

A CASE OF WAS-W IN HESSIAN: NEW EVIDENCE AGAINST SCOPE-MARKING

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1.0 INTRODUCTION

This study investigates the was-w construction in the German dialect Hessian (HE). It builds on previous research done on was-w constructions in High German by Kathol (1999) and Hinrichs and Nakazawa (2000) in the framework of Head-driven Phrase Structure Grammar (HPSG).

Extractions out of embedded clauses occur frequently in High German (HG). The example in (1) shows the contrast between a declarative sentence and a sentence with the extraction of the object-PP (*mit jemand* - Engl.: 'with someone') of the embedded clause. The purpose of the extraction is to form a question asking for the object, as in (1 c). To ask for the object, the object-PP is substituted with the corresponding wh-expression (*mit wem* - 'with who'). (1 b) shows the non-wh question with the statement of (1 a) as the embedded clause. (1 c) is the extraction construction, i.e. the matrix question contains the wh-extraction from the embedded clause.

- (1) a. *statement*
Jakob hat mit jemand geredet.
Jakob has with someone talked
"Jakob has talked to someone."
- b. *question with embedded clause*
Glaubst du [dass Jakob mit jemand geredet hat]?
believe you that Jakob with someone talked has
"Do you believe that Jakob has talked to someone?"
- c. *matrix question which includes extraction out of embedded clause*
Mit wem glaubst du [dass Jakob geredet hat]? (Kathol 1999: 357)
with who believe you that Jakob talked has
"Who do you believe Jakob talked to?"

However, German speakers give preference to (2) over (1c). In (2) the wh-phrase *mit wem* is only fronted within the embedded clause, with the accompanying interrogative pronoun *was* ('what') in the immediately superordinate clause. Hence, (2) is an instance of was-w.

- (2) Was glaubst du [mit wem Jakob geredet hat]? (Kathol 1999: 358)
what believe you with who Jakob talked has
"Who do you think Jakob talked with?"

The construction in (2) is often referred to as *partial wh-movement* as the *mit wem* is moved to the front in the form of *was*, while at the same time also remaining at its original position. The interrogative pronoun *was* functions like a "dummy" wh-word and in the partial extraction can stand for any other wh-expression, such as *wem* ('who'-DAT), *wen* ('who(m)'-ACC), *wer* ('who'-NOM), *wie* ('how'), *wo* ('where'), *wann* ('when'), *was* ('what'), *wieso/weshalb/warum* ('why'). Hence, the term was-w refers to a question construction in which an embedded wh-expression (Kathol 1999) or the whole interrogative phrase (Hinrichs and Nakazawa (H&N) 2000) is partially extracted to the front of the matrix question in the form of *was*.

This study shows that HE allows was-w constructions to be licensed by the predicate *wisse* ('to know'), which, according to H&N, HG does not. Furthermore, it shows that it is not just the embedded wh-expression but the entire interrogative phrase that is partially extracted to the front, thus providing further evidence against a scope-marking approach and supporting H&N's indirect analysis.

In §2 the paper presents the HE data, which is discussed in §3 in light of Kathol's scope-marking analysis. Evidence against a scope-marking approach leads to an H&N-based indirect analysis of the data in §4. In §5 I summarize the main findings of this paper.

2.0 WAS-W IN HESSIAN

Hessian is the name of a variety of the Franconian dialects spoken in the German state of Hessen but also in the area of Rheinhessen, which formerly belonged to Hessen but after 1945 was amalgamated with other lands to form the new state of Rheinland Pfalz.

In HE, as in HG, *wh*-expressions (underlined) occur in non-embedded questions (3a), embedded questions (3b), and embedded interrogative clauses (3c).

(3) a. *non-embedded question*

Wo mache mer hie? (Uderzo 1999: 7)
 where make we to
 "Where do we go?"

b. *embedded question*

Koennte Sie uns vielleicht sage, wo mer was zum anziehe fuer den Klaane da
 could you us maybe tell where we what to wear for the little-one there
 finne koenne? (Uderzo 1999: 22)
 find can
 "Could you maybe tell us where we can find something to wear for the little one?"

c. *embedded interrogative clause*

...un wisse gar net, wo es hingehet. (Uderzo 1999: 7)
 and know totally not where it go-there does
 "...and don't even know where we are heading to."

