs between the languages (see section 4 for a detailed presentation of the grammatical differences between the prepositional phrases in the two languages). These observations lead to the general research question addressed in this paper: Do the grammatical differences between the prepositional phrase (and the noun phrase within it) in German and Swedish affect the retraction patterns in self repair in these languages?

We will commence by giving an overview of the theoretical background of our study, concentrating on research on the syntax of spoken language (section 2.1) and repair and retraction (section 2.2). This is followed by a description of the interactional data and quantitative methodology (section 3) and an introduction to the prepositional phrase in German and Swedish (section 4). Further, we present our empirical analysis of the data, first detailing the results of each language (section 5) and then, taking a contrastive approach, discussing differences and similarities between German and Swedish (section 6). We conclude by summarizing our central findings and suggesting avenues for future research (section 7).

2. Theoretical background

2.1. Analysis of syntax of spoken language

In the study of spoken language, syntax should not be perceived as a product, but rather as an ongoing process (Ono and Thompson, 1995:251; Steensig, 2001:73–74; Lindström, 2008:43–44). Viewing syntax as a process means studying constructions and utterances not as ready and fixed units, but rather as modifiable units that are created and molded in interaction (Linell, 2005:46, 80–81; Lindström, 2008:43). As spoken language is an emergent process and a social phenomenon that takes place in realtime, it can therefore never be considered a fixed and established object (Hopper, 1988, 1998). Auer (2005, 2009) has developed this construct further, terming spoken language syntax as an *on-line syntax*, a view that is adopted within the current study as well. Auer (2009) points out that a theory of syntax of spoken language must pay particular attention to three aspects of temporality that differentiate spoken from written language: its transitory nature, its irreversibility, as “that which is said is said and cannot be undone” (Auer, 2009:3), and its synchronization (i.e., the streams of consciousness of the speaker and the hearer being closely coordinated in face-to-face interaction).

Synchronization in interaction relates back to language understanding: The hearer processes the speaker's utterance as it is being spoken. In order to facilitate language processing, the hearer makes a permanent (though unconscious) attempt to infer from the already produced syntactic structure how the utterance will continue. Due to his/her knowledge about the regularities of the language, the hearer can anticipate a particular number of possible continuations. This first basic operation of on-line syntax, through which “the speaker creates expectations in the listener about the further development of the emerging syntactic pattern,” is called syntactic *projection* (Auer, 2009:4). Another type of basic

operation is *expansion*, in which the speaker adds syntactic elements to the unfolding utterance. The elements used for expansion (e.g., particles in the German middle field, cf. Auer, 2009:7) neither project constituents nor fulfill projections of other constituents. The third basic operation of spoken syntax is called *retraction*. Contrary to projections, which orient forward in time and pre-structure the upcoming syntactic slots, retractions refer back in time to a certain syntactic slot and take up an already produced syntactic structure in order to change it. Since the research phenomenon of our study is repair, retractions will play a major role in the empirical analyses of the present paper.⁴

2.2. Repair and retraction in spoken language

In everyday conversation, various trouble sources can arise in the process of speech production that can potentially lead to problems in interaction. In order to avoid interactional trouble, the speaker, more precisely the speaker's monitor (cf. Levelt, 1983, 1989), needs to detect these problems in the not-yet-produced phonetic plan or in already articulated parts of the utterance and repair them. Given the preference for self-repair (Schegloff et al., 1977), which is broadly defined as a large range of phenomena, from minimally marked hesitations to error corrections (Schegloff et al., 1977), the speaker usually carries out repair immediately upon detection. One repair method is the operation of retraction, in which the speaker responds to the error or inappropriateness detected by the monitor. Retractions are the focus of the present paper, though of course the speaker has other options for dealing with trouble, e.g., sound lengthening or pauses, to delay the ongoing talk. When retracing, the speaker can, apart from a fresh start, reactivate a previous syntactic slot and apply different repair strategies, ranging from single repetitions, substitutions, insertions, and deletions to multiple retractions or various combinations of repair types. Retractions that aim at solving any kind of problem occurring in speech production by manipulating the syntactic structure of the utterance in one of the four ways mentioned above (i.e., repetition, substitution, insertion, deletion), are called same-turn self-initiated self-repairs. In the following, we will refer to this phenomenon with the term “self-repair”. Focusing on language-specific characteristics of repair, more linguistically oriented researchers have defined self-repair in narrower terms. They consider the term self-repair to cover those instances where syntax is manipulated, even if only by repetition (e.g., Fox and Jasperson, 1995:81). There is the additional possibility of defining repair according to cognitive features. Psycholinguistically oriented linguists (e.g., Levelt, 1983; Schade et al., 2003) take into account whether self-repair is carried out before the problematic part of the utterance has actually been articulated, i.e., during early stages of speech production planning. These early self-repairs that do not contain an obvious repairable are therefore called “covert repairs” as opposed to “overt repairs”, where “morphemes are changed, added or deleted” (Levelt, 1983:44).

Since Schegloff (1979) pointed out the relevance of studying repair from a syntactic point of view, i.e., with a focus on linguistic form, many researchers have been occupied with the relation between repair and syntax and the patterns of how syntax and repair affect each other. One of the first syntactic explorations of repair (Fox and Jasperson, 1995) examines repair and syntactic units, such as noun phrases, prepositional phrases, and verb phrases, in English conversation. This study gives insight into what repair reveals about speaker orientation towards certain syntactic units. For instance, the tendency to avoid recycling back to the verb suggests that “the category of Verb Phrase may not have much cognitive-interactional significance for conversationalists” (Fox and Jasperson, 1995:113). Findings such as these demonstrate how self-repair can contribute to an understanding of the general syntactic conditions of a language and pave the way for future studies on the syntax of self-repair in other languages.

The first studies on the syntactic structure of self-repair in German were carried out by Uhmman (1997, 2001, 2006). Her main observations are summarized in the Extended Head Rule, a rule for the syntactic design of self-repair in German based on introspection (cf. Uhmman, 1997, 2001) and empirical analysis (cf. Uhmman, 2006). The Extended Head Rule, founded on the principles of Generative Grammar (e.g., Chomsky, 1965), identifies the structure of self-repair as being determined by one specific syntactic feature: the functional head of the phrase containing the repairable. In addition to several theoretical problems concerning the formulation of the Extended Head Rule, empirical counter-evidence also suggests that the emerging structure of self-repair is influenced by not only syntactic, but also important functional motivations (cf. Pfeiffer, 2008, 2010, in press-b). Nevertheless, the importance of Uhmman's (2006) analyses for the present investigation is the finding that carrying out self-repair in German prepositional phrases usually starts with the preposition, while systematically ignoring the determiner as a possible point of retraction.

Little research has been conducted on repair in spoken Swedish, barring a few general descriptions (e.g., Norrby, 2004; Lindström, 2008) and some case studies (of Swedish as both a first and second language, e.g., Børestam Uhmman, 1994; Slotte-Lüttge, 2005; Lehti-Eklund, 2006; Green-Vänttinen and Lehti-Eklund, 2007; Ridell, 2008). Of these, only

⁴ Some papers use the term “recycling” (e.g., Fox et al., 2009a,b, 2010), or “backtracking” and “retracing” (Levelt, 1983) instead of “retraction”. As we adopt Auer's (2009) on-line perspective on the syntax of spoken language, we use the term “retraction” (as well as the corresponding term “projection”) in order to maintain terminological coherence.

Lindström (2008) has a clear focus on repair from a syntactic perspective. In his introduction to Swedish spoken syntax and research within the field of Interactional Linguistics, Lindström addresses some syntactic regularities of repair in spoken Swedish, among which is the observation that one recurrent position for repair initiation is after the preposition (Lindström, 2008:170). Additionally, Bockgård's research on syntactic units in spoken Swedish, particularly that on collaborative productions (2003, 2004), also shows that prepositional phrases are fairly strong syntactic units in spoken Swedish.

3. Data and methodology

This paper examines to which points within prepositional phrases speakers retrace in spoken German and Swedish. Given the syntactic differences between German and Swedish prepositional phrases (see overview in section 4), we expect to find differences between the retraction patterns in these two languages, i.e., an influence of grammar on the structure of self-repair. We use quantitative analysis of a self-repair collection drawn from a corpus, the description of which we turn to now.

3.1. Presentation of data

The German and Swedish data used for this study stem from informal interviews, doctor–patient interaction, and broadcasted spontaneous everyday conversations. The German data were collected from the following corpora available at the University of Freiburg (approx. 51 h).

- Therapist–patient interaction, recorded in a clinic with patients suffering from medically unexplained symptoms (10 h).
- Doctor–patient interaction with chronic pain patients and a dentist and interviews with the patients (approx. 15 h).
- Narrative interviews on dialect use with speakers from Hamburg and Munich (approx. 3 h).⁵
- Recordings of the TV-Show Big Brother which was broadcasted in German TV in the year 2000, consisting of a broad range of informal face-to-face interactions (approx. 23 h).

The Swedish data were collected from the following corpora (approx. 51 h):⁶

- Medical consultations. The corpus consists of 20 doctor consultations with patients with fibromyalgia and other chronic pain conditions. The recordings were conducted within the project interaction in an institutional context (approx. 13 h).
- Moderated, informal group discussions on music. Groups consisting of between three and five high school students listen to and discuss music under the guidance of the researcher. The discussions were recorded as part of the project *The Language and Music Worlds of High School Students* (approx. 20 h).
- Informal interviews, mostly about prejudices and language attitudes. The corpus consists of 33 interviews led by one interviewer. In each interview two adolescents (between the ages of 16–18) participated. The recordings were carried out within the project *The language and language attitudes of Swedish-speaking teenagers in Helsinki* (approx. 12 h).
- Focus group interviews, during which students and employees discuss their experiences of and opinions about language policy and practice at the University of Helsinki. The recordings were conducted within the project *Language Dynamics and Management of Diversity*, DYLAN (approx. 6 h).

