Chapter 12

The *w*-… *w*-construction: Appositive or scope indicating?

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1 Historical background[*]

In the field of linguistic activities that I have been associated with, the *was-* … *w*-construction was established as a topic of interest through certain bold remarks made by Thilo Tappe during an RDGG meeting[1] in January 1980 (see (16) below). A variant of Tappe's idea became widely known through Riemsdijk's correspondence paper (Riemsdijk 1982). Over the years, informal discussions of the properties of the construction and aspects of its analysis were taken up sporadically, partly during RDGG meetings, partly in personal communications. Luckily,

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[*]The text that follows is a reconstruction of talks held in 1989 and 1990. It closely follows Höhle (1989a), with a few additional observations taken from Höhle (1989b); see the references. (Höhle 1990 was mainly an abridged version of Höhle 1989b.) Sections 8ff. and the notes have been added in February 1996. [A few rough passages have been smoothed down in 1999.] I am grateful to Gereon Müller for encouraging me to orally present major portions of this on December 1, 1995.

[1]For information about the RDGG (Recent Developments in Generative Grammar) interest group, which was founded on the initiative of Jan Koster and Craig Thiersch, see Toman (1985: ix).

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many of the results found their way into *Bausteine* (Stechow & Sternefeld 1988: 354ff., 374f., 384f., 393, 400). Somewhat surprisingly, though, none of these authors felt a need to defend their assumption that *was* is a scope indicator against the traditional assumption that the construction is appositive in nature (see (15)).[2] But at last, this issue came up during a conference in November 1987 when É. Kiss presented her view of a similar construction in Hungarian (see (7) below). Her view met with criticism from more than one side. Some discussants argued for the traditional view, while I tried to argue for Tappe's idea on the basis of the closely related *w*-P ... *w*-P constructions (Section 5). The present article is an attempt to assess the plausibility of each idea.

2 Variant I: *Was ... w*-P – initial observations

Consider the unembedded example (1) and its paraphrases in (2):

(1) Was glaubst du, wer Recht hat?
     what think   you who right has

(2) *Possible paraphrases*:

    a. Wer, glaubst du,   hat Recht?
       who, think   you, has right

    b. Was glaubst du\; wer hat Recht?
       what think   you; who has right

    c. Was glaubst du   hinsichtlich der Frage   / darüber,   wer Recht
       what think   you wrt.   the question   there.about who right
       hat?
       has

    d. Wer glaubst du, daß Recht hat?
       who think   you that right has

Given that the paraphrases differ syntactically, it is natural to ask whether any of them might be structurally related to (1) in some way.

The analysis of (2a) is controversial. It is either a parenthetical construction or an extraction from an embedded F2 clause (i.e., from a clause with a finite verb in second position). On either analysis, there is no similarity to (1).

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[2]To be sure, McDaniel (1986) did provide specific reasons for her analysis, see Section 11. But her work was not generally known here at that time. I came to know it only while preparing for Höhle (1989a), and made no attempt to do justice to its empirical observations and theoretical proposals.

The analysis of (2b), again, is not perfectly clear. But the fall of the intonation after *du* and the position of *hat* between *wer* and *Recht* are best taken as indications that this is a sequence of two complete clauses, none of which is embedded in the other. (1) differs from (2b) in both respects.

In (2c), *was* is clearly a direct object of *glaubst*, and the embedded *wh*-interrogative clause *wer Recht hat* is semantically related to *was*, the relation being mediated by *darüber* or *hinsichtlich der Frage*. One might imagine that the corresponding components of (1) stand in a similar relation. (This is, in essence, the traditional idea expressed below in (15).)

In (2d), *wer* is extracted from the embedded object clause. One might imagine that *was* in (1) functions as something like a place holder for *wer* with the effect that the semantic properties and (part of) the structural properties of (1) are calculated just like they are in (2d). (This was, in essence, Tappe's idea expressed below in (16).)

The construction seen in (1) is further illustrated in (3a)–(3f):

(3) a. Was meint Karl, wen   wir gewählt haben?
         what thinks Karl whom we elected   have

     b. Was nimmt   man an, wie der Prozeß ausgeht?
         what assumes one   how the trial   ends

     c. Was wird   angenommen, wie der Prozeß ausgeht?
         what becomes assumed   how the trial   ends

     d. Was hat sie gesagt, mit wem   er kommen will?
         what has she said   with whom he come   wants

     e. * Was scheint es, wen   Hans geschlagen hat?
           what seems   it whom Hans hit   has
                                                 (McDaniel 1986: 248 (60a))

     f. ? Was scheint dir,   wen   Hans geschlagen hat?
           what seems   to.you whom Hans hit   has

     g. Wen   scheint es, daß Hans geschlagen hat?
         whom seems   it that Hans hit   has

(3c) is a passive construction corresponding to (3b). Hence, if *was* in (3b) is accusative, *was* in (3c) is nominative. In passing, we note that the *was*-construction with *scheint* in (3e) (where *es* is obligatory) is unacceptable, whereas the *was*-construction with *scheint* plus dative in (3f) is much better and the extraction in (3g) is fine (for speakers who do long extractions).

In (4), the *was … w*-P construction is embedded in a matrix that selects inter-rogative clauses:

(4)   Heinz möchte wissen / es ist egal,
      Heinz wants   know   / it is no.difference

     a. … was   du   glaubst, wer Recht hat
         what you think   who right has

     b. … was   Karl meint, wen   wir gewählt haben
         what Karl thinks whom we elected have

     c. … was   man annimmt, wie der Prozeß ausgeht
         what one assumes   how the trial   ends

     d. … was   angenommen wird,   wie der Prozeß ausgeht
         what assumed   becomes how the trial   ends

Clearly, there is no way to assimilate embedded cases like these to the structure of the paraphrases (2a) or (2b).

