What copying (doesn't) tell us about movement: Remarks on the derivation wh-copying in German

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Abstract

There is now a considerable body of evidence supporting the idea that long wh-movement proceeds in a series of smaller, local steps. One widely cited piece of evidence is the fact that a number of languages can pronounce copies of a wh-phrase in positions through which movement is assumed to take place. Although the existence of wh-copying in languages such as German has been celebrated as robust support for the successive-cyclic nature of movement, I argue in this paper that the German wh-copy construction cannot be straightforwardly analyzed as the realization of an intermediate copy of long distance wh-movement. This will be shown on the basis of syntactic and semantic asymmetries between the copy construction and the extraction structures from which it supposedly derives.

1. Introduction

By now, it has almost become a kind of received wisdom in the discussion of long distance wh-movement that the wh-copy construction (CC), exemplified by German in (1), provides compelling evidence for the successive cyclic nature of movement (Chomsky 1977).

(1)   a.   Wer glaubst du, wer Recht hat?
             who believe you who right has
             'Who do you think is right?'
       b.   Wen meint Karl, wen wir gewählt haben?
             who thinks Karl who we elected have
             'Who does Karl think we have elected?'

> c.   Wie nimmt   man an, wie der Prozess endet?
>   how assumes one PRT how the trial   ends
>   'How do people think the trial will end?'   (Höhle 2000: 257)

As Schippers (2012*a*: 271) points out 'this construction appears to be (almost) invariably analyzed as a surface variant of long-distance wh-movement, in which the wh-phrase in the embedded SpecCP is analyzed as a spelled out copy of the moved wh-phrase', for example by Thornton & Crain (1994), Bayer (1996), Fanselow & Mahajan (2000), Höhle (2000), Fanselow & Ćavar (2001), Nunes (2004), Felser (2004), Rett (2006), Bošković & Nunes (2007), Barbiers et al. (2009), Schippers (2012*a*), Pankau (2009, 2013) and Baier (2014). Indeed, Boeckx (2008: 28) also remarks about the intermediate Spell-Out analysis that he is 'not aware of any alternative analysis of the wh-copying data. It is indeed hard to think of one'. In this paper, I point out a number of problems with this view, while remaining somewhat ambivalent about the correct analysis of the CC. I will show that the view that the CC involves Spell-Out of an intermediate copy generated by successive-cyclic movement suffers from empirical problems, and is incompatible with observations about the constructions from which it supposedly derives. There are only two plausible structures for the embedded clause from which extraction is assumed to take place: an embedded wh-interrogative or an embedded declarative (V2) clause. The main empirical problem with extraction from embedded V2 is that it triggers obligatory T-to-C movement, which is not found in the CC. Furthemore, we will see a number of further asymmetries between long-distance extraction structures and wh-copy constructions that cast further doubt on the assumption that the CC is the result of Spell-Out of an intermediate copy in a long-distance movement chain.

   The paper is structured as follows: Section 2 discusses the copy construction and some of its salient properties, pointing out that many aspects of the CC still remain problematic. Section 3 focuses on the precise derivation of wh-copying in German. In section 4, a number of further asymmetries between long-distance extraction and the CC will be presented. Finally, section 5 concludes.

2.   The syntax of wh-copying

A number of languages evince the so-called 'wh-copy construction', in which it seems that more than one copy of a moved wh-phrase is spelled out:

(2)   *Wer* glauben Sie eigentlich, *wer* Sie sind?[1]
        who think   you actually   who you are
        'Who do you think you are?'   (*German*; Sternefeld 1991: 105)

(3)   *Wie* denk je   *wie* ik gezien heb?
        who think you who I   seen   have
        'Who do you think I have seen?'   (*Dutch*; Barbiers et al. 2009: 2)

(4)   *Wer* tinke jo *wer*-t   Jan wennet?
        where think you where-that Jan lives
        'Where do you think Jan lives?'   (*Frisian*; Hiemstra 1986: 99)

(5)   *Waar-voor* dink jullie *waar-voor* werk ons?
        where-for think you   where-for work we
        'What do you think we work for?'   (*Afrikaans*; du Plessis 1977: 725)

(6)   *Kas* misline   *kas* o Demìri dikhlâ?
        who you.think who the Demiri saw
        'Who do you think Demiri saw?'   (*Romani*; McDaniel 1986: 182)

(7)   *Tayuwe* kt-itom-ups *tayuwe* apc   k-tol-i   malsanikuwam-ok?
        when   2-say-DUB   when   again 2-there-go store-LOC
        'When did you say you're going to go to the store?'
                                    (*Passamaquoddy*; Bruening 2006: 26)

(8)   *Who* do you think *who* Grover wants to hug?
                                    (*Child English*; Crain & Thornton 1998: 187)

Examples such as these have added to the growing body of evidence that
has ammassed in support of Chomsky's (1977) idea that wh-movement pro-
ceeds successive-cyclically in a series of local steps (see Boeckx 2008, Lahne
2008, Georgi 2014, van Urk 2015 for recent overviews of the evidence for
successive-cyclic movement). Under this view, inter-clausal or 'long distance'

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[1]Note that not all speakers seem to fully accept the copy construction. For example, Sternefeld
(2002) marks (i) with a question mark, whereas examples with nominative extraction such as
(2) are deemed fully acceptable.

(i)   Wen meinst du   wen sie wirklich liebt?
        who think   you who she really   loves
        'Who do you think she really loves?'   (Höhle 1990)

wh-movement does not take place in 'one fell-swoop' but stops (at least) at the edge of each clause.

(9)   [$_{CP}$ Who do you think [$_{CP}$ ⟨who⟩ that Mary likes ⟨who⟩]]] ?

Under the *Copy Theory of Movement* (Chomsky 1995, 2000, 2001), the theory of successive-cyclic movement predicts that there is a copy of a moved item at the edge of each clause. It seems that wh-copying structures would then offer compelling evidence in support of this idea. However, things are not quite as simple as this. Wh-copying, particularly in Germanic languages such as Dutch and German where it has been studied in the most detail, has been shown to be more restrictive than long distance movement (for discussion, see in particular Felser 2004, Haider 2010: §3.3, Schippers 2012*a*: §3, Pankau 2013: §2). One can identify three main challenging differences that have been addressed in the literature: (i) ban on complex material in the CC, (ii) trigger for multiple Spell-Out, (iii) only intermediate copies in Spec-CP can be pronounced.

2.1.   Ban on complex material

Complex nominal wh-phrases are not possible in the copy construction, whereas long wh-movement is not subject to any such restriction (see section 4.4 for further discussion).

(10)   a.   Welches Buch glaubst du, dass Maria gekauft hat?
               which   book believe you that Maria bought has
        b.   *Welches Buch glaubst du, welches Buch Maria gekauft hat?
               which   book believe you which   book Maria bought has
              'Which book do you think that Maria has bought?'

Following Fanselow & Mahajan (2000), a number of approaches appeal to some kind of morphological 'fusion' or reanalysis operation that combines the wh-phrase in Spec-CP with the C head. It is then assumed that complex wh-phrases cannot undergo this process (e.g. Nunes 2004). Aside from the problems of the location (PF/syntax) and trigger (repair/optional) of this operation, which are normally left unaccounted for, a considerable number of speakers allow for PPs of varying complexity in the CC, which poses a challenge to this kind of approach.

2.2. Trigger for multiple Spell-Out

One of the major theoretical challenges posed by the CC is why it is possible to pronounce an intermediate copy in the first place. Often this is simply presupposed as a fact of the languages under study, rather than derived in any insightful way (e.g. Rett 2006, Barbiers et al. 2009, Schippers 2012a). Sometimes, the phonological requirements of the language are invoked as the trigger for spelling out an intermediate copy. For example, Fanselow & Mahajan (2000: 221) suggest that German differs from English in not allowing a phonologically empty CP projection (11a).