3.2. Methodology

In order to render quantitative comparisons possible, we collected 300 examples of retraction within prepositional phrases in each language (see Henricson and Lindholm (2010) for a detailed discussion of this methodology based on Swedish data). Naturally, we used comparable data and mutual collection criteria (see section 3.3 for details). These collections were then inserted into two Excel files (one for German and one for Swedish) with similar structure. In these files, each retraction was analyzed according to the position of break-off point and the point of retraction, together constituting the retraction pattern. We also performed an analysis of the type of repair carried out after the retraction, dividing the examples into four types: *repetition*, *substitution*, *insertion*, and *deletion*. Other features were also examined,

⁵ We are grateful to Peter Auer and Margret Selting (principal investigators) as well as Peter Gilles and Jörg Peters (team members) for providing us with data from the DFG-funded research project “Dialektintonation” carried out at the Universities of Freiburg and Potsdam from 1998 to 2005.

⁶ We are grateful for the opportunity to use these data collections. For more information on the corpora, cf. Lindholm (2003), Wirdenäs (2002), Löfström (1995), Lindström and Saari (2010).

Table 1

Theoretical possibilities of retraction patterns (* marks break-off point, repeated parts are underlined).

→ Break-off point ↓ Retraction	A after/within preposition	B after/within determiner	C after/within adjective	D after/within noun
0 to Pre-P	<u>with</u> * particularly with the old bicycle	<u>with the</u> * particularly with the old bicycle	<u>with the old</u> * particularly with the old bicycle	<u>with the old bi</u> * particularly with the old bicycle
1 to preposition	<u>with</u> * with the old bicycle	<u>with the</u> * with the old bicycle	<u>with the old</u> * with the old bicycle	<u>with the old bi</u> * with the old bicycle
2 to determiner	X	with <u>the</u> * the old bicycle	with <u>the old</u> * the old bicycle	with <u>the old bi</u> * the old bicycle
3 to adjective	X	X	with the <u>old</u> * old bicycle	with the <u>old bi</u> * old bicycle
4 to noun	X	X	X	with the old <u>bi</u> * bicycle

such as which element (if any) can be seen as the repairable, and which structural positions of the prepositional phrase are filled in the original utterance.

We classified all examples according to the number of retractions occurring in the respective self-repair. Certain types of retraction patterns occurring in cases with more than one retraction within the same prepositional phrase are classified as multiple retractions. Single retractions include instances such as *wegen der- (-) wegen der DURCHFälle* 'because of the- (-) because of the diarrhea' and *från hand' från tummen* 'from hand' from thumb' (def.). Multiple retractions were classified according to the positions of the retraction, including same slot [e.g., *von der- (-) von (-) der- von UNSerer abteilung* 'from the- (-) from (-) the- from our department' and *i: i: (0.6) på britsen* 'in in (0.6) on bunk' (def.)] or different slots (e.g., *in die HINter' die hinterste hintere REIhe erstmal* 'in the back' the backmost back row first' and *me en me en elak .h elak tumör* 'with a with a malignant .h malignant tumor').

As a first step, each language was analyzed separately. The results from these analyses were discussed within the repair research group and the entire project team, singling out the most important tendencies within each language. We then proceeded to a comparative analysis of German and Swedish, focusing on differences and similarities between the two languages. Here, we concentrated on those differences and similarities which appear to be consistent with or contradictory to what could be expected in light of the differences between the prepositional phrases in the respective languages (see section 4 for details).

Since we take a form-based syntactic perspective rather than a functional one as a starting point, in this study we focus on retraction within prepositional phrases as a specific syntactic unit. In order to be systematically applicable and suitable for a contrastive approach, syntactically based definitions are required. Unfortunately, while these restrictions make repair phenomena accessible for syntactic research, they simultaneously divide functionally coherent categories into artificial groups. Therefore, in the present paper, with the intention of achieving methodological coherence, we primarily study *retraction patterns* and only thereafter analyze some of these retractions as instances of repair.

3.3. Categories of analysis

We took into account the *break-off point* and the *point of retraction*, the combination of which we refer to as the *retraction pattern* (cf. Pfeiffer (2008) for an application of this methodology in a classification of self-repair syntax in German). The *break-off point* refers to the position within a prepositional phrase where a speaker interrupts the phrase under construction in order to carry out self-repair. The *point of retraction* is the position of the prepositional phrase to which the speaker retraces.⁷ Table 1 offers an illustration of how the retraction patterns might appear using the constructed prepositional phrase *with the old bicycle*. The *break-off point* is named A–D, while the point of retraction is marked by numbers (0–4). For instance, the retraction pattern B1 represents a break-off after the determiner and a retraction back to the preposition, e.g., *with the** *with the old bicycle*. An asterisk (*) marks the point of interruption (break-off point). Elements of the prepositional phrase produced before the break-off are placed left of the asterisk, while those produced after the break-off are found to the right. Hence, the first element after the asterisk shows the position to which the speaker retraces back. To give an example, the retraction pattern D4 means that the speaker has arrived at the noun position before the construction is interrupted and then retraces back to the beginning of the noun. In this constructed example, in D4 the speaker starts producing the prepositional phrase

⁷ Although the pre-positioned element is part of the prepositional phrase, it is not included as a break-off point in Table 1. Speakers can break off after the pre-positioned element, but at that point it is not clear whether the produced element is intended to be part of a prepositional phrase. Therefore, it also remains unclear whether a prepositional phrase is projected at all.

and interrupts it within the noun (*with the old bi**), retraces back to the beginning of the noun slot and produces the complete noun (*bicycle*).⁸

Of course, the possible points of retraction are dependent on where the speaker interrupts the utterance, i.e., the break-off point. Hence, in Table 1, not all squares are filled. X marks impossible combinations of break-off point and point of retraction, since the speaker cannot retrace to a position that has not yet been reached in the production of the prepositional phrase. For another example, if a speaker has uttered the uncompleted prepositional phrase *with the old*, he/she can retrace back to the last filled slot (*old*, i.e., C), to one of the previous slots (*the*, i.e., B; or *with*, i.e., A) or to a point before the prepositional phrase.

We have counted each retraction within a prepositional phrase as one instance. This includes both those cases in which multiple retractions go to the same position and those with multiple retractions of differing scopes. This division of complex repair sequences was necessary in order to carry out quantitative comparisons.

As we are interested in how speakers orient towards prepositional phrases, we have considered only those sequences that deal with the prepositional phrase itself. This means that we have excluded retractions that start with a break-off within the prepositional phrase, but address problems on another level, such as the verb phrase or the sentence. We have included only retractions within a single turn constructional unit. The cases that were excluded on this ground are primarily lists (cf. Jefferson, 1991).

In addition, we categorized the examples according to what the speaker does when retracing: *repetition*, *substitution*, *insertion*, and *deletion*. The following examples illustrate the categories:

- repetition: *with* with bicycles*
- substitution: *with* by bicycle*
- insertion: *with bi* with old bicycles*
- deletion: *with old bi* with Ø bicycles*

Contrary to more functional categories, such as word search, correction, and specification, these syntactically-defined types do not involve a definition based on conversational functions. These syntactic categories provide a common ground for the quantitative comparison of German and Swedish.

4. Structure of prepositional phrases in German and Swedish

4.1. The prepositional phrase in German

The form a prepositional phrase in German takes depends on number, gender, case, (in)definiteness, and facultative adjectival constituents. As can be seen in Table 2, where the preposition requires a dative complement, not all syntactic positions of the complement noun phrase must be filled.

Table 2

The structure of the prepositional phrase in German (parentheses indicate facultative constituents).

Ex.	(Pre-P) Pre-positioned element	A Preposition	B Determiner	(C) Adjective	D Noun	
I	(besonders) <i>particularly</i>	mit <i>with</i>		(alten und rostigen) <i>old and rusty</i>	Fahrrädern <i>bicycles</i>	<i>Indef Pl</i>
II	(besonders) <i>particularly</i>	mit <i>with</i>	einem <i>a</i>	(alten und rostigen) <i>old and rusty</i>	Fahrrad <i>bicycle</i>	<i>Indef Sg</i>
III	(besonders) <i>particularly</i>	mit <i>with</i>	den/unseren/diesen <i>the/our/these</i>	(alten und rostigen) <i>old and rusty</i>	Fahrrädern <i>bicycles</i>	<i>Def Pl</i>
IV	(besonders) <i>particularly</i>	mit <i>with</i>	dem/unserem/diesem <i>a/our/this</i>	(alten und rostigen) <i>old and rusty</i>	Fahrrad <i>bicycle</i>	<i>Def Sg</i>

The preposition in German always requires a complement phrase, usually a noun phrase,⁹ as a complement. Hence, the only slots of the prepositional phrase that must be filled obligatorily are A (preposition) and D (noun) (see Example I).

⁸ Naturally, there can also be a change in the wording, which is not illustrated in the example, e.g. *with the old* with the new bicycle*. This is a question of what type of repair is carried out after the retraction (a substitution in this case).

⁹ Prepositions can also take adjective phrases (e.g., Ich halte Ottos Vorschlag *für sehr riskant* 'I think Otto's proposal is very risky') and adverbial phrases (e.g., Die Zuschauer eilten *nach vorn* 'The spectators rushed forward') as complements (Duden Grammatik, 2006:849). However, we did not include these instances in our corpus because of their low frequency of occurrence in our data.

The adjective position can always – but need not – be filled with a (more or less complex) adjective phrase. The determiner position (B) can be empty (Example I), be filled with an indefinite article (Example II) or a definite article, or be filled with a possessive or a demonstrative pronoun in plural (Example III) or singular (Example IV).

In our analysis, the distinction between numeral adjectives and indefinite articles in German is based upon combinatorial and inflective criteria (Gallmann and Lindauer, 1994:10 et seq.):

1. If a definite article can be inserted (*manche Bücher*/**die manchen Bücher* 'some books'/*'the some books' vs. *vielen Bücher*/*die vielen Bücher* 'many books'/'the many books'), the respective constituent must be classified as an adjective.
2. If the respective constituent declenches weak inflection of adjectives [*keine klugen Bücher* 'no intelligent books' vs. *vielen klugen*/**klugen Bücher* 'many intelligent (weak inflection)/intelligent (strong inflection) books'], it must be classified as an indefinite article.¹⁰

With respect to the comparative analysis of German and Swedish, two grammatical features of the German prepositional phrase that differentiate the two languages are worth mentioning. The first one is the possibility of cliticization of the preposition and the determiner (Uhmann, 2001). In German, there is a strong bond between the preposition and the article (Fox et al., 2010), which becomes obvious in forms like *im* (=in + dem) or *zur* (=zu + der), where the preposition and the definite article are fused phonologically and orthographically.

