Pseudo wh-copying as wh-slifting

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1 Introduction

German possesses a type of long distance extraction, known as *wh-copying* (cf. Pankau 2013), illustrated in (1).

(1) Wen glaubst du wen sie gesehen hat? who believe you who she seen has 'Who do you think she saw?'

The crucial feature of *wh*-copying is that the intermediate SpecCP positions contain overtly realized 'copies' (cf. section 2.4 below) of the successive-cyclically moved *wh*-phrase. There exists a variant of *wh*-copying, which I dub *pseudo wh*-copying, in which the finite verb appears in second position instead of its expected¹ clause final position, cf. (2).

(2) Wen glaubst du wen hat sie gesehen? who believe you who has she seen 'Who do you think she saw?'

The standard approach to pseudo *wh*-copying is to deny its existence. The main source for the claim that pseudo *wh*-copying doesn't exist is Pankau (2013: 34), and this claim has been repeated ever since in the literature (Murphy 2016: 155; Murphy 2014: 203). The only work that explicitly acknowledges the existence of pseudo *wh*-copying is Reis (2000: 395). According to this analysis, pseudo *wh*-copying is structurally identical to regular *wh*-copying, and the difference between verb final and verb second order is negligible.

The aim of this paper is to show that the difference in verb position is not negligible and that pseudo *wh*-copying has a structure that drastically differs from regular *wh*-copying. In particular, I will argue that pseudo *wh*-copying is based on *wh*-slifting, combined with sluicing and the repetition of the non-sluiced question.

The paper is structured as follows. I will first document five differences between regular *wh*-copying and pseudo *wh*-copying in section 2. In section 3, I will give an outline of the respective analyses for regular *wh*-copying and pseudo *wh*-copying. I will then apply the analysis for pseudo *wh*-copying in section 4 and show that its properties follow from it as desired. Section 5 concludes the paper.

¹ German is an SOV language with verb second order in main clauses (Besten 1989), so the finite verb appears clause finally in embedded clauses.

2 Differences between regular wh-copying and pseudo wh-copying

There are five differences between regular *wh*-copying and pseudo *wh*-copying. These relate to prosody, pragmatics, binding properties, copy licensing, and left branch extraction. I will discuss and illustrate each difference in turn.

2.1 Prosody

The first difference between regular *wh*-copying and pseudo *wh*-copying concerns their prosody. Regular *wh*-copying shows the typical prosodic profile of *wh*-questions in German (Truckenbrodt 2012). There is a single nuclear stress (NS), which is assigned in one of three ways. The first option is that the NS is assigned to the *wh*-phrase in the target SpecCP position. This happens when the *wh*-phrase is focused.² The second option is that the NS is assigned to the immediately preverbal constituent of the lower clause. This option is usually chosen in broad focus configurations. The third option is that the NS is assigned to the constituent that is focused. The three options are illustrated in (3a)-(3c), respectively.

- (3) a. WO glaubst du wo Peter die Frau gesehen hat? where believes you where Peter the woman seen has
 - b. Wo glaubst du wo Peter DIE FRAU gesehen hat? where believes you where Peter the woman seen has
 - c. context: I know where you think that John saw the woman, but... Wo glaubst du wo PETER die Frau gesehen hat? where believes you where Peter the woman seen has 'Where do you think Peter saw the woman?'

In pseudo *wh*-copying, however, there are two NS and the assignment is strict: each *wh*-phrase is assigned a NS, as shown in (4). In addition, as indicated by the bracketed hyphen, there is an optional intonational break between the two clauses.

(4) WO glaubst du (-) WO hat Peter die Frau gesehen? where believes you where has Peter the woman seen 'Where do you think Peter saw the woman?'

Under a uniform analysis for pseudo and regular wh-copying, this is unexpected.

2.2 Pragmatics

Pseudo *wh*-copying has also different usage conditions than regular *wh*-copying. Consider first out-of-the-blue questions, which are questions where no material counts as given, illustrated in (5).