The construction can also be iterated:

(5)   a.   Was glaubst du, was   Karl meint, wen   wir gewählt haben?
        what think   you what Karl thinks whom we elected have

     b.   Es ist egal,   was   du   glaubst, was   Karl meint, wen   wir
        it is no.difference what you think   what Karl thinks whom we
        gewählt haben
        elected have

     c. % Was glaubst du, daß Karl meint, wen   wir gewählt haben?
        what think   you that Karl thinks whom we elected have

     d. % Es ist egal,   was   du   glaubst, daß Karl meint, wen   wir
        it is no.difference what you think   that Karl thinks whom we
        gewählt haben
        elected have

     e.   Wen   glaubst du, daß Karl meint, daß wir gewählt haben?
        whom think   you that Karl thinks that we elected have

In (5a) and (5b) *was* occurs twice: this is a natural kind of expression for many speakers, in particular for those who do not do long extractions such as (5e). Many speakers who use both long extractions and the *was*-construction reject 'mixed' examples like (5c) and (5d). But there is a minority who find nothing objectionable with them.

Constructions similar to the *was … w*-P construction occur in a number of languages. Thus, the situation in Frisian seems almost identical to German:

(6) a. Wat tinke jo wêr't   Jan wennet?   (Hiemstra 1986: 99 (3c))
         what think you where that Jan resides

     b. Wat tinke jo wa't   my sjoen hat?   (Hiemstra 1986: 99 (2c))
         what think you who that me seen has

Note, though, that the *wh*-phrase in the embedded clause (*wêr't* and *wa't*) is suf-fixed by *'t* ('that'), in accordance with the general rule for embedded *wh*-inter-rogatives in Frisian.

A large group of speakers of Hungarian use a similar construction, sometimes referred to as the '*mit*-strategy':

(7) Mit   gondolsz hogy mit   mondott Vili hogy ki   látta Jánost?
     what you.think that   what said   Vili that who saw Janos
                                        (Mey & Marácz 1986: 263 (30))

Of this example, Kiss said that "according to the native speakers' intuitions, [this] is not a complex sentence but a series of non-embedded questions" (Kiss 1988 [1991]: 212). That is, she suggested for (7) a structure that might be adequate for (2b). But this is incompatible with the complementizer *hogy* ('that') appearing in (7). It shows up before the *wh*-expressions *mit* and *ki* in accordance with the general rule for embedded *wh*-interrogatives in Hungarian. Kiss in fact considers (7) to be marginal, but this judgement is not universally shared; cf. Marácz (1987).[3]

In two major variants of Romani (a Balkan language with Indic substrate), again, a very similar construction exists:

(8) a. So   o Demìri mislinol kas   i Arìfa dikhol?
         what the Demir thinks   whom the Arifa sees
                                        (McDaniel 1986: 111 (31a))

     b. Na janav so   o Demìri mislinol kas   i Arìfa dikhlâ?
         not I.know what the Demir thinks   whom the Arifa saw
                                        (McDaniel 1986: 112 (32b))

3 Characteristics of variant I

From embedded constructions as in (4), (5) and (8b), the position of the finite verb in (1), (3) and (6), *'t* in (6) and *hogy* in (7) we can draw some conclusions:

(9) i. The construction is a complex sentence with a constituent clause em-bedded in a matrix clause.

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[3]See also Marácz (1989: Ch. 7) and Horvath (1995) for ample discussion.

ii. a. The matrix clause is formally and semantically a *wh*-interrogative clause

b. with *was* occupying the position that is characteristic of *wh*-interrogative clauses.

In all cases considered so far, the embedded clause looks like any ordinary embedded *wh*-interrogative clause conforming to the rules of the individual language. This impression is confirmed in (10):

(10) a. Was glaubt sie, auf wessen Hilfe man sich verlassen kann?
          what thinks she on whose help one self rely   can

b. * Was glaubt sie, daß man sich auf wessen Hilfe verlassen kann?
       what thinks she that one self on whose help rely   can

c. * Was glaubt sie, auf wessen Hilfe kann man sich verlassen?
       what thinks she on whose help can   one self rely

d. * Was glaubt sie, auf wessen Hilfe sich verlassen zu können?
       what thinks she on whose help self rely   to can

e. * Was glaubt sie, ob   man sich auf dessen Hilfe verlassen kann?
       what thinks she whether one self on his   help rely   can

(There must be no fall of intonation at the comma.) Although the matrix predicate *glaub-* can combine with *daß* clauses, F2 clauses, and infinitival clauses, (10b)–(10d) are impossible: (10b) has no *wh*-phrase in clause initial position; embedded F2 interrogatives as in (10c) are disallowed in German; and so are infinitival interrogatives as in (10d). (10e) demonstrates that it is not sufficient for the embedded clause to be interrogative: it must be a *wh*-interrogative clause. This is summarized in the third clause of (9):

(9) iii. The constituent clause is formally an indirect *wh*-interrogative clause.

All matrix predicates lexically select a non-interrogative complement clause (in fact, all can combine with a *daß* clause), and many do not even allow for an interrogative complement, (11). Predicates that only select interrogative complements cannot combine with *was*, (12).

(11) a. Karl denkt, daß wir diesen Kandidaten gewählt haben
          Karl thinks that we this   candidate   elected have

b. * Karl denkt, welchen Kandidaten wir gewählt haben
       Karl thinks which   candidate   we elected have

c. Was denkt Karl, welchen Kandidaten wir gewählt haben?
    what thinks Karl which   candidate   we elected have

(12) a. Karl möchte wissen, wen   wir gewählt haben
       Karl wants   know   whom we elected have

    b. * Karl möchte wissen, daß wir sie gewählt haben
        Karl wants   know   that we her elected have

    c. * Was möchte Karl wissen, wen   wir gewählt haben?
        what wants   Karl know   whom we elected have

This is expressed in the fourth clause of (9):

(9) iv. The matrix predicate selects a non-interrogative complement clause.

