JS Journal of Historical Syntax
Volume 5, Article 5: 1–36, 2021

WH-RELATIVES IN THE HISTORY OF GERMAN (AND WHAT GENDER'S GOT TO DO WITH IT)*

Eric Fuß
Ruhr-Universität Bochum

Abstract This paper surveys the historical development of wh-relatives in German, focusing on the neuter singular form *was* 'what'. Taking into account data from Old High German, Middle High German und Early New High German (ENHG), it is shown that wh-relativizers first appeared in generalizing/unconditional free relatives before they spread to headed relatives attached to indefinite antecedents (*alles* 'all', in particular). The paper argues that the rise of wh-relatives involved two major reanalyses. First, indirect questions were reanalyzed as free relatives, and headed wh-relatives resulted from the reanalysis of appositive free relatives (introduced by wh-words). However, it was not until the ENHG period that the latter change gathered pace, leading to a rapid replacement of the neuter singular relativizer *das* 'that' with the wh-form *was* in headed relatives anteceded by indefinites and d-pronouns. The transition from *das* to *was* is attributed to another reanalysis that concerned the licensing conditions of d- and wh-relativizers. More precisely, it is proposed that the distribution of *das* and *was* was originally governed by semantic factors (i.e. (in)definiteness). When learners could no longer recognize the original semantic motivation behind the *das*/*was* alternation, they attributed it to a morphosyntactic property, namely the absence/presence of lexical gender on D_{rel}. As a result, relative *was* spread to further contexts (such as relatives modifying VP/IP), which is still an ongoing process.

* This paper grew out of joint work with Patrick Brandt on the properties of headed wh-relatives in present-day German, and owes a great deal to this collaboration. I would also like to express my gratidude to Marco Coniglio, Fabian Heck, Roland Hinterhölzl, Svetlana Petrova, Ben Sluckin, Robert Truswell, George Walkden, and audiences at the Universities of Cambridge, Nijmegen, Bochum, York, and Leipzig for insightful and helpful comments on earlier versions of this work. In addition, I want to thank two anonymous reviewers and Tom Ovens, the copy editor, who helped to improve the paper considerably. All remaining shortcomings are, of course, entirely my own.

1 Introduction

In many Germanic languages, we can observe that, diachronically, d-pronouns are replaced by wh-forms in relative clauses (e.g. English *who*, Dutch *wie*, *wat*, German *was*). This paper surveys the relevant historical developments leading to (headed) wh-relatives in German, focusing on the use of the neuter singular form *was* 'what'. I will argue that the rise of headed wh-relatives introduced by *was* 'what' was linked to a set of changes that blurred the original semantic motivation behind the distribution of d- and wh-forms in relative clauses (linked to definiteness), which paved the way for a reanalysis in which the *das/was* alternation was attributed to the presence/absence of valued gender features on D_{rel} (cf. Brandt & Fuß 2018 on present-day German). The paper is structured as follows. In section 2, I will briefly sketch a theoretical analysis of the distribution of relative *was* in present-day German. Section 3 gives an overview of the development of (headed) wh-relatives in the history of German. Section 4 discusses how the present-day system came into existence and what gender has to do with it. Section 5 briefly considers the development of headed relatives introduced by personal wh-words in Dutch and English. Section 6 provides a concluding summary.

2 Present-day German

As shown in (1), headed relatives are usually introduced by d-pronouns in present-day German. The d-pronoun inflects for case (assigned in the relative clause) and agrees in gender and number with the head of the relative clause:

(1) a. *der* *Mann,* *der/dem* *Peter* *hilft*
the man that.MASC.NOM/that.MASC.DAT Peter helps
'The man that helps Peter/Peter helps.'

b. *das* *Auto,* *das* *Peter* *fährt*
the car that.NEUT.ACC Peter drives

c. *die* *Männer/Frauen/Autos,* *die* *Peter* *gesehen* *hat*
the men/women/cars that.PL Peter seen has

However, the d-pronoun is replaced by the wh-pronoun *was* 'what' in connection with neuter singular indefinites/quantifiers, demonstratives and deadjectival nouns (cf. e.g. Duden 2016: §§1661–1663 and in particular Brandt & Fuß 2019; the following Modern German examples are taken from the German Reference Corpus DEREKO, https://www1.ids-mannheim.de/kl/projekte/korpora/):

(2) a. *Alles,* ***was*** *die Zuschauer dort sehen, ist Lug und Trug.*
everything what the spectators there see is lies and deception
'Everything that the spectators see there is lies and deception.'
(*Niederösterreichische Nachrichten*, 17.01.2013, Ressort: Meinungen; PRO & KONTRA)

b. *Das,* ***was*** *wir machen, ist das,* ***was*** *uns gefällt.*
that what we make is that what us pleases
'What we do is what we like.'
(*Braunschweiger Zeitung*, 04.06.2007; Das, was wir machen, ist das, was uns gefällt)

c. *Das Beste,* ***was*** *Microsoft heute tun kann, ist, Yahoo zu kaufen.*
the best what Microsoft today do can is Yahoo to buy
'The best that Microsoft can do today is to buy Yahoo.'
(*Hannoversche Allgemeine*, 08.11.2008, p. 15; Microsoft lässt Yahoo abblitzen)

As shown in Brandt and Fuß (2014, 2018, 2019), the most important factor governing the choice between d- and wh-relativizers is morphosyntactic in nature, namely the presence/absence of a lexical head noun. If a lexical antecedent is added to indefinites such as *alles* 'all, everything', which trigger relativization by means of *was*, a d-relativizer must be used, despite the fact that the antecedent still receives an indefinite interpretation:

(3) a. *alles,* ***was/?*das*** *es gibt*
all what/that there is

b. *alles Gold,* ***das/??was*** *es gibt*
all gold that/what there is

I follow Brandt and Fuß (2014, 2018, 2019) in assuming that *das* is inserted in the presence of a lexical head noun, while *was* is the underspecified elsewhere case that is used where the more specific licensing requirements of d-forms are not met (see also Boef 2012 on Dutch *wat*). More precisely, I take it that lexical gender is the defining characteristic of lexical nouns and that lexical gender features are hosted by the category-defining head *n* (cf. e.g. Lowenstamm 2007).[1] Assuming a realizational model of grammar

1 More precisely, lexical gender on nouns results from the combination of a category-defining (functional) head (*n*) with a lexical root ($\sqrt{}$): *n*'s (non-interpretable) gender feature is val-

(Halle & Marantz 1993), the more specified exponent *das* is inserted if the relative pronoun (D^0_{rel}) picks up a gender feature via agreement with a lexical nominal antecedent in the course of the syntactic derivation, while *was* corresponds to a less specified Vocabulary item that does not require the presence of valued gender features on D^0_{rel}:[2]

(4) $[D_{rel}, –obl, –pl, –masc, –fem] \leftrightarrow$ /das/
$[D_{rel}, –obl, –pl] \leftrightarrow$ /vas/

Further support in favor of an approach that treats *was* as an underspecified default relativizer comes from the fact that it makes available a unified treatment of different types of RCs that lack an appropriate (overt) nominal antecedent (see Fuß 2017a on deadjectival nouns), such as free relatives, relatives modifying predicates/propositions and quote-like expressions, which are all introduced by wh-elements, *was* in particular (cf. Brandt & Fuß 2014, 2019 for details):

(5) Free relatives:
*[**Was** der Mann auch anpackt], funktioniert.*
what the man ever tackles works
'Whatever the man tackles, works.'
(*Hannoversche Allgemeine*, 14.08.2009)

ued/licensed under Agree with a lexical root. Determiners and quantifiers, which are D-elements, lack *n*. Nominalizations may be derived by adding either D or *n* to another lexical category; for comparison, see for example Alexiadou & Iordăchioaia (2014).

2 The feature specifications in (4) and throughout the paper assume decomposition of phi-features, making use of more abstract features (basically following Bierwisch 1967; cf. Blevins 1995 and Wiese 1999 for slightly revised systems), including [±1, ±2] for person (where 3rd person corresponds to the absence of person specifications), [±plural] for number, [±masculine, ±feminine] for gender, and the following system of case distinctions based on the features [±oblique, ±object]:

(i) a. nominative: [–obl, –obj]
b. accusative: [–obl, +obj]
c. dative: [+obl, +obj]
d. genitive: [+obl, –obj]

(6) Relative clauses that modify a matrix event or proposition:

Wie bei allen anderen Mannschaftssportarten nahmen die
as with all other team sports took the
*Starken Rücksicht auf die Schwächeren, [**was** den Spass für*
strong regards for the weak what the fun for
alle garantierte].
all guaranteed
(*St. Galler Tagblatt*, 23.10.2009, p. 52; Goldener Herbst im Simmental)

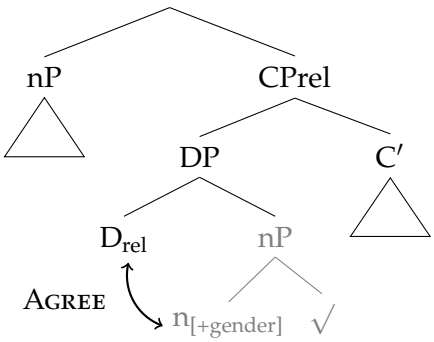
(7) Relative clauses referring to quote-like expressions:

*Von disciplina wird der Begriff discipulus hergeleitet, [**was***
from disciplina is the notion discipulus derived what
soviel wie Lehrling oder Schüler bedeutet].
so much as apprentice or pupil means
(*St. Galler Tagblatt*, 18.02.2009, p. 36; Geschichte prägt die Disziplin)

Adopting a matching analysis of relative clauses (Chomsky 1965, Sauerland 1998, 2003), the workings of this approach are illustrated below. If a relative clause combines with a lexical noun as in (8), the relativizer contains a copy of the antecedent (consisting of a lexical root $\sqrt{}$ and a category-defining n head), which is deleted under identity (marked by gray shading in (9)):

(8) $[_{DP}$ *das* $[_{nP}$ *Buch,* $[_{CP}$ ***das*** *du liest]]]*
the book that you read

(9)



In this configuration, the unvalued gender features on D_{rel} are identified with the lexical gender specifications of the copy of the antecedent (marked for deletion) in a standard downward Agree relation. The resulting feature specification of D_{rel} is given in (10):

(10) [D_{rel}, –pl, –obl, +obj, **Gender: –masc, –fem**]

As can be gathered from looking at the Vocabulary items in (4), both *das* and *was* are compatible with the insertion context. However, if we follow the standard assumption that the insertion of Vocabulary items is subject to some form of the Elsewhere Condition (Kiparsky 1973, 1982, Halle 1997), the most-specified candidate must be used, leading to insertion of *das* in the context of (8)/(9).