² Note that focusing needs to be distinguished from f-marking: *wh*-phrases are always f-marked but not necessarily focused (Haida 2007; Jacobs 1991).

(5) John and Mary, a couple, have dinner. They just discussed what happened at work. All of the sudden, John asks: "Where do you think we should go on vacation this year?"

The question about vacation in (5) counts as an out-of-the-blue question because it contains no information that is inherited from the preceding discourse. When translating this context into German, it turns out that regular *wh*-copying is fine as an out-of-the-blue question, cf. (6a), whereas pseudo *wh*-copying is not, cf. (6b) (the hash indicates pragmatic oddity).

(6) a. Wo denkst du wo wir dieses Jahr Urlaub machen sollten? where think you where we this year vacation make should b. #Wo denkst du wo sollten wir dieses Jahr Urlaub machen? where think you where should we this year vacation make 'Where do you think we should go on vacation this year?'

There are only two contexts where pseudo wh-copying can be used. The first context is echo questions (Sobin 1990), that is, questions where either the answer is in fact known to the person asking and he only wants to reaffirm the answer, or where the person re-asks a question because he didn't understand the answer. As (7) shows, pseudo wh-copying is fine as an echo-question.

(7) Mary and John discuss where to go on vacation this year. Mary suggests to go to Kaliningrad. But John didn't understand and asks:

Wo denkst du wo sollten wir dieses Jahr Urlaub machen?

where think you where should we this year vacation make 'Where do you think we should go on vacation this year?'

The second type of question that pseudo *wh*-copying is compatible with are questions that are contextually bound. By this, I refer to questions where the questioned constituent is in some sense salient in the discourse, for example because it is already established in the discourse or because it is a follow-up from the preceding discourse (cf. Roberts' 2012 *questions under discussion* approach for one implementation). The example in (8), where a context of the former type is given, shows that pseudo *wh*-copying is compatible with contextually bound questions.

(8) John and Mary discuss their plans for this year. Among other things, they agree to have vacation this year because they didn't have time last year. John then asks Mary:

Wo denkst du wo sollten wir dieses Jahr Urlaub machen? where think you where should we this year vacation make 'Where do you think we should go on vacation this year?'

The analysis that pseudo *wh*-copying is identical to regular *wh*-copying has little to offer when it comes to this difference.

2.3 Binding

The third difference between regular *wh*-copying and pseudo *wh*-copying concerns binding effects, in particular variable binding and Principle C effects. Long distance extractions in German allow the binding of a pronoun in the lower clause through a quantifier in the higher clause, whereas they disallow binding of an R-expression in the lower clause through a pronoun in the higher clause. This is shown in (9a) and (9b), respectively, for the long distance extraction of *wo* 'where' out of a clause introduced by the complementizer *dass* 'that'.

- (9) a. Wo glaubt jeder_i dass er_i die Frau getroffen hat? where believes everyone where he the woman met has 'Where does everyone believe that he met the woman?'
 - b. *Wo glaubt er_i dass Peter_i die Frau getroffen hat? where believes he that Peter the woman met has 'Where does he believe that Peter met the woman?'

Regular *wh*-copying shows the expected profile of a long distance extraction construction. As (10) show, regular *wh*-copying allows variable binding into the lower clause and shows Principle C effects.

- (10) a. Wo glaubt jeder_i wo er_i die Frau getroffen hat? where believes everyone where he the woman met has 'Where does everyone believe that he met the woman?'
 - b. *Wo glaubt er_i wo Peter_i die Frau getroffen hat? where believes he where Peter the woman met has 'Where does he believe that Peter met the woman?'

Pseudo *wh*-copying, however, behaves exactly the other way around, as the examples in (11) demonstrate.

- (11) a. * Wo glaubt jeder_i wo hat er_i die Frau getroffen? where believes everyone where has he the woman met 'Where does everyone believe that he met the woman?'
 - b. Wo glaubt er_i wo hat Peter_i die Frau getroffen? where believes he where has Peter the woman met 'Where does he believe that Peter met the woman?'