(11)　a.　*Wen_1 glaubst du　$[_{CP}$ t_1 $[_{C^0}$ Ø $]$ Maria t_1 gesehen hat] ?
　　　　　who believe you　　　　　　 Maria　 seen　　has

　　　b.　Wen_1 glaubst du　$[_{CP}$ t_1 $[_{C^0}$ dass $]$ Maria t_1 gesehen hat] ?
　　　　　who believe you　　　　　　 that Maria　 seen　　has

　　　c.　Wen_1 glaubst du　$[_{CP}$ wen_1 $[_{C^0}$ Ø $]$ Maria t_1 gesehen hat] ?
　　　　　who believe you　　 who　　　　　 Maria　 seen　　has

　　　d.　Wen_1 glaubst du　$[_{CP}$ t_1 $[_{C^0}$ hat_2 $]$ Maria t_1 gesehen t_2] ?
　　　　　who believe you　　　　　　 has Maria　 seen

A language with this constraint, such as German, can then employ a number of strategies to avoid an empty CP, one of which being the realization of an intermediate copy (11c). There is, however, also the option of moving the verb to C in order to satisfy this requirement (11d) and, from the perspective of economy, it is unclear why spelling out a lower copy of the chain is preferred to the presumably less costly options of movement or realization as *dass*, if this is in fact the trigger for wh-copying.[2]

Other approaches assume that there is variability in how the various movement steps are connected. For example, Schippers (2012a: 281) suggests that a language can choose whether to view an intermediate movement step as the head of a lower chain or the tail of a higher chain. If the former option is chosen, then two distinct chains are formed and the head of each will be realized (thereby yielding the CC). However, it is unclear how this approach captures any restrictions on the CC or indeed why copy constructions are not

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[2]For example, it is unclear whether the non-Germanic, non-V2 languages that also have the CC, such as Romani and Passamaquoddy, tolerate an empty CP. If not, then this cannot be the trigger for copying in general.

possible in all languages with long distance wh-movement (Schippers 2012*b*: 194 rejects this analysis in favour of an Indirect Dependency Approach; see section 4). In sum, there is still no clear explanation of what actually triggers multiple Spell-Out in the CC.

2.3.   Intermediate copies only in Spec-CP

One final peculiar property of the CC is that it only allows putative intermediate copies to be realized in Spec-CP. The fact that the copy *in situ* cannot be pronounced is a long standing, and to my knowledge still unresolved, problem (see Haider 2010: 109f.). In addition, there is now also a considerable body of evidence supporting Chomsky's (2000, 2001) claim that, in addition to Spec-CP, Spec-vP is also a landing site for successive-cyclic movement under a phase-based approach (e.g. Saddy 1991, Fox 1999, Legate 2003, Rackowski & Richards 2005, Korsah & Murphy 2016). If this is the case, then it is unclear why wh-copying, assuming that it involves realization of an intermediate copy, cannot target the Spec-vP position (a point also made by Schippers 2012*a*: 273).

(12) *[$_{CP}$ Wen glaubt du, [$_{CP}$ wen [$_{TP}$ Maria [$_{vP}$ wen [$_{VP}$ ⟨wen⟩
         who believe you   who   Maria   who
      gesehen]] hat]]] ?
      seen   has

2.4.   Intermediate conclusion

This section has discussed some of the salient characteristics of the CC and shown that there are still a number of unresolved issues. This paper will not attempt to resolve any of these issues, but rather exacerbate the situation by pointing out further problems with the long-distance extraction analysis of the CC that have either received little or no attention in the literature. The following section will discuss the precise derivation of an extraction account of the CC in German and show that none of the available options are plausible.

3.   Two options for the derivation of the copy construction

This section discusses the derivation of the CC in German. Although the intermediate Spell-Out analysis is intuitively appealing, there are a number of problems with the actual derivation of the construction. This problem pertains

to the exact nature of the embedded clause in the CC. There are two plausible possibilities for the status of the embedded clause:

(13)   a.   The CC is derived by extraction from an embedded wh-interrogative clause.
       b.   The CC is derived by extraction from an embedded declarative V2-clause.

I will discuss each option in turn and show that each is problematic when adopted for the derivation of the CC.

3.1.   Extraction from an embedded interrogative clause

One fact that has not received much attention in the literature on wh-copying is the strict verb-finality of the CC (cf. Pankau 2013 and also Brandner 2000: 51 who identifies this restriction for wh-scope marking constructions):

(14)   a.   Wen glaubst du, wen sie liebt?
            who believe you who she loves
       b.   *Wen glaubst du, wen liebt sie?
            who believe you who loves she
            'Who do you think she loves?'   (Pankau 2013: 34)

Similarly, there is an asymmetry between German matrix and embedded wh-interrogatives in that the former are obligatorily V2 (15), whereas the latter must be verb-final (16):

(15)   a.   [$_{CP}$ wen$_2$ hat$_1$ [$_{TP}$ sie [$_{vP}$ t$_2$ eingeladen] t$_1$]] ?
                  who has   she   invited
       b.   *[$_{CP}$ wen$_2$ [$_{TP}$ sie [$_{vP}$ t$_2$ eingeladen] hat]] ?[3]
                  who   she   invited   has
            'Who did she invite?'

(16)   a.   *Es ist mir gleich, [$_{CP}$ wen$_2$ hat$_1$ [$_{TP}$ sie [$_{vP}$ t$_2$ eingeladen] t$_1$]]
            it is me equal   who has   she   invited
       b.   Es ist mir gleich, [$_{CP}$ wen$_2$ [$_{TP}$ sie [$_{vP}$ t$_2$ eingeladen] hat]]
            it is me equal   who   she   invited   has
            'I don't care who she invited.'   (Brandner 2000: 52)

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[3]Note that this order (albeit with a different intonation) is possible for matrix wh-exclamatives, but not genuine interrogatives (see d'Avis 1998, 2002).

Assuming that verb-second order in V2 languages such as German results from the verb moving from T in a head-final TP to the C position (see section 3.2 for further discussion), then it seems that T-to-C movement is blocked in both embedded wh-clauses and the embedded clause of the CC. Since both constructions evince obligatory verb-final order, one could assume that the CC involves extraction from an embedded wh-interrogative with the lower copy somehow spelled out:

(17)   [$_{CP}$ *wen* glaubst du [$_{CP}$ *wen* [$_{TP}$ sie liebt]]]

This is immediately problematic since it is clearly not possible to extract the wh-phrase from the edge of an embedded wh-question:[4]

(18)   a.   I know [$_{CP}$ who$_1$ [$_{TP}$ John saw t$_1$]]
         b.   *Who$_1$ do you know [$_{CP}$ t$_1$ [$_{TP}$ John saw t$_1$]] ?

(19)   a.   Ich weiß [$_{CP}$ wen$_1$ [$_{TP}$ sie [$_{vP}$ t$_1$ eingeladen] hat]]
               I   know   who   she   invited   has
               'I know who she has invited.'
         b.   *Wen$_1$ weißt du [$_{CP}$ t$_1$ [$_{TP}$ sie [$_{vP}$ t$_1$ eingeladen] hat]] ?

Furthermore, there is another problem pertaining to selection. In the CC, the possible matrix predicates consist of only those predicates that select declarative clauses and not interrogative clauses. For example, predicates such as *meinen* 'think/say' (20) and *glauben* 'believe' (21) can embed declarative clauses, but not wh-interrogatives:[5]

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[4]An independent problem here is that question embedding predicates such as *wissen* are not bridge verbs:

(i)   a.   *Wen$_1$ weißt du, dass Maria t$_1$ gesehen hat?
               who   know you that Mary   seen   has
         b.   *Wen$_1$ weißt du, hat Maria t$_1$ gesehen?
               who   know you has Mary   seen

[5]Pankau (2009: 20of.) discusses the fact that *glauben* cannot select a [+wh] complement, but can combine with the embedded clause of a CC. In particular, he says 'in wh-copying this selectional requirement seems to be overridden, as a clause introduced by a wh-element (*wen*) appears in the complement position of *glauben*. However, it's quite unlikely that selectional requirements can be overridden. What seems more likely is that the intermediate copy doesn't bear a [+wh]-feature'. His assumption here is that 'the [+wh]-marking of *wen* arises under a local relation with a relevant matrix C^0-head', and as such the embedded clause does not

(20) a. Ich meine, dass sie Martin liebt.
          I   think   that she Martin loves
          'I think that she loves Martin.'
      b. *Ich meine, wen sie liebt
          I   think   who she loves

(21) a. Ich glaube, dass Jakob Maria gesehen hat.
          I   believe that Jakob Maria seen   has
          'I think that Jakob saw Maria.'
      b. *Ich glaube, wen Jakob gesehen hat.
          I   believe who Jakob seen   has

However, these predicates are entirely unproblematic in the CC, which would
be unexpected if the CC were derived from an embedded wh-interrogative:

(22) a. Wen meinst du, wen sie wirklich liebt?
          who think   you who she really   loves
          'Who do you think she really loves?'   (Höhle 1990)
      b. Wen glaubt Hans, wen Jakob gesehen hat?
          who believe Hans who Jakob seen   has
          'Who does Hans think that Jakob saw?'   (McDaniel 1989: 569)

Furthermore, predicates that can embed questions such as *sich fragen* 'ask' and
wissen 'know' (23) are not possible in the CC (24).

