Towards an analysis of the adverbial use of German interrogative was (‘what’)

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Abstract

The paper discusses the so-called adverbial use of the *wh*-pronoun *was* (‘what’), which establishes a non-standard interrogative construction type in German. It argues that the adverbial use of *was* (‘what’) is based on the lexical properties of a categorically deficient pronoun *was* (‘what’), which bears a causal meaning. In addition, adverbial *was* (‘what’) differs from canonical argument *was* (‘what’) as it is analyzed as a functor which is generated in clause-initial position.

By means of empirical facts mainly provided by d’Avis (2001) it is shown that *was* (‘what’) behaves ambivalently regarding the *wh*-property: On the one hand, *was* (‘what’) can introduce an interrogative clause, but on the other hand it cannot license *wh*-phrases in situ. While formally analyzing the data against the background of existing accounts on *wh*-interrogatives couched in the framework of Head-driven Phrase Structure Grammar, an analysis is developed that separates two pieces of information to keep track of the *wh*-information percolating in an interrogative clause. Whereas the WH-value models *wh*-fronting and pied-piping phenomena, the QUE value links syntactic and semantic information and thus keeps track of *wh*-in-situ phrases.

1 Introduction

Interrogative constructions always have been of great interest to linguists, and thus, it is not surprising that the analysis of *wh*-interrogatives also gained a lot of attention in the framework of Head-driven Phrase Structure Grammar (HPSG). There exists by now a significant amount of HPSGian work on *wh*-interrogatives dealing with relevant syntactic and semantic phenomena such as *wh*-fronting, *wh*-embedding, and *wh*-scope assignment.

With Ginzburg and Sag (2000), who provided a comprehensive account of a wide range of interrogative constructions in English, the core problems concerning the analysis of *wh*-interrogatives in a constraint-based framework seemed to be tackled. Nevertheless, some central issues are still open and worth to be discussed. van Eynde (2004), for instance, has shown that Ginzburg and Sags’ treatment of pied piping as a non-local dependency faces a number of problems. He therefore proposes to restrict the percolation of the *wh*-property within a *wh*-interrogative phrase by treating pied piping locally. In this article I will contribute another fact to the discussion that suggests a revision of the bookkeeping mechanism of the *wh*-property percolating within a *wh*-interrogative clause. By analyzing the German non-standard adverbial *was*-construction I will argue that there exist deficient *wh*-phrases whose behaviour necessitates in a constraint-based grammar a separated representation of information on syntactic *wh*-fronting on the one hand and information on the realization of *wh*-in-situ phrases on the other hand.

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The adverbial was-construction under discussion is empirically well-known from German grammar writing, and has been grammatically described thoroughly by d’Avis (2001), who couched his analysis in the framework of Government and Binding. An example of the considered construction is given in (1), which is taken from d’Avis (2001).

(1) Was schlägst du denn schon wieder den Hund?

What beats you PART PART again the dog

‘Why are you beating the dog again?’

The adverbial was-construction is peculiar mainly because it is introduced by a wh-phrase was (‘what’) which does not function as a subject or object phrase. Instead, was (‘what’) is used similar to an adverbial phrase bearing the meaning of why. Thus, the non-standard wh-construction in (1) has a causal interrogative meaning although it contains no overt wh-phrase canonically possessing a causal lexical meaning.

In this article I will argue by means of empirical data basically provided by d’Avis (2001) that the adverbial use of the wh-phrase was (‘what’) follows from a categorial deficiency of the pronominal element was (‘what’). In addition, I will formally analyze the data against the background of existing HPSG accounts on wh-interrogatives, thereby showing that none of the previous proposals couched in HPSGian theoretical terms is sufficient to account for the deficiency of adverbial was (‘what’) and the respective German non-standard wh-interrogative construction type.

The article is structured as follows. Firstly, I will introduce the empirical properties of adverbial was (‘what’) and the corresponding non-standard wh-interrogative construction. Secondly, I will briefly present recent HPSG approaches to wh-interrogatives, and I will show that all of them are not appropriate to deal with wh-clauses introduced by adverbial was (‘what’). Thirdly, I will provide evidence that adverbial was (‘what’) behaves like a categorically deficient pronoun (cf. Cardinaletti and Starke (1999); Abeillé and Godard (2003)), and I will finally develop a new analysis covering the presented empirical facts, thereby arguing that an adequate account of non-standard uses of was (‘what’) requires a better differentiation between syntactic wh-fronting on the one hand and handling wh-in situ on the other hand.

