

Wh-relatives in the history of German (and what's gender got to do with it)

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1. Introduction

- In the history of German, we can observe an ongoing change in which the neuter wh-pronoun *was* replaces the d-form *das* in (headed) relative clauses.
- Standard German: Headed relative clauses are introduced by a so-called d-pronoun that inflects for case (assigned in the relative clause) and agrees in gender and number with the head of the relative clause:¹

- (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.'
- d. die Frau, **die** Peter getroffen hat
the woman that.FEM.ACC Peter met has
- c. das Auto, **das** Peter fährt
the car that.NEUT.ACC Peter drives
- d. die Männer/Frauen/Autos, **die** Peter gesehen hat
the men/women/cars that.PL Peter seen has

- With a certain set of neuter antecedents, the d-pronoun is replaced by the wh-pronoun *was* (cf. e.g. Duden 2016: §§1661-63):

- (2) a. **indefinites/quantifiers**: *alles* 'everything', , *vieles* 'many things',
etwas 'something', ...
- b. **demonstratives**: *das* 'that', *dasjenige* 'that thing', *dem* 'that.DAT', ...
- c. **deadjectival nouns**: *das Gute* 'the good (thing)', *das Beste* 'the best' etc.

- (3) 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.'

¹ An alternative albeit less frequent and stylistically marked option consists in using inflected forms of the wh-pronoun *welche* 'which' to introduce relative clauses. *Welch-* has a similar distribution as d-forms and is typically confined to the written language.

(BRZ07/JUN.06447 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.’

(HAZ08/NOV.01608 Hannoversche Allgemeine, 08.11.2008, S. 15; Microsoft lässt Yahoo abblitzen)

- The use of *was* in headed relative clauses is an (early German) innovation (cf. Paul 1920: 206ff., see below for details); previously, all kinds of (headed) relative clauses were introduced by d-pronouns.
- This development is confined to the neuter form; personal wh-pronouns such as *wer* ‘who’ cannot be used to introduce headed relative clauses:²

- (4) *Jeder, [**wer** teilnimmt], gewinnt.
 each person who participates wins

This paper:

- ❖ theoretical analysis of the distribution of relative *was* in present-day German
- ❖ overview of the development of (headed) wh-relatives in the history of German
- ❖ discussion of how the diachronic facts relate to the analysis of present-day *das/was*

2. Present-day German: *was* as a default relativizer

- Observation: The absence/presence of a lexical-nominal antecedent is the most important factor governing pronoun choice in relative clauses (*das* vs. *was*), cf. Brandt & Fuß (2014) (see already Behaghel 1928: 725f.).
- Corpus study: Choice of *das* vs. *was* (as relativizers) and presence vs. absence of a lexical head noun (aggregate numbers):

	<i>das</i>	<i>was</i>
Antecedent without N	678	17 006
Antecedent with N	36 796	152

Table 1: Distribution of *das/was* dependent on the presence of a lexical head noun (aggregate numbers). Source: *Deutsches Referenzkorpus* (DeReKo)

² Additional wh-forms can be used to introduce relative clauses where the gap corresponds to an adverbial. Adverbial wh-forms often involve the locative *wo* ‘where’, typically in connection with an adpositional element, giving rise to so-called ‘prepositional adverbs’ (*womit* ‘where+with’, *wofür* ‘where+for’, *worüber* ‘where+about’ etc.). A wider range of grammatical options is found in dialects, which also exhibit relative particles/complementizers such as *wo*, which do not inflect and can be doubled by relative pronouns (especially in southern German varieties), cf. e.g. Weise (1916), Fleischer (2005).