As (11a) shows, variable binding into the lower clause is impossible; and (11b) shows that pseudo *wh*-copying is insensitive to Principle-C effects. If pseudo *wh*-

copying were nothing but regular wh-copying plus verb second order, then the reverse binding effects for pseudo wh-copying documented in (11) are unexpected.

2.4 The licensing of copies

Another difference between regular *wh*-copying and pseudo *wh*-copying concerns the types of copies they license. As documented in Pankau (2013: chapter 3), regular *wh*-copying puts a single but heavy restriction on the set admissible copies in intermediate SpecCP position: they have to be pronominal, that is, elements lacking a lexical NP-restriction. The examples in (12) illustrate the consequence of this restriction (the inverted question mark indicates idiolectal variation).

- (12) a. ¿Wen glaubst du den Peter getroffen hat? who believe you who Peter met has 'Who do you think Peter met?'
 - b. ¿Welchen Mann glaubst du wen/den Peter getroffen hat? which man believe you who Peter met has
 - c. *Welchen Mann glaubst du welchen Mann Peter getroffen hat? which man believe you which man Peter met has 'Which man do you think Peter met?'

(12a) shows that the copy in intermediate SpecCP position need not be a *wh*-pronoun but can be drawn from the set of d-pronouns. (12b) shows that once a complex *wh*-phrase consisting of a *wh*-determiner and a lexical NP-restriction is extracted, the copy left behind is nevertheless a pronoun; this pronoun can either be a *wh*- or a d-pronoun. Finally, (12c) shows that repeating the complex *wh*-phrase leads to ungrammaticality. All these effects follow neatly from the restriction that the copies have to be pronominal and hence lack a lexical NP-restriction. (12a) follows because d-pronouns lack a lexical NP-restriction. (12b) follows because both *wh*- and d-pronouns lack a lexical NP-restriction. (12c) is out because the copy contains a lexical NP-restriction and hence violates the condition. Since the restriction is silent on the identity between the extracted *wh*-phrase and the copy, such an identity can hold (as in 1), but need not.

Pseudo wh-copying, on the other hand, is rather different: it requires identity between the extracted wh-phrase and the copy in intermediate position, cf. (13).

- (13) a. *Wen glaubst du den hat Peter getroffen? who believe you who has Peter met 'Who do you think Peter met?'
 - b.*Welchen Mann glaubst du wen/den hat Peter getroffen? which man believe you who has Peter met
 - c. Welchen Mann glaubst du welchen Mann hat Peter getroffen? which man believe you which man has Peter met 'Which man do you think Peter met?'

Note that the examples in (13) are minimal pairs to the ones in (12), differing only in the position of the finite verb in the lower clause. Again, analyzing pseudo *wh*-copying as regular *wh*-copying runs into difficulties.

2.5 Left branch extraction (LBE)

The final difference between pseudo *wh*-copying and regular *wh*-copying concerns their availability of LBE. As documented in Pankau (2013: chapter 2) and also in section 2.3, regular *wh*-copying behaves like regular long distance extraction. It therefore comes as no surprise that it bars LBE, as shown in (14).

(14)*Welchen glaubst du welchen Mann er getroffen hat? which believe you which man he met has 'Which man do you think he met?'

What comes as a surprise is that pseudo wh-copying does allow LBE, cf. (15).

(15) Welchen glaubst du welchen Mann hat er getroffen? which believe you which man has he met 'Which man do you think he met?'