2 Empirical facts

The non-canonical adverbial was-construction exemplified by (1) is distinguished by two obvious properties: (i) The wh-pronoun was (‘what’) heads a wh-phrase that has to be realized in clause-initial position, and (ii) was (‘what’) bears the meaning of why instead of the meaning of what and is, thus, used like a causal adverb. The things are even worse: Although was (‘what’) contributes a causal meaning, it does not behave like a standard interrogative adverb either. Thus, an obvious analysis
that treats was (‘what’) as a semantically ambiguous pronoun simply having two different lexical meanings cannot cope with the empirical facts, which I will present next in more detail.

2.1 Empirical properties of the German adverbial was-construction

As d’Avis (2001) observed, the non-standard was (‘what’) differs from an ordinary wh-word in several aspects, particularly with respect to coordination, extraction, and wh-in situ phenomena.

First of all, adverbial was (‘what’) contrasts to any standard wh-phrase as it cannot be realized in situ. As example (2a) illustrates, adverbial was (‘what’) is restricted to a clause-initial position (the so-called Vorfeld). Contrary to this, warum (‘why’) can be used in situ without any problems as (2b) demonstrates.

(2) a. * Wann trifft sich Maria was mit ihrem Exmann?
   when meet REFL Maria what with her divorcé
   ‘When does Maria meet her divorcé for which reason?’

In addition, adverbial was (‘what’) cannot be realized in reprise questions, although standard wh-phrases such as warum (‘why’) are completely fine in such a context. This is illustrated by (3b) versus (3c).

(3) a. Hans will sich scheiden lassen, weil seine Frau zu viel arbeitet.
   Hans wants REFL divorce let because his wife too much works.
   Hans wants to divorce because his wife works too much.’

b. * Hans will sich WAS scheiden lassen?
   Hans wants REFL what divorce let
   ‘Hans wants to divorce WHY?’

c. Hans will sich WARUM scheiden lassen?
   Hans wants REFL why divorce let
   ‘Hans wants to divorce WHY?’

The reverse side of the just mentioned properties of adverbial was (‘what’) seems to be that was (‘what’), contrary to warum (‘why’), cannot license another wh-phrase in situ. Whereas the multiple wh-question in (4a) is completely out, the one in (4b) is perfect.

(4) a. * Was spielt sich wer denn so auf?
   what act REFL who PART that way up
   ‘Why does who act that way up?’

b. Warum spielt sich wer denn so auf?
   why act REFL who PART that way up
   ‘Why does who act that way up?’
Furthermore, (5) demonstrates that adverbial was (‘what’) cannot be extracted out of a complement clause although warum (‘why’) allows this extraction (at least in some dialects of German).

(5) a. * Was glaubst du, dass Otto den Hund t geschlagen hat?  
   *What believe you that Otto the dog t beaten has*  
   ‘Why do you believe that Otto has beaten the dog?’

b. Warum glaubst du, dass Otto den Hund t geschlagen hat?  
   *Why believe you that Otto the dog t beaten has*  
   ‘Why do you believe that Otto has beaten the dog?’

In addition, the contrast in (6) indicates that adverbial was (‘what’) cannot be coordinated with another standard wh-phrase. This is a fact that one would not expect if adverbial was (‘what’) were a canonical wh-interrogative expression.

(6) a. * Wann und was will sich Maria scheiden lassen?  
   *When and what wants REFL Maria divorce let*  
   ‘When and why wants Maria to divorce?’

b. Wann und warum will Maria sich scheiden lassen?  
   *When and why wants Maria REFL divorce let*  
   ‘When and why wants Maria to divorce?’

Last but not least, adverbial was (‘what’) cannot bear a focus accent. As the contrast in (7a) versus (7b) exemplifies, this is again in contrast to canonical adverbial wh-phrases like warum (‘why’).