HE also allows *was-w* constructions, like the one in (4c) which is based on (4b). The question in (4b) is related to the corresponding statement in (4a), in which the becoming of the wine is indicated as *guud* ('good'). To form a question out of (4a), the adverb *guud* is replaced by the *wh*-word for manner, *wie*, which is fronted. To retain verb-second structure, the auxiliary verb *duht* ('does') is fronted to the position behind *wie*.

(4) a. *statement*

Der Wein, der neue, duht sich guud arte.
 the wine the new-one does itself good grow
 "The new wine is coming along well."

b. *non-embedded question*

Wie duht sich der Wein, der neue, arte?
 how does itself the wine the new-one grow
 "How is the new wine coming?"

c. *was-w*

Was kammer wisse, wie der Wein, der neue, sich duht arte? (Witte 1974: 119)
 what can-we know how the wine the new-one itself does grow
 "Can we know how the new wine will become?" (implying that we cannot)

It is difficult to translate the sentence in (4c) into English, because its meaning is not really a question but a statement: 'We cannot know how the new wine will become.' The surface structure of the sentence is a question, but a question that implies that there is no answer, therefore expressing the impossibility of knowing the future.

This sentence is grammatical in HE. However, a similar construction in HG is ungrammatical, as (5) shows.

- (5) * Was hat Hans gewusst, wer kommen soll. (H&N 2000: 152)
 what has Hans known who come should
 "Could Hans have known who should come?"

Hence, the verb *wisse(n)*¹ ('to know') behaves differently in HE and HG with respect to licensing *was-w*. High German does not allow the interpretation of the sentence as a statement of impossibility. Rather, the mismatch between the predicate that requires something to be known and the fact that this something is asked for, and therefore not known, makes the sentence ungrammatical.

How the grammaticality of the HE sentence in (4c) can be accounted for is shown in the remaining parts of this paper. The analysis of this HE *was-w* sentence as a scope-marking construction is problematic as the following section shows. However, HE *was-w* also challenges the indirect analysis, in which certain classes of predicates license *was-w* constructions, but *wissen* is not included in these classes.

3.0 WAS-W AS SCOPE-MARKING

According to Kathol (1999), it is only the *wh*-expression of the embedded interrogative clause that is partially extracted to the matrix question, such as *wer* ('who') in (6b). In comparison, (6a) shows a full extraction.

- (6) a. *full extraction*
Wer denkst du hat das getrunken?
 who think you has that drunk
 "Who do you think drank that?"
- b. *was-w*
Was denkst du wer das getrunken hat?
 what think you who that drunk has
 "Who do you think drank that?"

Kathol calls these constructions (*wh*) scope-marking constructions, since the *was*-element is viewed as a scope marker. The *was* indicates the syntactic domain that receives a question interpretation in the semantics, i.e. it flags everything that follows as part of the question. Hence, Kathol assumes that the semantic interpretations of both sentences in (6) are identical. However, the same is not true for the HE *was-w* data, which is listed again in (7b). In comparison, (7a) shows the corresponding full extraction of the *wh*-expression *wie*.

- (7) a. *full extraction*
Wie kammer wisse, dass der Wein, der neue, sich duht arte?
 how can-we know that the wine the new-one itself does grow
 "How can we know that the new wine will come along?"
- b. *was-w*
 Was kammer wisse, wie der Wein, der neue, sich duht arte? (Witte 1974: 119)
 what can-we know how the wine the new-one itself does grow
 "Can we know how the new wine will become?" (implying that we cannot)

The meaning of the two sentences is quite different. In (7a), *wie* refers to the knowing but not the growing, i.e. asking 'how can you know this,' while in (7b) *wie* only has scope over the growing (scope is indicated by underlining). Therefore, unlike the sentences in (6), the sentences in (7) do not result in the same semantic interpretation. This provides evidence against a scope-marking analysis of *was-w* in HE, as *was* is not a copy of *wie* but rather stands for the answer of the embedded question. *Was kammer wisse* asks IF we know the answer to the embedded question that *was* stands for but does not ask for the answer itself.

Similar evidence against the scope-marking idea comes from Dayal (1996) and (H&N 2000). Dayal also argues that the *was* of the *was-w* construction is associated not just with the embedded *wh*-word (*wen*) but with the embedded clause as a whole. The HG data in (8) illustrates this point. In (8a) to (8c) the underlined phrase is the

¹ In HE, many infinitive verb forms drop the verb-final "n" that is so characteristic for infinitive verb forms in HG. Thus, HG *wissen* becomes HE *wisse*.

object of *behauptet* ('claimed'), but in (8c) the underlined phrase is the object of *wissen/gewusst* ('to know/known') as well.