It is in large part the tension between (9iii) and (9iv) that gives the *was ... w*-P construction its strange appearance.

    There is, however, a further aspect to selection by the matrix. In all cases that I am aware of, the matrix can also combine with a nominal expression (*das, was,* ...) with propositional meaning in place of the constituent clause, as in (13), and it can often have *es* or *das* in combination with the constituent clause, as in (14).[4]

(13) a. Das sagt Hanna
       that says Hanna

    b. Was denkt Hanna?
       what thinks Hanna

(14) a. Das denkt Hanna (nur), daß es dort regnet
       that thinks Hanna (only) that it there rains

    b. Hanna hat es oft   gesagt, daß es dort regnet
       Hanna has it often said   that it there rains

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[4]The constructions seen in (13) and (14) are not confined to matrix predicates that select a *daß* clause:

  (i) Was möchte Karl wissen?
     what wants   Karl know

  (ii) Karl kann das nicht wissen, ob   es dort regnet
     Karl can   that not   know   whether it there rains

  (iii) Karl hat es immer bedauert, mir   vertraut zu haben
      Karl has it always regretted to.me trusted to have

They correlate with the observations on (3e) and (3f):

  (iv) * Was scheint es?
      what seems   it

  (v) ? Was scheint dir?
      what seems   to.you

This observation is expressed in the last clause of (9):

(9)   v.   The matrix predicate can combine with a nominal expression
        a.   in place of a complement clause,
        b.   or in addition to a constituent clause.

(This applies to German. I have not inquired into other languages.) It is the co-existence of (9iv) and (9v) that gives rise to the competition between the analytic ideas that we will now turn to.

4 Analytic ideas

In my experience, everyone who is aware of the properties expressed in (9) but has not investigated the construction in detail is prone to suggest an analysis along the lines of (15). (Thus, I am confident (15) can be considered *the* traditional idea although I am not sure that it can be found anywhere in the traditional literature on German.)

(15)   *Traditional idea: 'appositive'*:
     i.   *Was* is a complement of the matrix predicate.
     ii.   The constituent clause is (not a complement but) something like an apposition elucidating *was*; cf. paraphrase type (2c).

Therefore, Tappe's suggestion (Tappe 1980) was felt to be genuinely intriguing:

(16)   *Tappe, Riemsdijk idea: 'scope indicating'*:
     i.   *Was* is (not a complement but) a 'scope marker' that is 'base-generated' in Comp; it must be coindexed with a *wh*-phrase in the Comp of the constituent clause.[5]
     ii.   The constituent clause is a complement of the matrix predicate; cf. paraphrase type (2d).

Evidently, both ideas raise quite a number of questions. For instance, while (15i) (unlike (16i)) relies on (9v), the notions of 'apposition' and 'elucidation' in (15ii) are in need of clarification.

The construction exemplified in (14) might seem to be an instance of the relation appealed to in (15ii). But this impression is misleading. Occasionally, *es*

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[5] This assumption is of course only applicable to languages that characterize their *wh*-interrogative clauses by some specific 'Comp position'. Thus, it is not evident that it is relevant for Hungarian; cf. (7).

and *das* in (14) are considered to be associated with no semantic content what-soever, so that they do not play any role in the determination of the clause's meaning. If this is true, *was* in (13) and in the *was ... w*-P construction must be something totally different, as it obviously contributes to the meaning of the clause. Alternatively, *es* and *das* in (14) are often considered to be cataphors. That is, they contribute importantly to the determination of the clause's meaning, but identify their content with that of the embedded clause they are cataphorically related to. Again, the same cannot be true for *was* in (1), (3), etc.: (1) does not have the (impossible) meaning '(do) you think who is right' that would result from identifying the content of *was* with that of the constituent clause. Thus, if (9v) is relevant at all, its clause (9va) is, but (9vb) cannot play any role for (15) (or (16)). Put differently, it does not seem possible to understand both *was* and the constituent clause in terms of antecedent analytic experience.

Still, some general account might conceivably be developed that predicts that when a matrix predicate takes *was* as a nominal complement, any clause it combines with must be of a different semantic type than the matrix ordinarily combines with, in accordance with (9iii) and (9iv). In this way, (10a)–(10d) could conceivably be accounted for.[6] But then it seems next to impossible to account for the negative datum (10e).

Also, it is not clear why (5c) and (5d) should not be acceptable to all speakers who accept long extractions, given that (17) would be a possible structure for (5c):

(17)   Was$_i$ [glaubst du [daß Karl t$_i$ meint [wen wir gewählt haben]]]?

In (16i), the very concept of a 'scope marker' is in need of clarification. The scope being indicated is obviously the 'scope' of interrogativity. But it may be more, perhaps including the scope of a *wh*-quantifier and, if so, also the scope of the variable restriction (thus differing from pure markers of interrogativity such as *ka* in Japanese). Also, the coindexation is obviously meant to have similar consequences like coindexation of a long extracted phrase and its trace(s), so that the complement is not evaluated as an interrogative clause, in accordance with (9iv). But how does this come about? And how are (10c) and (10d) accounted for? (Cf. Section 10 on the latter question.)