- If a lexical noun is added to elements such as *alles* ‘all, everything’ that require relativization by means of *was*, a d-relativizer must be used:

- (5) a. *alles, was/*das es gibt*
 all what/that there is
 b. *alles Gold, das/??was es gibt*
 all gold that/what there is

(6) Generalization: Relativization by means of *das*

$N_{[\text{neuter singular}]} \rightarrow \textit{das}$

- Basic proposal: The choice between d- and wh-morphology is determined in the course of the syntactic derivation, depending on whether the relativizer enters into an agreement relation with a lexical head noun (Brandt & Fuß 2014, 2017; see also Boef 2012 on Dutch, Wiese 2013 on German).
- Core assumptions:
 - (i) (Inherent) gender is the defining characteristic of lexical nouns.
 - (ii) The more specified exponent *das* is used in cases where the relativizer picks up a gender feature via agreement with a lexical nominal antecedent.
 - (iii) Elsewhere, *was* is inserted (as a default relativizer).
- I adopt the idea (cf. e.g. Lowenstamm 2007) that lexical gender features are hosted by the category defining head *n*; in other words, the presence of *n* is the defining characteristic of lexical nominals.³

2.1 Syntax


- Standard assumptions: Relative pronouns (RP) contain a category feature [D], an operator feature [Op], and a set of phi-features (features that await valuation in the course of the syntactic derivation are marked as ‘uF’):⁴

(7) RP [D, Op, Person, Number, uCase, uGender]

³ More precisely, I assume that lexical gender on nouns results from the combination of a category defining (functional) head (*n*) with a lexical root ($\sqrt{\quad}$): *n*’s (non-interpretable) gender feature is valued/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, cf. e.g. Alexiadou & Iordăchioaia (2014).

⁴ [person] might be left unspecified if it is assumed that third person expresses the absence of positively specified person features (Benveniste 1950, 1966). Number seems to play a special role: The finite verb of the RC agrees in number with the RP, which suggests that the RP is inherently specified for number. However, the RP also agrees in gender and number with the head noun, which suggests that number must be checked by the relevant agreement operation; thus, agreement not only involves feature valuation, but also matching of already valued features.

- The gender feature is determined/valued via agreement with the head noun (case is assigned/valued internal to the RC):⁵

(8) head [_{CP} RP_i [_{C'} C [_{TP} ... t_i ...]]]


- Focusing on the *das/was* alternation, there are two possible outcomes of the syntactic derivation, dependent on whether the RP acquires a gender feature from a lexical head noun:⁶

(9) a. [D, Op, -pl, -obl, -obj/+obj, **Gender: -masc, -fem**]
 b. [D, Op, -pl, -obl, -obj/+obj, **Gender: __**]

2.2 Spelling out RP

- The distribution of *das* vs. *was* is accounted for by different featural specifications of the Vocabulary items that are used to realize relative pronouns/operators:

(10) a. [D, +Op, -obl, **-masc, -fem**] ↔ /das/
 b. [+Op, -obl] ↔ /vas/

- *das* signals [Op], a category feature and neuter gender; in contrast, *was* is a pure focus/scope marker (cf. e.g. Bayer & Brandner 2008, Grewendorf 2012).
- Under the assumption that the insertion of phonological exponents is governed by some form of the Elsewhere Condition (Kiparsky 1973, 1982; Halle 1997), the distribution of *das* and *was* can be correctly described:

⁵ See Zeijlstra (2012, 2013) for the idea that agreement involves a relation between a probe and a higher, c-commanding goal. Cf. Heck & Cuartero (2011) for an alternative mechanism based on downward agree that accomplishes agreement between head noun and relative pronoun/relative clause; see also Sternefeld (2008). Additional questions concern e.g. the nature of the feature that renders N active as a goal for upward Agree. One likely candidate is the case feature of N, which is still unvalued at the point where the RC is merged with N (see Heck & Cuartero 2011 for related considerations). Downward agreement between the relative operator can also be assumed if a matching analysis of relative clauses is adopted, in which the relativizer contains an NP which is deleted under identity with the head of the relative clause (Chomsky 1965, Sauerland 1998, 2003).