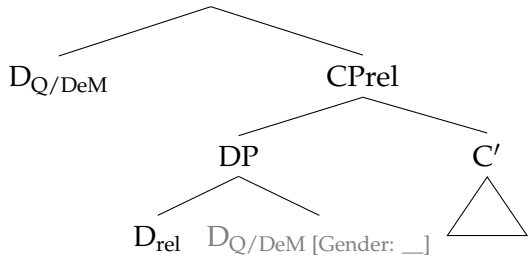
However, if CP_{rel} is merged with a quantifier/determiner/d-pronoun ($D_{Q/DeM}$), which lacks an nP complement and does not carry lexical gender features, it cannot receive a gender feature in the syntax (cf. the resulting feature specification in (12)); as a result, *das* does not match the insertion context. The only option left is insertion of the default relativizer *was*, which is underspecified for [gender]:

(11)

[$_{DP}$	*alles,*	[$_{CP}$	***was***	*du*	*liest]]*
	all		what	you	read

(12) [D_{rel}, –pl, –obl, –obj/+obj, **Gender**: __]

(13)



Note that in (13), the gender feature on both the relativizer (D_{rel}) and its head ($D_{Q/DeM}$) remains unvalued. I propose that this defect is repaired at the interfaces by the insertion of default values. At the interface to the morphological component, unvalued [Gender: __] is interpreted as [neuter], while at the interface to the semantic component, [Gender: __] is interpreted as [–animate/human] (cf. e.g. Harley & Ritter 2002 for related considerations). The fact that personal wh-forms cannot introduce headed relatives, as shown in (14), can then be explained as resulting from a feature clash between grammatical gender (as found in headed relatives) and the semantically interpretable gender feature on personal wh-forms (interpreted as [+animate/human]):

(14)

der Mann/jeder,	*[**der**/*wer*	*teilnimmt],*	*gewinnt.*
the man/each person	who	participates	wins

More precisely, I assume that the gender specification of personal wh-forms (i.e. of the relevant vocabulary items) is not compatible with grammatical gender on D_{rel} in languages like German, with grammatical gender being equal to the presence of an unvalued gender feature in the syntax, which is non-interpretable and acts as a probe in the course of the syntactic derivation: ... [$_{CPrel}$ D_{rel} [Gender:_] ...].[3,4]

3 The rise of wh-relatives in the history of German

In many Indo-European languages, wh-words turned into relative pronouns and replaced other strategies to mark relative clauses (cf. Delbrück 1893: 389ff.; Gonda 1954 on early Indo-European languages; Harbert 2007 on Germanic; Truswell & Gisborne 2015, Gisborne & Truswell 2017, Gisborne & Truswell 2018).[5] Wh-relativizers are not inherited from Proto-Indo-European; rather, they evolved repeatedly in various daughter languages (polycentric/parallel evolution; see Gisborne & Truswell 2018). In the Germanic family, relative d-pronouns are replaced by wh-forms in a change that has been going on for about 1,000 years (cf. e.g. Fleischmann 1973, Fuß 2017b, Fuß 2019; Coniglio & Paul 2019 on German; Brandt & Fuß 2014, 2018 on present-day German) and seems to follow the following pathway across languages:

3 No such clash occurs in free relatives, which lack a nominal antecedent. Accordingly, wh-pronouns that carry a gender specification (such as *wer*) can be freely used to introduce free relatives. Note furthermore that in free relatives, the wh-pronouns keep on signaling the [±personal] distinction typical of interrogative (and indefinite) pronouns (which is not signaled by relative pronouns in German, in contrast to English).

4 One anonymous reviewer asks whether this approach should not lead us to expect there to be many more cases of gender clashes in connection with wh-forms. Note, however, that the above analysis rules out only a very specific constellation, namely cases where a personal wh-form is inserted into a node that carries a non-interpretable gender feature that must be valued in the course of the syntactic derivation. In other cases, personal wh-forms are predicted to be fine. For example, wh-indefinites can be modified by a restrictive relative clause in German. The relative pronoun then agrees with the wh-pronoun in gender:

(i) *Hast du wen getroffen, der interessant ist?*
have you someone met who.MASC interesting is
'Have you met someone interesting?'

Still, the analysis of (14) seems to require that at the point of Vocabulary Insertion, the insertion procedure must be able to distinguish between (i) gender features valued during the syntactic derivation and (ii) semantically interpretable lexical gender features. This can be achieved in various ways, for example by a diacritic feature or by assuming that different types of gender features correspond to different structures in the syntax (cf. e.g. Picallo 2008, Lowenstamm 2012). However, an in-depth discussion of these issues goes well beyond the scope of this paper. I will therefore leave it to future research.

5 Note that both d- and wh-relativizers are rare cross-linguistically (de Vries 2002), but very common in the Indo-European family (according to Comrie 1998, both represent a European areal feature).

(15) wh-interrogatives/-indefinites (in various constructions) → generalizing/free choice/unconditional free relatives → individuating/specific free relatives → headed relatives (subject to language-specific restrictions)

Languages may differ with regard to the (interrogative/indefinite) constructions that were reanalyzed as free wh-relatives, the specific contexts in which free relatives were reanalyzed as headed relatives, and the set of wh-elements that were affected by these reanalyses in headed relatives. For example, previous research has identified the following two contexts in which wh-indefinites/interrogatives were reanalyzed as relativizers introducing free relatives. The first scenario involves the so-called *so*-wh-*so* construction, in which a wh-indefinite is modified by an adverbial element *sô* and a corresponding relative clause. (16) illustrates the set of changes that are commonly assumed to have taken place in the history of German (cf. e.g. Erdmann 1874: 56, Paul 1920: 199, Behaghel 1923: 369, 1928: 290–292; see Jespersen 1954 on Old English (OE); see Lühr 1998, Harm 2001 and Jäger 2018, 2019 for more recent variations on (16)).

(16) a. $[_{DP}$ *sô hwer* $[_{CPrel}$ *sô* ...]] 'such one as ...'

b. $[_{DP}$ *sô hwer* $[_{CPrel}$ ∅ ...]]

c. $[_{DP}$ *swer* $[_{CPrel}$ ∅ ...]] ⇒ $[_{free\ CPrel}$ *(s)wer* ...]
(Middle High German (MHG))

In (late) Old High German (OHG), the second *sô* (introducing the relative clause) could be dropped. Later on, the adverbial element cliticized onto the wh-pronoun (giving rise to extended wh-forms such as *swer* 'who(ever)', *swaz* 'what(ever)', which are typical of MHG and eventually disappeared altogether. It is commonly assumed that the amalgamation of the adverbial element and the wh-word went hand in hand with a structural change, in which the combination of wh-indefinite plus asyndetic (headed) relative clause was reanalyzed as a free wh-relative introduced by the extended wh-form. An alternative source for free wh-relatives is the sentential complements of matrix verbs that may license a propositional or a nominal complement (usually verba dicendi/sentiendi) (cf. e.g. Hogg & Denison 2006 on OE). Thus, cases such as (17) are potentially ambiguous between (propositional) indirect questions and (nominal) free relatives, inviting a reanalysis of the former as the latter:[6]

6 A third possibility is discussed in Gisborne & Truswell (2018), who argue that OE wh-clauses like (i) are ambiguous between a conditional and an unconditional (free relative) interpretation (see also Paul 2007 on the conditional interpretation of free relatives in MHG).

(17) *uuanda si ne-uuizzen [**uuaz** sî tuônt]* ⇒ ... [$_{free\ CPrel}$
since they not-know what they do
***uuaz** sî tuônt]*

a. 'Since they don't know what they do.' ⇒
b. 'Since they don't know the thing they do.'
(Notker, Psalmen, Glossen 18 56–59)

The following examples suggest that this ambiguity is real: In (18 a) the verb 'know' takes a wh-complement clause, followed by a DP in apposition; in (18 b), the wh-clause is the combined argument of two verbs, but only one of them ('know') licenses a propositional complement:

(18) a. *Wéist thu [**weih** thir rédinon] [thaz selba lób*
know you what-I you-DAT tell that same praise
theist thaz lón] giwisso wízist thu thaz ...
that-is the reward certainly know you that
'You know what I tell you, that same praise, that is the reward. Surely you know that ....'
(Otfrid, Gospel Harmony II 21, 13)

b. *Tû neuuéist nóh mág geskéhen . [**uuáz** ih ságen*
you not-know neither can happen what I say
uuíle]
want
'You don't know, nor can it happen what I want to say.'
(Notker, Boethius' De Consolatione Philosophiae II 102–108)

In the history of German, relative wh-pronouns were initially confined to free relatives with indefinite/generalizing readings (cf. e.g. Paul 1920: 199ff.). Later on, the wh-forms spread to headed relative clauses. In what follows, I will give a brief overview of the relevant developments in the history of German, starting with OHG.