(7) a. * Ich möchte wissen, WAS Maria sich scheiden lassen will und  
   *I want to know what Maria REFL divorce let wants and*  
   *not when*  
   ‘I want to know why Maria wants to divorce and not when.’

b. Ich möchte wissen, WARUM Maria sich scheiden lassen will  
   *I want to know why Maria REFL divorce let wants*  
   *and not when*  
   ‘I want to know why Maria wants to divorce and not when.’

In the light of these facts one could wonder whether the adverbial was-construction is a wh-interrogative construction at all. But evidence for its interrogativity comes from data like (8) and (9).

(8) indicates that adverbial was-constructions are not limited to root clauses, but can be combined with question embedding predicates such as wonder and want to know, which means that the adverbial was-construction can be used as an indirect question.

(8) Ich möchte wissen, was Maria den Hund wieder schlägt.  
   *I want to know what Maria the dog again beats*  
   ‘I want to know why Maria is beating the dog again.’
In addition, example (9) demonstrates that the German equivalents to expressions like the hell, on earth or the devil, whose occurrence is clearly restricted to interrogative phrases, can be added to adverbial was.

(9) Was zum Teufel schlägst du schon wieder den Hund?

‘Why the devil are you beating the dog again?’

Thus, there seems to be no doubt that adverbial was (‘what’) introduces a wh-interrogative clause with a question meaning. On the other hand, it is obvious that this construction at least syntactically does not behave like a standard wh-interrogative clause. This raises the question of how we can account for this non-canonical behaviour of the adverbial was-construction and which consequences for a HPSGian treatment of wh-interrogative clauses in general result from this.

2.2 The adverbial was-construction is not restricted to German

Note that the adverbial was-construction is by no means an idiosyncratic German construction. For instance Nakao and Obata (2009) discuss accusative wh-adjuncts with reason meaning in Japanese. Interestingly enough, the data they provide for Japanese match the German facts. Nani-o in example (10) behaves, in grammatical terms, exactly like German was (‘what’) as it is an accusative wh-adjunct with reason meaning.

(10) a. Kare-wa nani-o sawai-dei-ru no?

‘Why is he making a noise?’

b. Kare-wa naze sawai-deu-ru no?

‘Why is he making a noise?’

In addition, as M. Desmets and A. Rosen (p.c.) pointed out, the same construction type can be observed in French and Czech. Since the adverbial use of interrogative what is not confined to German, an adequate analysis in constraint-based grammar seems to be required. However, having a closer look at existing HPSGian approaches to wh-interrogatives, none of them seems to be appropriate to capture the peculiarities of the adverbial was-construction. Two major reasons are responsible for this result: Firstly, in all previous accounts it is assumed that basically any wh-phrase can be realized in-situ, and secondly there is no device that allows a fronted wh-phrase to have access to the information whether an in-situ wh-phrase is present or not. Consequently, the grammar overgenerates because there is no way to exclude the ungrammatical examples in (2a) and (4a). The problem arises since in all accounts two structural aspects of interrogative clauses, i.e. (i) the topicalization of a single wh-phrase on the one hand, and (ii) the handling of wh-phrases in-situ on the other hand, are somehow mixed up by using just one
single feature value to keep track of the syntactic *wh*-information. I will briefly elaborate on this issue in the next section.

### 3 Relevant HPSG approaches to *wh*-interrogatives

It is well-known that the nonlocal feature QUE is usually exploited to represent the *wh*-property. This idea goes back to Pollard and Sag’s standard HPSGian analysis of *wh*-interrogatives. QUE, whose value represents a restricted index of type *npro*, is lexically instantiated for all *wh*-words. Subject to the Non-local Feature Principle, the value of the QUE feature percolates in a phrase until bound. In this setup, QUE instantiation and percolation ensures that a *wh*-interrogative clause contains exactly one fronted *wh*-phrase. At the same time, QUE is used to determine the semantic scope of a *wh*-phrase by binding the QUE value at an appropriate constituent. Consequently, the information that a clause contains a *wh*-in-situ phrase is accessible only indirectly.

In their approach to *wh*-scope assignment, Pollard and Yoo (1998) also use the QUE feature to handle *wh*-fronting, pied piping and the licensing of *wh*-in-situ phrases. They, however, suggest that each *wh*-word introduces a quantifier that is represented as a value of QUE, which is a synsem feature in their account. In fact, an interrogative operator associated with a *wh*-phrase is stored twice: as value of the QUE feature and as value of the QSTORE feature of the *wh*-phrase. This is depicted in figure 1 showing the partial lexical entry for the *wh*-word *who* according to Pollard and Yoo (1998).