The second feature is the occurrence of two-way prepositions (*Wechselpräpositionen*). Some of the most frequent prepositions in German (*an*, *auf*, *hinter*, *in*, *neben*, *über*, *unter*, *vor*, and *zwischen*) can take both a dative and an accusative complement phrase, depending on the verb and the spatial meaning of the utterance, e.g., *Ich stehe in dem/im Garten* ('I am standing in the garden') [dative complement, (possible cliticization of) preposition + definite article] vs. *Ich gehe in den Garten* ('I am going into the garden') (accusative complement, non-cliticized form). The dative marking of a complement phrase of a *Wechselpräposition* indicates that the subject in the above examples is situated statically at a certain place ($\Rightarrow$ location), whereas accusative marking indicates that the subject is moving towards a place ($\Rightarrow$ direction).

The preposition governs the complement noun phrase by determining its case. The cases projected by German prepositions are dative, accusative and genitive, whereas nominative is never projected. The dative is the most common case, followed by the less frequent accusative and the rare genitive (Duden, 2006:848). The agreement of case, number and gender leads to the following picture, as illustrated in Table 3:

Table 3
The syntactic form of the prepositional phrase in German.

Case required by verb	Singular def	Singular indef	Plural def	Plural indef
Feminine noun				
Accusative (Ich gehe/I am going)	in die Küche <i>into the kitchen</i>	in eine Küche <i>into a kitchen</i>	in die Küchen <i>into the kitchens</i>	in Küchen <i>into kitchens</i>
Dative (Ich stehe/I am standing)	in der Küche <i>in the kitchen</i>	in einer Küche <i>in a kitchen</i>	in den Küchen <i>in the kitchens</i>	in Küchen <i>in kitchens</i>
Masculine noun				
Accusative (Ich gehe/I am going)	in den Garten <i>into the garden</i>	in einen Garten <i>into a garden</i>	in die Gärten <i>into the gardens</i>	in Gärten <i>into gardens</i>
Dative (Ich stehe/I am standing)	in dem/im Garten <i>in the garden</i>	in einem Garten <i>in a garden</i>	in den Gärten <i>in the gardens</i>	in Gärten <i>in gardens</i>
Neuter noun				
Accusative (Ich gehe/I am going)	in das Haus <i>into the house</i>	in ein Haus <i>into a house</i>	in die Häuser <i>into the houses</i>	in Häuser <i>into houses</i>
Dative (Ich stehe/I am standing)	in dem/im Haus <i>in the house</i>	in einem Haus <i>in a house</i>	in den Häusern <i>in the houses</i>	in Häusern <i>in houses</i>

In the following section, we will turn to the structure of the Swedish prepositional phrase and its grammatical characteristics.

¹⁰ The same holds for Swedish. 1) Can a determiner be added in front of B/C? If not, B/C is classified as a determiner (e.g.: *på vilket sätt** *på det vilket sätt*, 'in which way' in that which way'). If yes, B/C is classified as an adjective (e.g.: *två böcker*, *de två böckerna*, 'two books', 'the two books'). 2) In flexible cases: ^{A)} If a determiner is added in front of B/C, then B/C is modified. In this case, B/C is classified as a determiner (e.g.: *en bok*, *den ena boken*, **den en bok*, 'a/one book'/'that one book', *'the a/one book'). ^{B)} If a determiner is added in front of B/C, then B/C does not need to change. In this case, B/C is classified as an adjective (e.g.: *i liten skala*, *i en liten skala*, 'on small scale', 'on a small scale').

4.2. The prepositional phrase in Swedish

The minimal Swedish prepositional phrase consists, like in German, of a preposition and a noun in a bare form (as in *med cykel*, 'with bicycle', and *med cyklar*, 'with bicycles'). Bare nouns are very common as complements, as the Swedish reference grammar (SAG 3:25 § 2) describes. This is confirmed by the Swedish data collected for this study. Furthermore, bare prepositional phrases occur more often in the Swedish than in the German data. All other slots are optional, and are filled in different ways depending on whether the noun phrase is indefinite or definite.

Table 4 gives an overview of the structure of the Swedish prepositional phrase, prototypically consisting of a preposition and a noun phrase.¹¹ The optional elements are marked by brackets. The number sign # indicates that a constituent can occur in the respective position if the preceding position B is filled. All other elements are obligatory.

Table 4

The structure of the prepositional phrase in Swedish (parentheses indicate facultative constituents).

Ex.	(Pre-P) Pre-positioned element	A Preposition	(B) Determiner	(C) Adjective	D Noun	
I	(speciellt) <i>particularly</i>	med <i>with</i>		(gamla och rostiga) <i>old and rusty</i>	cyklar <i>bicycles</i>	<i>Indef Pl</i>
II	(speciellt) <i>particularly</i>	med <i>with</i>	(en) <i>an</i>	(gamla och rostig) <i>old and rusty</i>	cykel <i>bicycle</i>	<i>Indef Sg</i>
IIIa	(speciellt) <i>particularly</i>	med <i>with</i>	(de) <i>the</i>	(gamla och rostiga)# <i>old and rusty</i>	cyklarna <i>bicycles</i>	<i>Def Pl</i>
IIIb	(speciellt) <i>particularly</i>	med <i>with</i>	(våra) <i>our</i>	(gamla och rostiga) <i>old and rusty</i>	cyklar <i>bicycles</i>	
IVa	(speciellt) <i>particularly</i>	med <i>with</i>	(den) <i>the/this</i>	(gamla och rostiga)# <i>old and rusty</i>	cykeln <i>bicycle</i>	<i>Def Sg</i>
IVb	(speciellt) <i>particularly</i>	med <i>with</i>	(vår) <i>our</i>	(gamla och rostiga)# <i>old and rusty</i>	cykel <i>bicycle</i>	

The determiner position (B) can be empty. If filled, it can contain elements such as indefinite and definite articles, possessive attributes, and demonstratives.¹² In indefinite noun phrases (I and II), position B (determiner) can either be empty (as in *med cykel*, 'with bicycle', and *med cyklar*, 'with bicycles') or filled with an indefinite article, which is a freestanding function word preceding the noun (as in *med en cykel*, 'with a bicycle'). In indefinite plural forms (I), position B always remains unfilled (like in the example *med cyklar*, 'with bicycles'). When the noun phrase is indefinite, position C (adjective) can always optionally be filled with an adjective phrase.

Definiteness in Swedish noun phrases can be marked in two different ways: (1) as a suffix to the noun (*cykel-n*, 'bicycle' + def.suff.sg., *cyklar-na*, 'bicycle' + def.suff.pl.) and (2) as double definite marking, with both a freestanding definite article in front of the adjective and a definite suffix added to the noun (*den gamla cykel-n*, 'the old bicycle' + def.suff.sg., *de gamla cyklar-na*, 'the old bicycle' + def.suff.pl.). There is one exception: When the determiner in the definite Swedish noun phrase is a possessive attribute, no suffix is added to the noun (*vår cykel*, 'our bicycle', *våra cyklar*, 'our bicycles'), and hence the noun has the same form as in indefinite noun phrases. Double definite marking is obligatory when a definite noun has an adjectival attribute. In cases of double definite marking without an attribute (*den cykel-n*, 'the bicycle' + def.suff.sg., *de cyklar-na*, 'the bicycle' + def.suff.pl.), the determiner functions as a demonstrative pronoun. Finally, the scheme contains one optional position, i.e., Pre-P for pre-positioned elements sometimes preceding the preposition (*Speciellt med vår gamla och rostiga cykel*, 'Particularly with our old and rusty bicycle').¹³

Besides definiteness, there are two declinations of gender (non-neuter and neuter) and number (singular and plural). The rule in Swedish, with some exceptions, is that living (animate) beings usually take non-neuter gender. Further, about three-fourths of Swedish nouns are non-neuter gender. The following Table 5 shows the forms determiners take in congruence with gender.

¹¹ Other possible complements are subordinate clauses with noun-like function, infinitive clauses initiated by *att*, 'that', adjective or participle phrases, prepositional phrases and adverb phrases, and adverb clauses. Sometimes, the preposition stands alone and the object of the preposition is missing [*genom att arbeta*, lit. 'through to work (inf.)' 'by working', *genom att vi arbetade*, lit. 'through that we worked' 'by working']. However, prepositional phrases with other complements besides noun phrases were not included, as they are found very infrequently in spoken Swedish (and German).

¹² By 'possessive attributes' we refer to possessive pronouns and possessive noun phrases, in accordance with the Swedish reference grammar (SAG 3:14 § 9–16). In order to distinguish between determiners and adjectives in ambiguous cases we used the same criteria as for German, see 4.1.

¹³ In addition, potential modifiers can be placed after the noun (e.g., *Med vår gamla och rostiga cykel i garaget*, 'With our old and rusty bicycle in the garage'). Examples of this type were also included in our corpus.

Table 5
The form of the determiner according to gender in Swedish.

Singular def	Singular indef	Plural def	Plural indef
Non-neuter noun med (den) cykeln with the/that bicycle	med (en) cykel with a bicycle	med (de) cyklarna with the/those bicycles	med cyklar with bicycles
Neuter noun i (det) paketet in the/that parcel	i (ett) paket in a parcel	i (de) paketen in the/those parcels	i paket in parcels

4.3. Short summary and comparison of German and Swedish

In both German and Swedish, the prepositional phrase is usually composed of a preposition and a noun phrase (i.e., minimally a noun), such as *mit Fahrrädern*, *med cyklar*, ‘with bicycles’. In both languages, the preposition precedes its complement.¹⁴ In neither language do all positions of the noun phrase need to be filled; instead, the prepositional phrase can, and frequently does, consist of only a preposition and a noun.

In Swedish, a preposition frequently takes a noun in “bare form” as a complement, that is, a noun with no article (e.g., *med cykel*, ‘with bicycle’). In German, only plural bare forms exist (e.g., *mit Fahrrädern*, ‘with bicycles’).