(23) a. Ich frage mich, wen sie liebt.
          I   ask   REFL who she loves
          'I wonder who she loves.'
      b. Ich weiß, wer das war.
          I   know who that was
          'I know who that was.'

(24) a. *Wen fragst du dich, wen sie liebt?
          who ask   you REFL who she loves
          'Who do you wonder whether she loves?'   (Pankau 2014: 301)

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constitute a [+wh] clause at the point at which it is selected by *glauben*. One of the problems
with this is that, if the wh-phrase only becomes [+wh] when it reaches the matrix C head, then
it is unclear what triggers the wh-phrase to move in the first place. The same objection would
hold for embedded interrogatives.

b. *Wer weißt du, wer das war?
    who know you who that was
    'Who do you know that was?'

We can therefore conclude, as Pankau (2013: 25) also does, that the embedded clause of the CC should not be treated as an interrogative clause. The selection problem coupled with the general impossibility of extraction from such clauses are enough to disregard this option.

3.2. Extraction from an embedded V2-clause

Following the conclusions of the previous section, it seems we are forced to treat the embedded clause of the CC as a declarative clause from which extraction takes place. It is relatively uncontroversial that long distance wh-extraction in German is possible from embedded clauses headed by *dass* ('that') (25).[6] Furthermore, extraction from embedded verb-second clauses is generally also assumed to be possible (e.g. Thiersch 1978, Tappe 1981, Sternefeld 1989, Staudacher 1990, Haider 1993) (26).[7]

(25) a. Niemand sagt, dass sie Pudding mag.
          nobody says that she pudding likes
          'Nobody says that she likes pudding.'

    b. Was$_1$ sagt niemand, dass sie t$_1$ mag?
        what says nobody that she likes
        'What does nobody say that she likes?'

(26) a. Niemand sagt, sie würde Pudding mögen.
          nobody says she would pudding like
          'Nobody says she would like pudding.'

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[6] Although there is a dialectal variation regarding the acceptability of extraction from *dass*-clauses, see footnote 17.

[7] However, see Reis (1995*a*,*b*, 2002) and Steinbach (2007) for an analysis of extraction from embedded V2-clauses that derives 'long movement' from insertion of a 'VIP' (verb-first integrated parenthetical) into a monoclausal question (this is also similar to approaches to long-distance dependencies in Tree Adjoining Grammar; see e.g. Frank 2002). If this analysis turns out to be correct, then any analysis of the CC involving extraction from a V2-clause would become untenable. Despite the convincingness of Reis' arguments, I will assume for the purposes of this discussion that extraction from V2 is possible.

b.   Welchen Pudding$_1$ sagt niemand, würde sie t$_1$ mögen?
     which   pudding   says   nobody   would she   like
     'What pudding does nobody say she likes?'

<div align="right">(Müller & Sternefeld 1993: 465)</div>

Reis (1995*a*) points out that extraction from embedded V2-clauses has two peculiar properties:

(27)   *Restrictions on putative extraction from V2-clauses (Reis 1995a: 50, (18))*
     a.   Initial gap restriction: Regardless of the base position of the movee, extraction leaves a gap in the initial position of the V2-clause.
     b.   V2 route restriction: Extraction may occur via V2-clauses and into V2-clauses only.

Let us focus on the first restriction for now. What we observe here is that extraction from a V2-clause triggers subject/verb inversion in the embedded clause. If we consider the embedded V2-clause in (28), extraction out of this clause requires the verb to precede the subject (29):

(28)   Er glaubt   [$_{CP}$ sie wohnt in Berlin jetzt]
       he believes   she lives   in Berlin now
       'He thinks she lives in Berlin now.'

(29)   a.   Wo$_1$ glaubt   er [$_{CP}$ t$_1$ wohnt sie t$_1$ jetzt]?
             where believes he   lives   she   now
       b.   *Wo$_1$ glaubt   er [$_{CP}$ t$_1$ sie wohnt t$_1$ jetzt]?
             where believes he   she lives   now
             'Where does he believe she lives now?'   (Reis 1995*a*: 50)

This is immediately problematic for any analysis assuming that the CC is derived from extraction out of an embedded V2-clause, since we saw in example (14) (repeated below) that the CC is strictly verb final:

(30)   a.   Wen glaubst du, wen sie liebt?
             who believe you who she loves
       b.   *Wen glaubst du   wen liebt sie?
             who believe you who loves she
             'Who do you think she loves?'   (Pankau 2013: 34)

If the CC simply involved spelling out an intermediate copy of movement from an embedded V2-clause as in (31b), we would expect (31c) to be possible (angled brackets indicate a phonetically unrealized copy).

(31) a. Ich glaube [$_{CP}$ Maria liebt Peter]
         I   believe   Maria loves Peter
     b. Wen glaubst du   [$_{CP}$ ⟨wen⟩ liebt Maria ⟨wen⟩] ?
         who believe you   loves Maria
     c. *Wen glaubst du [$_{CP}$ wen liebt Maria ⟨wen⟩] ?
         who believe you   who loves Maria

Assuming auxiliary inversion targets the head of CP, we are faced with the puzzling asymmetry that T-to-C movement is blocked in the CC, whereas it is required in extraction from V2-clauses. Pankau (2013: 34) argues that 'it is a general property of embedded clauses targeted by extraction that they disallow I-to-C movement in case something else already occupies the pre-subject position.' In order to support this claim, he cites the following contrast:

(32) a. Wen$_1$ glaubst du, dass sie t$_1$ liebt?
         who   believe you that she   loves
     b. *Wen$_1$ glaubst du, dass liebt sie   t$_1$?
         who   believe you that she   loves
         'Who do you think she loves?'

However, this is a mischaracterization. It is a well-known fact of German syntax that embedded clauses introduced by an overt complementizer (e.g. *dass* 'that') are strictly verb-final, whereas main clauses are obligatorily verb-second. The now standard account of this fact is that German main clauses are CPs and what is traditionally referred to as the 'left bracket' (or the *linke Satzklammer* in traditional, topological approaches; see Höhle 1986 and Müller 2016: §1.8 for an overview) corresponds to the C^0 position. In V2-clauses, the finite verb or auxiliary moves to C^0 and the Spec-CP position is occupied by another constituent (cf. den Besten 1983).

(33)   [$_{CP}$ XP$_2$ [$_{C'}$ [$_C$ V$_1$] [$_{TP}$ [$_{vP}$ … t$_2$ …] t$_1$]]]

In embedded clauses, if the C^0 position is occupied by the complementizer *dass*, then movement of the verb to C^0 is blocked. Thus, the ungrammaticality

of (32b) does not stem from a restriction to one element in the pre-subject position, but instead from the fact that *dass* and verbs in second position compete for the same structural position and are therefore mutually exclusive.[8]

Consequently, the asymmetry between extraction from embedded V2-clauses and the CC cannot simply be explained away in this manner. The question still remains as to what triggers this inversion. Languages exhibiting the 'V2 property' require that the head of declarative CPs be filled if there is something occupying Spec-CP. As well as in main clauses, this property also holds for embedded V2 declarative clauses:

(34) a. Peter behauptet [$_{CP}$ er$_1$ [$_C$ würde$_2$] [$_{TP}$ t$_1$ [$_{vP}$ nie   Fleisch
          Peter claims   he   would   never eat
          essen] t$_2$]]
          meat
          'Peter claims he would never meat.'

      b. Peter behauptet [$_{CP}$ Fleisch$_1$ [$_C$ würde$_2$] [$_{TP}$ er [$_{vP}$ nie   t$_1$
          Peter claims   meat   would   he   never
          essen] t$_2$]]
          eat
          'Peter claims that meat, he would never eat.'

      c. *Peter behauptet [$_{CP}$ [$_C$ würde$_2$] [$_{TP}$ er [$_{vP}$ nie   Fleisch
          Peter claims   would   he meat never
          essen] t$_2$]]
          eat
          'Peter claims that meat, he would never eat.'