- (8) a. *statement*
 Er hat es *behauptet*, ohne es wirklich zu wissen.
 he has it claimed without it really to know
 "He has claimed it without really knowing it."

b. *was-w with 'behaupten'*
Was hat er *behauptet*, wen sie liebt?
 what has he claimed who she loves
 "Who did he claim that she loves?"

c. *was-w with 'behaupten' and 'wissen'*
Was hat er, ohne wirklich zu *wissen*, *behauptet*, wen sie liebt? (Dayal 1996)
 what has he without really to know claimed who she loves
 "Who did he claim that she loves without him really knowing it?"

The interesting thing about (8c) is that both *behauptet* and *wissen* take the same complement *was*. While it can be assumed that in (8b) *was* stands for the loved one, i.e. the person *wen*, the same cannot be said about (8c), since *wissen* cannot take a direct object that refers to a person. Hence, *was* stands not just for the wh-word *wen* but for the whole argument *wen sie liebt*. This speaks against the idea of *was* as partial extraction of *wen* with scope-marking function. H&N bring forth further evidence, which is provided in (9) (H&N 2000: 150).

- (9) a. Was Hans sagt, wen er verdaechtigt, das habe ich ueberprueft.
 b. Was Hans sagt, wen er verdaechtigt, *den habe ich ueberprueft.
 what Hans says who he suspects (a) that/(b) him have I evaluated
 "I evaluated what Hans says about the person whom he suspects."

In (9a), *was* stands for *das*, which stands for the whole argument *wen er verdaechtigt*. In (9b), *was* stands for *den*, which refers to *wen*, i.e. the suspicious person. In the sentences, this difference has been indicated through underlining the argument that is referred to.

Following from the grammaticality, in this sentence, again, *was* stands for the whole argument and not just for the wh-expression. This leads to the conclusion that the *was-w* construction is not a scope-marking construction as assumed by Kathol.

The new HE evidence discussed in this paper and the evidence from Dayal (1996) and H&N (2000) seem to suggest an indirect dependency (Dayal 1994) between *was* and the embedded wh-expression. This leads to an indirect, i.e. non-scope-marking, analysis of the *was-w* construction.

4.0 INDIRECT ANALYSIS

4.1 Verbs that license *was-w* constructions

Turning away from the scope-marking focus of previous analyses, H&N (2000) investigate the predicates that license *was-w* constructions in HG and the type coercion necessary to account for the apparent mismatch between the syntactic form of the embedded question and its semantic function.

Following Ginzburg and Sag (2001), H&N distinguish four classes of predicates that take either wh-sentential complements (+WH) or non-wh-sentential complements (-WH). The table in (10) is a modification of a table provided by H&N (2000: 154). It gives sample verbs of English for each, states whether the predicates take +WH or -WH complements, lists if they license *was-w* constructions in HG, and indicates examples.

(10) Predicate classification

Resolutive Predicates (RP)	Factive Predicates (FP)	Question Predicates (QEP)	True/False Predicates (TFP)
tell guess predict	reveal know discover	ask wonder investigate	believe deny prove
+WH & -WH	+WH & -WH	+WH	-WH
was-w	do not license was-w	do not license was-w	was-w
example: (11)	example: (12)	example: (14)	example: (13)

In HG, the set of was-w licensing predicates includes some (RP, see (11)) but not all (FP, see (12)) verbs that allow both +WH and -WH complements outside of this construction.

(11) RP (H&N 2000: 151)

a. +WH complements

Hans hat entschieden/berichtet/sich vorgestellt, wer kommen soll.

Hans has decided/reported/imagined who come should

b. -WH complements

Hans hat entschieden/berichtet/sich vorgestellt, dass Peter kommen soll.

Hans has decided/reported/imagined that Peter come should

c. was-w

Was hat Hans entschieden/berichtet/sich vorgestellt, wer kommen soll?

What has Hans decided/reported/imagined who come should

(12) FP (H&N 2000: 152)

a. +WH complements

Hans hat gewusst/vergessen/sich erinnert/erraten, wer kommen soll.

Hans has known/forgotten/remembered/guessed who come should

b. -WH complements

Hans hat gewusst/vergessen/sich erinnert/erraten, dass Peter kommen soll.