![Figure 1: Partial lexical entry for a *wh*-word according to Pollard and Yoo (1998)](image)

In addition, Pollard and Yoo (1998) implement a Cooper storage mechanism in order to determine the scope of a *wh*-quantifier. They formulate a syntactic licensing constraint on *wh*-retrieval that firstly says that the retrieval of quantifiers introduced by *wh*-in-situ phrases is only allowed if there is a left peripheral *wh*-phrase whose quantifier is simultaneously retrieved, and secondly that any non-empty QUE value of a filler daughter must be retrieved. This constraint thus syntactically cues the point where interrogative meaning is retrieved.
Similar to Pollard and Sags’ approach, Pollard and Yoo (1998) cannot account for the ungrammaticality of (2a) and (4a), where was (‘what’) is realized in situ as the information of the realization of a wh-in-situ phrase cannot be accessed by the left-peripheral wh-filler-phrase. The syntactic licensing constraint on wh-retrieval that they formulate only implements the retrieval of quantifiers introduced by wh-in-situ phrases in dependence of a simultaneously retrieved left peripheral wh-phrase. Nothing is said concerning the relation between a retrieved non-empty QUE value of a filler daughter and a potential wh-in-situ phrase. The information that a wh-in-situ-phrase might exist could only be derived from the QUANTS-list, but this list cannot be accessed by the fronted wh-phrase.

In the construction-based account proposed by Ginzburg and Sag (2000)—an elaborated version of Ginzburg (1992)—the analysis is based on a multi-inheritance hierarchy of sorts with associated sort constraints. Inspired by situation semantics, Ginzburg and Sag (2000) hold the view that questions are basic semantic entities such as individuals and propositions. Grammar objects of sort question are distinguished from any other entity in terms of a feature called PARAMS, whose set value must always be non-empty for wh-questions. Syntactically, Ginzburg and Sag (2000) basically follow Pollard and Sag (1994) by arguing for a non-local head-driven treatment of wh-interrogatives. The wh-property is represented by a set-valued WH feature. Wh-words bear an optional WH specification such that the WH value of an interrogative word can either be a singleton set containing a parameter or an empty set as is illustrated in figure 2. This assumption is necessary to syntactically handle in-situ wh-words without violating the WH constraint saying that all non-initial arguments of a lexeme must be specified as [WH { }]. In addition, the Filler Inclusion Constraint, which requires that the non-head daughter of a clause of sort wh-interrogative-clause must be WH-specified, ensures that each interrogative clause is introduced by an expression that is or contains an interrogative wh-word. In this setting, the fact that a clause contains a wh-phrase in situ is only inferable from a non-singleton PARAMS value of the clause. The non-head daughter of a wh-interrogative, however, has no access to this information. Again, the ungrammaticality of (2a) and (4a) cannot be captured. An alternative analysis whereupon the PARAMS value of adverbial was (‘what’) is generally stipulated to be lexically empty is not viable either because such an approach results in a
semantic interpretation for the *was*-construction which equates the interpretation of polar questions, which is certainly not eligible. Also, the STORE value cannot be exploited to restrict adverbial *was* (‘what’) to an initial position and to prevent any other *wh*-phrase from occurring in-situ because firstly an empty STORE at clause-level is a requirement that is valid for all independent clauses including all clauses of sort *wh*-interrogative-clause, and is thus no specific requirement for adverbial *was*-constructions. Secondly, it is not obvious how the STORE value of the clause’s head-daughter shall be restricted by the non-head daughter, especially considering the fact that non-*wh*-quantifiers might be regularly stored as well.

van Eynde (2004) enhances Ginzburg and Sags’ account by proposing a local functor-driven treatment of the *wh*-property. The gist of his proposal is that all categories are either functors or heads, and functors select their head sisters via a head feature SELECT. In addition, he redefines objects of sort *category* as he introduces a MARKING feature having the values *marked* or *unmarked*. The fundamental architecture of this account is depicted in figure 3.