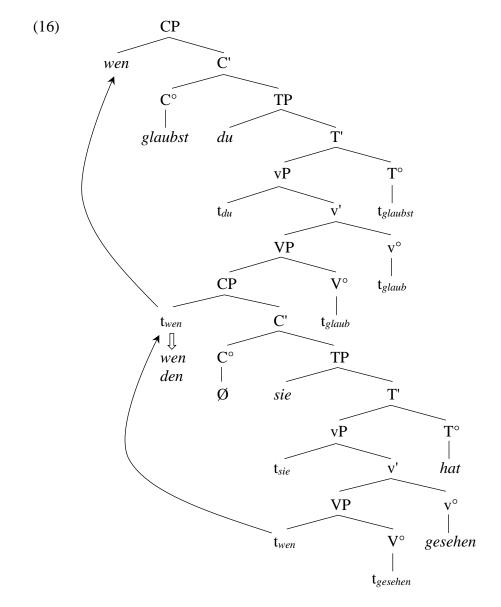
Also this difference cannot be captured under an approach treating regular *wh*-copying and pseudo *wh*-copying alike.

3 Analyses for regular wh-copying and pseudo wh-copying

Given the many differences between regular *wh*-copying and pseudo *wh*-copying documented in section 2, any approach analyzing the two constructions alike is obviously on the wrong track. Instead, the two constructions must have fundamentally different structures. The relevant fundamental difference between the two constructions that I want to suggest is that regular *wh*-copying is a subspecies of long distance extraction and hence instantiates a *bi-clausal* structure, whereas pseudo *wh*-copying is not a subcase of long-distance extraction but rather instantiates a *bi-sentential* structure.

3.1 Analysis for regular wh-copying

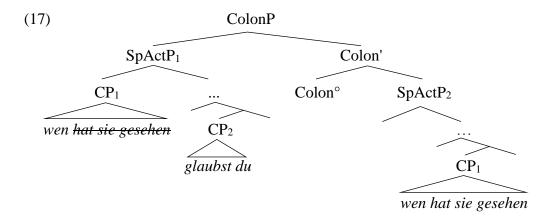
As already noted in section 2, regular *wh*-copying shows the typical profile of long distance extraction. I will adopt the analysis of Pankau (2013: chapter 6), according to which regular *wh*-copying is a standard case of long distance extraction plus some mechanism that allows copy spell-out of copies left behind by successive cyclic A'-movement in intermediate SpecCP positions. The simplified analysis for the sentence in (1) is given in (16).



The structure in (16) is in all aspects identical to standard long distance extraction and differs from it only in that the copy in the intermediate SpecCP position is overtly realized. This analysis for regular wh-copying captures its properties documented in section 2. Regular wh-copying shows the prosodic contour and the pragmatics of a typical wh-question because it has the structure of a typical wh-question. That a quantifier in the higher clause can bind a pronoun in the lower clause follows because the quantifier c-commands the pronoun. Principle C effects show up for the same reason: the constituents in the higher clause c-command the constituents in the lower clause. The unavailability of LBE is due to sensitivity of A'-movement to LBE in the formation of wh-questions.

3.2 Analysis for pseudo wh-copying

The analysis for pseudo wh-copying is that it is a combination of wh-slifting, the interrogative clause internal to which is affected by forward sluicing, and the repetition of the sluiced interrogative clause. This analysis is sketched in (17) for the pseudo wh-copying example in (2).



In (17), there are two sentences asyndetically conjoined. I follow a recent strand of research and assume that sentences have functional structure on top of them encoding information regarding their pragmatic force and their discourse participants (Haddican 2018; Miyagawa 2017; Haegeman & Hill 2013; Speas 2004; Rizzi 1997). For ease of exposition, I choose the label Sp(eech)ActP(hrase) (Speas & Tenny 2003) as a cover label for the respective projections on top of CP, but nothing hinges on this particular implementation. The two sentences, SpActP₁ and SpActP₂, respectively, are asyndetically conjoined through a functional projection, which following Koster (2000) I label ColonP. The first sentence, SpActP₁, instantiates a wh-slifting structure (Haddican et al. 2014; Ross 1973). By wh-slifting, one refers to sentences where a dependent interrogative clause appears in front of the clause selecting it. In (17), the dependent interrogative is the CP₁ wen hat sie gesehen and the selecting clause is the CP₂ glaubst du. Since it is of no relevance for the analysis whether CP₁ is moved from below CP₂ to its final position or base generated there right above CP2, I will remain agnostic about this issue. I will then assume that internal to CP₁ of SpActP₁, sluicing applies (Merchant 2001; Ross 1969), as indicated through strikethrough. The second sentence, SpActP2, is defined by the repetition of the interrogative clause from within SpActP1, namely CP1, but without the application of sluicing.