To appreciate how any reliance on the notion of 'coindexation' can be problematic, we may look at a proposal in Hiemstra (1986: 106). The claim there is that (i) *was* and the embedded clause are coindexed (because they both relate to an object position licensed by the matrix), and (ii) any clause and its head are coindexed. Hiemstra (1986) takes *was* and the *wh*-phrase to be situated in the

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[6]See Dayal (1994) for an explicit analysis of Hindi along these lines.

heads of their clauses and (iii) to be coindexed with the heads. Alternatively, one may take them to be specifiers of C and (iii') to be coindexed with C. In any case, by transitivity of coindexation *was* and the *wh*-phrase end up being coindexed. This seems like a remarkable result: the coindexation appealed to in (16i) is deduced from more general principles, and (15) and (16) are seen to inadequately isolate different aspects of one and the same structural configuration. In fact, however, transitivity of coindexation in Hiemstra (1986) is just a mirage arising from equivocations. There may be a sensible explication for the coindexation in step (i), although this is far from evident in light of our discussion of (9vb). There may also be some explication for the coindexation of a clause and its head in step (ii), although this again is not at all obvious. Spec-head coindexation in step (iii') – or even coindexation in step (iii) of a *wh*-expression and the position it is situated in – might be explicable in its own way. But these three (hypothetical) explications have nothing in common. For example, the embedded *wh*-phrase is definitely not an object of the matrix in the way that *was* or the embedded clause possibly is one; and the coindexation of embedded and matrix clause that results from transitivity makes no sense at all. Hence, this tale about coindexation fails to have the consequence intended by (16i): it does not express any sensible relation between *was* and the *wh*-phrase. It merely serves to obscure distinctions that no analysis can afford to ignore. (Of course, Hiemstra (1986) is not alone in this: abuse of coindexation is ubiquitous in the literature.)

The version of (16i) in Riemsdijk (1982) more articulately asserts that *was* and the *wh*-phrase bear identical 'scope indices', where a scope index "is a property of the *wh*-feature" that is associated with a *wh*-word and percolates to the *wh*-phrase containing that word. Still, the scope index is of the same kind as other indices used in the grammar. Therefore, maleficent interactions with several modules of the grammar must be circumvented by judiciously assigning different percolation mechanisms and well-formedness conditions on coindexation to different levels of representation.

Faced with open questions of all kinds, we turn to observations that might help motivate a choice between (15) and (16).

5 Variant II: *w*-P … *w*-P

Many (but not all)[7] speakers of German use a construction that looks just like the *was … w*-P construction, except that it exhibits a copy of the *wh*-phrase in place of *was*:

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[7]The variation among speakers has no obvious dialectal or regional basis.

(18)　a.　Wer glaubst du, wer Recht hat?
　　　　　who think   you who right has

　　　b.　Wen   meint Karl, wen   wir gewählt haben?
　　　　　whom thinks Karl whom we elected have

　　　c.　Wie nimmt   man an, wie der Prozeß ausgeht?
　　　　　how assumes one   how the trial   ends

　　　d.　Wovon   denkst du, wovon   wir leben?
　　　　　where.of think   you where.of we live

　　　e. * Auf wen   hat sie gesagt, auf wen   er warten soll?
　　　　　on whom has she said   on whom he wait   should

　　　f. ? Wieviel   meint sie, wieviel   das kostet?
　　　　　how-much thinks she how.much that costs

　　　g. ? Wen   scheint es, wen   Hans geschlagen hat?
　　　　　whom seems   it whom Hans hit   has
　　　　　　　　　　　　　　　　　　　(McDaniel 1986: 247 (59a))

It can also be embedded:

(19)　Heinz möchte wissen / es ist egal,
　　　Heinz wants   know   it is no.difference

　　　a.　… wer du glaubst, wer Recht hat
　　　　　who you think   who right has

　　　b.　… wen   Karl meint, wen   wir gewählt haben
　　　　　whom Karl thinks whom we elected have

　　　c.　… wie man annimmt, wie der Prozeß ausgeht
　　　　　how one assumes   how the trial   ends

　　　d.　… wovon   du denkst, wovon   wir leben
　　　　　where.of you think   where.of we live

　　　e. ? … auf wen   sie gesagt hat, auf wen   er warten soll
　　　　　on whom she said   has on whom he wait   should

　　　f.　… wieviel   sie meint, wieviel   das kostet
　　　　　how.much she thinks how.much that costs

To my ear, (19e) and (19f) seem markedly better than (18e) and (18f). Still, there are strong restrictions on the *wh*-phrase to be copied:

(20)   Heinz möchte wissen / es ist egal,
          Heinz wants   know   it is no.difference

    a. * ... welche (Bücher) du   glaubst, welche Bücher sie gerne liest
           which books   you think   which books   she gladly reads

    b. * ... wessen (Hund) du   meinst, wessen Hund das ist
           whose dog   you think whose dog   that is

    c. * ... wen   sie gesagt hat, auf wen   er warten soll
           whom she said   has on whom he wait   should

(20a) and (20b) show that the *wh*-word does not combine with an ordinary noun.[8] (20c) shows that when the embedded *wh*-phrase is a prepositional phrase, the full PP must be copied, as in (19e); just copying its nominal constituent is strictly impossible.

Variant I can be embedded in an exclamative matrix (21), and variant II can, too, at least to some extent (22).

(21) a. Du würdest dich wundern,   was Heinz meint, wieviel   du
         you would   self be.surprised what Heinz thinks how.much you
         verdienst
         earn

    b. Schildern Sie   mal,   was Karl glaubt, wie das
         describe   you.HONOR PRTCL what Karl thinks how that
         funktionieren soll!
         function   should

(22) Du würdest dich wundern,   wie Heinz meint, wie das funktioniert
    you would   self be.surprised how Heinz thinks how that functions

The copying construction is also known from other languages. It is found in Frisian:

(23) a. Wêr   tinke jo   wêr't   Jan wennet?   (Hiemstra 1986: 99 (3b))
         where think you where that Jan resides

    b. Wa   tinke jo   wa't   my sjoen hat?   (Hiemstra 1986: 99 (2b))
         who think you who that me seen has

And in Afrikaans:

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[8]Ellen Brandner told me Josef Bayer told her there are actually speakers who use this kind of example.