With regard to the noun phrase, differences also exist in the marking of definiteness in the languages concerned. In German, the definite article is placed as a freestanding constituent before the noun, whereas in Swedish the definite article appears as a suffix to the noun, e.g., *cykel-n*, ‘bicycle’ + det.suff. In some cases Swedish definiteness is marked twice, such as when a definite noun has an adjectival attribute. In double definite marking there is both a freestanding definite article in front of the adjective as well as a definite suffix added to the noun (e.g., *den gamla cykel-n*, ‘the old bicycle’ + def. suff.). This is not possible in German.

Thus, there is a general difference between the languages regarding how much grammatical information is projected by the preposition. In German, the preposition determines the case form of the noun phrase, although with some prepositions (*Wechselpräpositionen*) the case form depends on the verb and the spatial meaning of the utterance. In contrast, Swedish prepositions do not project case marking. As prepositions in German are linked to specific case forms, there is also a strong bond between the preposition and the article. This becomes particularly apparent in the cliticized forms of prepositions and determiners, such as *im* for *in dem* (‘in the’), which are common in German. In Swedish, cliticization of preposition and determiner does not occur.

5. Description of the results

In the following section, we will describe our empirical results in the two languages to provide an overview of the similarities and differences between the retraction patterns in German and Swedish prepositional phrases. We will then turn to a discussion of cross-linguistic differences in retraction patterns (section 6).

5.1. Retraction patterns in German

We will first present the results of our analysis of retraction patterns in German. In doing so, we follow the successive progression of the process of repair within the prepositional phrase as it unfolds in real-time (see Table 1). We begin by presenting the results for the break-off point (see Table 6), followed by the point of retraction (see Table 7) and finally the combination of the two criteria (retraction patterns) (Table 8).

5.1.1. Break-off point

As can be seen in Table 6, there are two major positions in the German prepositional phrase where the speaker interrupts the utterance: after the preposition (A, 45.3%) and after the determiner (B, 35.7%).

Break-off occurs much less frequently in other positions, that is, within or after the production of the adjective (C, 6.7%) and the noun (D, 12.3%).

¹⁴ However, both languages also have postpositions, such as *der kinder wegen* (‘because of the kids’) and *vänner emellan* (‘between friends’), but these cases are not very frequent in spoken German and Swedish (cf. Duden, 2006:607; SAG 3:25 § 1.). In fact, there were no examples in our corpora.

Table 6
Break-off point in German.

Position	N=	%
A (prep)	136	45.3
B (det)	107	35.7
C (adj)	20	6.7
D (noun)	37	12.3
<i>Total</i>	<i>300</i>	<i>100</i>

5.1.2. Point of retraction

After having interrupted the emerging syntactic structure, the speaker must go back to some point within the already produced part of the utterance in order to carry out self-repair. Within the prepositional phrase, there are five logically possible positions of retracing (0 = pre-positioned element, 1 = preposition, 2 = determiner, 3 = adjective, 4 = noun). There are clear differences in the frequencies of use between the five positions of retracing.

As shown in Table 7, the preposition is by far the most common target point of retraction in German, making up 82% of all the retractions. This finding strongly supports Uhmman's (2001, 2006) findings. The remaining 18% of retractions are divided among the other positions, with the next largest number of retractions occurring in pre-positioned elements (8%).

Table 7
Point of retraction in German.

Position	N=	%
0 (pre-p)	24	8.0
1 (prep)	246	82.0
2 (det)	14	4.6
3 (adj)	5	1.7
4 (noun)	11	3.7
<i>Total</i>	<i>300</i>	<i>100</i>

5.1.3. Retraction patterns

Through examining the possible combinations of break-off point and point of retraction in German, we can see that some patterns seem to be very common while others are rarely used (see Table 8). The patterns P → P (A1, 41%) and Det → P (B1, 29%) are by far the most frequent patterns. Taken together, they make up 70% of all the patterns that occur in our data. In contrast, the patterns Adj → Pre-p (C0), Adj → Det (C2), Adj → Adj (C3), N → Pre-p (D0), N → Det (D2), and N → Adj (D3) constitute only 3.3% of all the retraction patterns.

Table 8
Retraction patterns in German.

Type	Description	N=	%
A0	P → Pre-p	13	4.3
A1	P → P	123	41.0
B0	Det → Pre-p	8	2.7
B1	Det → P	87	29.0
B2	Det → Det	12	4.0
C0	Adj → Pre-p	2	0.7
C1	Adj → P	14	4.7
C2	Adj → Det	1	0.3
C3	Adj → Adj	3	1.0
D0	N → Pre-p	1	0.3
D1	N → P	22	7.3
D2	N → Det	1	0.3
D3	N → Adj	2	0.7
D4	N → N	11	3.7
	<i>Total</i>	<i>300</i>	<i>100</i>

After having uttered the preposition, speakers have two possibilities for retraction. They can either go back to the preposition [e.g., *in** (.) *in allen situaTIONen* 'in* (.) in all the situations'; P → P, A1] or go even further back to a pre-positioned element (e.g., *in** *irgendwo in madrid* 'in* somewhere in madrid'; P → Pre-p, A0). The former possibility is clearly the preferred alternative. The retraction to the pre-positioned element (A0) is used quite rarely (4.3%), whereas in 41% of all retractions in our corpus, speakers chose to restart the utterance directly at the preposition.

When the speaker breaks off the syntactic construction after the determiner, there is the additional possibility of retracing directly to the determiner. This alternative is present in only 4% of our data, meaning that the speaker rarely makes use of the minimal span of retracing in these cases. Instead, nearly all the instances of break-off after the determiner are combined with a retraction to the preposition (e.g., *bei der** *bei der ausreise* 'at the* at the departure'; Det → P, B1). Finally, there is always the possibility of retracing to the slot of a pre-positioned element (Det → Pre-p, B0). However, this is the least frequent option for interruptions after the determiner.

Break-offs after or within the adjective (C0–C3) occur in only 6.7% of cases in our corpus. If the speaker arrives at the adjective slot before breaking off, there is – just like for the other points of interruption – a tendency to retrace back to the preposition (e.g., *mit dem normalen** *mit dem normalen dumpfen SCHMERZ* 'with the normal* with the normal dull pain'; Adj → P, C1). The other possibilities of retraction do occur, but in only 1% or less than 1% of all cases.

Speakers reach the noun position of the German prepositional phrase in only 12% of all examples and often interrupt the noun when initiating repair at this point of the prepositional phrase (72.9% of break-offs within the noun; 27.1% of break-offs after the noun). Having arrived at this point, all the theoretical possibilities of retracing illustrated in Table 1 are possible. However, the pre-positioned element, the determiner, and the adjective are rarely used as restarting points. The only slots that are actually used are the noun, i.e., the minimal span of retracing [e.g., *mit dem TEAMle** (.) *TEAMleiter* 'with the team lea* team leader'; N → N, D4], and the preposition [e.g., *im* (.) *ap** *im MAI* 'in ap* in may'; N → P, D1]. For this break-off point, we find the same pattern as for all other positions: The preposition is the predominant target point of retracing and is used twice as often for retraction as the noun.

Single retractions occur in 88% of self-repairs in our data and are therefore the most common type of retraction. Only 35 retractions (12% of the German corpus) are organized as multiple retractions (meaning retractions that occur as a series of subsequent retractions within the same prepositional phrase). Similar to single retractions, multiple retractions usually go to the preposition ($n = 30$; 86%). Multiple retractions to different slots are quite rare ($n = 5$; 14% of all the multiples).

5.2. Retraction patterns in Swedish

This section presents a brief overview of the retraction patterns in the Swedish data following the same order as the German overview above. We begin by discussing the break-off point, followed by the point of retraction and the retraction patterns.

5.2.1. Break-off point

As can be seen in Table 9, the preposition (54.7%) is the most frequent break-off point. Another commonly used break-off point is after/within the noun (28.7%). Determiners (9%) and adjectives (7.6%) are less frequently used as positions for repair initiation.

Table 9
Break-off point in Swedish.

Position	N=	%
A (prep)	164	54.7
B (det)	27	9.0
C (adj)	23	7.6
D (noun)	86	28.7
Total	300	100

Interruptions after the adjective are primarily cases in which the adjective is the second element of the prepositional phrase without a preceding determiner. This holds for 18 of the 23 cases, with only five including a determiner.

5.2.2. Point of retraction

Table 10 shows the distribution of the points of retraction in the Swedish data.

Table 10
Point of retraction in Swedish.

Position	N=	%
0 (pre-p)	21	7.0
1 (prep)	213	71.0
2 (det)	16	5.3
3 (adj)	16	5.3
4 (noun)	34	11.4
Total	300	100

In the vast majority of cases, the retraction goes back to the beginning of the prepositional phrase, or the preposition (71%). The noun is the second locus of retraction, counting for 11.4% of all cases, whereas retracing back to the determiner, the adjective, or the pre-positioned element is done even less frequently.

Table 11
Retraction patterns in Swedish.

Type	Description	N=	%
A0	P → Pre-p	16	5.3
A1	P → P	148	49.3
B0	Det → Pre-p	1	0.3
B1	Det → P	17	5.7
B2	Det → Det	9	3.0
C0	Adj → Pre-p	0	0.0
C1	Adj → P	10	3.3
C2	Adj → Det	2	0.7
C3	Adj → Adj	11	3.7
D0	N → Pre-p	4	1.3
D1	N → P	38	12.7
D2	N → Det	5	1.7
D3	N → Adj	5	1.7
D4	N → N	34	11.3
	Total	300	100

5.2.3. Retraction patterns

As can be seen in Table 11, in Swedish, as in German, some retraction patterns are used very frequently, while others are almost never used. In Swedish, the most common pattern by far is P → P (A1; 49.3%), followed by N → P (D1; 12.7%), and N → N (D4; 11.3%). On the other hand, the patterns Adj → Pre-p (C0), Det → Pre-p (B0), Adj → Det (C2), and N → Pre-p (D0) are extremely rare.

