

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
- b. Wann trifft sich Maria *warum* mit ihrem Exmann?
when meet REFL Maria why 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
Hans wants REFL divorce let because his wife too much
arbeitet.
works
 Hans wants to divorce because his wife works too much.'
- b. * Hans will sich **WAS** scheiden lassen?
Hans wants REFL what divorce let
- 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
- 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
- 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
- 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
 nicht wann.
not when
- b. Ich möchte wissen, WARUM Maria sich scheiden lassen will
I want to know why Maria REFL divorce let wants
 und nicht wann.
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 beats you REFL again the dog
 ‘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?
he-TOP what-ACC make-noise-PROG-PRES Q
 ‘Why is he making a noise?’
 b. Kare-wa naze sawai-deu-ru no?
he-TOP why make-noise-PROG-PRES Q
 ‘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 Sags' 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).

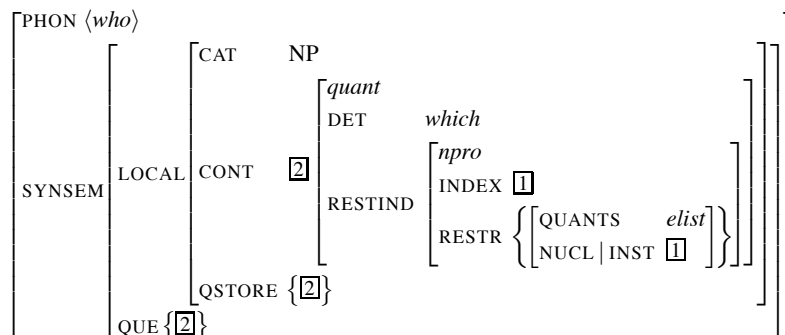


Figure 1: Partial lexical entry for a *wh*-word according to Pollard and Yoo (1998)

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

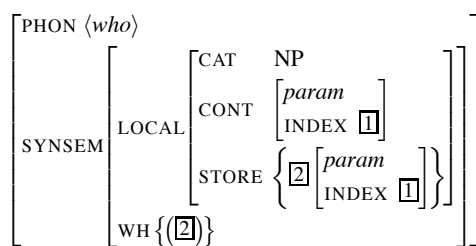


Figure 2: Partial lexical entry for a *wh*-word according to Ginzburg and Sag (2000)

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.

$$\left[\begin{array}{l} \textit{cat} \\ \text{HEAD} \quad \left[\begin{array}{l} \textit{part-of-speech} \\ \text{SELECT canon-ss} \vee \textit{none} \end{array} \right] \\ \text{MARKING} \quad \textit{marking} \\ \text{SUBJ} \quad \textit{list}(\textit{synsem}) \\ \text{COMPS} \quad \textit{list}(\textit{synsem}) \end{array} \right]$$

Figure 3: Redefinition of objects of type *category* according to van Eynde (2004)

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.

$$\left[\begin{array}{l} \text{PHON } \langle \textit{who} \rangle \\ \text{SYNSEM} \mid \text{LOCAL} \left[\begin{array}{l} \text{CAT} \quad \text{NP} \left[\begin{array}{l} \text{MARKING} \left[\begin{array}{l} \textit{marked} \end{array} \right] \\ \text{WH } \alpha \end{array} \right] \\ \text{CONT } \textit{parameter} \end{array} \right] \end{array} \right] \end{array} \right]$$

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

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 Starke's 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 explicate this approach in more detail.

To simplify matters I first extend 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*.

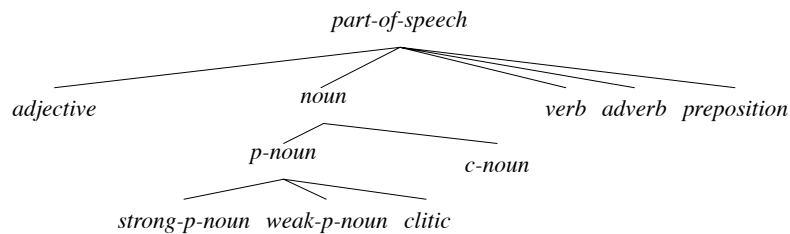


Figure 5: Partition of type *part-of-speech*

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.

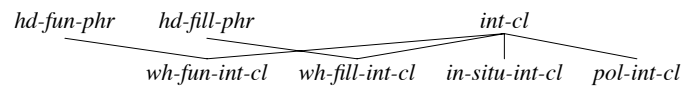


Figure 6: New interrogative construction type for adverbial *was*-construction

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

$$\left[\begin{array}{l} \text{cat} \\ \text{MARKING} | \text{WH } \textit{wh} \end{array} \right]$$

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

$$\left[\begin{array}{l} \textit{hd-fun-ph} \\ \text{SYNSEM | LOC | CAT | MARKING } \boxed{1} \textit{ marking} \\ \text{DTRS } \langle \left[\text{SYNSEM | LOC | CAT } \left[\begin{array}{l} \text{HEAD | SELECT } \boxed{2} \\ \text{MARKING } \boxed{1} \end{array} \right] \right], \boxed{3} \rangle \\ \text{HEAD-DTR } \boxed{3} \left[\text{SYNSEM } \boxed{2} \textit{ synsem} \right] \end{array} \right]$$

Figure 8: Generalized Marking Principle following van Eynde (2004)

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.