(24) a. Waarvoor dink julle waarvoor werk ons?   (Plessis 1977: 725 (8))
         where.for think you where.for work we

      b. Met wie het jy nou weer gesê met wie het Sarie gedog   met
         with who have you now again said with who has Sarie thought with
         wie gaan Jan trou?   (Plessis 1977: 725 (11))
         who goes Jan marry

      c. Waaroor   dink jy waaroor   dink die bure   wat /
         where.about think you where.about think the neighbours what
         waar stry   ons die meeste oor?   (Plessis 1977: 725 (15))
         where argue we the most   about

Note that in Afrikaans, embedded *wh*-interrogatives need not have the independent verb in final position: in informal speech, the second position, as seen in (24), is preferred (Ponelis 1979: 530). Notice also the remarkable case of full PP copying combined with preposition stranding in the lowest clause in (24c).

    One variant of Romani also makes use of the copying construction:

(25) a. Kas   misline   kas   o Demìri dikhlâ? (McDaniel 1986: 182 (126a))
         whom you.think whom the Demir saw

      b. Kas   izglèda kas   o Demìri marja?   (McDaniel 1986: 247 (59b))
         whom it.seems whom the Demir hit

As a rough summary, variant II can be characterized as in (26):

(26) The characteristics of variant II are identical to (9), except for (9iib): there
      is a copy of the *wh*-phrase, rather than *was*. The copy (and hence, the *wh*-
      phrase) must not contain a full noun.[9]

Modifying the aspect of the analysis that is responsible for the form of the initial *wh*-expression takes us from an analysis of variant II to an analysis of variant I (or vice versa). It appears, thus, that analyses of variants I and II must be closely related.

    Obviously, (15) and (16) differ markedly with respect to their ability to accommodate (26). According to (15ii), there is a relation between the initial *wh*-expression and the embedded clause, but no relation between the initial *wh*-expression and the embedded *wh*-phrase. According to (16), the converse is true. But variant II is characterized by a specific relation between the initial *wh*-expression and the

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[9]Considering the observation in McDaniel (1986: 247f.) that (18g) appears to be better than (3e), variant II possibly does not fully comply with (9v).

embedded *wh*-phrase. Hence, the existence of variant II is altogether unexpected upon (15), but seems natural upon (16i).

If the copy in variant II is indeed a 'scope marker' just like *was* in variant I, (20c) shows that Tappe's original version of (16i) is more correct than Riemsdijk's. According to Riemsdijk (1982), the 'scope index' of the PP is identical to the scope index of the nominal embedded in it. Hence, there is no reason why (20c) should be any worse than (19e). But according to Tappe, the initial *wh*-expression is related to the *wh*-phrase itself, as in (19e), rather than to anything embedded in it.

6 *Wh*-phrases in situ

In situ *wh*-phrases provide another opportunity to study the consequences of (15) and (16):

(27)   a.   WAS meint WER, wen   wir gewählt haben?
              what thinks who whom we elected have

                                    (cf. McDaniel 1986: 153, (79b))

             (= WEN   meint WER, daß wir gewählt haben?)
             (= whom thinks who that we elected have)

    b. ?* WER meint WAS, wen   wir gewählt haben?
         who thinks what whom we elected have

Most speakers I have consulted agree that (27a) is fully acceptable or at least possible. This is expected upon (15i). It is compatible with (16i) if *was* does not just indicate the 'scope' of interrogativity but (at least) the scope of a *wh*-quantifier. Most speakers strongly reject (27b). This is totally surprising upon (15i). Upon (16i), (27b) should be absolutely impossible for all speakers. For some, though, the effect is slightly less strong. The same results are found with embedding:

(28)   a.   Es ist egal,   WAS WER meint, wen   wir gewählt haben
              it is no.difference what who thinks whom we elected have

    b. ?* Es ist egal,   WER WAS meint, wen   wir gewählt haben
         it is no.difference who what thinks whom we elected have

Observations on echo questions are similar:

(29)   ?* Karl meint WAS/, wen   wir gewählt haben?
        Karl thinks what whom we elected have

Most speakers strongly reject examples like this, which is surprising upon (15i). And again, some reject (29) less vehemently than (16i) would lead one to expect.

Judgements are sharp with variant II:

(30)   a.   wo   meint WER, wo   das stattfindet?
           where thinks who where that place.takes

   b. * WER meint WO, wo   das stattfindet?
           who thinks where where that place.takes

(31)   a.   Es ist egal,   wo   WER meint, wo   das stattfindet
           it is no.difference where who thinks where that place.takes

   b. * Es ist egal,   WER WO   meint, wo   das stattfindet
           it is no.difference who where thinks where that place.takes

For speakers who actively use variant II, (30a) and (31a) are fine, but (30b) and (31b) are inconceivable (on the intended reading).

7 LF movement?

One way to explicate the notion of a *wh*-scope indicator is to assume 'LF movement' of the *wh*-phrase from the embedded clause to the initial *wh*-expression. There are (at least) two problems with this idea: coordination and matrix negation.

Consider (32a) and (32b):

(32)   Es ist egal,
       it is no.difference

   a.   ... ob   sie kommt und wen   sie mitbringt
           whether she comes and whom she with.brings

   b. * ... was er meint, ob   sie kommt und wen   sie mitbringt
           what he thinks whether she comes and whom she with.brings

   c.   ... was er meint, wann sie kommt und wen   sie mitbringt
           what he thinks when she comes and whom she with.brings

Although a *whether* clause and a *wh*-clause can in general be conjoined, as in (32a), they cannot in the *w- ... w*-construction (32b). This is just what we would expect on the evidence of (10e). And expectedly, two *wh*-clauses can be conjoined, as in (32c). But what would the result of LF movement look like in this case? Both *wann* and *wen* would have to move to the position of *was* – how are they situated

to one another at LF?[10] Even if one might prefer to leave this question to a general theory of coordination, it is of no use to ignore it for long.

As for negation in the matrix, consider first the examples in (33): a *was … w*-P construction in (33a), a long extraction in (33b), a sequence of unembedded clauses (just like (2b)) in (33c), and a complex construction like (2c) in (33d).