Once a speaker has uttered a preposition, there is the possibility of retracing back either to the preposition [e.g., *för* från liksom medievärlden* 'for* from like media world' (def.); P → P, A1] or to a pre-positioned element [e.g., *bara i* (.) kanske i form av uppfostran* 'only in* (.) maybe in means of education'; P → Pre-p, A0]. Overall, the combination of breaking off after the preposition and retracing back to the preposition is the most frequent retraction pattern, amounting to almost half of all cases of retraction patterns. Occasionally, speakers retrace back to an unfilled position, inserting a specifying or modifying element (e.g., *på* ganska mycke på finska* 'in* quite a lot in Finnish').

When a speaker breaks off after the determiner, there is the possibility of retracing back to the determiner [e.g., *ti en* (0.7) en språktjänst* 'to a* (0.7) a language service'; Det → Det, B2], the preposition [e.g., *ti en* (.) ti en reumatolog* 'to a* (.) to a rheumatologist'; Det → P, B1], or to a pre-positioned element (Det → Pre-p, B0). In our data, the retraction usually goes back to the preposition (63% of all initiations after the determiner).

Having arrived at the adjective, speakers tend to retrace back either to the preposition (e.g., *ur nya* i nya banor* 'of new* from new perspectives'; Adj → P, C1) or to the adjective (e.g., *på bå* två ställen* 'in bo* two places'; Adj → Adj, C3). This is expected, since in most cases no other elements (neither a pre-positioned element nor a determiner) have been uttered at this point. However, break-offs after or within the adjective are rare in our data (7.7%).

When uttering the noun (position D), the speaker has the possibility of retracing back to all the previous slots. However, two positions are preferred: the preposition (e.g., *på svenska* på svenska* 'in Swedish* in Swedish'; N → P, D1) and the

noun (e.g., *på le* leder* 'at jo* joints'; N → N, D4). It is common (63/86; 73.3% of all initiations after or within the noun) that the noun is cut off before completion.

Almost half of all retractions in the Swedish data are part of longer sequences of multiple retractions. The Swedish data include 45 instances of multiple retractions, consisting of 136 retractions. A majority ($n = 30$; 66.7%) of these multiple retractions include only retractions to the preposition [e.g., *i* i* (.) i* i axelpartiena* 'in* in* (.) in* in shoulder regions' def.]. Even in the remaining 15 multiples (i.e., one-third of all multiples), at least one of the retractions goes back to the preposition (e.g., *me en* me en elak* .h elak tumör* 'with a* with a malignant* .h malignant tumor').

6. Comparative discussion of the results

After having presented the separate presentation of the retraction patterns in German and Swedish, we now turn to a cross-linguistic analysis. The aim of the contrastive discussion is to explain the similarities and, more particularly, the main differences in retraction patterns between the languages.

To this end, we carried out a chi-square test (see Table 12). For the purpose of statistical analysis, the retraction patterns C0, C2, D0, D2, and D3 were excluded because of their low frequency of occurrence (i.e., less than seven tokens). The remaining nine retraction patterns were included in the analysis.

The first important result is that there is a highly significant general difference between the Swedish and German retraction patterns ($p = 0^{***}$ / Value 70 / df 8).

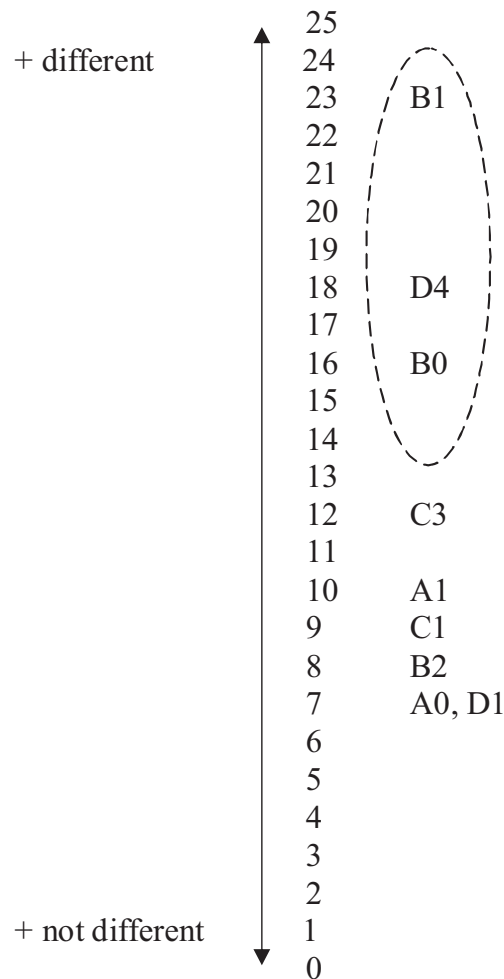
Given this general difference between the languages, the question arises as to which retraction patterns are used more often for self-repair in each language. In order to answer this question, points (from 7 to 23) were given according to the number of significant differences between one retraction pattern in German and Swedish and all the others (pairwise comparison, see Table 12). For example, the difference between A1 ($n = 123$ in German, $n = 148$ in Swedish) and C1 ($n = 10$ in German, $n = 14$ in Swedish) is not significant, because the quantitative ratio 123:148 is similar to 10:14. The degree of difference was rated as follows:

- Not significant, ns = 0 points
- Statistical tendency $(*) = 1$ point
- Significant $*$ = 2 points
- High significance $** = 3$ points
- Highest significance $*** = 4$ points

Table 12
Pairwise analysis of differences between the retraction patterns.

	A0	A1	B0	B1	B2	C1	C3	D1	D4
A0 (7)		ns	$p = 0.02^*$ $V = 5.4$ df 1	$p = 0^{***}$ $V = 16.6$ df 1	ns	ns	ns	ns	$p = 0.059^{(*)}$ $V = 3.6$ df 1
A1 (10)			$p = 0.014^*$ $V = 6.1$ df 1	$p = 0^{***}$ $V = 37.2$ df 1	ns	ns	$p = 0.06^{(*)}$ $V = 3.5$ df 1	ns	$p = 0.003^{**}$ $V = 8.6$ df 1
B0 (16)				ns	$p = 0.091^{(*)}$ $V = 2.9$ df 1	$p = 0.077^{(*)}$ $V = 3.1$ df 1	$p = 0.002^{**}$ $V = 10$ df 1	$p = 0.004^{**}$ $V = 8.4$ df 1	$p = 0^{***}$ $V = 14.1$ df 1
B1 (23)					0.01* $V = 6.6$ df 1	$p = 0.005^{**}$ $V = 8$ df 1	$p = 0^{***}$ $V = 24.5$ df 1	$p = 0^{***}$ $V = 33.6$ df 1	$p = 0^{***}$ $V = 46.8$ df 1
B2 (8)						ns	$p = 0.036^*$ $V = 4.4$ df 1	ns	$p = 0.008^{**}$ $V = 7.1$ df 1
C1 (9)							$p = 0.037^*$ $V = 4.4$ df 1	ns	$p = 0.007^{**}$ $V = 7.3$ df 1
C3 (12)								ns	ns
D1 (7)									ns
D4 (18)									

Leftmost column: number of points (=strength of difference) is given in brackets, ns = not significant, p = probability of error, V = value, df = degree of freedom.



Scale 1. Degree of difference between retraction patterns.

For a clearer overview, the sum of the points given for each of the pairwise comparisons is shown visually in [Scale 1](#) above.

As can be seen, the patterns A1, C1, B2, A0, and D1 are not significantly different, but each is different from the patterns B1, D4 and B0 (with the exception of D1 vs. D4, where there actually is a difference between the patterns).

This leads to the formation of a “difference group”. The patterns B1, D4, and B0 are not only different from the patterns outside of the “difference group”, but are also different from each other (with the exception of B0 vs. B1). This means that each of these three patterns is somehow different from (nearly) all the other retraction patterns.

As the difference between the two languages must be the reason for the difference between the retraction patterns, the patterns B1, D4 and B0 can be interpreted as significant differences between German and Swedish.

As a starting point for the comparative discussion, the following [Table 13](#) gives an overview of the retraction patterns for German and Swedish. It indicates that there are a number of similarities, but also striking differences, between Swedish and German. We will begin by briefly examining the similarities before turning to a detailed discussion of the differences.

6.1. Similarities

The most obvious similarity between the two languages is that the pattern $P \rightarrow P$ (A1), consisting mainly of repetitions of the preposition, is used most frequently for repair, accounting for almost half of all the retractions in Swedish and for 41% in German. This high proportion of retractions back to the preposition occurs primarily after the following three break-off points: after the preposition (A), after/within the adjective (C) and after/within the noun (D). Conversely, other theoretically possible points of retraction, such as determiner (position 2) and adjective (position 3), are rarely used in either language.

Table 13

Retraction patterns in Swedish and German (bold face = significant difference between the languages).

Type	Description	German N=	%	Swedish N=	%
A0	P → Pre-p	13	4.3	16	5.3
A1	P → P	123	41.0	148	49.3
B0	Det → Pre-p	8	2.7	1	0.3
B1	Det → P	87	29.0	17	5.7
B2	Det → Det	12	4.0	9	3.0
C0	Adj → Pre-p	2	0.7	0	0.0
C1	Adj → P	14	4.7	10	3.3
C2	Adj → Det	1	0.3	2	0.7
C3	Adj → Adj	3	1.0	11	3.7
D0	N → Pre-p	1	0.3	4	1.3
D1	N → P	22	7.3	38	12.7
D2	N → Det	1	0.3	5	1.7
D3	N → Adj	2	0.7	5	1.7
D4	N → N	11	3.7	34	11.3
	<i>Total</i>	<i>300</i>	<i>100</i>	<i>300</i>	<i>100</i>

Thus, we have found a strong orientation to the preposition as a point of retraction. Why is this the case? On the surface, speakers seem to prefer retracing to phrase boundaries. However, this observation has very limited explanatory power because the probability of a random retraction to a phrase boundary would be around 90% in right-branching languages (cf. Levelt, 1983:77). Hence, other constraints must account for this finding. In many languages, prepositional phrases tend to be treated not as compositions of independent elements, but as units with strong internal bonds between elements (for English, cf. the repair patterns analyzed by Fox and Jaspersen, 1995, and the collaborative productions analyzed by Szczepek, 2000). In Swedish, the prepositional phrase has been suggested to be one of the strongest units in spoken language (cf. Bockgård, 2004:233, 258, 261). This becomes particularly apparent in the retraction patterns B1, C1, and D1, where possible earlier points of retraction are ignored in favor of returning to the preposition. In German, the tendency of retracing to the preposition is particularly strong, with German speakers systematically ignoring the determiner position as a point of retraction (cf. Uhmman, 2001, 2006).¹⁵ The high number of retractions to the preposition and the low number of retractions to the determiner appear as even clearer tendencies in German than in Swedish, thus suggesting that German has a stronger bond between the preposition and the determiner (cf. Fox et al., 2010). This bond becomes obvious in the strong tendency of German prepositions to fuse with definite articles [e.g., *in + dem* → *im* 'in + the' (def, sg, m/n)] (cf. Uhmman, 2001:394). In addition to this tendency to cliticize, German prepositions project case on the complement noun phrase. The high number of retractions to the preposition in German provides evidence for its great grammatical significance, which seems to be cognitively represented (Pfeiffer, 2008).