3.1 Old High German

In OHG, both free and headed relatives are generally introduced by d-pronouns (3,959 cases in the Old German Reference Corpus):[7]

(i) *[eal swa hwæt swa ic þe gehet] [eal ic hit gesette]*
all so what so I thee promised all I it appoint
'If I promised you anything, I will do it.'
'Whatever I promised you, I will do it all.' (Gisborne & Truswell 2018: 26)

7 Free d-relatives continue to exist as a somewhat archaic option in present-day German:

(19) a. *thaz si uns beran scolti* ***[ther*** *unsih giheilti]*
that she us bear should that.MASC.NOM us heals
(Otfrid, *Gospel Harmony*, 1.3.38)

b. *tho liefun sar, so thu weist,* ***[thie*** *inan minnotun meist]*
then came running at once as you know that.PL him loved most
(Otfrid, *Gospel Harmony*, 5.5.3)

(20) a. *dhazs fona dhemu almahtigin fater dhurah inan ist al uuordan,* ***[dhazs*** *chiscaffanes ist]*
that from the.DAT almighty father through him is all become that created is
'That everything that was created came to be from the Almighty Father through him.'
(lt. quando a patre per illum cuncta creata esse noscuntur; Isidor 99)

b. *uuaz ist thaz* ***[thaz*** *her quidit]*
what is that that he says
(Tatian 174,2)

As shown in (20 b), d-forms are also used in connection with indefinites and demonstratives, that is, contexts that trigger relativization by means of *was* in present-day German. Wh-pronouns (used as indefinites) primarily occur in generalizing *so*-wh-*so* constructions as in (21):

(21) *inti* ***so uuaz so*** *ir bitit in minemo naman thaz duon ih*
and so what so you.PL ask in my name that do I
'And whatever you ask in my name, that I will do.'
(Tatian 164,1)

There are a small number of relative clauses that are introduced by 'pure' wh-pronouns. Cases where the wh-element substitutes a nominal argument are primarily free relatives featuring the neutral wh-form *was* as in (22), which seem to be confined to indefinite/generalizing readings. Moreover,

(i) *[Der das sagt], muss es wissen.*
that.MASC.NOM that.NEUT says must it know
'He who says so, must know it.'

Fuß & Grewendorf (2014) argue that d-free relatives exhibit a number of special properties that set them apart from wh-free relatives and suggest an analysis where a demonstrative pronoun is modified by a relative clause, leading to deletion of the relative pronoun under identity with the head element (an instance of syntactic haplology).

the fact that contracted forms such as *swer/swaz* are very rare in OHG (they only begin to show up in late OHG) suggests that free wh-relatives did not develop from *so*-wh-*so* constructions (but rather from a reanalysis of indirect questions):

(22) *[**Uuáz** álle únde **uuáz** îogelîche lîute állero dîeto . tágeliches*
what all and what everybody of-all nations every day
îlen getûon]. dáz skînet ál ûzer démo spîegule
hasten to do that appears all out-of that mirror
'What all people of all nations hasten to do each day can all be seen in that mirror.'
(Notker, Martianus Capella, I 60-63)

In addition, there are very few potential examples of headed relative clauses introduced by pure wh-forms. Interestingly, headed wh-relatives seem to attach to the same set of elements that trigger relativization by means of *was* in the present-day language (indefinites and d-pronouns):

(23) *dhazs sie ni eigun eouuihd [**huuazs** sie dhar uuidar*
that they not own anything, what.REL the there against
setzan].
set
'That they do not possess anything that they set against it.'
(lt. dum non habeant quod proponant, Isidor, V.5)

(24) *Sar so tház irscínit, [**waz** mih fon thír rinit]*
as soon as that appears what me from you touches
'As soon as that appears that touches me from you.'
(Otfrid, Gospel Harmony II 8, 202–222)

The relevant numbers are given in Table 1 below. It appears that among the argumental wh-forms (compare the shaded area), *was* is by far the most frequent form; personal wh-forms are rare.[8] Furthermore, the vast majority of all cases tagged as relative wh-forms are free relatives; there are only nine examples that seem to involve headed relatives. Four of them involve the neutral form 'what'.[9]

8 That is, in contrast to OE, early uses of wh-forms in headed relative clauses are not confined to cases where the relative pronoun is linked to an adverbial or oblique gap in the relative clause (for OE cf. e.g. Truswell & Gisborne 2015, Gisborne & Truswell 2017; see also Romaine 1980, 1982 on Middle Scots). Rather, the most 'frequent' wh-relativizer is the neuter form 'what'.

9 The second-most frequent type of headed wh-relatives involves the locative form 'where' as in (i):

	Free RCs	Headed RCs	Total
huuaz 'what'	50[10]	4	54
huuer 'who.MASC.NOM'	2		2
huuem(u) 'who.MASC.DAT'	4	1	5
huuen 'who.MASC.ACC'	2		2
huues 'who.MASC.GEN'	2		2
(mit) uuiu/uueo 'how'	66		66
war/uuara 'where, whereto'	7	3	10
wanne/uuanda 'when'	2	1	3
uuanan '(because) of what, why'	11		11
uuelihch+NP 'which+NP'	9		9
uuelihch-(eru/a/es) 'which.NOM'	13		13
huuelihes 'which.MASC.GEN'	3		3
uueliu 'what kind of'	1		1
wialih 'however'	1		1

Table 1 Relative clauses introduced by pure wh-pronouns in the Old German Reference Corpus (182 cases)

The existence of headed wh-relatives might be attributed to sporadic reanalyses of extraposed appositive free relatives (cf. Paul 1920: 206f., Behaghel 1928: 726; on OE, see Truswell & Gisborne 2015, Gisborne & Truswell 2017). Note that extraposed wh-relatives are often structurally ambiguous between (i) an appositive free relative that merely provides additional information (or a kind of afterthought) linked to a nominal expression, and (ii) a headed (restrictive) relative that modifies a nominal expression (this also holds for the potential cases of headed relatives in (23) and (24)). This ambiguity might lead to syntactic reanalysis:

(i) *quaemet inti gisehet thia stat [**uuar** trohtin gilegit uuas]*
come and see the place where the Lord laid-to-grave was
(Tatian, 217,6)

10 I excluded seven examples where a pure wh-word seems to introduce an indirect question (complements to verbs like 'ask' and clausal wh-attributes like 'the definition/precept/command, wh...'), but included nine instances where *uuazs* is tagged as a relative pronoun and introduces the clausal complement of verba dicendi such as *quedan* 'say'. More generally, the distinction between an indirect question and a free relative proves to be problematic, since many examples allow both readings.

(25) *quaemet inti gisehet [thia stat] [$_{free\ RC}$* ***uuar*** *trohtin gilegit uuas]*
come and see the place where Lord laid-to-grave was
'Come and see the place, namely the one where the Lord was laid to grave.'

⇓

quaemet inti gisehet [thia stat [$_{headed\ RC}$ ***uuar*** *trohtin gilegit uuas]]*
'Come and see the place where the Lord was laid to grave.'

The appositive character is particularly clear in examples like (26) where the relative pronoun fails to agree (in number) with the nominal element:

(26) *erzélist thu ouh thia gúati, [****waz*** *íagilicher dáti]*
tell you also the good.PL what each did
(Otfrid, Gospel Harmony II 9, 24 (195–215))

Summing up, it appears that in OHG, all types of relative clauses are usually introduced by d-pronouns (or alternative strategies, e.g. involving relative particles; cf. e.g. Schrodt 2004). In addition, there are few cases of free and headed wh-relatives; especially the latter are very rare:

(27) $D_{rel} \rightarrow$ d-pronoun
(plus occasional cases of free and headed wh-relatives)

3.2 Middle High German

In the MHG period, d-relatives still dominate (cf. e.g. Paul 2007: 370). However, free relatives introduced by contracted forms such as *swaz*, *swer*, *swen*, *swes*, *swanne* and *swâr* (< *so*+wh) have become a frequent pattern (a search conducted in the MiGraKo[11] subcorpus (*c.*1,000,000 tokens) of the Reference Corpus of Middle High German produced 2,066 hits for argumental wh-forms and 1,461 hits for adverbial wh-forms). Free relatives introduced by extended wh-forms are typically linked to a generalizing/free choice reading:

11 *MiGraKo* is the corpus of the new Middle High German Grammar ("Korpus zur Mittelhochdeutschen Grammatik"), see Klein, Solms & Wegera (2009).