Hans has known/forgotten/remembered/guessed that Peter come should

c. was-w

*Was hat Hans gewusst/vergessen/sich erinnert/erraten, wer kommen soll?

What has Hans known/forgotten/remembered/guessed who come should

TFP are the class of verbs that appear most frequently in was-w constructions, but outside of these constructions they only allow -WH complements as shown in (13).

(13) TFP (H&N 2000: 151)

a. +WH complements

*Hans hat gesagt/geglaubt, wer kommt.

Hans has said/believed, who comes

b. -WH complements

Hans hat gesagt/geglaubt, dass Peter kommt.

Hans has said/believed that Peter comes

c. was-w

Was hat Hans gesagt/geglaubt, wer kommt?

What has Hans said/believed who comes

In contrast, verbs that only license +WH complements but not -WH complements do not license was-w. These are QEP and they pattern as illustrated in (14).

(14) QEP (H&N 2000: 151)

a. +WH complements

Hans hat nachgeforscht/gefragt, wer kommt.

Hans has investigated/asked, who comes

b. *-WH complements*

*Hans hat nachgeforscht/gefragt, dass Peter kommt.
Hans has investigated/asked that Peter comes

c. *was-w*

*Was hat Hans nachgeforscht/gefragt, wer kommt?
What has Hans investigated/asked who comes

H&N investigated the difference between these four classes to establish why RP and TFP allow *was-w* constructions, while FP and QEP do not. They point out that RP and FP have fact-denoting arguments that are taken to provide the answer to the question of the embedded +WH complement. The difference between (15) and (16) illustrates this. (15) shows that in conjunction with an FP, Jean only discovered the question, not the answer, while in (16), in conjunction with a QEP, Jean's action aims towards the content of the question, i.e. the answer.

(15) *FP* (H&N 2000: 153)
Jean discovered an interesting question.
The question was who left yesterday.
It does *not* follow that: Jean discovered who left yesterday.

(16) *QEP* (H&N 2000: 153)
Jean asked an interesting question.
The question was who left yesterday.
Hence: Jean asked who left yesterday.

Although the substitution test in (15) shows that FP and RP involve fact-denoting arguments, the grammaticality of (12 a) and (15) shows that they do allow +WH complements nonetheless. Thus, to link answer and question in (12 a), the question *wer kommen soll* is forced into a fact that resolves the question. This allows the *wh*-interrogative *wer* to appear in the fact-denoting argument position of the FP. This forcing is called "type coercion" and its implementation in HPSG is discussed in section 4.2.

What follows from this is that RP and FP behave differently from QEP. In their paper, H&N then go on to discuss what distinguishes RP from FP, to establish RP and TFP as a natural *was-w* licensing class. However, as the following discussion of the HE data shows, this is unnecessary for HE. In this dialect, RP, TFP and FP license *was-w* constructions. Hence, excluding QEP, as shown, is sufficient.

(17) Was kammer wisse, wie der Wein, der neue, sich duht arte? (Witte 1974:119)
what can-we know how the wine the new-one itself does grow
"Can we know how the new wine will become?" (implying that we cannot)

The grammaticality of *was-w* in (17) with the FP *wisse* ('to know') in HE indicates that there is evidence in this dialect that FP license *was-w*. As in (15), but unlike (16), it does not follow from the sentence in (17) that we know how the wine will become.

The challenge that this data poses for H&N's indirect analysis is to include FP as *was-w* licensing for HE. However, that is not much of a challenge, since HE behaves more generally than HG by allowing all verbs that license declarative complements to also license *was-w*. Hence, there is evidence that in this dialect RP, TFP and FP form a natural *was-w* licensing class.

For both RP and FP to take +WH complements it is necessary to apply type coercion of questions to facts, i.e. facts resolved (for FP) and unresolved² (for RP). The implementation of type coercion in HPSG is discussed in the following section.