![Figure 3: Redefinition of objects of type category according to van Eynde (2004)](image)

The MARKING value propagates from the functor daughter to the mother in head-functor phrases, or otherwise from the head daughter. For our purposes van Eynde’s definition of the WH feature is interesting: He redefines it as a boolean feature having the values *positive* or *negative* and being appropriate for objects of type *marking*. He further stipulates that all words are negatively marked for WH in the lexicon, except for the *wh*-words, which remain lexically underspecified as is shown in figure 4.

![Figure 4: Partial lexical entry for a *wh*-word according to van Eynde (2004)](image)

Since van Eynde adapts Ginzburg and Sags’ Filler Inclusion Constraint by requiring that the non-head daughter of a *wh*-interrogative clause must be a sign with a positive WH value, underspecified *wh*-words are compatible with the Filler Inclusion Constraint. If a *wh*-phrase occurs in a left-peripheral position its WH value
is positively specified. If a wh-phrase is used in situ, its WH value is negatively instantiated. This, however, leads to the result that wh-in-situ phrases are in terms of their WH specification not distinguishable from any other non-wh-phrase, which means again, that the examples in (2a) and (4a) cannot be excluded, and the grammar overgenerates.

The problem for all existing approaches to wh-interrogatives seems to be that they are all based on the assumption that any wh-phrase can in principle be fronted or realized in-situ. If we look at the adverbial was-construction, this assumption, however, seems to be wrong. Although adverbial was (‘what’) can mark a clause as wh-interrogative and functions in this respect as a normal wh-phrase, it is at the same time deficient in that it can neither be placed in-situ nor license another wh-phrase within the clause. In addition, it cannot be extracted and not be coordinated with an ordinary wh-phrase.

To account for these facts, I propose an analysis of the adverbial was-construction that is based on the following fundamental assumptions:

- There exist two wh-words was (‘what’) in the lexicon: a standard wh-pronoun that behaves like a typical argument wh-phrase, and a categorically deficient pronoun with adverbial function.
- The peculiarities of the adverbial was-construction follow from the deficiency of was (‘what’).
- Adverbial was (‘what’) is distinguished from canonical argument was (‘what’) as it is not analyzed as a filler-phrase, but acts as a functor in the sense of van Eynde (2004), and is thus restricted to a left-peripheral position.
- Two separate syntactic features, both representing wh-information, are exploited: one to treat wh-fronting and to handle pied piping; the other one to keep track of wh-in-situ phrases.

Before I develop this analysis in more detail, I will show next that adverbial was (‘what’) indeed behaves like a deficient pronoun, thereby presuming a theory that divides pronouns in different classes depending on their syntactic weight.

### 4 Adverbial was (‘what’) as a deficient pronoun

Research on the Germanic pronominal system goes back as far as to Koster (1978). In the course of this research it has been shown that pronouns are not homogeneous at all, but differ distributionally, prosodically, morphologically, syntactically and semantically.

It has been claimed that there exist pronouns with a special syntax in Germanic languages, which makes it necessary to distinguish them from standard pronouns which were called ‘strong pronouns’. For instance, the 3rd person neuter pronoun
es (‘it’) was taken as a typical example of such a non-canonical pronoun that grammatically differs from typical strong pronouns in German.

Furthermore, the thorough comparison of Germanic pronouns with the set of pronouns in Romance languages has led to the assumption that there are universal pronominal categories. Cardinaletti and Starke (1999) for instance develop an analysis of the languages’ pronominal systems in terms of a three way distinction between ‘strong’, ‘weak’ and ‘clitic pronouns’. They literally point out that the differences between these pronominal categories should be accounted for by a theory of featural deficiency. In addition, Cardinaletti and Starke (1999) claim that there is a ranking in deficiency between these subclasses: clitic pronouns are more deficient with respect to weak pronouns, which are in turn more deficient with respect to strong pronouns. Although the pronominal system of Germanic languages differs from the one of Romance languages in that the morphology of Germanic pronouns is often opaque, there seems to be evidence that a three-way split is indeed justified for Germanic. Haegemann (1999) for instance has demonstrated that the three classes are instantiated in the object pronominal system of West Flemish.