The fact that some positions in the phrase are filled more frequently than others partly influences the number of break-offs after a certain constituent. Since the preposition is the head of the prepositional phrase, it occurs in every instance which – together with the preference for early repair initiation discussed below – increases the probability of break-off after this constituent.

Generally, the data show a clear tendency of speakers to interrupt the utterance as early as possible within the production of the prepositional phrase and to minimize the scope of retraction. In both languages, there is a tendency to break off as early as possible, meaning that break-offs occur as soon as – or even before – the repairable is uttered. Instances of self-repair where the speaker breaks off before the repairable is uttered are called covert repair. The preference for breaking off the utterance as soon as possible after detecting the repairable has already been observed in previous work on self-repair (e.g., Main Interruption Rule, Levelt, 1983). The tendency towards minimizing the scope of retraction becomes apparent, for instance, in the frequent cases in which the break-off and the retraction occupy the same slot of the prepositional phrase (counting for more than half of all Swedish examples). This tendency appears to be stronger in Swedish, whereas in German, speakers often retrace to the preposition, even in cases where this increases the retraction span.

¹⁵ In our data, the number of retractions to the determiner is similar in German and Swedish. However, in many Swedish prepositional phrases, the determiner slot is not filled. Hence, there is a clear difference between the languages that will be subject to discussion in section 6.2.1.

6.2. Differences

In what follows, we will turn to a discussion of the retraction patterns that differ most between German and Swedish. Statistical analysis revealed major differences between retraction patterns, of which Det → P (B1), N → N (D4), and Det → Pre-p (B0) varied most between the two languages. Retraction pattern Det → P (B1) refers to break-off after the determiner and retraction to the preposition [e.g., Ge. *in den* in den fuffziger JAHren* 'in the* in the fifties', Swe. *om en* (0.2) om en attityd* 'about an* (0.2) about an attitude']. Pattern N → N (D4) circles around the noun, with an interruption after or within the noun and a retraction to the noun (e.g., Ge. *nach sp* mallorca oder irgendWAS* 'to sp* to mallorca or something', Swe. *i ku* turkiet* 'in ku* turkey'). The pattern Det → Pre-p (B0) consists of cases with break-off after the determiner and retraction to a pre-positioned element. However, this pattern is not included in the discussion of differences (section 6.2) due to the low number of tokens and the heterogeneity of pre-positioned elements found in our corpus.

6.2.1. Break-off after determiner, retraction to preposition: B1

The first major difference between German and Swedish is the number of break-offs after the determiner (B0, B1, and B2, see Table 13). While German speakers interrupt themselves after the determiner in 35.7% of all cases (e.g., *mit dem.* mit dem GLEITwirbel* 'with the:* with the sliding vertebra'), this occurs approximately four times less often in Swedish (e.g., *om en* (0.2) om en attityd* 'about an* (0.2) about an attitude') (9%). This difference is partly due to the overall number of occurring determiners, which differs significantly in the two languages. Table 14 compares the total number of prepositional phrases with determiners in the corpus to the number of cases where a break-off occurs after the determiner.

Table 14
Break-off point after determiner.

	Break-off after det	Total PP with det
German	107 (74%)	144 (100%)
Swedish	27 (60%)	45 (100%)

While in German 29% of all cases follow pattern B1, this retraction pattern is rarer in Swedish (5.7%). This is due to the fact that determiners in German prepositional phrases occur approximately three times more often than determiners in Swedish (as shown in Table 14), which can partly be explained by the different structural organization of the prepositional phrase (and the noun phrase within it) in German and Swedish (see section 4). One of the major differences between the two languages is the fact that the Swedish complement noun phrase has post-positioned determiners, while in German this does not occur. For example, such post-positioned determiners can be used for assigning definiteness to the noun without using a front article, whereas German lacks this possibility and requires the use of pre-positioned determiners for any kind of grammatical marking.

Another important observation that sheds light on the difference with respect to B1 is the number of repaired – mostly substituted – determiners. As Table 15 shows, determiners are repaired more than three times more often in German than in Swedish ($n = 48$ vs. $n = 14$).

Table 15
Number of repairables (substitutions, insertions, and deletions).

	Preposition	Determiner	Adjective	Noun
German	34	48	6	21
Swedish	29	14	10	47

Swedish determiners are less likely to be repaired because they generally do not project as much grammatical information as German determiners. A Swedish speaker can produce a determiner without having decided on the noun to follow (with the exception of determiners of non-neuter gender projecting animate nouns, see section 4.2). The determiner slot in German, however, which structurally corresponds to the front article in Swedish, is the most important position for grammatical marking (i.e., case, gender, number, definiteness). Therefore, German determiners are frequently subject to self-repair activities in prepositional phrases. The grammatical information projected by the form of the German determiner often has to be revised when the “new” intended noun no longer matches the projected one (cf. Uhmman, 2006; Pfeiffer, 2010). When such a repair is carried out, the preferred point of repair initiation is directly after the repairable,

i.e., the determiner. This finding is in line with the general observation in the language-specific sections that there is a tendency to break off in the vicinity of or within the repairable.

To summarize, Swedish pre-positioned articles are not only produced less often in prepositional phrases compared to German, but are also less likely to be repaired, because they generally involve less grammatical projection than German determiners.

6.2.2. Break-off after/within noun, retraction to noun: D4

The second statistically significant difference we found between the languages is the retraction pattern D4, in which break-off occurs after or even within the noun and retraces back to the beginning of the noun slot [e.g., Ge. *mit dem TEAMlei** (.) *TEAMleiter* 'with the team lea*' team leader', Sw. *för till** *tillfälle* 'at pre*' present']. In German, speakers generally retrace to the preposition in most self-repairs within the prepositional phrase (see Pfeiffer, in press-b, for an analysis of the interplay of formal and functional motivations in determining the point of retraction in substitutions of the noun in German prepositional phrases). In Swedish, however, there is the additional possibility of retracing to the noun when repair is initiated towards the end of the production of the prepositional phrase (see Table 13).

An interrelation exists between this finding and the distribution of repairables in the two languages mentioned above (Table 15). The numbers of repaired determiners and nouns in the two languages are diametrically opposed to each other: Determiners are substituted more often in German than in Swedish (see above, Table 15, $n = 48$ vs. $n = 14$) because determiners project more grammatical information in German and thus often need adjustment when speakers decide to modify the emerging utterance retrospectively. As the form of the determiner is dependent on the noun in German, repairing the determiner often means repairing the noun to follow (cf. Pfeiffer, in press-a). This kind of 'early adjustment' reduces the need for breaking off the utterance during or after the production of the noun. Conversely, due to the weaker grammatical projection involved in Swedish pre-positioned articles, speakers less often modify them and thus less often interrupt their utterance after the production of pre-positioned articles. As speakers of Swedish cannot carry out early adjustments in the same way as German speakers, they need to repair the noun more often and hence initiate repair more frequently during and after the noun. This is reflected in the frequency of the retraction pattern D4.

The finding that the retraction pattern $N \rightarrow N$ (D4) occurs three times more often in Swedish than in German suggests that in German the speaker has usually not yet reached the noun position when repair is carried out in prepositional phrases, whereas this happens more often in Swedish. Taking into account the types of repair that can be found for this retraction pattern, Table 16 can provide a more accurate insight into this finding.

Table 16
Types of repair in retraction pattern D4.

	Repetition		Substitution		Insertion		Deletion		Total
	N=	%	N=	%	N=	%	N=	%	
German	6	54.5	5	45.5	0	0	0	0	11 (100%)
Swedish	7	20.6	26	76.4	1	3.0	0	0	34 (100%)

When a speaker makes use of the retraction pattern D4, there are two major types of repair that can be carried out: repetition of (a part of) the noun or substitution of the noun. There is only one exception to this in our data, i.e., a Swedish example classified as an insertion (*på så' klädsel å sånt* 'on stu' cloths and stuff'). Interestingly, in German there is practically no quantitative difference between repetitions and substitutions following the retraction pattern D4 (54.5% vs. 45.5%), whereas there is a significant difference in Swedish: only 20.6% are repetitions whereas 76.4% are substitutions of the noun. Additionally, a comparably low number of instances for repetitions is evident in both languages ($n = 6$ in German, $n = 7$ in Swedish), but at the same time, a striking difference regarding the number of substitutions can be seen ($n = 5$ in German, $n = 26$ in Swedish). This result gives rise to the hypothesis that certain speech planning activities take place at different temporal stages in the online processing of the two languages. As the low number of substitutions of nouns for D4 in German indicates, the selection of a specific noun apparently is realized earlier in speech production, i.e., at the latest when the determiner, whose grammatical form is partly dependent on the noun, is uttered.¹⁶ This interpretation is corroborated by the finding that in German, nearly all of the repair work done after the production of the determiner does not concern semantic problems, but rather articulation problems: In only two of the D4 repairs in German there is a lexical noun repairable, whereas all the others ($n = 9$) are articulation problems (e.g., *von Elnem speta' zsch'*

¹⁶ Due to the low number of instances of D4 in German our interpretation is somewhat tentative. However, we believe that the quantitative difference between repetitions and substitutions in the two languages is clear enough to draw this conclusion.

spezialisten 'by one speta' ts* specialist'). Repetitions of (a part of) the noun, which are most often hearable as "stuttering" or "fumbling" in our data, are classified as articulation problems.