4 Capturing the properties of pseudo wh-copying

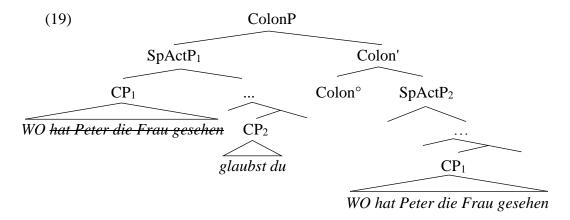
Having presented the structure for pseudo *wh*-copying and the analysis behind it in section 3, I will now demonstrate that this analysis captures the properties of pseudo *wh*-copying documented in section 2.

4.1 Prosody

As shown in section 2.1, pseudo wh-copying differs from regular wh-copying in that pseudo wh-copying bears two NS (nuclear stress), both of which are assigned to the two wh-phrases, as shown in (4), repeated as (18).

(18) WO glaubst du (-) WO hat Peter die Frau gesehen? where believes you where has Peter the woman seen 'Where do you think Peter saw the woman?'

The structure for (18) is given in (19).



This peculiar intonational profile results from sluicing and the repetition of the sluiced interrogative CP_1 . As is well known, sluicing requires the *wh*-phrase to be stressed (Merchant 2001), cf. (20).

(20) John met someone, but I don't know WHO/*who.

Since the first *wh*-phrase in pseudo *wh*-copying results from sluicing, it has to bear stress as well. That the second *wh*-phrase is also stressed is a consequence of the identity of the CP contained in SpActP₁ and the one in SpActP₂. For the two CPs to count as identical, the material inside of them has to be identical. Consequently, whatever prosodic contour the material inside the first CP bears, the material inside the second CP has to bear the same prosodic contour.

4.2 Pragmatics

As documented in section 2.2, pseudo *wh*-copying is bad as an out-of-the-blue question and can only be used as an echo question or as a question that is contextually bound. For the question in (18) this means that it can only be used when either the speaker didn't understand the answer to the question 'Where did Peter see the woman?', or when the set of places x such that Peter saw the woman at x has already been discussed.

These usage condition are again a consequence of sluicing. In sluicing, the *wh*-phrase is not only necessarily stressed it also necessarily focused (Merchant 2001). Crucially, this type of focus is true, information-structural focus and must not be confused with the inherent f-marking of *wh*-phrases (Haida 2007; Jacobs 1991). The reason why the example in (21) is bad is that no focus alternative is provided by the discourse context.

(21) * *John met Peter, but I don't know who.*

Consequently, the wh-phrase in pseudo wh-copying requires contextual anchoring via focus alternatives. This requirement excludes pseudo wh-copying in out-of-the-blue contexts such (22) because such contexts do not define any focus alternatives for the wh-expressions only, as all material in such questions is new.

- (22) John and Mary, a couple, have dinner. They just discussed what happened at work. All of the sudden, John asks:
 - # Wo denkst du wo sollten wir dieses Jahr Urlaub machen? where think you where should we this year vacation make 'Where do you think we should go on vacation this year?'

In (22), the set of places x such that John and Mary should have their vacation at x is not contextually anchored and hence excluded by the requirement for contextually defined alternatives. Importantly, the requirement for contextual anchoring is satisfied in echo questions such as (7), repeated as (23), because the discourse context is about places and the *wh*-phrase is therefore contextually anchored.

(23) Mary and John discuss where to go on vacation this year. Mary suggests to go to Kaliningrad. But John didn't understand and asks:

Wo denkst du wo sollten wir dieses Jahr Urlaub machen?

where think you where should we this year vacation make 'Where do you think we should go on vacation this year?'