(28) a. *[**swer** an rehte güete wendet sin gemüete],*
whoever at right goodness turns his mind
dem volget sælde und êre
that.MASC.DAT follows blessing and honor
'Whoever turns his mind to true goodness will be attended by happiness and honor.'
(Iwein 1–3; Paul 2007: 371)

b. *Bit unnuzen worten di man dut firlusit man*
with useless words that.PL one does loses one
*[**swaz** man gudes dut]*
whatever one good does
'With useless words, one forfeits whatever good things one does.'
(Idsteiner Sprüche der Väter, 13_1-wmd-PV-X > M114-N1 (tok_dipl 128–139))

It has been pointed out (cf. e.g. Paul 1920: 199ff.) that in MHG, the semantic difference between generalizing/indefinite and individualizing/definite free relatives could be marked by the choice of relative pronoun. While the former are typically introduced by sw-forms, d-pronouns are used to mark definite free relatives. In the following complex clause, the free relatives introduced by extended *sw*-forms convey an indefinite/generalizing meaning, while the free d-relative is clearly linked to a definite reading:

(29) *[**Swen** genüeget **[des** er hât]], der ist rîche,*
whoever.ACC suffices that.GEN he has that.NOM is rich
*[**swiez** ergât].*
however-it fares
'Whoever is content with what he has, is rich, however things will turn out.' (*Freidanks Bescheidenheit*, 43,10)

Sw-forms can also be used to introduce headed relative clauses – primarily in connection with an indefinite/generalizing antecedent:

(30) *durch den dir al gitan ist **[swaz** giscaffines ist]*
through that.MASC.ACC you all done is what created is
(*Bamberger Glaube u. Beichte*, 12th c., M089-G1 (tok_dipl 265–275))

In the course of the MHG period, the wh-pronouns extended by /s-/ are eventually replaced by simple wh-forms (cf. e.g. Paul 2007: 224). This is illustrated in (31) with a set of headed relatives attaching to the quantifier *alles* 'all':

(31) a. *síe hetten gnuc des alles [**waz** díe erde truc]*
they had enough of-everything what the earth bore
(Heinrich von Freiberg: Tristan (F); 14_1-omd-V-G > M311-G1 (tok_dipl 6184–6211)

b. *Inde wísende allíz [**waz** her sprach]*
and knowing all what he spoke
(Der Wilde Mann: Dichtungen: 13_2-md-V-X > M243-N1 (tok_dipl 72–83)

c. *vnd saite im alliz [**was** im got bewiset hatte]*
and told him all what him God shown had
(Jenaer Martyrologium Path: 13_2-omd-PV-G > M408-G1 (tok_dipl 15,117–15,138))

However, if we take a look at the quantitative distribution of d- and wh-forms in contexts that favor the use of wh-relatives in present-day German (i.e. neuter singular indefinites/demonstratives), it turns out that relativization by means of d-forms is still the dominant pattern throughout the MHG period. See for comparison Table 2 and the examples in (32) and (33):

	daz	*swaz*	*waz*
allez 'all'	165	5	7
d-pronoun	85[12]	5	9

Table 2 Relativization strategies with neuter antecedents in MHG (MiGraKo)

(32) *Vnde allez [**daz** in den kielen was].*
and all that in the ships was
(King Rother, 1039)

(33) *umbe daz [**daz** ir mir habet getân]*
about that that.REL you.PL me have done
(Gottfried von Straßburg: Tristan 13_1-obd-V-G > M342-G1 (tok_dipl 4814–4835))

Moreover, a number of cases listed in Table 2 as headed wh-relatives that modify a d-pronoun are potentially ambiguous. This can be illustrated with examples such as (34), which contain both a demonstrative and a relative clause introduced by an extended *sw*-form:

12 Including genitival d-forms (*des*); the search did not produce any genitival forms of *swaz* or *waz*.

(34) *doch wil ich gerne lîden daz, [**swaz** mir dâ von*
yet want I gladly suffer that whatever to-me of-it
geschehen sol]
happen shall
a. 'I will gladly suffer that which will happen to me because of it.' [restrictive wh-rel.]
b. 'I will gladly suffer it, whatever will happen to me because of it.' [generalizing FR]
(Hartmann von Aue, *Klagebüchlein*, 568f.)

As already pointed out by Paul (1920: 206f.), examples like (34) may be potentially ambiguous between a restrictive reading and a postposed generalizing free relative (FR). He explicitly discusses the possibility that a correlative demonstrative referring to the postposed free relative might be mistakenly analyzed as the head of a restrictive wh-relative. Note, however, that in MHG, a reanalysis along these lines was presumably hindered by the fact that the extended sw-forms were still linked to an unconditional/generalizing reading. The reanalysis only became available more readily when *sw-* and bare wh-forms fell together in the Early New High German (ENHG) period (see section 4 below).

In a similar vein, examples with the pure wh-element 'what' that involve verba dicendi/sentiendi often allow an alternative interpretation where the wh-clause constitutes either an indirect question or an appositive free relative (possibly involving a correlative element in argument position – five of nine cases):[13]

(35) *Ir ſchult daz wizzin [**waz** daz bezeichini]*
you should that know what that means
a. 'You should know what it means.' [indirect question]
b. 'You should know that, namely what it means (= the thing that it means).' [appos. FR]
(12_2-bairalem-PV-G > M214-G1 (tokens 8816–8838))

So it does not seem to be the case that there is a real difference between OHG and MHG with regard to the availability of wh-forms in headed relatives. However, a major shift can be observed in free relatives, where the extended *sw*-forms are widely used in connection with generalizing/indefinite/unconditional readings. This can be summarized as follows:

13 Note that (35) may also be interpreted as involving a headed wh-relative that modifies the d-pronoun *daz*.

(36) a. $D_{[FR, -def]} \rightarrow$ (*s*-)wh-pronoun
b. elsewhere $\rightarrow$ d-pronoun
(+ sporadic instances of headed wh-relatives)

3.3 Early New High German

The discussion so far already suggests that the major change affecting the availability of wh-elements in headed relatives took place in the ENHG period. In what follows, I will first present the results of a study carried out in the Bonn Corpus of ENHG (around 600,000 tokens), focusing on headed relative clauses in connection with *alles* 'everything' and *das* 'that'. Subsequently, I will briefly discuss the distribution of d- and wh-relatives in Luther's *Septembertestament*, making use of the Parsed Corpus of Early New High German created by Caitlin Light (around 100,000 words).

3.3.1 das *vs.* was *in the Bonn Corpus in headed relatives (with* alles*/d-pronouns)*

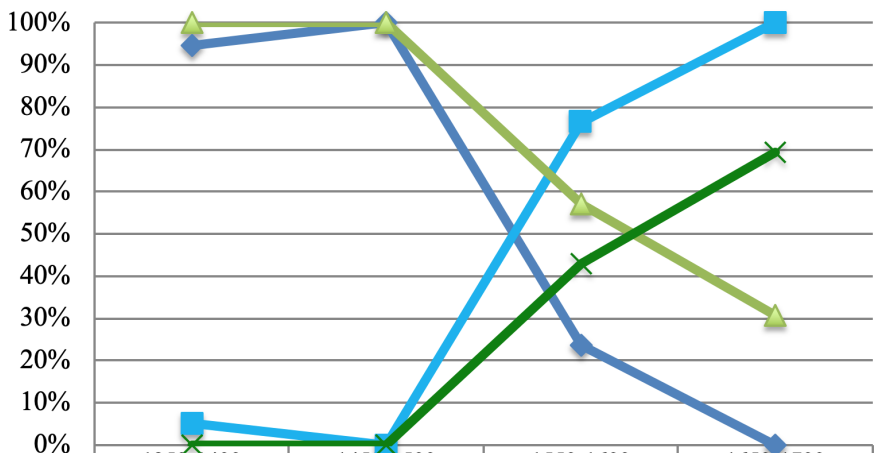
Early ENHG (14th and early 15th c.) does not differ much from MHG, in that we almost exclusively find d-relatives in connection with *alles*, as in (37). Later on (16th/17th c.), *das* is replaced by *was* in these contexts (as in (38)):

(37) *alles, [**daz** uns geschehe]*
all that us happens
'Everything that happens to us.'
(East Franconian, late 14th c., Mönch von Heilsbronn, Namen, 17,B2)

(38) *Denn durch solchen glauben vergibt Gott alles [**was** vnserm gehorsam noch mangelt].*
since through such belief forgives God all what our obedience still lacks
'Since through such belief God forgives everything that our obedience still lacks.'
(East Franconian, 1578, Veit Dietrich, Summaria, 30,3)

Similar observations hold for the use of headed wh-relatives in connection with d-pronouns. Taking both developments together, it turns out that the transition from *das* to *was* takes place quite rapidly (in around 150 years), as shown in Figure 1 (see the appendix for the exact numbers in the individual dialectal regions represented in the Bonn Corpus).[14]

14 It is noteworthy that the relative particle *wo* is only scarcely attested in the Bonn Corpus (Ebert, Reichmann, Solms & Wegera 1993: 447). It is standardly assumed that the relativizer *wo* developed from the locative wh-pronoun *wo* 'where'. Recently, however, Brandner & Bräuning (2013) have argued that *wo* originated from the equative particle *so*.



	1350-1400	1450-1500	1550-1600	1650-1700
alles, das	95%	100%	24%	0%
alles, was	5%	0%	76%	100%
das/dem, das	100%	100%	57%	31%
das/dem, was	0%	0%	43%	69%

Figure 1 Headed *das/was*-relatives in ENHG (after *alles* 'all things' and *das/dem* 'that')

If we compare the changing relativization patterns after *alles* 'all things' and d-pronouns such as *das* '3sg.neut.nom/acc' and *dem* '3sg.neut.dat', we can see that in the latter context, the rise of headed *was*-relatives sets in somewhat later and is not fully completed by the end of the ENHG period (see also Ebert et al. 1993: 449).

3.3.2 das- *vs.* was-*relatives in Luther's* Septembertestament

Additional data taken from a parsed portion of an early version of Luther's Bible translation (the so-called *Septembertestament*, 1522) sheds further light on the transition from *das* to *was*.[15] The central observation is that the distribution of *das* and *was* in both free and headed relatives seems to be governed by semantic properties in Luther's (early) writings:

15 In a search conducted in the Parsed Corpus of Early New High German made available by Caitlin Light, I extracted all 379 cases labeled as CP-REL(+CP-REL-SPE) and all free relatives (CP-FRL, 114 cases).

- The use of *das* is linked to individuating/definite readings (nouns, d-pronouns/demonstratives and individuating/specific free relatives).
- The use of *was* is linked to generalizing/indefinite readings (indefinites ('everything', 'nothing') and free-choice/unconditional free relatives).