Conversely, the noun slot in the Swedish prepositional phrase is still a potential locus for the conceptual planning processes involved in noun selection. In Swedish, there are 15 lexical substitutions [e.g., *meh* (0.4) *avdelningen** *institutionen* 'with (0.4) the department* institution] in D4, while 13 represent articulation repairs (e.g., *på fens** *svenska å finska* 'in fins* swedish and finnish'). The front article in Swedish does not project any rigid grammatical constraints and therefore allows for a rather late choice out of a morphosyntactically non-restricted and semantically varied range of nouns.

6.2.3. Types of repair

The following Table 17 gives an overview of the distribution of repair types in German and Swedish. As can be seen, the overall picture is quite similar. In both German and Swedish, repetition is by far the most frequent type of repair, followed by substitution, insertion and deletion.

Table 17

Types of repair in German and Swedish.

	Repetition	%	Substitution	%	Insertion	%	Deletion	%	Total
German	173	57.8	102	34.0	20	6.6	5	1.6	300
Swedish	164	54.7	99	33.0	33	11.0	4	1.3	300

However, despite these similarities, as far as the prepositional phrase is concerned, there are some interesting differences regarding the repetition of function words and the substitution of content words that has been reported in other studies (e.g., Rieger, 2003; Fox et al., 2009a,b, 2010). In examining the number of repairables (see Table 15), it is evident that while the noun is the constituent that is substituted most frequently in Swedish, in German, determiners are substituted twice as often as nouns. Thus, unlike Swedish speakers, German speakers appear not to follow the general rule of substituting content words when adjusting prepositional phrases, even though this tendency has been found to hold across syntactic categories (Rieger, 2003; Fox et al., 2010). This tendency is reinforced by a typological difference: as was argued above, Swedish – unlike German – has a suffixed definite article in simple noun phrases. As a consequence, the determiner position is more often filled in German than in Swedish.

7. Summary and conclusion

In this concluding section we will briefly summarize the central findings that have been presented and discussed.

In both German and Swedish, speakers most frequently break off after the preposition (45.3% in German, 54.7% in Swedish). In both languages, this implies a preference for addressing problems in the prepositional phrase as early as possible, thus confirming a tendency that has been noted in previous research (e.g., Schegloff et al., 1977; Levelt, 1983).

Since the problem the speaker addresses at this early point does not become apparent on the syntactic surface, there is a high amount of covert repairs, even more so considering the high frequency of repetitions (of the preposition as well as of the preposition and the determiner) found in both languages. With regard to German, the frequent substitution of determiners before articulating the projected noun can be considered additional evidence for this tendency.

In addition to being the most frequent break-off point, the preposition (i.e., usually the first element of the prepositional phrase) is the main locus of retraction (82% in German, 71% in Swedish). In both languages, this further supports the idea that there are strong bonds between the elements of prepositional phrases in spoken German and Swedish. In line with previous studies, this tendency was found to be particularly striking in German, which can be explained by the strong bond between the preposition and the determiner. This becomes obvious in, for example, the possible cliticization of the preposition and the definite article.

While in Swedish there appears to be a clear preference for minimizing the scope of retraction (shown, for instance, by high frequencies of retracing only one step), in German this preference could not be observed. Instead, we found a general orientation to the preposition when retracing within the prepositional phrase. The minimal retractions that go back only one single step primarily follow the pattern A1 ($P \rightarrow P$) in both German and Swedish. However, in Swedish a minimal retraction can also include the noun position D4 ($N \rightarrow N$). Indeed, this is the third most frequent retraction pattern in the Swedish data (11.3%), indicating that the bond between the preposition and the noun phrase is not as strong in Swedish as in German where this pattern is rarely used (3.7%).

As a consequence of the preference for early initiation, the initial stages of the prepositional phrase are also common loci of retraction, since the prepositional phrase has not yet unfolded. Accordingly, towards the end of the prepositional

phrase retractions become less frequent. This tendency is stronger in German, where the retractions tend to occur in the earlier stages, even when the (covert) repairable lies at the end, i.e., the noun. In Swedish, on the other hand, the speaker might retrace to the noun when repair is initiated towards the end of the prepositional phrase, thus minimizing the scope of retraction.

Since the prepositional phrase in both languages increases its semantic weight towards the end, the type of repair may correlate with the actual stage of the prepositional phrase, as well as with the elements being repaired. Indeed, the point of break-off appears to be connected with the type of repair to follow. The more the speaker advances with the production of the prepositional phrase, the higher the probability for substitution. Consequently, the earlier repair is initiated, the higher the probability for repetition.

One possible explanation for this finding may be that the repair process often circles around the element of the prepositional phrase with the most semantic content, i.e., the noun, because the retrieval of lexical items can be considered more time-consuming than the retrieval of formal elements such as determiners (cf. Fox et al., 1996, 2010). Repetitions, then, may be one strategy among others (e.g., pauses, lengthening of sounds, use of hesitation markers such as *uh*) to delay the production of the noun in order to gain more time for the word search (cf. Rieger, 2003:58). From this perspective, repetitions at an early stage of the prepositional phrase can often be considered covert repairs of the noun to follow. As described earlier, there is no (obvious) repairable in these instances of self-repair.

We have argued that the retraction patterns provide evidence for a different timing of noun selection processes in the two languages. In German, the substitution of determiners can be seen as strong evidence for the noun being the “anticipated” repairable (cf. Pfeiffer, *in press-a*). This suggests that in German, the speaker usually addresses problems of speech production involving the noun before overtly producing it. This is connected to the grammatical structure of German prepositional phrases, whereby a specific noun must be selected at the latest when choosing a determiner. In Swedish, as much less grammatical projection is involved in prepositions and determiners, speakers can proceed to the noun position before having to decide on the noun itself. Thus, the repair seems to center around the selection of the noun in both languages, although there are differences in retraction patterns and the distribution of types of repair due to the different grammatical properties of the languages. As we have shown in the comparative discussion, the number of retractions to the noun in relation to the type of repair that is carried out in this position suggests a different timing of speech planning activities in both languages. While the noun selection in German takes place during earlier stages of the production of the prepositional phrase, the grammar of the Swedish prepositional phrase allows for a rather late selection of the noun.

Previous research has shown that a pattern of recycling function words and substituting content words is found in several languages (e.g., Fox et al., 2010; Rieger, 2003). For prepositional phrases, this would imply moving from repetition to substitution when advancing in production. Indeed, as our study indicates, this tendency holds for Swedish as well. On the other hand, this claim seems not hold in the same way for German, at least not for self-repair within prepositional phrases. While in Swedish, prepositions are primarily repeated in both languages and nouns are often substituted, in German, determiners are substituted much more often than nouns. Added together, the number of substituted nouns and determiners arrive at similar figures in German and Swedish, but the internal division of the repaired elements shows opposite distributions (German 21 nouns and 48 determiners, Swedish 47 nouns and 14 determiners). Taking into account the difference in the grammatical projection of determiners, this implies that in German – in contrast to Swedish – speakers already address and adjust the noun when uttering and substituting the preceding determiner.

As a starting point for this study, we raised the question as to whether the grammatical differences between the prepositional phrases in German and Swedish [e.g., concerning the potential of the preposition and the (pre-positioned) determiner for grammatical marking] affect the retraction patterns in each language. Generally, our analysis gives reason to confirm that the grammatical differences do indeed result in different retraction patterns. Nonetheless, many general tendencies are shared in both German and Swedish, most likely due to the fact that the two languages are typologically closely related.

In the present study, we took a quantitative approach to the investigation of self-repair. This approach has made it possible to point out structural similarities and differences in the retraction patterns of the two languages, giving us clearer insight into both general and language-specific characteristics of retractions within Swedish and German prepositional phrases. Nonetheless, at this stage of research, features such as the interactional functions of the analyzed repair sequences have been neglected. Future comparative research on the collected examples should include an in-depth sequence analysis as well as a prosodic study. Here, a basis is laid in Pfeiffer's (*in press-a*) intonation study of substitutions of the determiner within prepositional phrases in German.

Appendix A. Transcription conventions (based on Selting et al., 2009)

wo'	Truncation
*	Break-off point
.h	Inbreaths
(.)	Micropause
(-)	Pause of 0.25 s
(2.5)	Pause of indicated length
:	Lengthened segment
NEver	Accented syllable, primary accent
nEver	Secondary accent
word-	Level intonation