⁶ The feature structures in (8) 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), [\pm plural] for number, [\pm masculine, \pm feminine] for gender, and the following system of case distinctions based on the features [\pm oblique, \pm object]:

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

- (11) a. das Buch, **das** du liest
 the book that you read
 b. alles, **was** du liest
 all what you read

- (11a): RC is merged with a lexical noun. Both vocabulary items are compatible with the insertion context (RP containing a valued gender feature). According to the Elsewhere Condition, however, the more specified exponent must be used ⇒ **insertion of *das***.
- (11b): RC is merged with a determiner/quantifier (presumably of the category D). The RP does not receive a gender feature in the syntax; as a result, *das* does not match the insertion context since it requires the presence of valued gender features ⇒ **insertion of the pure operator marker *was***, which is underspecified for [gender].
- This analysis facilitates a unified treatment of different types of RCs, which all have in common that they lack an appropriate (overt) nominal antecedent (see Fuß 2017 on deadjectival nouns). Apart from headed *was*-relatives, these include:

(12) Free relatives:

[**Was** der Mann auch anpackt], funktioniert.
 what the man ever tackles works
 'Whatever the man tackles, works.'

(HAZ09/AUG.02148 Hannoversche Allgemeine, 14.08.2009;)

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

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

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

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

2.3 Some further consequences of the analysis: wh-forms vs. d-forms

- d-forms:
 - (i) The insertion of d-forms is bound to the presence of a syntactic agreement relation between head noun and RP (valuation of [uGender]), which also serves to establish coreference between these two elements.
 - (ii) Grammatical gender (non-interpretable, resulting from agreement)

 - wh-forms:
 - (i) *was* (and wh-forms more generally) is not dependent on a syntactic agreement relation with an antecedent (RP's content is not affected by feature valuation in the syntax).
 - (ii) Gender distinction has a semantic effect: The absence of an antecedent with specified gender (and number) features frees up wh-forms to code a semantic (as opposed to grammatical gender) difference, namely, the difference between persons (*wer*) and non-persons (*was*), just as in interrogatives (cf. Wiese 2013).

 - Absence of valued [gender] at the interfaces – repair via insertion of default values:
 - (a) At the interface to the morphological component, the absence of [gender] is interpreted as [neuter] (cf. e.g. Harley & Ritter 2002 for related considerations).
 - (b) At the interface to the semantic component, the absence of [gender] is interpreted as [–animate/human].

 - Personal forms such as *wer* ‘who’ cannot introduce headed relative clauses:
 - ❖ wh-relativizers are only possible in contexts that lack a lexical antecedent, that is, in contexts where the head element does not carry gender features.
 - ❖ Personal wh-forms carry an interpretable lexical gender feature;
 - ❖ As a result, the use of a personal wh-pronoun leads to a feature clash in the contexts where wh-relatives are potentially licensed:⁷
- (15) *Antecedent_[–gender] [C_{PRel} wh-pronoun_[+gender] ...]

⁷ 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).

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

- **The historical development of (free) *wh*-relatives – two scenarios:**

1. Reanalysis of a construction where a *wh*-indefinite is modified by an adverbial element *sô* and a corresponding relative clause (cf. Paul 1920: 199; see also Jespersen 1954 on Old English):

- (16) a. [DP *sô hwer* [CPrel *sô ...*]] ‘such one as ...’
 b. [DP *sô hwer* [CPrel \emptyset ...]]
 c. [DP *swer* [CPrel \emptyset ...]] \Rightarrow [free CPrel (s)wer ...] (MHG)

- In (late) Old High German, the second *sô* (introducing the relative clause) could be dropped. Later on, the adverbial element cliticized onto the *wh*-pronoun (giving rise to Middle High German forms such as *swer* ‘who(ever)’) and eventually disappeared altogether.
- 2. Reanalysis of indirect questions as free relatives: Ambiguous cases in connection with *verba dicendi/sentiendi*, which may license a propositional or nominal complement (cf. e.g. Hogg & Denison 2006 on OE).

- (17) *uuanda si ne-uuizzen [uuaz sî tuônt] \Rightarrow ... [free CPrel uuaz sî tuônt]*
 since they not-know what they do
 (N_Ps_Glossen_18_56-59 (edition 75 - 95))

- The following examples suggest that this ambiguity is real: In (18a) the verb ‘know’ takes a *wh* complement clause, followed by a DP in apposition; in (18b), 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 theist thaz lón]*
 know you what-I you-DAT tell that same praise that-is the reward
giwisso wízist thu thaz ...
 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)
- c. *Tû neuuéist nóh mág geskéhen . [uuáz ih ságen uuíle]*
 you not-know neither can happen what I say want
 ‘You don’t know nor can it happen what I want to say.’
 (N_DeCon_II_102-108 (edition 1102 - 1122))

- 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.