Regardless of whether the subject or object occupies Spec-CP, T-to-C movement is required. The inversion we see with extraction from embedded V2 is

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[8]Further evidence against Pankau's characterization comes from sentential adverbs. According to Frey (2004), sentential adverbs such as *wahrscheinlich* ('probably') are adjoined to TP. In (i), T-to-C movement is not blocked despite the sentential adverb occupying pre-subject position.

(i)   Wen glaubst du [$_{CP}$ hat [$_{TP}$ wahrscheinlich [$_{TP}$ MARIA gestern   gesehen]]] ?
       who believe you   has   probably   Maria yesterday seen
       'Who do you think that MARY problaby saw yesterday?'

The embedded subject is focused to block an interpretation in which *Maria* is topic. Frey (2004) shows that topics in German seem to occupy a position above sentential adverbs, but see Fanselow (2006a) for counter-arguments.

interesting since it seems that T-to-C is triggered despite there not being any overt element in Spec-CP of the embedded clause. This effect is also present in all embedded clauses with long-distance movement.[9] Here, despite the embedded Spec-CP position not being overtly filled, T-to-C movement has taken place.

(35)   [$_{CP}$ Wen$_1$ meinst du [$_{CP}$ t$_1$ hat Maria behauptet [$_{CP}$ t$_1$ wird Hans t$_1$
        who think you   has Maria claimed   will Hans
        treffen]]] ?
        meet
        'Who do you think that Maria claimed that Hans will meet?'

This is an instance of syntactic opacity (cf. Müller 2013, Georgi 2014, Assmann et al. 2015) since, on the surface, the context for T-to-C movement (an element in Spec-CP) is not given. This is therefore a case of *overapplication* or *counterbleeding* (Kiparsky 1973). From a derivational perspective, this can be explained by assuming that T-to-C movement applies at the point at which the wh-phrase is present in the intermediate Spec-CP.[10] If subject/auxiliary inversion is a reflex of extraction from a V2-clause (also see Torrego 1984 for Spanish), then we would expect to find it with wh-copying if this were indeed derived by extraction.

Alternatively, one could pursue an argument along the lines of Fanselow & Mahajan (2000) and try to block T-to-C movement if the intermediate wh-copy is realized by appealing to the *Doubly Filled COMP Filter* (DFCF; Chomsky & Lasnik 1977), which (in a modern rendering) states that both the specifier and head of a CP cannot both be pronounced. As a result, spelling out the intermediate copy of the wh-phrase will block T-to-C movement since the resulting representation would violate the DFCF. This approach is immediately faced with the fact that not all varieties of German obey the DFCF (cf. Bayer 1984) and even allow DFCF violations in the CC (36).

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[9]Note that this pattern has also been reported in unrelated V2 languages such as Dinka (Nilotic: South Sudan; van Urk 2015, van Urk & Richards 2015).

[10]An alternative would be to claim that a trace/copy can also trigger inversion, but this would amount to a 'coding trick' (Chomsky 1995: 224).

(36) Wen denkst du [$_{CP}$ wen$_1$ [$_{C'}$ [$_C$ dass] [$_{TP}$ sie t$_1$] liebt]] ?
who believe you   who   that   she   loves
'Who do you think she loves'

<div align="right">(Fanselow & Mahajan 2000: 221)</div>

If the CC were linked to the DFCF, then we would expect dialects without it to permit examples such as (37), however no such dialect seems to exist.

(37) *Wer glaubst du [$_{CP}$ wer$_1$ [$_{C'}$ [$_C$ bist$_2$] [$_{TP}$ du t$_1$] t$_2$]] ?
who believe you   who   are   you

This approach also faces problems concerning the architecture of the grammar. If phonological realization of an intermediate wh-copy can bleed head movement in the CC, then head movement must presumably happen as late as PF (see e.g. Chomsky 1995, Merchant 2001, Schoorlemmer & Temmerman 2012, Platzack 2013, Hein this volume). Furthermore, the determination of which copies are pronounced, i.e. Chain Reduction (Nunes 2004), must precede head movement. However, the opacity facts are incompatible with this view since, if T-to-C movement at PF happens after the determination of which copies are pronounced (i.e. after Chain Reduction has deleted the copy in intermediate Spec-CP), it is unclear why T-to-C movement happens at all. By the time head movement applies, the configuration triggering it (an occupied Spec-CP) would no longer be given. We are therefore presented with a rule ordering paradox; the ban on T-to-C movement in the CC requires that Chain Reduction precede PF head movement so that T-to-C movement is bled, whereas subject/auxiliary inversion with extraction from V2 requires that head movement precede Chain Reduction (counterbleeding). Since both processes coexist in German, the DFCF approach is faced with an intractable ordering paradox at PF.

A final argument against an analysis of the CC as involving extraction from an embedded V2-clause pertains to the second restriction on extraction from embedded V2-clauses in (27) (repeated below):

(38) *Restrictions on putative extraction from V2-clauses (Reis 1995a: 50, (18))*
     a.   Initial gap restriction: Regardless of the base position of the movee, extraction leaves a gap in the initial position of the V2-clause.
     b.   V2 route restriction: Extraction may occur via V2-clauses and into V2-clauses only.

What the so-called *V2 route restriction* captures is the fact that extraction from V2-clauses cannot then pass through a *dass*-clause:

(39)   a.   *[$_{CP}$ Wo   meint er [$_{CP}$ t_1 dass Peter geglaubt hat [$_{CP}$ t_1 wohnt
                where thinks he   that Peter believed has   lives
            sie t_1]]] ?
            she

      b.   [$_{CP}$ Wo   meint er [$_{CP}$ t_1 hat Peter geglaubt [$_{CP}$ t_1 wohnt sie
            where thinks he   has Peter believed   lives she
            t_1]]] ?
            'Where does he think Peter believed she lives?'   (Reis 1995a: 50)

Müller & Sternefeld (1996) claim (*contra* Dayal 1994) that the wh-scope marking constructions can violate the V2 route restriction (40):

(40)   Was glaubst du [$_{CP}$ dass er gesagt hat [$_{CP}$ wen er eingeladen hat]]?
       what believe you   that he said has   who he invited   has
       'Who do you believe that he said that he invited?'

                                                    (Müller & Sternefeld 1996: 509)

The key question is how the CC behaves in this regard. If wh-copying were derived from extraction from an embedded V2-clause, then we would expect it to obey the V2 route restriction. While there is reportedly some variation in this regard, a number of speakers accept wh-copying with extraction from a V2-clause via *dass*-clauses (Felser 2004: 552, Rett 2006: 365, Pankau 2013: 31):[11]

(41)   [$_{CP}$ Wen glaubst du [$_{CP}$ dass er meint [$_{CP}$ wen sie gesehen hat]]] ?
            who believe you   that he thinks   who she seen   has
       'Who do you think he believes she has seen?'

                                                            (Pankau 2013: 31)

This is of course completely unexpected since we would expect the CC and extraction from V2-clauses to behave alike regarding the V2 route restriction. Given the differences between the constructions, we can conclude that the assumption that the CC is derived from extraction from an embedded V2 declarative is not tenable.

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[11]Reis (2000: 395) judges a similar example as ungrammatical, however she seems to also find wh-scope marking examples with an intervening *dass*-clause ungrammatical (p. 380). In general, there seems to be a considerable degree of speaker variability in this regard.

4. Asymmetries between wh-copying and long distance extraction

In the previous section, we saw that the assumption that the CC simply consists of spelling out an intermediate copy of long-distance movement faces a number of technical problems regarding the exact derivation one has to assume. However, there are also a number of empirical differences between the CC and long-distance extraction discussed in the literature that are unexpected *a priori* if the CC is derived from long-distance extraction.[12] Much of the discussion from which the following data are drawn centres around the correct analysis of wh-scope marking constructions such as (42a) and, to a lesser extent, wh-copying (42b).