References

- Auer, Peter, 2005. Projection in interaction and projection in grammar. *Text* 25 (1), 7–36.
- Auer, Peter, 2009. On-line syntax: thoughts on the temporality of spoken language. *Language Sciences* 31, 1–13.
- Bockgård, Gustav, 2003. Samtalets byggstenar – ett teoretiskt och empiriskt bidrag till beskrivningen av olika syntaktiska enheters relevans i samtal. *Folkmålsstudier* 42, 41–80.
- Bockgård, Gustav, 2004. Syntax som social resurs. En studie av samkonstruktionssekvensers form och funktion i svenska samtal. Uppsala universitet, Uppsala.
- Börestam Uhlmann, Ulla, 1994. Skandinaver samtalar. Språkliga och interaktionella strategier i samtal mellan danskar, norrmän och svenskar. Uppsala universitet, Uppsala.
- Chomsky, Noam, 1965. *Aspects of the Theory of Syntax*. MIT Press, Cambridge.
- Couper-Kuhlen, Elizabeth, Ono, Tsuyoshi, 2007. 'Incrementing' in conversation. A comparison of methods in English, German and Japanese. *Pragmatics* 17 (4), 513–552.
- Duden, 2006. *Die Grammatik*. (Duden-Reihe Bd. 4), Dudenverlag, Mannheim/Leipzig/Wien/Zürich.
- Fox, Barbara A., Jasperson, Robert, 1995. A syntactic exploration of repair in English conversation. In: Davis, P.W. (Ed.), *Alternative Linguistics. Descriptive and Theoretical Modes*. John Benjamins, Amsterdam, Philadelphia, pp. 77–134.
- Fox, Barbara A., Hayashi, Makoto, Jasperson, Robert, 1996. Resources and repair: a cross-linguistic study of syntax and repair. In: Ochs, E., Schegloff, E.A., Thompson, S.A. (Eds.), *Interaction and Grammar*. Cambridge University Press, Cambridge, pp. 185–237.
- Fox, Barbara A., Maschler, Yael, Uhlmann, Susanne, 2009a. Morpho-syntactic resources for the organization of same-turn self-repair: cross-linguistic variation in English, German and Hebrew. *Gesprächsforschung – Online-Zeitschrift zur verbalen Interaktion* 10, 245–291., <http://www.gespraechsforschung-ozs.de/heft2009/ga-fox.pdf>.
- Fox, Barbara A., Wouk, Fay, Hayashi, Makoto, Fincke, Steven, Tao, Liang, Sorjonen, Marja-Leena, Laakso, Minna, Hernandez, Wilfrido Flores, 2009b. A cross-linguistic investigation of the site of initiation in same-turn self-repair. In: Sidnell, J. (Ed.), *Conversation Analysis. Comparative Perspectives*. Cambridge University Press, Cambridge, pp. 60–103.
- Fox, Barbara A., Maschler, Yael, Uhlmann, Susanne, 2010. A cross-linguistic study of self-repair: evidence from English, German, and Hebrew. *Journal of Pragmatics* 42, 2487–2505.
- Gallmann, Peter, Lindauer, Thomas, 1994. Funktionale Kategorien in Nominalphrasen. *Beiträge zur Geschichte der Deutschen Sprache und Literatur* 116, 1–27.
- Green-Vänttinen, Maria, Lehti-Eklund, Hanna, 2007. Självreparationer i svenska som S1 och S2. In: Lehti-Eklund, H. (Ed.), *Att växa till lärare – svensklärarutbildning i utveckling*. University of Helsinki, Helsinki, pp. 53–81.
- Hayashi, Makoto, 1994. A comparative study of self-repair in English and Japanese conversation. In: Akatsuka, N. (Ed.), *Japanese/Korean Linguistics*, vol. IV. CSLI, Stanford, pp. 77–93.
- Henricson, Sofie, Lindholm, Camilla, 2010. Reparation med form eller funktion i fokus – två möjliga perspektiv inom interaktionell lingvistik. In: Lindholm, C., Lindström, J. (Eds.), *Språk och interaktion*, vol. 2. Department of Finnish, Finno-Ugrian and Scandinavian Studies, Helsinki, pp. 9–28.
- Hopper, Paul, 1988. Emergent Grammar and the A Priori Grammar Postulate. In: Tannen, D. (Ed.), *Linguistics in Context: Connecting Observation and Understanding. Lectures from the 1985 LSA/TESOL and NEH Institutes*. Ablex Publishing Corporation, Norwood, pp. 117–134.
- Hopper, Paul, 1998. Emergent grammar. In: Tomasello, M. (Ed.), *The New Psychology of Language. Cognitive and Functional Approaches to Language Structure*. Lawrence Erlbaum Associates, Mahwah, pp. 155–175.
- Jefferson, Gail, 1991. List construction as a task and resource. In: Psathas, G. (Ed.), *Interactional Competence*. Irvington Publishers, New York, pp. 63–92.
- Lehti-Eklund, Hanna, 2006. Att planera och reparera. Skillnader mellan talare av svenska som förstaspråk och andraspråk. In: Ask, S., Byrman, G., Hammarbäck, S., Lindgren, M., Stille, P. (Eds.), *Lekt och lärt. Vänskrift till Jan Einarsson. Rapporter från Växjö universitet*, vol. 16. Växjö University Press, Växjö, pp. 120–131.
- Levelt, Willem J.M., 1983. Monitoring and self-repair in speech. *Cognition* 14, 41–104.
- Levelt, Willem J.M., 1989. *Speaking: From Intention to Articulation*. The MIT Press, Cambridge, MA.

- Lindholm, Camilla, 2003. Frågor i praktiken. Flerledade frågeturer i läkare-patientsamtal. The Society of Swedish Literature in Finland, Helsinki.
- Lindström, Jan, 2008. Tur och ordning. Introduktion till svensk samtalsgrammatik. Norstedts akademiska förlag, Stockholm.
- Lindström, Jan, Saari, Mirja, 2010. Språklig mångfald inom den högre utbildning: att analysera policy och praktik. In: Andersson, L.-G., Josephson, O., Lindberg, I., Thelander, M. (Eds.), *Språkvård och språkpolitik/Language Planning and Language Policy*. Norstedts, Stockholm, pp. 234–251.
- Linell, Per, 2005. *The Written Language Bias in Linguistics. Its Nature, Origins and Transformations*. Routledge, London.
- Löfström, Jamima, 1995. Språk och attityder bland helsingforssvenska ungdomar: en projektpresentation. In: Saari, M., Lindström, J. (Eds.), *Svenskan i Finland*, vol. 3. University of Helsinki, Helsinki, pp. 116–123.
- Norby, Catrin, 2004. *Samtalsanalys – så gör vi när vi pratar med varandra*, second edition. Studentlitteratur, Lund.
- Ono, Tsuyoshi, Thompson, Sandra A., 1995. What can conversation tell us about syntax? In: Davis, P.W. (Ed.), *Alternative Linguistics: Descriptive and Theoretical Modes*. Benjamins, Amsterdam, pp. 213–271.
- Pfeiffer, Martin, 2008. *Reparaturen vor syntaktischem Abschluss im gesprochenen Deutsch*. Unpublished Master's Thesis, University of Freiburg.
- Pfeiffer, Martin, 2010. Zur syntaktischen Struktur von Selbstreparaturen im Deutschen. *Gesprächsforschung – Online-Zeitschrift zur verbalen Interaktion* 11, 183–207., <http://www.gespraechsforschung-ozs.de/heft2010/ga-pfeiffer.pdf>.
- Pfeiffer, Martin. What prosody reveals about the speaker's cognition: self-repair in German prepositional phrases. In: Bergmann, P., Brenning, J., Pfeiffer, M., Reber, E. (Eds.), *Prosody and Embodiment in Interactional Grammar*. FRIAS-series "linguae & litterae", de Gruyter, in press-a.
- Pfeiffer, Martin. Formal vs. functional motivations for the structure of self-repair in German. In: MacWhinney, B., Malchukov, A., Moravcsik, E.A. (Eds.), *Competing Motivations in Grammar and Cognition*. Oxford University Press, Oxford, in press-b.
- Ridell, Karin, 2008. *Dansk-svenska samtal i praktiken: Språklig interaktion och ackommodation mellan äldre och vårdpersonal i Östersundregionen*. Uppsala universitet, Uppsala.
- Rieger, Caroline L., 2003. Repetitions as self-repair strategies in English and German conversations. *Journal of Pragmatics* 35, 47–69.
- SAG 3 = Teleman, Ulf, Hellberg, Staffan, Andersson, Erik, 1999. *Svenska akademiens grammatik. Del3: Fraser*. Norstedts ordbok, Stockholm.
- Schade, Ulrich, Berg, Thomas, Laubenstein, Uwe, 2003. Versprecher und ihre Reparaturen. In: Rickheit, G., Herrmann, T., Deutsch, W. (Eds.), *Psycholinguistik – Psycholinguistics (Handbücher zur Sprach- und Kommunikationswissenschaft)*. Mouton de Gruyter, Berlin, pp. 317–338.
- Schegloff, Emanuel A., 1979. The relevance of repair to syntax-for-conversation. In: Givón, T. (Ed.), *Discourse and Syntax. Syntax and Semantics*, vol. 12. Academic Press, New York, pp. 261–286.
- Schegloff, Emanuel A., Jefferson, Gail, Sacks, Harvey, 1977. The preference for self-correction in the organization of repair in conversation. *Language* 53, 361–382.
- Selting, Margret, Auer, Peter, Barth-Weingarten, Dagmar, Bergmann, Jörg, Bergmann, Pia, Birkner, Karin, Couper-Kuhlen, Elizabeth, Deppermann, Arnulf, Gilles, Peter, Günthner, Susanne, Hartung, Martin, Kern, Friederike, Mertzlufft, Christine, Meyer, Christian, Morek, Miriam, Oberzaucher, Frank, Peters, Jörg, Quasthoff, Uta, Schütte, Wilfried, Stukenbrock, Anja, Uhmann, Susanne, 2009. *Gesprächsanalytisches Transkriptionssystem (GAT 2)*. *Gesprächsforschung – Online-Zeitschrift zur verbalen Interaktion* 10, 152–183.
- Slotte-Lüttge, Anna, 2005. *Ja vet int va de heter på svenska. Interaktion mellan tvåspråkigaelever och deras lärare i en enspråkig klassrumsdiskurs*. Åbo Akademi University Press, Turku.
- Steensig, Jakob, 2001. *Sprog i virkeligheden. Bidrag til en interaktionel lingvistik*. Aarhus Universitetsforlag, Århus.
- Szczepek, Beatrice, 2000. Formal Aspects of Collaborative Productions in English Conversation, *InLiSt – Interaction and Linguistic Structures* 17 (June 2000). URL: <http://www.inlist.uni-bayreuth.de/issues/17/inlist17.pdf>.
- Uhmann, Susanne, 1997. *Grammatische Regeln und konversationelle Strategien. Fallstudien aus Syntax und Phonologie*. Niemeyer, Tübingen.
- Uhmann, Susanne, 2001. Some arguments for the relevance of syntax to same-sentence self-repair in everyday German conversation. In: Selting, M., Couper-Kuhlen, E. (Eds.), *Studies in Interactional Linguistics*. John Benjamins, Amsterdam, pp. 373–404.
- Uhmann, Susanne, 2006. *Grammatik und Interaktion: form follows function? Function follows form?*. In: Deppermann, A., Spranz-Fogasy, T., Fiehler, R. (Eds.), *Grammatik und Interaktio*. Verlag für Gesprächsforschung, Radolfzell, pp. 95–122.
- Wirdenäs, Karolina, 2002. *Ungdomars argumentation. Om argumentationstekniker i gruppsamtal*. Acta Universitatis Gothoburgensis, Göteborg.