3.1 Old High German

- Source: Old German Reference Corpus (c. 650,000 tokens).
- Both free and headed relatives are generally introduced by d-pronouns (3,959 cases in the Old German Reference Corpus):⁸

- (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,
 then came running at once as you know
 [thie inan minnotun meist]
 that.PL him loved most
 (Otfrid, Gospel Harmony, 5.5.3)
- (20) a. dhazs fona dhemu almahtigin fater dhurah inan ist al uuordan,
 that from the.DAT almighty father through him is all become
 [dhazs chiscaffanes ist]
 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)
- c. thar ist inne manag gúat [thaz géistlichu uns io
 there is therein much good that-REL spiritually us always
 wóla duat]
 good does
 ‘It is much good therein that does us good spiritually.’
 (O_Otfr.Ev.3.7 (edition 279 - 306))

- As illustrated in (20), d-forms are also used in connection with indefinites, demonstratives and nominalized adjectives that require (or allow) relativization by means of *was* in present-day German.
- wh-pronouns (used as indefinites) occur in generalizing *so-wh-so* constructions:

⁸ Free d-relatives continue to exist as a somewhat archaic option in present-day German:

- (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).

- (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)

- In addition, relative clauses may be introduced by 'pure' wh-pronouns, as shown in Table 2.

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

Table 2: Relative clauses introduced by pure wh-pronouns in the Old German Reference Corpus (182 cases)

- Observations:
 - ❖ In cases where the wh-pronoun is an argument, *was* is by far the most frequent form; personal wh-forms are rare.¹⁰
 - ❖ The (vast) majority of these pure wh-relatives are (tagged as) free relatives:

⁹ I excluded 7 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 9 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.

¹⁰ That is, in contrast to OE (cf. e.g. Truswell & Gisborne 2015, Gisborne & Truswell, to appear; see also Romaine 1980, 1982 on Middle Scots), 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. Rather, the most 'frequent' wh-relativizer is the neuter form 'what'.

(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.’
 (N_Mart_Cap.I.60-63 (edition 198-223))

- There are few examples of headed relative clauses introduced by pure wh-forms.
- Note: Similarities between OHG and present-day German with regard to the contexts that allow wh-relatives (indefinites & d-pronouns).
- The antecedent is an indefinite element:

(23) dhazs sie ni eigun eouuihd [huuazs sie dhar uuidar setzan].
 that they not own anything, what.REL they there against set
 ‘that they do not possess anything that they set against it’
 (lt. dum non habeant quod proponent, Isidor_DeFide_5 (edition 513 - 538))

- The antecedent is a demonstrative:

(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)

- Further contexts: In (25), the locative wh-pronoun refers to a lexical noun; in (26), the antecedent is a free relative clause introduced by a wh-form:

(25) quaemet inti gisehet thia stat [uuar trohtin gilegit uuas]
 come and see the place where the Lord laid-to-grave was
 (T_Tat217 (edition 91 - 104))

(26) inti suohenti untar in uuer iz uuari fon in [uuer
 and searched among them who it was of them who.REL
 sulih tati]
 such-a-thing did
 ‘And they began to enquire among themselves, which of them it was that
 should do this thing.’
 (Tatian 158.7)

- **The transition from free to headed wh-relatives**: Reanalysis of appositive free relatives (cf. Paul 1920: 206f. Truswell & Gisborne 2015, Gisborne & Truswell, to appear, on OE)).