(42) a. Was glaubt Maria, wen Hans mag?
          what believes Maria who Hans likes
      b. Wen glaubt Maria, wen Hans mag?
          who believes Maria who Hans likes
          'Who does Mara think Hans likes?'   (Beck & Berman 2000: 31)

There are two different approaches to the wh-scope marking construction in particular (see Fanselow 2006*b* for an overview). The first approach suggests that there is a direct relation between *was* and the lower wh-phrase (i.e. movement). This approach is referred to as the *Direct Dependency Approach* (e.g. van Riemsdijk 1983, McDaniel 1989, Beck & Berman 2000, Cheng 2000). The alternative approach is the so-called *Indirect Dependency Approach* (e.g. Dayal 1994, Horvath 1997, Felser 2001, Klepp 2002, Stepanov & Stateva 2006), in which no direct link between the wh-phrases is assumed. Instead, *was* in (42a) is assumed to be related only indirectly, i.e. via co-indexation, to the lower interrogative clause. In order to choose between these approaches, researchers have tried to ascertain to what extent wh-scope marking and long-distance extraction pattern alike. If they do, then one has good evidence for the Direct Dependency Approach. Any significant differences, however, would support

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[12]Note that many of the differences proposed here are controversial in that the complete opposite judgements have also been reported. There is a striking tendency for those researchers whose analyses require that the CC be derived from long-distance extraction to oppose judgements that would contradict this conclusion (in particular Rett 2006 and Pankau 2013). This highlights the pitfalls of pure introspection as well as the need for serious empirical study and corroboration of the often subtle contrasts identified in the literature. As such, many of the asymmetries discussed here remain more controversial than conclusive.

the Indirect Dependency Approach. As for wh-copying, it is mostly assumed that the Direct Dependency Approach is correct (although see den Dikken 2009, Koster 2009, Schippers 2010, 2012*b* for Indirect Dependency approaches), i.e. the CC is derived from long-distance movement. If this were the case, we would not expect to find any significant differences between the two constructions. As the following discussion will show, there are a number of ways in which the CC does not pattern like long-distance wh-movement, which proves problematic for accounts that posit successive-cyclic movement as the source for the CC.

4.1. Interpretive differences

4.1.1. *Quantifier scope*

If the CC were derived from long-distance movement, we would not expect differences with regard to scope-taking properties. Pafel (2005: 146f.) discusses the following data. With long-distance extraction (43), the wh-phrase can scope above the universal quantifier in the matrix clause, as well as below it (yielding a pair-list interpretation).

(43)   Wo   glaubt jeder,   dass die besten Weine wachsen?
       where believe everyone that the best   wines grow
       'Where does everyone think the best wines grow?'   ($wh > \forall$, $\forall > wh$)

However, he claims that while the CC variant of (43) certainly has a pair-list reading, the reading with wide scope of the wh-phrase is notably less accessible than with (43) (also see Felser 2004: 557, who corroborates this claim, but Rett 2006: 356, fn. 2, who disputes it).

(44)   Wo   glaubt jeder,   wo   die besten Weine wachsen?
       where believe everyone where the best   wines grow
       'Where does everyone think the best wines grow?' ($?wh > \forall$, $\forall > wh$)

Furthermore, consider the following minimal pair from Pafel (2000: 348):

(45)   a.   Wo   wird nicht einer vermuten, dass sie sich versteckt hält?
             where will nobody   assume   that she REFL hidden   keeps
             'Where will nobody assume that she is hiding?'
       b. %Wo   wird nicht einer vermuten, wo sie sich versteckt hält?
             where will nobody   assume   that she REFL hidden   keeps

'Where will nobody assume that she is hiding?'

Here, Pafel claims that wide scope of the negative quantifier *nicht einer* yields a 'strange interpretation' (there is no person *x* such that for the location *y*, *x* would assume she is hiding at *y*). In order to get the natural interpretation, we need the wh-phrase to outscope the negative quantifier. While this is unproblematic for the long-distance extraction in (45a), Pafel claims that wh-copying patterns with scope-marking constructions in that the wide scope interpretation of the wh-phrase is less accessible (although he admits there is some variation in the judgements).[13] If these observations hold water, then it would be puzzling to find such a discrepancy between long-distance extraction structures and the CC if these were supposedly derived from the same source.

4.1.2. (In)consistent readings

Another discrepancy that has been discussed in the literature involves what Reis (2000: 383) calls '(in)consistent readings'. Reis illustrates the distinction with the following examples:

(46)   a.   Wo   glaubt Maria, dass Fox populärer   ist als   er ist?
            where believes she   that Fox more.popular is than he is
            'Where does Maria think that Fox is more popular here than he is?'
       b. #Wo   ist Fox populärer   als   er ist?
            where is Fox more.popular than he is
            'Where is Fox more popular than he is?'

Whereas (46b) necessarily involves a contradiction, (46a) is ambiguous due to two possible sources of belief to the degree to which Fox is popular; the degree to which Fox is popular can be evaluated either relative to the belief state of an individual (e.g. their doxastic alternatives; Hintikka 1962) or the actual world of evaluation. This is then essentially a case of the familiar *de*

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[13]Pafel claims that the wide scope reading of the wh-phrase is definitely out with scope-marking or 'partial movement' constructions such as (i):

(i)   ??Was wird nicht einer vermuten, wo sie sich   versteckt hält?
        what will nobody   assume   that she REFL hidden keeps
        'Where will nobody assume that she is hiding?'

re/de dicto ambiguity (see e.g. Lechner 2013: 24).[14] The 'consistent' or *de dicto* reading can be summarized as follows:

(47)   *Consistent reading (de dicto)*:
       For which place x, is Fox popular to degree d in x in Maria's belief worlds (w') and popular to degree d' in the world of evaluation (w)
       $\lambda w \lambda p. \exists x. \ \forall w' \in \text{Dox-Alt}_{\text{Maria},w'}. \ \exists d. \ \text{Fox is } d\text{-popular at } x \text{ in } w' \wedge \exists d'.$
       Fox is d'-popular at x in w

The sentence in (46a) has this reading and therefore allows for Maria to be mistaken about Fox' popularity in a given place. For example, she could

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[14]There is another *de re/de dicto* ambiguity often discussed in the literature on wh-scope marking constructions. Herburger (1994) claims that there is a distinction between the scope marking construction in (ia) and the long-distance extraction in (ib) (also see Stepanov & Stateva 2006: 2145):

(i)   a.   Was glaubt   der Georg, wen die Rosa geküsst hat?
             what believes the Georg who the Rosa kissed   has
       b.   Wen glaubt   der Georg, dass die Rosa geküsst hat?
             who believes the Georg that the Rosa kissed   has
             'Who does Georg believe that Rosa kissed?'

Here, the claim is that with the scope marking construction, the proposition that Georg kissed someone has to be understood as being part of the speaker's belief state rather than Georg's (i.e. *de re*). According to Herburger, a *de dicto* interpretation for (ia) in which Georg mistakenly believes that Rosa kissed someone is impossible. Interestingly, this does not seem to be the case for long-distance movement constructions such as (ib). Here, a *de dicto* interpretation seems possible. The important question at this point is whether the CC patterns with scope marking or long-distance extraction structures. Rett (2006: 357) and Pankau (2013: 23) claim that the CC can have a *de dicto* reading, thereby suggesting that it patterns with long movement. The availability of this reading can be tested using the following context suggested by Andreas Haida (p.c.):

(ii)   Ich verstehe, warum du sauer bist auf mich. Ich war gestern den ganzen Tag alleine, aber ich weiß, …
       ('I understand why you are angry at me. I was alone all day yesterday, but I know …')
       a.   wen du glaubst, dass ich gestern   getroffen habe.
             who you believe that I   yesterday met   have
       b.   #was du glaubst, wen ich gestern   getroffen habe.
             what you think   who I   yesterday met   have
       c.   %wen du glaubst, wen ich gestern   getroffen habe.
             who you believe who I   yesterday met   have
             '… who you think I met yesterday.'

believe that Fox is incredibly popular in Bielefeld, when in fact he is not. There is another perhaps less salient reading, which involves Maria holding a contradictory belief state in which she believes that there is some place, where Fox is popular to two differing (and therefore contradictory) degrees there:

(48) *Contradictory reading (de re)*:
For which place x, is Fox popular to degree d in x in Maria's belief worlds (w) and popular to degree d' in the (same) world of evaluation (w)
$\lambda p.\exists x.\ \forall w \in \text{Dox-Alt}_{\text{Maria},w}\ \exists d.$ Fox is d-popular at x in $w \wedge \exists d'.$ Fox is d'-popular at x in w

Crucially, the monoclausal interrogative in (46b) is reported to only have the contradictory *de re* reading (since only the speaker's belief state can be taken into account). Since long-distance extraction allows for a consistent reading, we would expect the CC to also allow one if the CC derives from it. However, according to Reis (2000: 395) and Felser (2004: 558) only the contradictory *de re* reading is possible:[15]

(49) #Wo   glaubt sie, wo   Fox populärer   ist als   er ist?
    where believes she where Fox more.popular is   than he is
    'Where does she believe that Fox is more popular than he is?'