Thus, we can observe that in the *Septembertestament*, indefinites such as *alles* 'everything' and *nichts* 'nothing' trigger relativization by means of *was*, whereas d-pronouns such as *dem* 'that.sg.masc.dat' seem to require relative clauses introduced by *das*:

(39) a. *Als nu Jhesus wuste, alles [**was** yhm begegen sollt], gieng er hynaus [...]*
when now Jesus knew all what him come-upon should went he out
'Jesus therefore, knowing all things that should come upon him, went forth [...].'
(Septembertestament-John,.1483)

b. *denn sie preyseten alle Gott, vbir dem [**das** geschehen war, [...]]*
for they glorified all God about that that happened was
'For all men glorified God for that which was done.'
(Septembertestament-Acts,.204)

This distribution is without exception in the parsed portion of the *Septembertestament*; see Table 3 for a comparison.[16] Note that this observation fits in with the fact that more generally, headed wh-relatives develop later in connection with d-pronouns as antecedents (cf. Figure 1 above).

16 Moreover, Table 3 shows that lexical nouns always trigger d-relatives (or relativization by means of 'which', which has the same distribution as d-relativizers in present-day German).

	d-pronoun	**P+d-pronoun**	**wh-pronoun (*was*)**	**'which'**	**P+ 'which'**	**else (adv., *da* 'there')**
$N_{masc.sg}$	124	5	–	23	2	10
$N_{fem.sg}$	30	–	–	6	5	5
$N_{neut.sg}$	27	–	–	7	1	11
N_{pl}	136	–	–	5	4	1
$Indefinite_{neut.sg}$ (*alles/nichts*)	–	–	6	–	–	–
$d\text{-}pronoun_{neut.sg}$ ($dem_{masc.sg.dat}$)	5	–	–	–	–	–
dies 'this'	1	–	–	–	–	–
es 'it'	1	–	–	–	–	–
Quote/translation	–	–	–	1	–	–

Table 3 Antecedents and relativizers in the Parsed Corpus of ENHG (*Septembertestament*)

In free relatives, pronoun choice seems to give rise to a semantic difference (similarly to MHG), namely that d-pronouns introduce individuating/definite free relatives while wh-pronouns are linked to generalizing/free-choice readings (with some amount of ambiguity). See the examples in (40) and Table 4:[17]

(40) a. *vnnd da es horten* ***[die*** *vmb yhn waren],*
and when it heard that.PL around him were
giengen sie hynaus [...]
went they out
'And when his friends heard of it, they went out [...].'
(Septembertestament-Mark,.198)

17 In examples such as (i), the free relative can be linked either to a definite reading (a specific amount of money) or an indefinite/unconditional interpretation (whatever was in the bag/box).

(i) *sondern er war eyn dieb, vnd hatte den beuttell, vnd trug* ***[was***
but he was a thief and had the bag and carried what
geben wart] [...]
given was
'But he was a thief, and had the money box; and he used to take what was put in it.'
(Septembertestament-John,.1079)

Another kind of ambiguity can be observed in examples like (ii), where the wh-clause can be interpreted as a free relative or an indirect question:

(ii) *denn er wuste wol,* ***[was*** *er thun wollte].*
for he knew well what he do wanted
'For he himself knew what he would do.'
(Septembertestament-John,.432)

b. *darumb verhies er yhr mit eynem eyde, er wollt*
therefore promised he her with an oath he wanted
*yhr geben, [**was** sie foddern wurde]*
her give what she demand would
'Whereupon he promised with an oath to give her whatsoever she would ask.'
(Septembertestament-Matthew,.966)

	Individuating/ definite	**Generalizing/ indefinite**	**Ambiguous: ±def.**	**Ambiguous: interrog./FR**
d-FR	56		1	
wh-FR		7	6	13
which-FR	3	1	2	3
else (adv.: *wo/da*, etc.)	26			

Table 4 Free relatives in the Parsed Corpus of ENHG (*Septembertestament*)

Summing up, the present section has shown that the transition from *das* to *was* took place in ENHG, eventually giving rise to the present-day distribution. Moreover, the evidence reviewed so far suggests that the development went through three different stages:

1. Early ENHG is very similar to MHG, but has by and large lost extended *swer-/swaz*-forms.
2. A potentially intermediate system can be observed in the (early) writings of Luther. Here, the distribution of *das* and *was* seems to be linked to semantic properties in both free and headed relatives. More precisely, *was* seems to be a special relativizer linked to indefinite contexts/interpretations, while *das* is the elsewhere case that appears in all other neuter singular contexts:

   (41) a. $D_{FR/rel}$ [–def] → *was*
   b. elsewhere: $D_{FR/rel}$ → *das*
   (i.e., CP_{rel} merged with N/nP, $D_{[+def]}$, VP/IP)[18]

3. In late ENHG, however, the system is already very similar to present-day German. In particular, the relativizer *was* occurs in connection with neuter singular d-pronouns, in contrast to what we have found

18 Note that free relatives can be analyzed on a par with headed relatives merged with a D-head if a 'Comp-analysis' of free relatives (Groos & van Riemsdijk 1981) is adopted (assuming that in free relatives, CP_{rel} is merged with a phonetically empty D-head).

in Luther's writings. This suggests a major reanalysis that turned *was* into the elsewhere case (a markedness reversal), giving rise to the present-day situation. Moreover, the change probably involved a reinterpretation of the factors that govern the distribution of *das*/*was* in relative clauses. What I would like to propose is that an intermediate system similar to the Lutheran system of semantic triggers was reanalyzed in terms of morphosyntactic triggers (see the following section for details):[19]

(42) a. $N_{[\text{neuter singular}]} \rightarrow$ *das*
b. elsewhere $\rightarrow$ *was*

4 Toward an explanation of the facts: What's gender got to do with it?

We have seen so far that OHG and MHG exhibit only occasional examples of headed wh-relatives; the 'real' change took place in mid/late ENHG. It is well known that at this time, the syntax and morphology of nouns (and noun phrases) was subject to a major overhaul (cf. e.g. Ebert et al. 1993, Demske 2001), including a collapse of inflection classes, a fixation of DP-internal word order, a development of new determiners from former adjectives/pronouns, and a diminishing role of (in)definiteness as a factor governing the choice of inflections/word forms within the DP, to name but a few. Against this background, it is tempting to suppose that the change from d- to wh-pronouns in (headed) relative clauses is somehow linked to these independent changes that affected the nominal domain in the ENHG period. In what follows, I will develop an explanation for the change in relativization patterns that builds on the hypothesis that the original (semantically motivated) division of labor between *das* and *was* was blurred by independent changes, leading at some point to a major reanalysis of the factors that governed the choice between d- and wh-relativizers. These independent developments

(i) extended the range of functions that could be expressed by wh-elements,

(ii) reduced the distribution of d-forms, and

(iii) blurred the influence of semantic factors (±definite, in particular) on the insertion of phonological exponents.

19 Of course, additional corpus studies would be necessary to verify that this intermediate system was more widespread in ENHG and not only confined to the writings of Luther.

A first step, which already took place in (late) MHG, consisted in the loss of extended sw-forms (presumably via phonological erosion). As a consequence, the distinction between *swer-/swaz*-forms (relativizers linked to indefinite/generalizing readings) and pure wh-pronouns (originally linked to indefinite/interrogative interpretations/functions) could no longer be expressed, leading to the development of underspecified wh-forms not linked to a specific function. This contributed to the ambiguity of postposed indirect questions and free relatives. A further result was presumably that free wh-relatives were no longer confined to free choice/unconditional readings, but could also assume a definite interpretation, a function originally linked to d-pronouns (cf. fn. 17 for relevant examples from the *Septembertestament*). Moreover, the use of *das* in connection with d-pronouns was presumably blurred by occasional (surface) dissimilation of *das*, *das* → *das*, *was* (cf. Behaghel 1928: 727; Neeleman & van de Koot 2006 on *dat*, *wat* in Dutch; Fuß & Grewendorf 2014). The scope of the former elsewhere relativizer *das* was further diminished because *das* was replaced by *welches* 'which' in relatives modifying VP/IP in mid/late ENHG (Behaghel 1928: 724f.). Finally, the role of semantic properties in determining the choice of word forms was undermined by a well-known change that led to a reanalysis of the factors that governed the distribution of weak and strong adjectival inflections (Paul 1920, Behaghel 1928, Ebert et al. 1993, Demske 2001).

In OHG and MHG, the choice between the strong and the weak declension of adjectives was governed by the semantic feature [±definite] (which is still the case in the present-day Scandinavian languages). The weak inflection was used in [+definite] DPs, while in [–definite] contexts, the strong inflection had to be used (probably the elsewhere case). However, in the ENHG period, the original semantically motivated distribution of strong and weak forms was reanalyzed as being governed by morphosyntactic properties, namely the presence of strong inflection on the determiner. For comparison, see (43) and the examples in (44):

(43) *Choice between strong and weak adjectival inflection*

a. MHG: **semantic factors** (+definite: weak, else: strong) →

b. (late) ENHG: **morphosyntactic factors**
(inflected D: weak, else: strong)

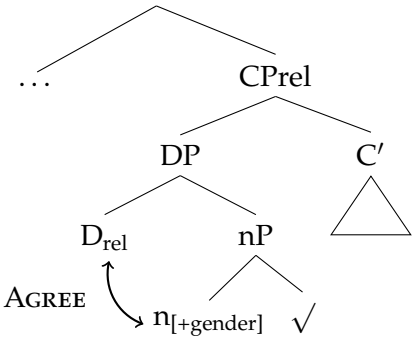
(44) a. *die gegenwe̊rtichait **aller** pozz-**er** geist*
the presence all.GEN.PL evil-GEN.PL.ST ghosts
(Middle Bavarian, 1384: Wilhelm Durandus, *Rationale*, Wien, 32,30) [$D_{[\text{-def}]}$: strong]

b. *die* *fünffte* *Essents* ***aller*** *Mechanisch-**en***
the fifth essence all.GEN.PL mechanical-GEN.PL.WK
Künsten
arts
(Swabian, 1660, Christoph Schorer, Chronik Memmingen, Ulm, 20,28) [$D_{[+phi]}$: weak]

In (44 a), strong adjectival inflection is governed by the indefinite nature of the quantifier 'all'; in (44 b), the presence of strong inflection on the same quantifier triggers weak inflection on the adjective. This change is presumably linked to the rise of an articulated system of determiners (via a reanalysis of adjectives and pronouns) that mark (in)definiteness (cf. Demske 2001). Crucially, this development reduced the evidence for [±def] as a feature governing the choice of inflections/word forms in the DP, which paved the way for another reanalysis that affected the distribution of *das* and *was* in headed relatives. What I want to propose is that when learners could no longer clearly recognize the original semantic motivation behind the *das*/*was* alternation, they attributed it to a morphosyntactic property, namely the absence/presence of lexical gender (on D_{rel}):

(45)

Before the reanalysis: *das* by default; (*was*: $D_{[rel, -def]}$)



After the reanalysis: insertion of *das*, which requires valued gender on D_{rel} (elsewhere: *was)*

In other words, prior to the reanalysis, *das* was the elsewhere case, while *was* was confined to contexts where D_{rel} carried a [–def] specification:

(i) generalizing free relatives (CP_{rel} merged with an empty indefinite D-head)

(ii) headed relatives with an indefinite antecedent (indefinite D-heads: pronouns/quantifiers).