- Examples like (24), (25), (26): Potentially ambiguous between appositive free relatives and relatives modifying a nominal head. The appositive character is particularly clear in examples like (27) where the relative pronoun fails to agree (in number) with the nominal element:

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

3.2 Middle High German

- Source: Middle High German Reference Corpus (MiGraKo, c. 1,000 000 tokens)
- In the MHG period, d-relatives still dominate (cf. e.g. Paul ²⁴1998: 373).
- However, free relatives (FRs) introduced by contracted forms such as *swaz*, *swer*, *swen*, *swes*, *swanne*, *swâr* (< so+wh) have become a frequent pattern (2,066 hits for argumental wh-forms, and 1,461 hits for adverbial wh-forms):

(28) a. *swer* an rehte gúete wendet sin gemüete,
 whoever at right goodness turns his mind
 dem volget sælde und êre
 that.MASC.DAT follows blessing and honor
 (Iwein 1-3; Paul ²⁴1998: 374)

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))

- In the course of the MHG period, the wh-pronouns extended by /s-/ are eventually replaced by simple wh-forms (cf. e.g. Paul ²⁴1998: 230).
- *sw*-forms can also be used to introduce headed relative clauses – primarily in connection with an indefinite/generalizing antecedent:

(29) *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 this context, we can also find relativization by means of the ‘pure’ form *was*:

- (30) a. *síe hetten gnuc des alles · [waz die erde truc]*
 they had enough of-everything what the earth bears
 (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 15117 - 15138))

- As shown in Table 3, *wh*-forms keep a relatively low profile in headed relatives throughout the MHG period (focusing on contexts (neuter indefinites/demonstratives) that favor the use of *wh*-relatives in present-day German):

	<i>daz</i>	<i>swaz</i>	<i>waz</i>
<i>allez</i> 'all'	165	6	6
d-pronoun	85 ¹¹	13	13

Table 3: Relativization strategies with neuter antecedents in MHG (MiGraKo)

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

- (32) *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))

- Still, we can observe a difference between neuter and personal *wh*-forms: While the former slowly become more frequent, the latter continue to be rare. A search in MiGraKo produced only very few (potentially) relevant examples:

- (33) *Ein iegelícher [swer zuo mir kuomt . unde horit mine rede] [...]*
 everybody s-who.MASC to me comes and hears my speech
 (Evangelienbuch des Matthias von Beheim, 14_1-omd-PU-G > M318-G1 (tok_dipl 10429-10455))

3.3 Early New High German

- Source: Bonn ENHG Corpus (around 450,000 tokens)
- In the Early New High German period, the morphosyntax of nouns and noun phrases was subject to some major changes (cf. e.g. Ebert et al. 1993, Demske 2001) including

¹¹ Including genitival *d*-forms (*des*); the search did not produce any genitival forms of *swaz* or *waz*.

- ❖ a collapse of inflection classes
- ❖ the development of new determiners from former adjectives/pronouns
- ❖ the fixation of word order in the DP
- ❖ ...
- Another change that has not received much attention in the literature concerned the distribution of d- vs. wh-pronouns in headed relative clauses (cf. Ebert et al. 1993: 449). This is shown in what follows for relative clauses in connection with *alles* ‘all.NEUT.SG’ and *das* ‘that.NEUT.SG’
- In early ENHG (14th and early 15th c.), we almost exclusively find d-relatives in connection with *alles*; later on *das* is replaced by *was*:

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

(35) Denn durch solchen glauben vergibt Gott alles
 since through such belief forgives God all
 [**was** vnserm gehorsam noch mangelt].
 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)

- The transition from *das* to *was* takes place quite rapidly (in around 150 years), compare Table 5, Figure 1, and appendix I.

	<i>das</i>	<i>was</i>
1350-1400	33	1
1450-1500	18	0
1550-1600	8	11
1650-1700	0	18

Table 4: *alles* ‘all’ + *das/was* in ENHG (absolute numbers)