This interpretive difference between long-distance and the CC is then surprising if the CC were derived from long-distance extraction (in fact it seems to pattern with scope marking constructions in this regard).

4.1.3.   Single identity readings

A further interpretive difference between long-distance extraction and the CC is discussed by Felser (2004: 560). It is possible to ATB-extract out of conjoined embedded clauses:

Although this judgement is less clear for some speakers, the CC does seem to pattern with long-distance extraction in this respect. However, this probably tells us more about wh-scope marking than it does about the CC.

[15] In familar fashion, divergent claims are made by Rett (2006: 357) and Pankau (2013: 32).

(50)   Wen$_1$ glaubst du   [$_{CP}$ t$_1$ dass sie t$_1$ getroffen hat] und [$_{CP}$ t$_1$ dass sie
        who believe you   that she   met   has and   that she
        t$_1$ liebt] ?
          loves
        'Who do you think that she met and that she loves?'

It is well-known that ATB movement forces a so-called 'single identity reading', that is, the answer to a question like (50) must be a single individual that she both met and loves (see Citko 2005: 489; Citko 2011: 58; Blümel 2014: 20 and Hein & Murphy this volume). It is not possible for the gaps in the conjuncts in (50) to refer to different individuals. However, Felser points out that with wh-copying it is possible, if not preferred, to have a reading in which the 'copy' in each conjunct refers to a different individual.

(51)   Wen glaubst du [$_{CP}$ wen$_k$ sie getroffen hat] und [$_{CP}$ wen$_j$ sie liebt]?
        who believe you   who she met   has and   who she loves
        'Who do you think that she met and that she loves?'

Again, this distinction would not be expected if the CC simply involved the phonological realization of intermediate copies in a structure like (50).

4.1.4. *Variable binding*

Another apparent interpretive difference between the CC and long-distance extraction structures pertains to cross-clausal variable binding. In a long-distance extraction structure, it is uncontroversially possible for a quantifier in the matrix clause to bind a variable in the embedded clause:

(52)   a.   Was$_1$ glaubt   jeder Student$_i$, dass er$_i$ t$_1$ kaufen soll?
              what believes every student   that he   buy   should
              'What does every student$_i$ think he$_i$ should buy?'
        b.   Mit wem$_1$ glaubt   jeder Student$_i$, dass er$_i$ t$_1$ gesprochen hat?
              with who   believes every student   that he   spoken   has
              'With whom does every student$_i$ think he$_i$ has spoken?'
                                                              (Dayal 1994: 151)

Dayal (1994) contrasts this with the wh-scope marking construction where she claims that no binding between the matrix subject and embedded pronoun is possible:

(53)　*Was glaubt jeder Student$_i$, mit wem$_1$ er$_i$ t$_1$ gesprochen hat?
　　　what believes every student　with whom he spoken has
　　　'With whom does every student$_i$ think he$_i$ has spoken?'

<div align="right">(Dayal 1994: 152)</div>

The question now is whether the CC behaves like long extraction (52) or scope marking (53). Rett (2006: 356) simply asserts that the CC allows cross-clausal binding, but does not provide any supporting data. A number of the speakers I consulted seemed to suggest the reverse.[16] As (54) shows, there does seem to be a contrast between long-distance extraction and the CC:

(54)　a.　Wo glaubt jeder Fußballspieler$_i$, dass er$_i$ nächstes Jahr
　　　　　where believes every footballer　that he next year
　　　　　spielen wird?
　　　　　play will
　　　　　'Where does every footballer$_i$ believe he$_i$ will play next year?'
　　　b.　?Wo glaubt jeder Fußballspieler$_i$, wo er$_i$ nächstes Jahr
　　　　　where believes every footballer　where he next year
　　　　　spielen wird?
　　　　　play will
　　　　　'Where does every footballer$_i$ believe he$_i$ will play next year?'

One immediate conclusion that could be drawn from the contrast in (54) is that the quantifier between the wh-phrases triggers an intervention effect (Beck 1996, Beck & Kim 1997). While some researchers seem to detect an intervention effect in the CC (Fanselow & Mahajan 2000, Fanselow & Ćavar 2001), others do not (Pafel 2000, Reis 2000, Felser 2004, Rett 2006, Pankau 2013). It is relatively straightforward to test whether the source of deviance is the cross-clausal binding or an intervention effect. If we remove the binding in (54b), the example is reported to improve (55).

(55)　Wo glaubt jeder Fußballspieler, wo Messi nächstes Jahr
　　　where believes every footballer　where Messi next year
　　　spielen wird?
　　　play will
　　　'Where does every footballer$_i$ believe he$_i$ will play next year?'

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[16] Particular thanks go to Andreas Haida for discussion of the following examples.

This suggests that it is actually the binding that is responsible for the contrast in (55). If the CC were in fact derived from long-distance extraction, we would not expect the CC to show any differences with regard to cross-clausal binding.

4.2.   Predicate restrictions

Another well-known difference between the CC and long extraction is that the set of permissible predicates in the CC is more restricted than those allowed in long-distance movement structures.

4.2.1.   *Volitional predicates*

The first difference concerns so-called 'volitional predicates' such as *mögen* ('like') *hoffen* ('hope') and *wollen* ('want'), which are reported to be possible in long-distance extraction structures (56a), but impossible in the CC (56b) (see Reis 2000: 395, Fanselow & Mahajan 2000: 220, Haider 2010: 108).

(56)   a.   Wen möchtest du, dass ich befrage?
            who want   you that I   question
        b.   *Wen möchtest du, wen ich befrage?
            who want   you who I   question
            'Who do you want me to question?'   (Haider 2010: 108)

As discussed by Pankau (2013: 14), there is some variation with regard to *wollen* ('want'). Some researchers have claimed that the CC is acceptable with *wollen* (McDaniel 1986, Simpson 2000, Pankau 2013):

(57)   Wen willst du, wen Hans besticht?
        who want you who Hans bribes
        'Who do you want Hans to bribe?'   (Simpson 2000: 162f.)

However, these volitional predicates have another peculiar property, namely they are bridge verbs that allow extraction from *dass*-clauses, but do not embed V2-clauses (the same holds for *wollen*; see Pankau 2013: 15):

(58)   a.   *Er möchte, ich rufe sie an.
            he wants   I   call her PRT
        b.   Er möchte, dass ich sie anrufe.
            he wants   that I   her call
            'He wants me to call her.'   (Haider 2010: 108, fn.25)

Furthermore, cases of putative extraction from V2-clauses embedded under volitional predicates are also judged to be deviant:

(59)   *Wen$_1$ willst du [$_{CP}$ soll   sie t$_1$ einladen] ?
          who want you   should she   invite
          'Who do you want her to invite?'   (Pankau 2013: 15)

If the CC were to be analyzed as involving the Spell-Out of the intermediate copy in (59), then the contrast between (57) and (59) would be puzzling.

4.2.2. Negated predicates

Another class of predicates that show different distributions in long-distance extraction and the CC are 'negated predicates' including negators such as *nicht* ('not') and *keiner* ('nobody'), as well as inherently negative predicates such as *bezweifeln* ('doubt'). Whereas long extraction from clauses embedded under negated predicates is generally regarded to be unproblematic (60a), such predicates are disallowed in the CC (60b).[17]

(60)   a.   Wen glaubst du nicht, dass sie liebt?
                 who believe you not   that she loves
                 'Who don't you think she loves?'   (Felser 2004: 555)
          b.   *Wen glaubst du nicht, wen sie liebt?
                 who believe you not   who she loves
                 'Who don't you think she loves?'   (Reis 2002: 34)

4.2.3. Preference predicates

Reis (1995*a*: 64ff.) shows that long-distance extraction is possible with a set of predicates she calls 'preference predicates' (*Präferenzprädikate*) (61), however this is not true of the CC (62).