(33) a. Was meint jeder,   wen   Hanna mitbringt?
          what thinks everybody whom Hanna with.brings

      b. Wen   meint jeder,   daß Hanna mitbringt?
          whom thinks everybody that Hanna with.brings

      c. Was meint jeder\;   wen   bringt Hanna mit?
          what thinks everybody whom brings Hanna with

      d. Was meint jeder   hinsichtlich der Frage,   wen   Hanna
          what thinks everybody wrt.   the question whom Hanna
          mitbringt?
          with.brings

None of these examples is problematic.[11] But when *everybody* is replaced by *nobody*, results are very different, as Kiss (1988 [1991]: 214) was the first to observe (for Hungarian):

(34) a. *Was meint keiner, wen   Hanna mitbringt?
           what thinks nobody whom Hanna with.brings

      b. Wen   meint keiner, daß Hanna mitbringt?
           whom thinks nobody that Hanna with.brings

      c. *Was meint keiner\; wen   bringt Hanna mit?
           what thinks nobody whom brings Hanna with

      d. Was meint keiner hinsichtlich der Frage,   wen   Hanna
           what thinks nobody wrt.   the question whom Hanna
           mitbringt?
           with.brings

---

[10]And in terms of (16i): what would it mean for *was* to be 'coindexed' with both *wann* and *wen*?

[11]Also, the bound reading of the pronoun in (i) is fully acceptable to many speakers, pace Dayal (1994: 152 (21b)):

(i) Was glaubt [jeder Student]$_i$, mit   wem   er$_i$ gesprochen hat?
      what thinks every student$_i$ with whom he$_i$ spoken   has

The extraction in (34b) is possible (if somewhat marginal) for speakers who do long extractions. In contrast, (34a) is definitely bad (or impossible, for some speakers). Notice also that (34d), which is supposed to be semantically similar to the analysis of (34a) upon (15ii), is possible (in certain contexts). This appears to indicate that (15) will not provide a plausible account for (34a). But LF movement in accordance with (16i) does not seem to provide a plausible account either, for why should it be blocked in (34a) while S-structure movement is possible in (34b)?

8 Interpretational dependencies

Originally, the notion of 'LF movement' was motivated by the observation that certain interpretational dependencies seem to comply with restrictions that overt (S-structural) movement is subject to. Viewed from this perspective, (34b) is a genuine problem for an LF movement account of (34a). Still, there is a similar blocking effect induced by negation in (35c), pointed out to me by Jürgen Pafel (p.c.) in spring 1989:

(35) a. [Was für Bücher] hat niemand gelesen?
           what for books   has nobody   read

      b. [Was] hat Karla [für Bücher] gelesen?
           what has Karla for books   read

      c. * [Was] hat niemand [für Bücher] gelesen?
           what has nobody   for books   read

In general, *was* can be detached from an NP of the form *was für NP*, as in (35b). But when negation intervenes between the preposed part *was* and the remnant *für NP*, as in (35c), the result is bad. Similar observations hold for in situ *wh*-phrases as in (36):

(36) a. Es ist egal,   WEM   Karla WEN vorgestellt hat
           it is no.difference to.whom Karla whom introduced has

      b. Es ist egal,   WER WEN   niemals betrogen hat
           it is no.difference who whom never   deceived has

      c. * Es ist egal,   WEM   niemand WEN   vorgestellt hat
           it is no.difference to.whom nobody   whom introduced has

      d. * Es ist egal,   WER niemals WEN   betrogen hat
           it is no.difference who never   whom deceived has

Thus, (34a) seems to fall into a pattern such that at S-structure negation must not intervene beween some interpretationally dependent expression – the *wh*-phrase in (34a), the remnant in (35c), the in situ *wh*-phrase in (36) – and the position it is dependent on. For thorough empirical and theoretical discussion see Beck (1993) and Beck (1996), where a non-traditional notion of 'LF (movement)' is motivated.[12] In broader empirical context, then, (16i) actually appears to receive support from (34a).

9 Exclamatives

In (21) and (22), partly repeated in (38) below, we have seen that the *w- … w-*construction can be embedded in an exclamative matrix. This merits closer inspection.[13]

For present purposes, I consider a predicate to be 'exclamative' if it (i) combines with clauses that look like *wh*-interrogative clauses but (ii) does not (on the same reading) combine with *whether* clauses and (iii) allows the *wh*-clause to be introduced by certain *wh*-phrases that do not occur in bona fide interrogative clauses.[14] The predicates *wunder-* ('be surprised') and *schilder-* ('describe') are exclamative in this sense. Only *wunder-* is illustrated in (37); but note that exclamative predicates need not in general be 'emotive' in any obvious sense.

(37)   a.   Sie wundert   sich, wieviel   du verdienst
            she is.surprised self   how.much you earn

       b. * Sie wundert   sich, ob   du viel verdienst
            she is.surprised self   whether you much earn

       c.   Sie wundert   sich, [was   für riesige Füße] er hat
            she is.surprised self   what for huge   feet   he has

       d.   Sie wundert   sich, [wie erfolglos]   er ist
            she is.surprised self   how unsuccessful he is

       e.   Sie wundert   sich, [welches Behagen] sie empfindet
            she is.surprised self   which   comfort she senses

---

[12]Contrary to Beck (1996: 48), but in accordance with Beck (1993: 11), I consider it highly probable that at least *für* in (35b,c) must be relevantly related to *was*, since *was für* is something like an idiom.

[13]I am grateful to Franz d'Avis for useful conversation on this topic.