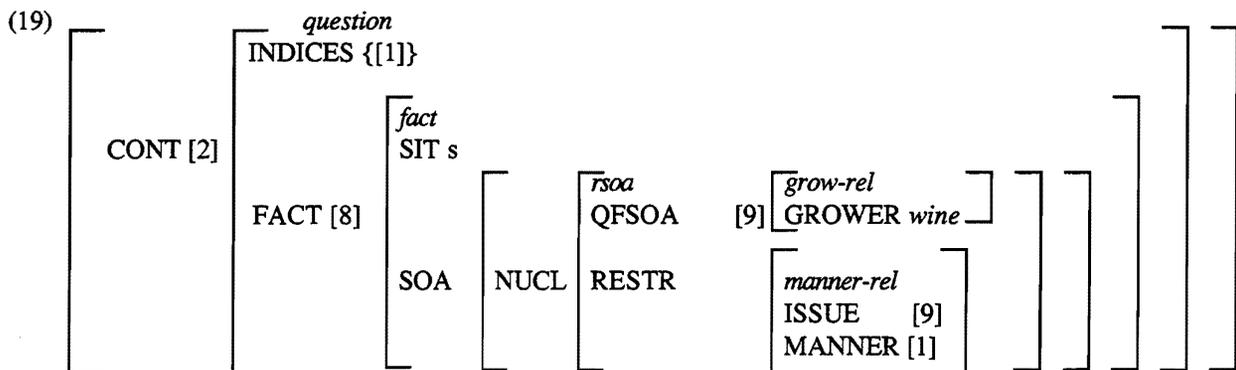
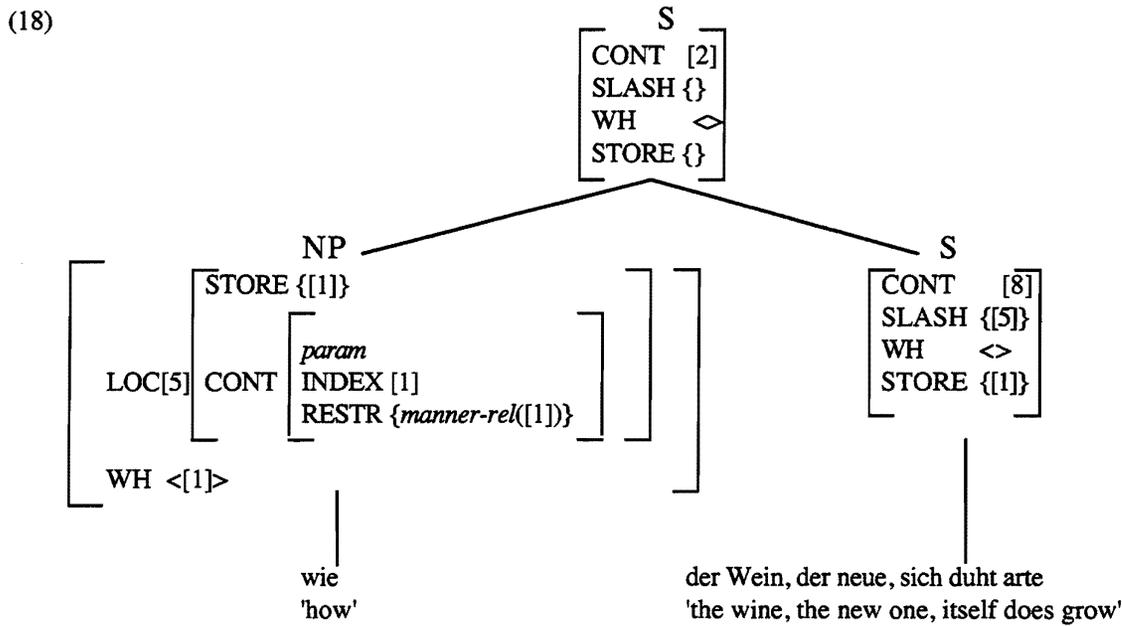
² H&N call these 'propositions.'

4.2 Type-coercing the denotation of the embedded interrogative

The sentence in (17) contains the embedded interrogative *wie der Wein, der neue, sich duht arte*. The embedded interrogative can be derived syntactically as shown in (18). The semantic representation of the interrogative phrase is given in (19).