$$\textit{wh-fun-int-cl} \Rightarrow \left[\begin{array}{l} \text{DTRS } \langle \left[\text{SYNSEM | LOC | CAT } \left[\begin{array}{l} \text{HEAD } \textit{ weak-p-noun} \\ \text{MARKING | WH } \textit{ positive} \end{array} \right] \right], \boxed{1} \rangle \\ \text{HEAD-DTR } \boxed{1} \end{array} \right]$$

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

$$\left[\begin{array}{l} \textit{word} \\ \text{PHON } \langle \textit{was} \rangle \\ \text{SS | LOC | CAT } \left[\begin{array}{l} \text{HEAD } \textit{ weak-p-noun} \\ \text{MARKING | WH } \textit{ positive} \end{array} \right] \end{array} \right]$$

Figure 10: Partial lexical entry for adverbial *was* (‘what’), part I

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 *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 *wh*-in-situ phrase is realized at the same time. The functor treatment also allows to explain the extraction facts since functors resist extraction.

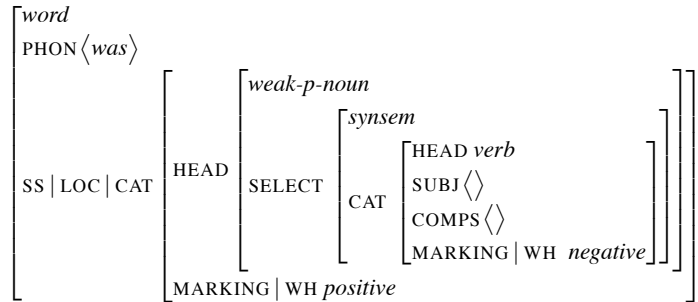


Figure 11: Partial lexical entry for adverbial *was* ('what'), part II

However, one major problem of the previous accounts has not been solved, yet. If a *wh*-interrogative clause is introduced by adverbial *was* ('what'), so far nothing prevents any other *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 *wh*-in-situ phrase, I suggest to employ the QUE value defined with Pollard and Yoo (1998) as a *synsem* feature. I assume that adverbial *was* ('what') is a functor that differs from any other *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 *wh*-element. Adverbial *was* ('what') itself has a filled QUE set which contains, depending on the theoretical setting, either a *wh*-quantifier or a restricted index in case it is stated that *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 *weak-p-noun* lexically marked as WH *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 *wh*-expression *was* ('what') establishes a new interrogative construction type which is based on the lexical prop-

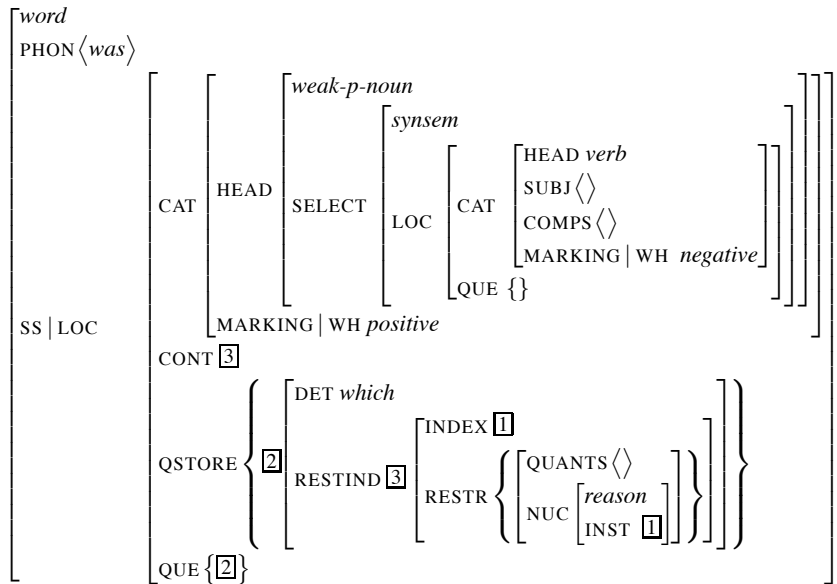


Figure 12: Partial lexical entry for adverbial *was* ('what'), part III

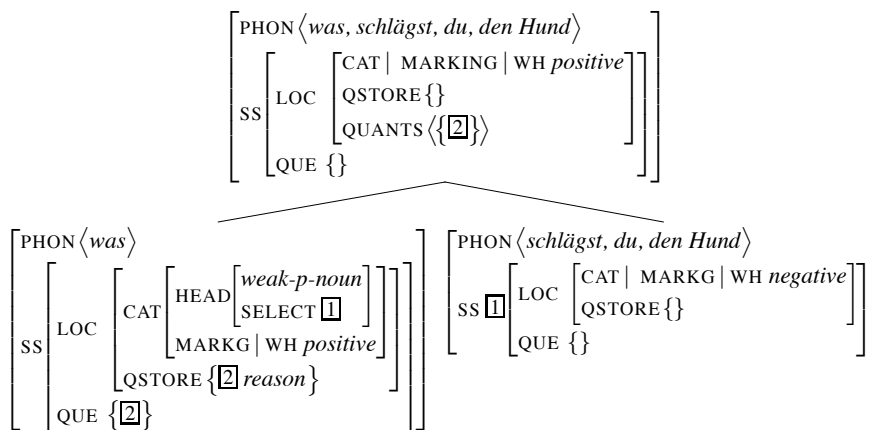


Figure 13: Example analysis for example (1)

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.

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