Similarly, the requirement is also satisfied in contexts where the question is a follow-up from the discourse, as in example (8) from section 2.2, repeated here as (24).

(24) John and Mary discuss their plans for this year. Among other things, they agree to have vacation this year because they didn't have time last year. John then asks Mary:

Wo denkst du wo sollten wir dieses Jahr Urlaub machen? where think you where should we this year vacation make 'Where do you think we should go on vacation this year?'

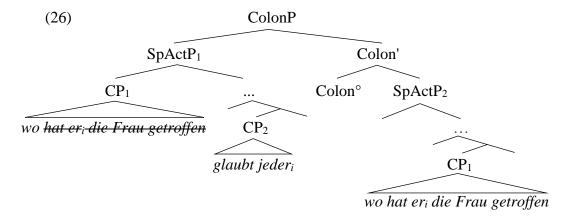
'Going on vacation' implies a location where to have vacation. So the question for a place in (24) is contextually anchored and the use of pseudo *wh*-copying is consequently captured.

4.3 Binding

Recall from section 2.3 that pseudo *wh*-copying disallows binding of a pronoun in the lower clause through a quantifier in the higher clause and that it is insensitive to Principle C violations. The relevant example from section 2.3 illustrating this is repeated here as (25)

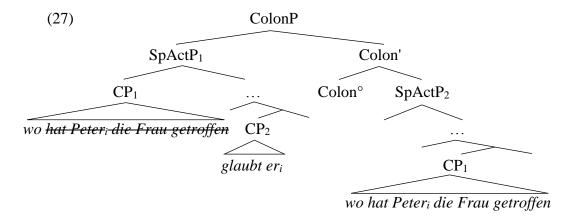
- (25) a. *Wo glaubt jeder_i wo hat er_i die Frau getroffen? where believes everyone where has he the woman met 'Where does everyone believe that he met the woman?'
 - b. Wo glaubt er_i wo hat Peter_i die Frau getroffen? where believes he where has Peter the woman met 'Where does he believe that Peter met the woman?'

The distribution of these peculiar binding effects follows from the *wh*-slifting structure underlying pseudo *wh*-copying and in particular the c-command domains resulting from it. Consider first the structure for (25a), sketched in (26).



The reason why variable binding is excluded in pseudo wh-copying is due to the lack of c-command between the quantifier jeder 'everyone' and the pronoun er 'he'. The c-command domain of the quantifier jeder 'everyone' is maximally the CP it is contained in, namely CP₂. The pronoun er 'he', however, is outside this c-command domain since it is not embedded in CP2³. The structure for (25b) is sketched in (27).

³ Once movement of CP_1 around CP_2 is adopted, the reconstructed position of the moved CP_1 could be assumed to be included in CP_2 . However, as Haddican et al. (2014) argue, CP_1 is not part of CP_2 in the pre-movement structure, so reconstruction of CP_1 would again result in a configuration where the quantifier *jeder* 'everyone' doesn't c-command the pronoun er 'he'.

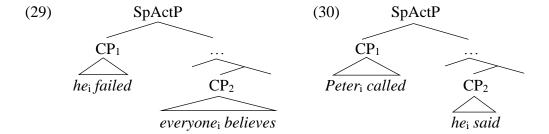


The reason why Principle C effects do not show up in pseudo *wh*-copying again reduces to the c-command relations between the two CPs, in particular to the lack of any mutual c-command relations between the material inside CP₁ and the material inside CP₂. The c-command domain of CP₁ does not include CP₂, and the c-command domain of CP₂ does not include CP₁. Therefore, co-indexation between a pronoun and an R-expression is licit as long as they appear in distinct CPs, which is exactly what we observe in (27).

Let me stress that the binding properties of pseudo *wh*-copying are not a quirk of this construction but are shared by slifting structures in general (Corver & Thiersch 2001): they disallow variable binding and are insensitive to Principle C, cf. (28).

(28) a. *He_i failed, everyone_i believes.b. √Peter_i called, he_i said.