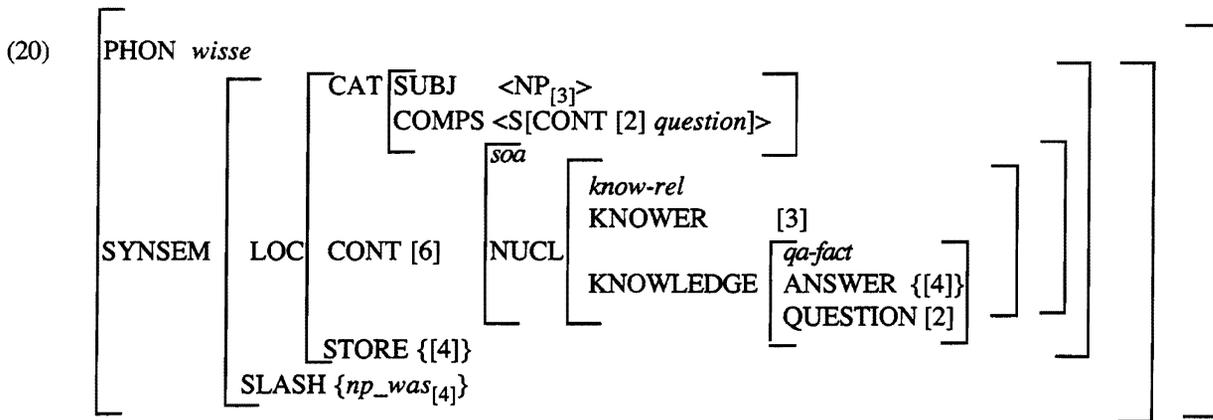
In (18), STORE serves as the scope indicator of the wh-index. It differs from SLASH in that SLASH allows the wh-expression to be extracted and bound off at a higher level, while STORE is only a placeholder for the index to indicate scope.

In (19) it can be seen that "embedded interrogatives are assigned denotations of type *question*" (H&N 2000: 157), containing the features INDICES and FACT. This is different from H&N as in their case the embedded interrogative is assumed to be a proposition. Hence, they use the feature PROP instead of FACT. Furthermore, in H&N the question was aiming at a person, while here it is aiming at an adverbial of manner. Accordingly, the semantic representation in (19) incorporates a restriction on the verb *arte* ('to grow') in the form of the adverbial of manner. Following Kasper (1994), *rsoa* stands for "restricted state of affairs" and has the features QFSA, which stands for "quantifier-free state of affairs," and RESTR.



In the was-w constructions the embedded complement syntactically has all the properties of an embedded interrogative, while semantically it seems to have the properties of a fact, as discussed in section 4.1 above. This is where type coercion comes into play.

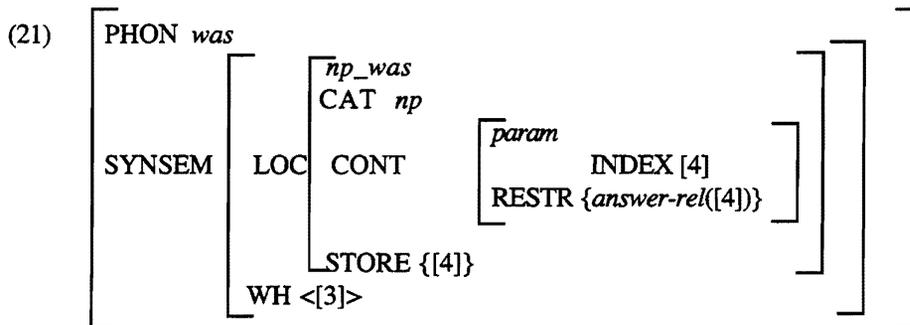
(20) shows the lexical entry for a *wisse* ('to know') that licenses was-w. From H&N's discussion it follows that there are at least two lexical entries for these verbs, one for when they occur in non-was-w constructions and one for was-w.



This lexical entry for *wisse* shows that the KNOWLEDGE of *wisse* in a was-w construction is of type *qa-fact* (short for *question-answer fact*) instead of *question* as in (20). This is a deviation from H&N's HG analysis, since in their analysis they introduced the type *qa-proposition*. However, as a distinction between resolved facts and unresolved facts, i.e. propositions, proves to be unnecessary in HE, I introduce *qa-fact* as a subtype of a factive supertype.

In (20), the *qa-fact* contains the link to the question *wie der Wein, der neue, sich duht arte* as well as to the answer *was*. Thus, QUESTION connects to the embedded interrogative (19), which is of type *question*. This is the type coercion, the question is resolved into a fact, because *wisse* takes the *qa-fact* that contains the *question*.

The lexical entry for *was* of the was-w construction is given in (21)³. According to H&N, the *was* of a was-w construction has a special type of local value *np_was* and its CONT | INDEX value is restricted to being an answer (H&N 2000: 158).



How (20) and (21) combine for the question *Was kammer wisse, wie der Wein, der neue, sich duht arte?* is shown in (22).

³ Taken from H&N (2000: 158), but replacing the tag [1] with the more appropriate tag [4].

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