In all other contexts (definite free relatives, headed relatives attaching to nouns and demonstratives, relatives attaching to VP/IP), a d-relativizer was

used by default. In this system, the elsewhere character of the relativizer *das* was clearly signaled by the fact that *das* occurred in contexts where definiteness was a non-factor, as, for example, in relative clauses that modify VP/IP. When the evidence in support of this system was blurred by independent developments (ambiguous interpretation of pure wh-elements, replacement of *das* by *welches* 'which' in VP/IP-relatives, general weakening of the factor [±def]), learners attributed the use of *das* to another factor, namely the presence of valued gender features on D_{rel}. This change was probably facilitated by the fact that d-relativizers always agree in gender with their nominal antecedents in headed relatives, which is the most common type of relative clause. Thus, the reanalysis in question exploited an existing, frequently occurring Agree relation to account for the distribution of d- and wh-relativizers. This in turn led to a markedness reversal in which *was* turned into the elsewhere case (probably facilitated by its underspecification after the loss of extended *sw*-forms), giving rise to the following distribution after the reanalysis:[20]

(46) a. *d*-forms: headed relatives attaching to nouns

b. *was*: free relatives, headed relatives attaching to (genderless) D^0, relatives attaching to VP/IP.

Note that the reanalysis did not affect the surface distribution of d- and wh-forms in headed relatives, that is, the vast majority of cases. In relatives modifying VP/IP, the change did not create any problems either, since VP/IP-relatives were introduced by 'which' at the time of the change. It is only in free relatives that we expect a change in surface patterns. However, note that this difference is confined to definite free relatives (which were formerly introduced by d-forms), while generalizing free relatives (arguably the majority case) continue the earlier pattern (wh-forms).

Further evidence in favor of this scenario comes from subsequent developments which can be directly related to the reanalysis in (45). First of all, we can observe that during the transition from ENHG to New High German the use of d-pronouns in free relatives became obsolete (free d-relatives are still marginally possible in present-day German, but presumably have a different structure; see fn. 7 above). This is expected if d-pronouns require a gender specification, which is not available in free relatives. Another direct conse-

20 In studies of language change, the term 'markedness reversal' is commonly used to refer to cases where a formerly marked inflection or structure assumes a wider scope, while a competing, formerly less marked or default inflection/structure is restricted to certain contexts (cf. e.g. Dik 1978: 111f., Givón 1979: 75f., 1991; Anderson 1977, 1980 on the rise of ergative alignment from former passives; Witkowski & Brown 1983 on the role of (lexical) frequency in markedness reversals; Pietsch 2005 on the changing distribution of verbal *-s* and zero inflections in Northern dialects of English).

quence of the markedness reversal was the extension of the new default form *was* to other contexts where no lexical gender feature is available. Relevant examples come from the use of wh-relatives in connection with nominalized adjectives, a later ENHG development, which is still not categorical in present-day German (with the exception of superlatives; cf. Ebert et al. 1993 on ENHG, Fuß 2017a for present-day German), and relative clauses that modify IP/VP, where *was* replaced d-forms and *welches* 'which'. According to Behaghel (1928: 724f.), the extension of *was* to VP/IP-relatives begins to show up in the written records in the second half of the 18th century (prior to the ENHG period, only d-forms were possible in this context; cf. Paul 2007: 411 and see also Senyuk 2014 for a recent study). Furthermore, this approach correctly predicts that extension of wh-forms to headed relatives should be confined to the neuter singular. Personal wh-pronouns such as *wer* 'who' are ruled out because they are specified for a semantically interpretable gender feature that is not compatible with the presence of grammatical gender (an unvalued/uninterpretable feature) on D_{rel} (see section 2 above). In what follows, I will add some remarks on the rise of headed wh-relatives in English and Dutch, a development that seems to be linked to the breakdown of grammatical gender in these languages.

5 'Who' in headed relatives: Some brief remarks on English and Dutch

In this section, I will briefly comment on a set of related developments in English and Dutch, where it seems that the replacement of d-forms by wh-relativizers might be linked to changes in the gender system. For reasons of space, I cannot go into the details of the relevant changes, but see, for example, Harbert (2007: 436–450) for a comprehensive overview across Germanic.

5.1 English

It has been pointed out that in English, early instances of wh-relatives are confined to adverbials and oblique argument positions (cf. Chevillet 1981, Hogg & Denison 2006, Harbert 2007). In contrast to German, *what*-relatives are rare in Old and Middle English, and are confined to free relatives in the present-day language (but see Johnsen 1913 on headed *what*-relatives in OE[21]). The rise of (headed) wh-relatives is sometimes attributed to the loss of case in the demonstrative paradigm (cf. Hogg & Denison 2006; see Traugott 1972 for the idea that the rise of wh-relatives has been promoted by contact with Old French/Anglo-Norman): Since wh-forms preserved a

21 I am indebted to Robert Truswell for pointing this out to me.

number of case distinctions (in particular with personal forms), they are arguably more specified than the corresponding d-forms (leading to another type of markedness reversal). As a result, they are better suited as realizations of relative pronouns in headed relative clauses (in contrast to German). In a parallel development, the underspecified d-form *that* turned into the default relativizer (a relative complementizer).[22] Importantly for our purposes, the rise of headed relatives with *who* is a later Early Modern English (EModE) development (16th c.; cf. e.g. Nevalainen 2006); this seems to be linked to the breakdown of grammatical gender, which also took place in the EModE period, at a point when the extension of personal wh-forms to headed relatives could no longer be hindered by the presence of interpretable gender features on wh-forms.

5.2 Dutch

At first sight, it appears that Dutch is somewhere in between English and German. It shows a reduced inventory of forms (basically *die*/*dat*, *wie*/*wat* + pronominal PPs of the type *waar*+P): *die*/*dat* signal the distinction between common and neuter gender; *wie*/*wat* signal the distinction [±human] (similar to German). However, it appears that, compared to German, wh-forms have a wider distribution in relative clauses (cf. van der Wal 2002, Boef 2012, Broekhuis & Keizer 2012). In Standard Dutch, relativization by d-pronouns is the most common strategy, and the distribution of *dat* and *wat* is quite similar to that of *das*/*was* in German (cf. Boef 2012, Broekhuis & Keizer 2012: 407–420).[23] However, in contrast to German, headed relatives that modify a [+human] antecedent may also be introduced by personal wh-pronouns when the relative clause is introduced by a wh-PP as in (47), or when the wh-pronoun functions as the indirect object of the relative clause (in this context, *wie* co-varies with *die*), as shown in (48):[24]

(47) *de student* ***[aan wie*** *ik gisteren een boek heb gegeven]*
the student to whom I yesterday a book have given
'The student to whom I have given a book yesterday.'
(Broekhuis & Keizer 2012: 405)

22 See Axel-Tober (2017) on OHG *thaz*. A related development seems to have affected the form 'what' in a number of Germanic languages (see Harbert 2007 and fns. 25 and 26 below).

23 Similarly to German *was*, Dutch *wat* is used in connection with quantifiers and demonstratives such as *al*, *niets*, *iets*, *dat*, predicatives (cf. Brandt & Fuß 2019 on German), superlatives and relative clauses that modify VPs/clauses. In contrast to Standard German (but similarly to colloquial German varieties; see section 6), *wat* may also occur in connection with non-animate lexical nouns, in particular abstract nouns. This use seems to be more widespread in non-restrictive relatives (cf. Broekhuis & Keizer 2012: 408).

24 See Boef (2012) for a theoretical analysis. Related patterns can be observed in the Scandinavian languages (see e.g. Harbert 2007: 447f.).

(48) *de* *student* ***[wie/die*** ***ik*** *gisteren* *een* *boek* *heb* *gegeven]*
the student who/who I yesterday a book have given
'The student whom I have given a book yesterday.'
(Broekhuis & Keizer 2012: 406)

Crucially, however, it has been observed that in colloquial varieties, personal wh-forms have been gaining a wider distribution (cf. van der Wal 2002, Boef 2012):[25]

> 'Whereas in Standard Dutch the relative pronoun is required to spell out syntactic gender, in colloquial Dutch this grammatical distinction is less important and the relative pronoun may spell out semantic animacy instead. For example, in the case of a common gender human RC head like *man* "man", Standard Dutch requires the d-pronoun *die* (that spells out the [common] feature), whereas colloquial Dutch allows the w-pronoun *wie* (that spells out the [human] feature) as well.'
> (Boef 2012: 181)

Thus, it seems that the change affecting relative pronouns is linked to a more general change affecting the gender system of Dutch, in which semantic factors are becoming more important in gender agreement, eventually leading to the loss of grammatical gender (cf. e.g. Audring 2009, Klom & de Vogelaer 2017).