Although Cardinaletti and Starkes’ proposal has been criticized in several aspects (cf. van Riemsdijk (1999), as far as I know no-one has challenged the principle idea of a tripartite classification of pronouns so far. An even more fine-grained distinction between strong and weak categories has been proposed for instance by Abeillé and Godard (2003). In order to account for French adverbs they introduce a fourth category called ‘light’. Since the argumentation here focuses on the fact that adverbial was (‘what’) is deficient or weak in comparison to canonical wh-words such as argument was (‘what’), which generally behaves like a strong element, nothing specific of the proposed analysis here hinges on the question of which of the by now proposed classifications according to the weight of a syntactic category is the more adequate one. The crucial claim made here is that adverbial was (‘what’) is peculiar in that it is not a strong, but a deficient wh-word belonging to the class of pronouns.

Evidence for this assumption can be derived from the following properties of adverbial was (‘what’) which correspond to the criteria that Cardinaletti and Starke (1999) and others generally apply to deficient pronouns.

(i) A deficient pronoun must occur at surface structure in a special derived position, which means that it cannot be found in a base position. This clearly applies to adverbial was (‘what’) as the contrast between (3b) and (3c) illustrates. If we compare adverbial was (‘what’) to the wh-expression warum (‘why’), only warum (‘why’) can be positioned in the so-called German Mittelfeld, whereas was (‘what’) is restricted to a clause-initial position.

(ii) The contrast between (3b) and (3c) also supports a second general difference that Cardinaletti and Starke (1999) identified between strong and deficient pronouns as being a matter of distributional asymmetry: Compared to a strong pronoun, a deficient pronoun has an impoverished distribution. If
one compares adverbial was (‘what’) with a strong *wh*-word such as warum (‘why’) the same distributional result is achieved.

(iii) A deficient pronoun is incompatible with coordination. The contrast (5a) vs. (5b) clearly demonstrates that this restriction applies to adverbial was (‘what’).

(iv) Contrary to a strong pronoun, a deficient pronoun is incompatible with modification. The following contrasts support the assumption that was (‘what’) behaves similarly.

(11) a. *Was genau schlägst du denn schon wieder den Hund?

*what exactly beat you PART PART again the dog

b. Warum genau schlägst du denn schon wieder den Hund?

*why exactly beat you PART PART again the dog

‘Why exactly are you beating the dog again?’

(v) Deficient elements mostly occur unstressed, which is true for adverbial was (‘what’) if we take into account that was (‘what’) cannot bear a focus accent.

(vi) There is a semantic asymmetry between deficient and strong pronouns. Deficient pronouns are incapable of bearing their own range-restriction. The causal interpretation of adverbial was (‘what’) seems to be possible just because was (‘what’) is semantically underspecified. Therefore it is not surprising that there exists another non-canonical use of was (‘what’) which may occur in exclamative constructions like (12) (cf. d’Avis (2001)).

(12) Was DER seinen Hund schlägt!

*what he his dog beats

‘How (much) he beats his dog!’

In this case, was (‘what’) specifies a degree instead of a reason as was (‘what’) bears the meaning of wie sehr (‘how’/‘how much’).

Taking these facts into account, it suggests itself to assume that adverbial was (‘what’) belongs to the class of deficient pronouns. Such an analysis seems to be superior to a conceivable alternative approach whereupon adverbial was (‘what’) is analyzed as a deviant *wh*-complementizer similar to how come in English as one of the reviewers proposed. Let me briefly motivate my view.

First of all, a pronominal status of adverbial was (‘what’) allows to put it in a row with interrogative, relative and indefinite was (‘what’) being homophonous to adverbial was (‘what’) and doubtlessly belonging to the class of pronouns, cf. Gallmann (1997).

Secondly, adverbial was (‘what’) does not behave like typical complementizers in German in two respects. One concerns the position of the finite verb. German as
A verb second language possesses complementizers that—apart from few known exceptions—either select verbal phrases with the finite verb in final position or with the finite verb in second position. Adverbial *was* (‘what’), however, may occur with both, verb final and verb initial clauses. In the latter case, *was* (‘what’) even occupies the so-called Vorfeld-position, which is usually not adequate for complementizers. Thus, in this respect *was* (‘what’) has nothing in common with an ordinary complementizer.

There is a third reason that militates against a complementizer analysis: The meaning of adverbial *was* (‘what’) as a potential complementizer would depend on its syntactic context. This results from a comparison of the data in (12) and (13).