(61)   Dorthin$_1$ ist (es) besser, dass du   zu Fuß gehst.
          to.there is it   better that you to foot go
          'It would be better if you go there on foot.'   (Reis 1995*a*: 65)

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[17] Pankau (2013: 18) cites a number of cases in the literature where extraction from *dass*-clauses embedded under a negated predicate is judged as marginal. It is worth noting, however, that most of the cited researchers give this extraction an intermediate status (? or ??) (see Cheng 2000: 95, for example). This is most likely related to the fact that there is considerable variation regarding the acceptability of extraction from *dass*-clauses to begin with (Kiziak 2010: 42ff.).

(62)   *Wen ist besser, wen Petra heiratet?
       who is better who Petra marries
       'Who would it be better for Petra to marry?'   (Reis 2002: 34)

Interestingly, this is the same restriction that putative cases of extraction from embedded V2-clauses are subject to:

(63)   *Dorthin$_1$ ist (es) besser, gehst du zu Fuß.
        to.there is it better go   you to foot
        'It would be better if you go there on foot.'   (Reis 1995a: 65)

Reis (1995a,b, 2000) argues that this and other asymmetries between extraction from *dass*-clauses and extraction from embedded V2 support an analysis in which what looks like long-distance extraction from embedded V2 actually involves the insertion of a V1 parenthetical (see Murphy 2014 for an analysis of the CC along these lines).

4.3.   Superiority effects

Another putative, albeit more controversial, asymmetry regards the status of superiority effects with long-distance wh-movement. Felser (2004: 555) provides the following minimal pair:

(64)   a.   Wen$_1$ hat Peter wann gesagt, dass er t$_1$ besuchen wird?
            who   has Peter when said   that he   visit   will
       b.   *Wen hat Peter wann gesagt, wen er besuchen wird?
            who has Peter when said   who he visit   will
            'When did Peter say who he was going to visit?'

In (64a), we have long wh-movement that violates superiority, that is, it crosses the *in situ* wh-phrase *wann* in the matrix clause. While German does not exhibit superiority effects in main clauses (65), long distance wh-movement has been typically reported to be ungrammatical (Büring & Hartmann 1994, Grewendorf 2002, Heck & Müller 2003, Müller 2004).

(65)   a.   Wer t$_1$ liebt wen?
            who   loves whom
       b.   Wen$_1$ liebt wer t$_1$?
            whom loves who
            'Who loves who(m)?'

However, Fanselow & Féry (2008) present experimental evidence suggesting that this effect is not due to superiority, but is rather a general processing effect. The important point here pertains to the examples in (64). Regardless of the strength or cause of the contrast that some speakers feel with the superiority violations with long-distance wh-movement, if there does turn out to be a contrast between (64a) and (64b) (Felser 2004: 555 deems (64a) grammatical, Pankau 2013: 34 does not), then this would be entirely unexpected under the view that these are surface variants of the same underlying construction.

4.4. Size restrictions

One final difference between the CC and long-distance extraction structures is the fact that repeated material in the CC is subject to what we might call 'size restrictions', see Müller (this volume). Whereas copying of 'simplex' or 'monolexical' (Haider 2010: 108) wh-material is unproblematic (66), copying complex wh-phrases is not possible (67).

(66)   a.   Was glaubst du, was Hans kauft?
            what believe you what Hans buys
            'What do you think Hans will buy?'
       b.   Wo   glaubst du, wo   die besten Weine wachsen?
            where believe you where the best   wines grow
            'Where do you think the best wines grow?'

                                                        (Pafel 2005: 146)

       c.   Warum glaubst du, warum sie das getan hat?
            why   believe you why   she that done has
            'Why do you think she did that?'

                                            (Fanselow & Mahajan 2000: 220)

(67)   a.   *Welchen Mann glaubst du, welchen Mann sie liebt?
            which   man   believe you which   man   she loves
            'Which man do you think she loves?'

                                            (Fanselow & Mahajan 2000: 220)

       b.   *Wieviele   Studenten denkst du, wieviele   Studenten wir
            how.many students   think   you how.many students   we
            kennen?
            know
            'How many students do you think we know?'

                                              (Fanselow & Ćavar 2001: 122)

c.   *Auf wen hat sie gesagt, auf wen er warten soll?[18]
on   who has she said   on who he wait   should
'Who did she say he should wait for?'

(McDaniel 1986: 247)

On the surface, this restriction is puzzling and still seems to be lacking a satisfactory explanation.[19] If we can find similar size restrictons in a different corner of the grammar, then this might give us an insight into the nature of the

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[18] Note that there is apparently some speaker variability with regard to acceptability of PPs, see (Pankau 2013: 9ff.).

[19] There have of course been a number of proposals attempting to derive this. The most prominent approach assumes that intermediate wh-copies either cliticize onto or are 'reanalyzed' as C heads (see Fanselow & Mahajan 2000, Nunes 2004, Bošković & Nunes 2007). It is then stipulated that only morphologically 'simplex' elements can fuse with C since they are heads (see Bošković & Nunes 2007 for a head adjunction approach). One problem here is that a number of speakers do in fact permit PPs such as *auf wen* in (67c) in the CC. Bošković & Nunes (2007: 54) conjecture that this variability stems from 'the degree of morphological complexity a given dialect or idiolect tolerates under fusion'. However, so-called pronominal adverbs such as *wovon* seem to be acceptable in the CC even for speakers who reject putatively more complex PPs such as *auf wen*. Furthermore, pronominal adverbs such as *wovon* should probably be analyzed as a full PP since they are known to permit preposition stranding and are therefore probably not any less structurally complex than other PPs (Müller 2000, Abels 2003, Barnickel & Hein this volume). Rett (2006) tries to derive the distinction between (66a) and (67a) by claiming that 'wh-phrases quantify over an individual variable when they occur with an NP complement and introduce a free individual variable when they do not occur with an NP complement' (p. 371). Crucially for her, bare wh-words such as *what* do not introduce existential quantification, but rather free variables. However, what she calls wh-determiners such as *which* introduce existential quantification. According to Rett, the reason why complex NPs are excluded from the CC is that the variable corresponding to the 'trace' would be quantified over by the intermediate copy, leading to vacuous quantification by the higher copy. Since wh-pronominals such as *was* in (66a) only introduce free variables, no such problems arises. This approach suffers from a number of empirical problems. For example, this approach will never allow for complex NPs to occur in the 'intermediate position' since these bind the trace 'too early'. Examples from Fanselow & Ćavar (2001: 123) clearly show this to be an incorrect prediction.

(i)   Wieviel   sagt ihr   wieviel   Schweine ihr   habt?
how.many say you.PL how.many pigs   you.PL have
'How many pigs did you say you have?'

Addressing this same issue, Fanselow & Ćavar (2001: 130) themselves propose an OT constraint CONTIGUITYINSYNTAX stating that 'the phonetic material corresponding to a constituent must be spelled out in one position only'. It is unclear what independent motivation, if any, such a constraint has. Furthermore, van Craenenbroek (2012: 49) cites this restriction as evidence for his sluicing analysis that presupposes that complex wh-phrases are base-generated

CC. As first pointed out by Fanselow (1987: 57), long topicalization in German has been argued not to be sensitive to wh-islands (Müller & Sternefeld 1993, d'Avis 1995, Müller 2011, Grewendorf 2012).

(68) a. Ich weiß nicht [$_{CP}$ wie [$_{TP}$ man t_1 Radios repariert]]
          I know not   how   one   radios repairs
          'I don't know how to repair radios.'

      b. ?Radios$_2$ weiß ich nicht [$_{CP}$ wie$_1$ [$_{TP}$ man t_1 t_2 repariert]]
          radios   know I not   how   one   repairs
          'As for radios, I don't know how to repair them.'