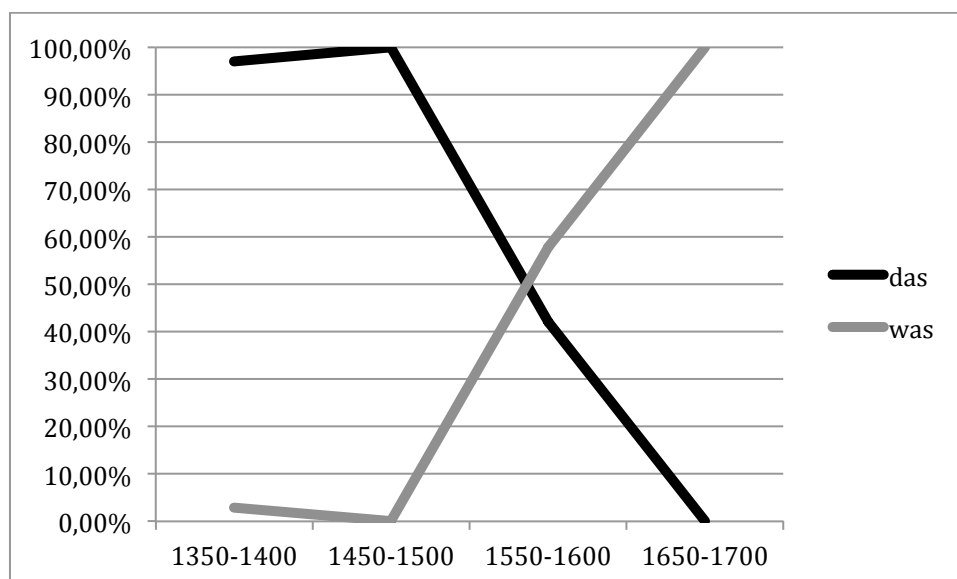


Figure 1: *alles* 'all' + *das/was* in ENHG

- A similar change can be observed in connection with *das* 'that', *dasjenige* 'that one', and nominalized adjectives (Ebert et al. 1993: 449), compare Table 6 for *das+das/was*:

	<i>das</i>	<i>was</i>
1350-1400	11	0
1450-1500	7	0
1550-1600	0	2
1650-1700	1	4

Table 5: *das* 'that' + *das/was* in ENHG (absolute numbers)

- Again, there are very few examples where *wer* 'who' introduces a headed relative clause (Ebert et al. 1993: 449); similar to earlier (and later) stages of German, this is a minority pattern. In the vast majority of cases, a d-relative is used to refer back to a masculine human/animate antecedent, as in (37).¹²

(36) denn ich will niemand on hulffe lassen/ [**wer** mir trawet].
 since I want nobody without help let who me trusts
 (Text 135: Veit Dietrich, Summaria, Nuremberg (East Franconian) 1578, 23,20)

(37) Es ... aber niemand war, [**der** sie hätte auffnehmen wollen]
 it however nobody was who them had.SUBJ accomodate wanted
 'However, there was nobody who would accomodate them.'
 (Hans Michael Moscherosch: „Gesichte, Straßburg 1650“ (Alsatian), 23, 27)

¹² Furthermore, it is noteworthy that the relative particle *wo* is only scarcely attested in the ENHG corpus (Ebert et al. 1993: 447). It is standardly assumed that the relative particle *wo* developed from the locative *wh*-pronoun. Recently, however, Brandtner & Bräuning (2013) have argued that *wo* originated from the equative particle *so*.

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

- OHG and MHG exhibit only occasional examples of headed *wh*-relatives; the 'real' change takes place in mid/late ENHG.
- Question: Can we link the changing relativization patterns to independent changes that affected the nominal domain in ENHG?
- Proposal:
 - (i) OHG/MHG: As a result of the reanalysis of appositive free relatives, the underspecified form *was* developed into a potential alternative to *das*.
 - (ii) ENHG: The grammaticalization of new determiners (from nominalized forms/pronouns to determiners) disrupted the context where *d*-pronouns could be licensed.
- Elements such as *all*- turned from pronouns into determiners in the ENHG period (Ebert et al. 1993: 199). The reanalysis as exponents of D^0 led to the loss of lexical nominal properties (including gender features).
- Independent evidence for this change in categorial status comes from the observation of changing patterns of adjectival inflection after inflected indefinites (Ebert 1993: 198f., Demske 2001: 84ff.).
- At the beginning of the ENHG period, elements such as *all*- trigger strong inflection on following adjectives; later on, the strong endings are replaced by weak endings (the same goes for other indefinites such as *solch*- 'such'; similar facts hold for demonstratives, cf. e.g. Demske 2001: 77f.):