[14]Thus, it is the similarity in German of exclamative and interrogative predicates with respect to their complements that gives rise to our discussion. Note this is not universal: Irish, e.g., does not have it, according to McCloskey (1979: 99).

f. Sie wundert sich, [wie (sehr / wenig)] sich die Stadt verändert
hat
she is.surprised self how (very / little) self the city changed
has

g. Sie wundert sich, was er manchmal schnarcht
she is.surprised self what he sometimes snores

wh-phrases like those in (37c-g) are impossible (or, at least, infelicitous) in true interrogatives; I will call them 'exclamative *wh*-phrases'. The special properties of exclamative *wh*-phrases cannot in general be traced to lexical properties of some *wh*-word. Thus, *was für* in (37c), *wie* in (37d), and *welch-* in (37e) seem to be just the same as in ordinary *wh*-interrogative phrases. In these cases, the exclamative quality of the phrases apparently derives compositionally from the combination with the other constituents in the *wh*-phrase. (But adverbial (or ad-adverbial) *wie* in (37f) and *was* in (37g), both meaning 'how much', seem to be confined to exclamatives.) Absence of *whether* clauses, as in (37b), is a necessary but not sufficient condition. There are some classes of predicates such as *aufzähl-* ('enumerate') that take bona fide *wh*-interrogative clauses but no *whether* clauses; see Schwarz (1994) for thorough discussion. Thus, the correct generalization appears to be: if a predicate takes a clause with an exclamative *wh*-phrase, it also takes a clause with an ordinary *wh*-phrase, but does not (on the same reading) take a *whether* clause.

Some examples with the *was ... w*-P construction appear in (38):

(38) a. Du würdest dich wundern, was Heinz meint, wieviel du
verdienst
you would self be.surprised what Heinz thinks how.much you
earn   = (21a)

b. Schildern Sie mal, was Heinz glaubt, wie das
funktionieren soll!
describe you.HONOR PRTCL what Heinz thinks how that
function should   = (21b)

c. Sie findet es schrecklich, was Heinz sagt, wer alles gekommen ist
she finds it awful what Heinz says who all come is

d. Er begreift jetzt, was sie denkt, was für Nägel wir brauchen
he grasps now what she thinks what for nails we need

But examples degrade significantly when the *wh*-phrase is an exclamative *wh*-phrase:

(39) a. Sie wundert sich, (?*was er meint) wie sehr sich die Stadt
          she is.surprised self (what he thinks) how very self the city
          verändert hat
          changed   has

      b. Schildern Sie   mal, (??was   Heinz sagt) welches Behagen er
          describe you.HONOR PRTCL (what Heinz says) which   comfort he
          empfindet!
          senses

      c. Sie findet es schrecklich, (?*was er glaubt) was sie manchmal
          she finds it awful   (what he thinks) what she sometimes
          schnarcht
          snores

      d. Er begreift jetzt, (?*was sie denkt) was für winzige Nägel wir
          he grasps   now (what she thinks) what for tiny   nails we
          brauchen
          need

On a first look, the material in parentheses may be felt to be anything between
mildly disturbing and thoroughly confusing. The longer the examples are looked
at, the more judgements appear to converge towards outright rejection. As can
be expected upon this observation, unembedded counterparts are nothing better,
be they interrogative (40) or exclamative (41):[15]

(40) a. ?* Was meint er, wie sehr sich die Stadt verändert hat?
              what thinks he how very self the city   changed   has

      b. ?? Was sagt Heinz, welches Behagen er empfindet?
              what says Heinz which   comfort he senses

      c. ?* Was glaubt er, was sie manchmal schnarcht?
              what thinks he what she sometimes snores

      d. ?* Was denkt sie, was für winzige Nägel wir brauchen?
              what thinks she what for tiny   nails we need

---

[15] There is one exception:

(i)   was DENKST du   / MEINEN Sie   / GLAUBT ihr,   was der manchmal
      what think   you.SG think you.HONOR think you.PL what he sometimes
      schnarcht!
      snores

This unembedded exclamative *was … w*-P construction is extremely restricted along several
dimensions. Only verba sentiendi are possible matrix predicates (no verba dicendi); only func-
tionally second persons appear as their subjects; the verb must appear in second position, even
though usually the final position as in (41) is possible or even preferred; and the meaning is
not compositional: the matrix translates as 'you cannot imagine …'.

(41) a. (?*Was er meint) wie sehr sich die Stadt verändert hat!
      (what he thinks) how very self the city   changed   has

   b. (??Was Heinz sagt) welches Behagen er empfindet!
      (what Heinz says) which   comfort he senses

   c. (?*Was er glaubt) was sie manchmal schnarcht!
      (what he thinks) what she sometimes snores

   d. (?*Was sie denkt) was für winzige Nägel wir brauchen!
      (what she thinks) what for tiny   nails   we need

As surprising as these observations are, they seem to demonstrate that (16i), as opposed to (15ii), is correct in that they seem to reveal a specific dependency between *was* and the *wh*-phrase in the embedded clause.

However, this impression might be deceptive. I assume all *wh*-clauses receive a Hamblin style interpretation. The *wh*-phrase denotes a set of contextually salient entities (of suitable semantic type), call this the W-Set. Correspondingly, the *wh*-clause denotes a set of propositions, call this the C-Set. The cardinality of the C-Set depends on the cardinality of the W-Set. Interrogative and exclamative predicates exert different conditions on the C-Set. The essence of interrogativity is that there is a possible choice between different members of (the W-Set, hence) the C-Set. It appears that ordinary *wh*-phrases invariably are associated with a non-trivial W-Set, that is, a set with more than one member. (Hence, the C-Set of any *wh*-clause they occur in has more than one member.) But exclamative predicates are not concerned with the possibility of choice. Rather, they induce a (speaker's) presupposition that some member(s) of the C-Set be true. Exclamative *wh*-phrases, in turn, appear to always denote a singleton set; and I suggest that is why they do not occur with an interrogative matrix. This may be illustrated with a predicate such as *tell* that can be exclamative, interrogative or declarative:

(42) a. She did not tell me what fool had called her.

   b. She did not tell me whether this fool or that fool or … had called her.

   c. There is/are some x, x a fool, such that she did not tell me that x had called her.

   d. She did not tell me what a fool had called her.

   e. She did not tell me that such a fool had called her.

   f. There is a certain extraordinary amount *a* such that she did not tell me that some person who is a fool to degree *a* had called her.