6 Concluding summary

In this paper I investigated the development of wh-relatives in the history of German, focusing on the neuter singular form was. Essentially following Brandt & Fuß (2018), I argued that the distribution of *das*/*was* in present-day German reflects featural properties of the antecedent of the relative clause. The d-form *das* is inserted in the presence of a lexical head noun, which is characterized by specified gender features on *n*, while *was* is taken to be the underspecified elsewhere case. I then reviewed the relevant historical facts, taking into account data from OHG, MHG and ENHG. I showed that, as in other languages, wh-elements first appeared in (generalizing/unconditional) free relative clauses before they spread to headed relative clauses. However, in contrast to English, it seems that the majority of early cases of (argumental) wh-relatives involved the non-personal form *was* 'what'. It was demonstrated

25 As shown in Ponelis (1993), this development is even more advanced in Afrikaans. Compare Harbert (2007: 445) for an analysis of the process by which Afrikaans *wat* has grammaticalized further into a relative particle/complementizer similar to English *that*.

that wh-forms kept a low profile in headed relatives up to the mid-ENHG period (quasi-non-existing in OHG, and still rare in MHG/early ENHG). In the 16th century, the neuter singular form *das* was rapidly replaced by *was* with indefinite antecedents such as 'everything' and 'nothing', eventually leading to the distribution still found in the present-day language. In addition, I showed that there are indications in the early writings of Luther that there probably existed an intermediate system where the distribution of the variants was governed by semantic properties (more precisely, *was* was used in [–def] contexts, while *das* was the elsewhere case). When the evidence for this division of labor became blurred as a result of independent changes, a reanalysis took place in which the original semantic factors were replaced by a morphosyntactic factor, namely the presence of gender features on D_{rel}. This led to a markedness reversal in which *was* turned into the elsewhere case. As a result, *was* spread to further contexts (such as VP/IP-relatives), which is still an ongoing process. In colloquial Standard German varieties, for instance, *was* is used instead of *das* with all kinds of neuter singular antecedents, including lexical nouns:[26]

(49) *Sein Trainer Dieter Hecking haderte mit der*
his manager Dieter Hecking railed with the
spielerischen Leistung: „Wir waren zu statisch in der 2.
gameplay we were too static in the 2nd
*Halbzeit. Das 0:0 ist ein Ergebnis, [**was** für uns nicht*
half the 0:0 is a result what for us not
zufriedenstellend ist].“
satisfactory is
'His manager Dieter Hecking railed against the performance: We were too static in the second half. A draw is a result that is not satisfactory for us.'
(dpa, 22.08.2008; Magerkost in Hannover: 96 und Energie Cottbus trennen sich torlos)

26 In some Low German dialects, relative 'what' has completely ousted *das*; in a subset of these dialects, it seems to have turned into a relative complementizer similar to English *that* (Weise 1917, Fleischer 2005). In these varieties, the use of *wat* as a relativizer is not confined to neuter singular nouns as in (ia), but also extends to masculine and plural antecedents as in (ib) and (ic):

(i) a. *dat Peerd, [**wat** ik köfft heb]*
the horse.NEUT what I bought have (Wiesenhann 1977: 27)

b. *də mån, [**wåt** dåur we:r]*
the man.MASC what there was (Pirk 1928: 36–37)

c. *Alle Mannslüd [**wat** dor sind ...*
all men what there are (Bock 1933: 104)

In contrast, personal wh-pronouns such as *wer* 'who' could not turn into relative pronouns in headed relatives, since they carry an interpretable gender feature, which gives rise to a feature mismatch in languages (such as German) where relative pronouns (D_{rel}) carry a grammatical (i.e. unvalued/uninterpretable) gender feature. It was then argued that the extension of personal wh-forms to headed relatives is linked to the loss of grammatical gender in languages such as English and Dutch.

Electronic corpora

Old German Reference Corpus, http://www.deutschdiachrondigital.de.
Reference Corpus of Middle High German, https://www.linguistics.rub.de/rem/.
Bonn Early New High German Corpus, https://korpora.zim.uni-duisburg-essen.de/Fnhd/.
German Reference Corpus (DeReKo), http://www1.ids-mannheim.de/kl/projekte/korpora/.
Parsed Corpus of Early New High German (*Septembertestament*), made available by Caitlin Light, University of York.

References

Alexiadou, Artemis & Gianina Iordăchioaia. 2014. Two syntactic strategies to derive deadjectival nominals. *Anglica Wratislaviensia* 52. 65–83.
Anderson, Stephen R. 1977. On mechanisms by which languages become ergative. In Charles N. Li (ed.), *Mechanisms of syntactic change*, 317–363. Austin: University of Texas Press.
Anderson, Stephen R. 1980. On the development of morphology from syntax. In Jacek Fisiak (ed.), *Historical morphology*, 51–69. Berlin: Mouton de Gruyter.
Audring, Jenny. 2009. *Reinventing pronoun gender*. Utrecht: LOT.
Axel-Tober, Katrin. 2017. The development of the declarative complementizer in german. *Language* 93. 29–65.
Behaghel, Otto. 1923. *Deutsche Syntax. Eine geschichtliche Darstellung I: Die Wortklassen und Wortformen*. Heidelberg: Carl Winter.
Behaghel, Otto. 1928. *Deutsche Syntax. Eine geschichtliche Darstellung III: Die Satzgebilde*. Heidelberg: Carl Winter.
Bierwisch, Manfred. 1967. Syntactic features in morphology: General problems of so-called pronominal inflection in German. In *To honor Roman Jakobson: Essays on the occasion of his seventieth birthday*, 239–270. The Hague: Mouton.
Blevins, James P. 1995. Syncretism and paradigmatic opposition. *Linguistics and Philosophy* 18. 113–152.
Bock, Karl Nielsen. 1933. *Niederdeutsch auf dänischem Substrat. Studien zur Di-*

alektgeographie Südostschleswigs. Copenhagen/Marburg: Levin & Munksgaard.
Boef, Eefje. 2012. *Doubling in relative clauses. Aspects of morphosyntactic microvariation in Dutch*. Utrecht: LOT.
Brandner, Eleonore & Iris Bräuning. 2013. Relative 'wo' in Alemannic: Only a complementizer? *Linguistische Berichte* 234. 131–169.
Brandt, Patrick & Eric Fuß. 2014. Most questionable pronouns: Variation between das- vs. was-relatives in German. *Linguistische Berichte* 239. 297–329.
Brandt, Patrick & Eric Fuß. 2018. A corpus-based analysis of pronoun choice in German relative clauses. *Belgian Journal of Linguistics* 31. 195–218.
Brandt, Patrick & Eric Fuß. 2019. Relativpronomenselektion und grammatische Variation: was vs. das in attributiven Relativsätzen. In Eric Fuß, Marek Konopka & Angelika Wöllstein (eds.), *Grammatik im Korpus. Beschreibung und statistische Analyse von Variationsphänomenen in komplexen Sätzen*, 91–213. Tübingen: Narr.
Broekhuis, Hand & Evelien Keizer. 2012. *Syntax of Dutch. Nouns and noun phrases I*. Amsterdam: Amsterdam University Press.
Chevillet, François. 1981. *Les relatifs au debut du Moyen-anglais*: Université de Lille 3 dissertation.
Chomsky, Noam. 1965. *Aspects of the theory of syntax*. Cambridge, MA: MIT Press.
Comrie, Bernard. 1998. Rethinking the typology of relative clauses. *Language Design* 1. 59–86.
Coniglio, Marco & Katharina Paul. 2019. Unknown relatives from the North? On the origin and development of w-relative pronouns in German. In Francesco Costantini (ed.), *Syntactic variation. The view from the German-language islands in northeastern Italy*, 23–43. Udine: UPI.
Delbrück, Berthold. 1893. *Vergleichende Syntax der indogermanischen Sprachen*. Strasbourg: Trübner. Erster Theil.
Demske, Ulrike. 2001. *Grammatische Merkmale und Relationen: Diachrone Studien zur Nominalphrase des Deutschen*. Berlin: de Gruyter.
Dik, Simon C. 1978. *Functional grammar*. Amsterdam: North-Holland.
Dudenredaktion (ed.). 2016. *Duden: Die Grammatik. 9th edn.* Mannheim/Leipzig/Vienna/Zurich: Dudenverlag.
Ebert, Robert Peter, Oskar Reichmann, Hans-Joachim Solms & Klaus-Peter Wegera. 1993. *Frühneuhochdeutsche Grammatik*. Tübingen: Niemeyer.
Erdmann, Oskar. 1874. *Untersuchungen über die Syntax Otfrid I: Die Formationen des Verbums in einfachen und zusammengesetzten Sätzen*. Halle/Saale: Verlag der Buchhandlung des Waisenhauses.
Fleischer, Jürg. 2005. Relativsätze in den Dialekten des Deutschen: Vergleich und Typologie. *Linguistik Online* 24. 171–186.

Fleischmann, Klaus. 1973. *Verbstellung und Relieftheorie – Ein Versuch zur Geschichte des deutschen Nebensatzes*. Munich: Wilhelm Fink.

Fuß, Eric. 2017a. Relativierungsverhalten und syntaktische Kategorie substantivierter Adjektive. In Sandra Döring & Jochen Geilfuß-Wolfgang (eds.), *Probleme der syntaktischen Kategorisierung: Einzelgänger, Außenseiter und mehr*, 43–100. Tübingen: Stauffenburg.

Fuß, Eric. 2017b. Wh-relatives in German: historical and current developments. Paper presented at the Workshop on complementizers and the left periphery, University of Cambridge, 28.03.2017.