                                                            (Fanselow 1987: 57)

Example (68b) shows that it is possible to have long topicalization out of what would normally constitute an island for movement (a wh-island). Interestingly, Bayer (2014) provides data that seem to suggest that this topicalization out of wh-islands is sensitive to 'size restrictions' in a similar way to the CC. Like Fanselow, Bayer finds topicalization out of interrogative clauses with simplex wh-phrases such as *was* ('what'), *wo* ('where') and *warum* ('why') grammatical:

(69) a. Den Opa$_1$ weiß ich nicht [$_{CP}$ was t_1 geärgert haben
          the grandfather know I   not   what   annoyed have
          könnte]
          could
          'As for grandfather, I don't know what could have annoyed him.'

      b. Den Präsidenten$_1$ sage ich euch gleich   [$_{CP}$ wo   ihr
          the president   tell I   you immediately   where you.PL
          t_1 abholen sollt]
              pick.up should
          'As for the president, I will tell you in a minute where you should
          pick him up.'

      c. Der Regierung$_1$ weiß ich schon [$_{CP}$ warum niemand
          the government know I already   why   nobody
          mehr t_1 vertraut]
          anymore   trusts
          'As for the government, I know why nobody trusts them anymore.'

                                                              (Bayer 2014: 34f.)

in the left periphery. Since they do not move, he argues, 'their non-occurrence in wh-copying follows straightforwardly'.

However, Bayer claims that comparable examples with topicalization out of an embedded interrogative clause with a complex wh-phrase are not possible.[20]

(70)   a.   ?*Den Opa$_1$ weiß ich nicht [$_{CP}$ welches Benehmen t$_1$
             the grandfather know I   not   which behaviour
             geärgert haben könnte]
             annoyed have   could

        b.   ?*Den Präsidenten$_1$ sage ich euch gleich   [$_{CP}$ von welchem
             the president   tell I you immediately   from which
             Flughafen ihr   t$_1$ abholen sollt]
             airport   you.PL   pick.up should

        c.   ?*Der Regierung$_1$ weiß ich schon [$_{CP}$ aus welchem Grund
             the government know I   already   for which   reason
             niemand mehr   t$_1$ vertraut]
             nobody anymore   trusts

                                                        (Bayer 2014: 35f.)

These observations, if they turn out to be robust, open up an interesting analytical possibility. It can be sketched as follows: We know that extraction of the copy of the wh-phrase in embedded Spec-CP is impossible, so perhaps it is somehow possible to 'topicalize' the lower copy of the wh-phrase across the other copy of itself in a similar way to the previous examples (71). Since we would have two distinct movement chains, the fact that both (highest) copies would be pronounced receives a plausible explanation.[21]

(71)   [$_{CP}$ was glaubst du [$_{CP}$ was Hans ⟨was⟩ kauft]]
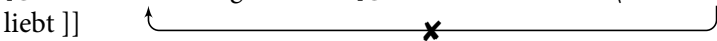
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[20]But cf. divergent judgements in Grewendorf (2012). Note that Bayer, unlike Grewendorf, supports his findings with an empirical study, however this may ultimately be a dialectal issue.
   [21]There is also another (albeit less plausible) possible analysis one could pursue since similar 'size restrictions' are also found with free relatives:

(i)   a.   Ich esse, was du willst.
             I   eat   what you want
             'I'll eat what(ever) you want.'
        b.   *Ich esse, welches Essen du willst.
             I   eat   which   food you want

   However, it is unclear how the free relative analysis could be made to work given the predicate restrictions discussed in section 4.2. Permissible CC-predicates such as *meinen* select for CP complements rather than DPs.

This wh-island-violating movement to derive the CC would of course be subject to the same restrictions as long topicalization, that is, movement across embedded interrogatives with a complex wh-phrase should be deviant:

(72)   [$_{CP}$ Welchen Mann glaubst du [$_{CP}$ welchen Mann sie ⟨welchen Mann⟩ liebt]]

Although this approach could potentially give us an explanation for the puzzling 'size restrictions' that the CC seems to be subject to, it is not without its problems. The main problem is that it has been known since Fanselow (1987) that long wh-movement is not impervious to wh-islands in the same way long topicalization seems to be:

(73)   *Welches Radio$_2$ weißt du   nicht [$_{CP}$ wie$_1$ [$_{TP}$ man t$_1$ t$_2$ repariert]] ?
         which   radio   know you not   how   one   repairs
         'Which radio do you not know how to repair?'

<div align="right">(Müller & Sternefeld 1993: 494)</div>

At this point, one could appeal to an operation such as wh-topicalization (Boeckx & Grohmann 2004, Grewendorf 2012). While this has been proposed, we would expect 'wh-topics', if they even exist, to be D-linked wh-phrases such as *which*-NPs (Pesetsky 1987, 2000).[22] This seems to be incompatible with the analysis sketched above since we would expect wh-topics, above all complex wh-phrases, to be able to be extracted, however it is precisely these which are not possible in the CC. As such, any explanation along these lines will have to contend with these problems as well as the fact that it is far from clear that wh-topicalization even exists (see e.g. Müller 1995: 345ff.).

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[22] Felser (2004: 566) suggests that D-linked wh-phrases are impossible in the CC since these do not undergo successive-cyclic movement. Under her assumptions, if wh-phrases do not stop in the specifier of CP, then they cannot be pronounced there to form the CC. Her evidence in support of this is the well-known observation that D-linked wh-phrases are less sensitive to weak islands (e.g. wh-islands) than movement of non D-linked wh-phrases (this claim has also been made for German, see Grewendorf 2012: 58). While this is an intriguing possibility, it is unclear how D-linked phrases could possibily move in 'one fell-swoop' if phases are to be taken seriously. Furthermore, if *how many*-NPs can also count as D-linked (see Cinque 1990: 16) then it is unclear how example (i) in footnote 19 could be derived.

5.   Conclusion

The goal of this paper was to point out a number of problems with the commonly held assumption that wh-copying provides straightforward evidence for successive-cyclic movement. Given the Copy Theory of Movement, it is tempting to immediately conclude from wh-copying that languages are simply pronouncing copies that go otherwise unpronounced, however, we have seen a number of problems with this view that indicate that things are not quite so straightforward. If the CC is derived by extraction from an embedded V2, which seems by far the most (if not only) plausible analysis, then the fact that the subject/auxiliary inversion that we ordinarily find with this kind of extraction is not triggered, is something that requires an explanation. Furthermore, a number of additional asymmetries between the CC and long distance movement have been reported in the literature, however, the need for serious empirical work on this domain becomes apparent due to the multitude of contradictory claims in the literature.

However, one fundamental question has not been addressed in this paper: If the CC is not the overt realization of an intermediate copy in a movement chain, then what is it? The general skepticism in this paper regarding the standard view of wh-copying would seem to be in line with the Indirect Dependency Approach to wh-copying, whereby the intermediate and highest copies do not actually share a 'direct' link (created by movement, for example). While this view is a relatively marginal one in literature on the CC (but see den Dikken 2009, Koster 2009, Schippers 2010, 2012*b*), it is a widely adopted approach for wh-scope marking. The general reluctance to pursue an Indirect Dependency Approach for the CC presumably stems, on the one hand, from the fact that in the CC, unlike in scope marking constructions, the copied elements perfectly match in form (however, there are a numerous arguments for partial copying in Dutch: see Barbiers et al. 2009, Schippers 2010), which has the hallmarks of a direct, movement dependency. Furthermore, it is difficult to pursue the same analysis for wh-scope marking and the CC, as these are known to exhibit a number of crucial differences. As this paper has shown, there are a number of differences between long distance movement and the CC as well, so the task for future research is to identify which of these are non-trivial.

From the point of view of replicative processes, the status of the 'copying' involved in the CC remains an open issue. If our theory of movement gives us copies for free, then the mechanism for replication is already given. However,

we would then expect to find many more examples of replication of this kind. Instead, the CC manifests itself only in a relatively restricted number of contexts and in a surprisingly small number of languages, given the assumption that the Copy Theory of Movement is universal. For this reason, it is desirable to countenance alternative approaches to copying that are not inherently linked to movement (see Müller this volume). In sum, despite being widely cited as evidence for the Copy Theory of Movement, the exact nature of wh-copying still remains one of the many unsolved puzzles in syntax.

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