Here, (42a) is ambiguous between an interrogative reading, which can be paraphrased by (42b), and an exclamative reading, which can be paraphrased by (42c). But (42d) with the exclamative *wh*-phrase *what a fool* can only be paraphrased

by (42e). The message in (42d) is not that there are several fools such that one (or more) of them has called her, but that some person who called her is a terrible fool. Thus, a slightly more articulate paraphrase may look like (42f).

If considerations along these lines are correct, it may be possible to explain (39)–(41) upon (15ii), i.e., by relying on a relation between *was* and the embedded clause, rather than its *wh*-phrase. In any case, the initial *wh*-expression in a *w-* … *w*-construction must have properties of an ordinary *wh*-phrase in that it induces a non-trivial W-Set whose cardinality is incompatible with that of (the exclamative *wh*-phrase in) the embedded clause. This is natural upon (15i). Upon (16i), it seems unexpected for a 'scope marker' to have a property like this.

10 On (9iii)

According to (16ii), the embedded clause is a complement of the matrix. (16i) is intended to imply that, semantically, it cannot be an interrogative clause. How, then, can the empirical generalization (9iii) follow from (16)? Specifically, the question is how to account for (10c) and (10d), repeated below.

From Section 8 we know that an in situ *wh*-phrase in a multiple interrogation structure is subject to similar restrictions as the *w-* … *w*-construction; cf. (36). Now observe in situ *wh*-phrases in embedded F2 clauses:

(43) a. Es ist egal,   WER der   Meinung war, dort hätte WER
          it is no.difference who of.the opinion   was there had   who
          gewohnt
          resided

      b. *Es ist egal,   WER der   Meinung war, WER hätte dort
          it is no.difference who of.the opinion   was who had   there
          gewohnt
          resided

Even though (43a) is not a model of beauty, relating the embedded postverbal *wer* to the matrix *wer* is possible. The same is strictly impossible with *wer* in (43b). Thus, the preverbal position in an embedded F2 clause, which can be considered a 'Comp position' in the sense of (16i), cannot be related to a *wh*-phrase in the matrix Comp. This fact may be sufficient to account for (44) (= (10c)):

(44)   *Was glaubt sie, auf wessen Hilfe kann man sich verlassen?
         what thinks she on whose help can   one self rely

From (16)'s perspective, the problem with (45) (= (10d)) is very different:

(45)   * Was glaubt sie, auf wessen Hilfe sich verlassen zu können?
        what thinks she on whose help self rely   to can

There are relative clauses such as (46a) that involve an initial infinitival clause, and some speakers accept similar *wh*-interrogative clauses (46b); cf. Trissler (1991).

(46)   a. (Das ist ein Umstand)   [[den$_i$ [t$_i$ zu berücksichtigen]] man
            (that is a circumstance) which   to heed   one
            nicht vergessen sollte]
            not   forget   should

        b. (Sie wollte wissen) [[[welchen Umstand]$_i$ [t$_i$ zu
            (she wanted know)   which   circumstance   to
            berücksichtigen]] man nicht vergessen sollte]
            heed   one not forget   should

Infinitival clauses like these are peculiar in that they are pied-piped relative or *wh*-interrogative phrases. That is, the '*wh*-feature' that originates from the relative/interrogative word contained in their Comp position cannot rest in that Comp but percolates up to the infinitival clause. For some reason, infinitival clauses in German never tolerate a relative/interrogative phrase in their Comp. That is, the phrases *welchen Umstand* in (46b) and *auf wessen Hilfe* in (45) are not *wh*-phrases in the technical sense; only their mother constituents are. Hence, the infinitival clause in (45) does not have a *wh*-phrase in its Comp, thus violating (16i).

11 Relative clause constructions

McDaniel reports on Romani relative clause constructions (47) that are remarkably similar to interrogative *w-* … *w*-constructions. She even found a speaker of German who accepted the construction in (48) (cf. McDaniel 1986: 189, note 8).[16]

(47)   a. Ake o ćhavo so   mislinav kas   i Arìfa dikhlâ
            here the boy   what/that I.think   whom the Arifa saw
                                                (McDaniel 1986: 113 (33a))

        b. Ake o ćhavo so   mislinav so   o Demìri mangol
            here the boy   what/that I.think   that/what the Demir wants
            kaça   te khelâv   (McDaniel 1986: 135 (59a))
            with.whom to I.dance

---

[16]McDaniel documents and discusses some further kinds of 'partial *wh*-movement' in Romani and in variants of German that I have no independent information about; see McDaniel (1986) and McDaniel (1989). According to McDaniel et al. (1995), approximately the same range of constructions can be found in child English.

(48) % Das ist der Junge, mit   dem   ich glaube, mit   dem   Hans spricht
         that is the boy   with whom I   believe with whom Hans speaks
                                                      (McDaniel 1986: 182 (125b))

Certain relative clause constructions in Irish evidence the same structural properties:

(49) (an doras) aL   mheasann sibh [aN   bhfuil an eochair ann]
         the door C_{gap} think   you C_{pron} is   the key   in.it
                                                      (McCloskey 1979: 19 (49))

The particle *aN* introduces clauses containing a resumptive pronoun; thus, the clause in brackets could be used as a so-called 'indirect' relative clause by itself. The particle *aL* usually introduces clauses containing a gap/trace (in various extraction constructions, e.g. in 'direct' relative clauses). Cf. also McCloskey (1979: 44; 168). But evidently, there is no NP or PP gap: the matrix predicate (*think*) does not combine with a non-propositional complement NP/PP that could serve as a trace related to the antecedent NP in (49). Exactly the same consideration applies to (47) and (48). Hence, the traditional idea (15) is unable to accommodate constructions like these.

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