Fuß, Eric. 2019. Wh-words in time. Paper presented at the workshop *Dimensions of wh-words: a German-Italian question time*. Villa Vigoni, 08.05.2019.

Fuß, Eric & Günther Grewendorf. 2014. Freie Relativsätze mit d-Pronomen. *Zeitschrift für Sprachwissenschaft* 33(2). 165–214.

Gisborne, Nikolas & Robert Truswell. 2017. Where do relative specifiers come from? In Eric Mathieu & Robert Truswell (eds.), *Micro-change and macro-change in diachronic syntax*, 25–42. Oxford: Oxford University Press.

Gisborne, Nikolas & Robert Truswell. 2018. Parallel evolution of relative clauses in Indo-European. Paper presented at the Philological Society, Oxford, Somerville College, 16.06.2018.

Givón, Talmy. 1979. *On understanding grammar*. New York: Academic Press.

Givón, Talmy. 1991. Markedness in grammar: Distributional, communicative and cognitive correlates of syntactic structure. *Studies in Language* 15(2). 335–370.

Gonda, Jan. 1954. Notes on the Indo-European kui- and kuo-pronouns. *Lingua* 4. 241–285.

Groos, Anneke & Henk van Riemsdijk. 1981. Matching effects in free relatives: A parameter of core grammar. In Adriana Belletti, Luciana Brandi & Luigi Rizzi (eds.), *Theory of markedness in generative grammar: Proceedings of the IVth GLOW Conference*, 171–216. Pisa: Scuola Normale Superiore.

Halle, Morris. 1997. Distributed Morphology: Impoverishment and fission. In Benjamin Bruening, Yoonjung Kang & Martha McGinnis (eds.), *PF: Papers at the interface*, 425–450. MIT Working Papers in Linguistics 30. Cambridge, MA: Department of Linguistics and Philosophy, MIT, MIT Working Papers in Linguistics.

Halle, Morris & Alec Marantz. 1993. Distributed Morphology and the pieces of inflection. In Kenneth Hale & Samuel J. Keyser (eds.), *The view from Building 20*, 111–176. Cambridge, MA: MIT Press.

Harbert, Wayne. 2007. *The Germanic languages*. Cambridge: Cambridge University Press.

Harley, Heidi & Elizabeth Ritter. 2002. Structuring the bundle: A universal morphosyntactic feature geometry. In Horst J. Simon & Heike Wiese (eds.), *Pronouns - grammar and representation*, 23–39. Amsterdam: John

Benjamins.
Harm, Volker. 2001. Zur Genese der verallgemeinernden Relativsätze des Althochdeutschen. *Indogermanische Forschungen* 106. 241–261.
Hogg, Richard & David Denison. 2006. *A History of the English Language*. Cambridge: Cambridge University Press.
Jespersen, Otto. 1954. *A modern English grammar on historical principles III*. London: Allen & Unwin.
Johnsen, Olaf. 1913. On some uses of the indefinite relatives in Old English and the origin of the definite relatives. *Anglia* 37. 281–302.
Jäger, Agnes. 2018. *Vergleichskonstruktionen im Deutschen. Diachroner Wandel und synchrone Variation*. Tübingen: Niemeyer.
Jäger, Agnes. 2019. The syntax of comparison constructions in diachronic and dialectal perspective. *Glossa: A journal of general linguistics* 4(1). 1–51.
Kiparsky, Paul. 1973. 'Elsewhere' in phonology. In Stephen Anderson & Paul Kiparsky (eds.), *A Festschrift for Morris Halle*, 93–106. New York: Holt, Rinehart and Winston.
Kiparsky, Paul. 1982. Word-formation and the lexicon. In F. Ingemann (ed.), *Proceedings of the 1982 Mid-America Linguistics Conference*, 3–29. Kansas: University of Kansas.
Klein, Thomas, Hans-Joachim Solms & Klaus-Peter Wegera (eds.). 2009. *Mittelhochdeutsche Grammatik. Teil III: Wortbildung*. Tübingen: Niemeyer.
Klom, Jan & Gunther de Vogelaer. 2017. Semantic agreement competing with syntactic agreement: The case of Dutch pronouns. *Leuvense Bijdragen: Leuven contributions in linguistics and philology* 101. 123–149.
Lowenstamm, Jean. 2007. On little n, ROOT, and types of nouns. In Jutta Hartmann, Veronika Hegedűs & Henk van Riemsdjik (eds.), *The sounds of silence: Empty elements in syntax and phonology*, 105–144. Amsterdam: Elsevier.
Lowenstamm, Jean. 2012. Feminine and gender, or why the feminine profile of French nouns has nothing to do with gender. In Eugeniusz Cyran, Henryk Kardela & Bogdan Szymanek (eds.), *Linguistic inspirations. Edmund Gussmann in memoriam*, 371–406. Lublin: Wydawnictwo Katolicki Uniwersytet Lubelski.
Lühr, Rosemarie. 1998. Verallgemeinernde Relativsätze im Althochdeutschen. In Karin Donhauser & Ludwig Eichinger (eds.), *Deutsche Grammatik – Thema in Variationen Festschrift für Hans-Werner Eroms zum 60. Geburtstag*, 263–281. Heidelberg: Carl Winter.
Neeleman, Ad & Hans van de Koot. 2006. Syntactic haplology. In Martin Everaert & Henk van Riemsdijk (eds.), *The Blackwell companion to syntax IV*, 684–710. Oxford: Blackwell.
Nevalainen, Terttu. 2006. *An introduction to Early Modern English*. Edinburgh: Edinburgh University Press.

Paul, Hermann. 1920. *Deutsche Grammatik IV: Syntax*. Halle: Max Niemeyer.
Paul, Hermann. 2007. *Mittelhochdeutsche Grammatik (25th edition)*. Tübingen: Niemeyer.
Picallo, M. Carme. 2008. Gender and number in Romance. *Lingue e linguaggio* VII(1). 47–66.
Pietsch, Lukas. 2005. *Variable grammars: Verbal agreement in northern dialects of English*. Tübingen: Niemeyer.
Pirk, Kurt. 1928. *Grammatik der Lauenburger Mundart. Ein Beitrag zur niederdeutschen Sprache in Ostpommern*. Greifswald: Ratsbuchhandlung L. Bamberg.
Ponelis, Fritz. 1993. *The development of Afrikaans*. Frankfurt am Main: Peter Lang.
Romaine, Suzanne. 1980. The relative clause marker in Scots English: Diffusion, complexity, and style as dimension of syntactic change. *Language in Society* 9. 221–247.
Romaine, Suzanne. 1982. *Socio-historical linguistics: Its status and methodology*. Cambridge: Cambridge University Press.
Sauerland, Uli. 1998. *The meaning of chains*: MIT dissertation.
Sauerland, Uli. 2003. Unpronounced heads in relative clauses. In Kerstin Schwabe & Susanne Winkler (eds.), *The interfaces: Deriving and interpreting omitted structures*, 225–226. Amsterdam: Benjamins.
Schrodt, Richard. 2004. *Althochdeutsche Grammatik II*. Tübingen: Niemeyer.
Senyuk, Ulyana. 2014. *Zum Status relativähnlicher Sätze im Frühneuhochdeutschen: Ein Beitrag zum Wesen der Subordination im älteren Deutsch*: University of Potsdam dissertation.
Traugott, Elizabeth. 1972. *The history of English syntax*. New York: Holt, Rinehart and Winston.
Truswell, Robert & Nikolas Gisborne. 2015. Quantificational variability and the genesis of English headed wh-relatives. In Eva Csipak & Hedde Zeijlstra (eds.), *Proceedings of Sinn und Bedeutung 19*, University of Constance: Gesellschaft für Semantik.
de Vries, Mark. 2002. *The syntax of relativization*: Universiteit van Amsterdam dissertation.
van der Wal, Marijke. 2002. Relativisation in the history of Dutch: Major shift or lexical change? In Patricia Poussa (ed.), *Relativisation on the North Sea Littoral*, 27–35. Munich: Lincom.
Weise, Oskar. 1917. Die Relativpronomina in den deutschen Mundarten. *Zeitschrift für deutsche Mundarten* 12. 64–71.
Wiese, Bernd. 1999. Unterspezifizierte Paradigmen. Form und Funktion in der pronominalen Deklination. *Linguistik Online* 4.
Wiesenhann, Tjabe. 1977. *Einführung in das ostfriesische Niederdeutsch*. Leer: Schuster.

Witkowski, Stanley R. & Cecil H. Brown. 1983. Marking-reversals and cultural importance. *Language* 59. 569–582.

Eric Fuß
Germanistisches Institut
Ruhr-Universität Bochum
Universitätsstraße 150
44801 Bochum
eric.fuss@rub.de

	Middle Bav.		Swabian		East Franconian		Upper Saxon		Ripuarian		East High Alemannic		East Swabian		Alsatian		Hessian		Thuring.	
	das	*was*	*das*	*was*	*das*	*was*	*das*	*was*	*das*	*was*	*das*	*was*	*das*	*was*	*das*	*was*	*das*	*was*	*das*	*was*
1350-1400	4	0	2	1	4	0	0	0	0	0	0	0	12[27]	0	9	0	2[28]	0	0	0
1450-1500	0	0	3	0	2	0	9[29]	0	0	0	1	0	3	0	0	0	0	0	0	0
1550-1600	0	0	(1x *welches*)	0	0	4	1	0	1	2	2	0	2	3	2	1	0	1	0	1
1650-1700	0	0	0	2	0	4	0	0	0	6	0	2	0	2	0	2	0	0	0	1

Table 5 *Alles, das/was* in the Bonn Corpus

27 plus 2x *des* (genitive singular)
28 plus 1x *des*
29 plus 1x *des*