(13)  *Was* der seinen Hund schlägt?
      *what* *he* *his* *dog* *beats*

‘Why does he beat his dog?’

*Was* (‘what’) would function as a causal interrogative complementizer in case of (13), but as a modal exclamative complementizer in case of (12). An analysis that describes the meaning of a complementizer against the meaning of the constituent it combines with, however, is implausible if one considers that the meaning of a complementizer is normally lexically determined.

Last but not least, the fact in (9) is difficult to bring in line with a complementizer analysis. Modifiers like *zum Teufel* (‘the devil’) only adjoin to a WH-specified lexical item. Complementizers, however, are generally not WH-specified.

Taking these arguments into account it seems to be more fruitful to assume that adverbial *was* (‘what’) is a clause-initial *wh*-pronoun and not a complementizer as *how come* in English.

In the next section, an analysis of the causal *was*-construction is developed that adequately captures the presented facts.

5 **An alternative approach**

The fundamental ideas of the proposed analysis are (i) that adverbial *was* (‘what’) is forced to a clause-initial position and (ii) that two separate mechanisms keep track of the *wh*-property in a clausal phrase structure. Firstly, van Eynde’s boolean *WH* feature is used to ensure that at least one *wh*-phrase is fronted in a *wh*-interrogative clause. And secondly, the *QUE* feature as defined by Pollard and Yoo (1998) is exploited to license *wh*-in-situ phrases. In the following, I want to explain this approach in more detail.

To simplify matters I first extent the inventory of head values by differentiating the value *p-nouns* including all pronouns into *strong-p-noun*, *weak-p-noun* and *clitic* as is depicted in figure 5. Accordingly, adverbial *was* (‘what’) bears a HEAD value *weak-p-noun*. Assuming that the HEAD value of argument *was* (‘what’) is specified as *strong-p-noun* it is easy to explain why the coordination in example (6a) is ungrammatical. A categorial mismatch between weak and strong pronouns
is responsible for the fact that adverbial was (‘what’) cannot be coordinated with a canonical wh-interrogative pronoun. Moreover, the aforementioned non-canonical prosodic properties of adverbial was (‘what’), i.e. that adverbial was (‘what’) neither can be stressed nor focalized follow from the fact that adverbial was (‘what’) is analyzed as a deficient pronoun of type weak-p-noun.

I further assume that the adverbial was-construction establishes a new interrogative construction type called wh-functor-interrogative-clause which inherits from both interrogative-clause and head-functor-phrase as is given in figure 6.

Adopting the feature architecture of van Eynde (2004) and in particular his functor treatment according to which functors are defined as signs which select their head sister, the WH feature is associated with the MARKING value as depicted in figure 7. The percolation of the WH value is constrained by van Eynde’s

\[
\text{cat} \\
\text{MARKING} | \text{WH} | \text{wh}
\]

Figure 7: WH defined as a feature of type marking

Generalized Marking Principle saying that the MARKING value is propagated from the functor daughter if present or from the head daughter otherwise as can be seen in figure 8.

I further assume that a clause of type wh-fun-int-cl, which is the clause type used to describe adverbial was-constructions, is characterized by a functor daughter...
which belongs to the class of weak pronouns and whose WH value is positively specified. This restriction is formulated by the constraint given in figure 9.

\[
wh-fun-int-cl \Rightarrow \begin{cases} 
\text{DTRS} \left( \begin{array}{c}
\text{SYNSEM} \\
\text{MARKING}
\end{array} \right) \\
\left( \begin{array}{c}
\text{LOC} \\
\text{CAT}
\end{array} \right) \\
\text{HEAD} \\
\text{SELECT}
\end{cases}
\]

Figure 9: Restrictions concerning the functor daughter of the new interrogative construction type for adverbial *was*-construction

Contrary to any other *wh*-word adverbial *was* (*what*) is lexically treated as a deficient pronoun that bears a positively specified WH value. This follows from the lexical specification for *was* (*what*), which is depicted in figure 10. Differing from adverbial *was* (*what*), canonical *wh*-words such as argument *was* (*what*) or adverbial *warum* (*why*) are stipulated to remain lexically unspecified with respect to the WH value.