The respective structures for (28a) and (28b) are given in (29) and (30).

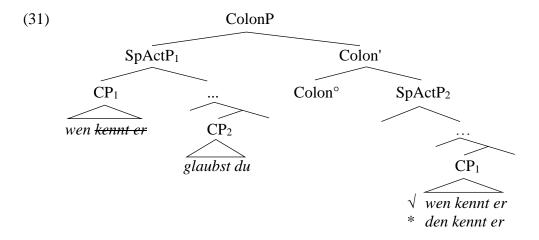


4.4 The licensing of copies

It was shown in section 2.4 that the two wh-phrases in pseudo wh-copying are necessarily identical, contrary to regular wh-copying. The relevant examples showing this are repeated in (30).

- (30) a. Wen glaubst du √wen / *den kennt er? who believe you who who knows he 'Who do you think he knows?'
 - b. *Welchen Mann glaubst du √welchen Mann/*wen/*den kennt er? which man believe you which man who who knows he 'Which man do you think he knows?'

The reason for these so-called identity effects is the identity between sluiced interrogative clause and the repeated interrogative clause. Consider the structure for (30a) in (31).



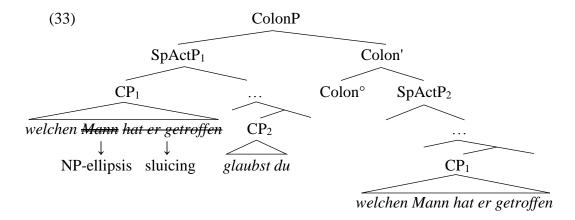
The example with *den* 'who' instead of *wen* 'who' is excluded for trivial reasons: the relevant CP₁ in SpActP₂ would no longer be identical to the CP₁ in SpActP₁, as is however required. For the same reason, the complex *wh*-phrase in (31b) has to be repeated.

4.5 Left branch extraction (LBE)

The final property of pseudo *wh*-copying to account for concerns its insensitivity to LBE, as shown in (32).

(32) Welchen glaubst du welchen Mann hat er getroffen? which believe you which man has he met 'Which man do you think he met?'

The insensitivity of pseudo *wh*-copying is in fact only apparent, as the structure in (33) reveals.



As the structure indicates, what looks like LBE is actually an instance of NP-ellipsis internal to the remnant *wh*-phrase left behind from sluicing. Note that NP-ellipsis is generally known to interact with sluicing (Merchant 2001: 147-8), cf. (34).

(34) They want to hire someone who speaks a Balkan language, but I don't know which.

Also in the case of LBE, the properties of pseudo *wh*-copying reduce to an independent property of sluicing.

5 Conclusion

I have argued in this paper that wh-copying with embedded verb second order, which I dubbed pseudo wh-copying, has to be distinguished from wh-copying with embedded verb final order, which I called regular wh-copying. The two types of wh-copying show distinct behavior in terms of prosody, pragmatics, binding, left branch extraction and the type of wh-phrases they license as copies. I argued that these difference follow neatly from an analysis that treats regular wh-copying as standard long distance extraction and pseudo wh-copying as an instance of wh-slifting. More specifically, the properties of regular wh-copying are identical to those of regular long distance extractions, so regular wh-copying instantiates a standard bi-clausal structure. Pseudo wh-copying, on the other hand, instantiates a bi-sentential structure. What looks like the matrix clause in pseudo wh-copying is in fact a wh-slifting sentence in which the interrogative clause is affected by sluicing. And what looks like the embedded clause in pseudo wh-copying is a repetition of the interrogative affected by sluicing in the wh-slifting sentence. I showed that the properties of pseudo wh-copying reduce to the properties of sluicing, slifting, and the identity between the two interrogative clauses. Pseudo wh-copying then patterns with other types of embedded verb second clauses in German, which have been shown to always involve different structures than their verb final counterparts (Antomo & Steinbach 2010; Gärtner 2001; Reis 1997).

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