It follows from the assumptions regarding adverbial *was* (*what*) that it may introduce a *wh*-interrogative clause since (i) it is compatible with the aforementioned constraint on objects of type *wh-fun-int-cl*, and (ii) it satisfies van Eynde’s Filler Inclusion Constraint (under the tacit assumption that this constraint has been extended to be applicable to clauses of type *wh-fun-int-cl*). The requirement of the Filler Inclusion Constraint that any fronted *wh*-phrase is specified as WH positive is lexically fulfilled in the case of adverbial *was* (*what*). On the other hand, it is guaranteed that adverbial *was* (*what*) cannot be placed in situ because in-situ phrases must bear a negatively specified WH value, which is only realizable for *wh*-words whose WH value is lexically unspecified.

The treatment of adverbial *was* (*what*) as a functor in the sense of van Eynde (2004) allows adverbial *was* (*what*) to have access to its sister constituent which
is the head daughter of a clause of type \textit{wh-fun-int-cl}. Again, this is captured in the lexicon. As figure 11 demonstrates, adverbial was (‘what’) selects a syntactically saturated and negatively WH specified sentential head daughter. Thus, it is impossible that a \textit{wh}-in-situ phrase is realized at the same time. The functor treatment also allows to explain the extraction facts since functors resist extraction.

![Figure 11: Partial lexical entry for adverbial was (‘what’), part II](image)

However, one major problem of the previous accounts has not been solved, yet. If a \textit{wh}-interrogative clause is introduced by adverbial was (‘what’), so far nothing prevents any other \textit{wh}-phrase to occur in situ, which contradicts the data in (4a). To account for the fact that adverbial was (‘what’) — contrary to argument was — does not license a \textit{wh}-in-situ phrase, I suggest to employ the QUE value defined with Pollard and Yoo (1998) as a \textit{synsem} feature. I assume that adverbial was (‘what’) is a functor that differs from any other \textit{wh}-phrase in the requirement that it selects a saturated VP whose QUE value is instantiated by the empty set and thus may not contain a \textit{wh}-element. Adverbial was (‘what’) itself has a filled QUE set which contains, depending on the theoretical setting, either a \textit{wh}-quantifier or a restricted index in case it is stated that \textit{wh}-words intrinsically lack a quantificational force. The partial lexical entry of adverbial was (‘what’) amended with this information is depicted in figure 12 on the next page.

Figure 13 on next page gives an example analysis: Was (‘what’) is analyzed as a deficient pronoun of type \textit{weak-p-noun} lexically marked as WH \textit{positive}. It introduces into the QSTORE a quantifier with a causal meaning. This quantifier is retrieved at the mother, which results in a question meaning of the whole construction. The verbal head daughter is specified as WH negative and has an empty QUE-value due to the selection properties of the functor daughter realized by was (‘what’).

6 Conclusion

I hope to have shown that the adverbial use of the \textit{wh}-expression was (‘what’) establishes a new interrogative construction type which is based on the lexical prop-

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Figure 12: Partial lexical entry for adverbial was ('what'), part III

Figure 13: Example analysis for example (1)
erties of a categorically deficient pronoun was (‘what’) that bears a causal meaning. By means of empirical facts on prosody, coordination, extraction, and wh-in-situ phenomena, I have argued that was (‘what’) behaves ambivalently regarding the wh-property: On the one hand, was (‘what’) may introduce a wh-interrogative clause, but on the other hand it neither can occur in situ nor can it license ordinary wh-in-situ phrases. This behaviour clearly contrasts to canonical wh-phrases.

To account for the presented facts, I have proposed an analysis that treats adverbial was (‘what’) as a functor selecting its head daughter. It follows from this analysis that adverbial was (‘what’) is forced to a clause-initial position. I have further argued that a proper analysis of the was-construction type necessitates a separation of two pieces of wh-information propagating in a wh-interrogative clause. I have suggested to exploit the marking feature WH for the modeling of wh-fronting and pied-piping phenomena, and the local feature QUE for the linking of syntactic and semantic information in such a way that it is possible to keep track of wh-in-situ phrases.

In this article I focussed on genuine grammatical aspects of the adverbial was-construction. Therefore, I had nothing to say about the peculiar pragmatic conditions that are related to the adverbial use of was (‘what’). In particular, the construction seems to have some special speaker’s inferences and might be related to the speaker’s illocutionary force. I leave this issue open for future research.

References