- (38) a. die gegenwurtichait **aller** pozz-er geist [strong]
 the presence all.GEN.PL evil-GEN.PL.ST ghosts
 (Middle Bavarian, 1384: Wilhelm Durandus: Rationale Wien, 32,30)
- b. die funffte Essents **aller** Mechanisch-en Künsten [weak]
 the fifth essence all.GEN.PL mechanical-GEN.PL.WK arts
 (Swabian, 1660, Christoph Schorer, Chronik Memmingen, Ulm, 20,28)

- This is expected if *all*- turned into a determiner, which is the primary exponent of inflectional features in the DP and commands weak inflection on the adjective.
- Factors that block the use of *wer* 'who' as a relative pronoun:
 - (i) The presence of (masc.) gender on personal *wh*-forms leads to a feature mismatch between antecedent and relative pronoun in the contexts where *wh*-relatives are licensed:

(39) *Antecedent_[-gender] [_{CP}Rel *wh*-pronoun_[+gender] ...]

- (ii) In addition, the transition from personal (interrogative) *wh*-pronouns to relative pronouns is probably inhibited by the fact that in German, relative pronouns signal grammatical gender while interrogatives signal semantic gender (i.e., the distinction [+/-human/animate])

5. Some brief remarks on English and Dutch

5.1 English

- Early instances of *wh*-relatives are confined to adverbials and oblique argument positions (cf. Hogg & Denison 2006); in contrast to German, *what*-relatives are rare in OE and ME, and are confined to free relatives in the present-day language (but see Johnsen 1913 on headed *what*-relatives in OE¹³).
- The rise of (headed) *wh*-relatives is perhaps linked to the loss of case in the demonstrative paradigm (cf. Hogg & Denison 2006): Since *wh*-forms preserved a number of case distinctions (in particular with personal forms), they are arguably more specified than the corresponding *d*-forms (markedness reversal). As a result, they are better suited as realizations of relative pronouns in headed relative clauses (in contrast to German).
- The underspecified *d*-form *that* turned into the default relativizer.
- The role of gender: Due to the general loss of grammatical gender, the extension of *wh*-forms to headed relatives could not any longer be hindered by the presence of interpretable gender features on *wh*-forms.

5.2 Dutch

- Dutch is in between English and German:
 - ❖ 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 [\pm human].
 - ❖ *wh*-forms have a wider distribution (cf. van der Wal 2002, Boef 2012, Broekhuis & Keizer 2012).
- Standard Dutch:
 - ❖ Relativization by *d*-pronouns is the most common strategy.
 - ❖ The distribution of *dat* and *wat* is quite similar to *das/was* in German (cf. Boef 2012, Broekhuis & Keizer 2012: 407-420).¹⁴
 - ❖ In contrast to German, headed relatives that modify a [+human] antecedent may also be introduced by personal *wh*-pronouns:
 - a. the relative clause is introduced by a *wh*-PP, cf. (40)

¹³ I am indebted to Robert Truswell for pointing this out to me.

¹⁴ Similar to German *was*, Dutch *wat* is used in connection with quantifiers and demonstratives such as *al*, *niets*, *iets*, *dat*, predicatives (cf. Brandt & Fuß 2017 on German), superlatives and relative clauses that modify VPs/clauses. In contrast to Standard German (but similar to colloquial German varieties, cf. appendix II), *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).

- b. the wh-pronoun functions as the indirect object of the relative clause (in this context, *wie* co-varies with *die*), cf. (41).¹⁵

(40) 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)

(41) 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)

- In colloquial varieties, personal wh-forms have been gaining a wider distribution (cf. van der Wal 2002, Boef 2012):

“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)

- The role of gender: The change affecting relative pronouns is possibly linked to a more general change affecting the gender system of Dutch, in which semantic factors are becoming more important in gender agreement (cf. e.g. Audring 2009, Klom & de Vogelaer 2017).

6. Concluding Summary

- Distribution of *das*/*was* in present-day German:
- The alternation between the relativizers *das* and *was* reflects categorial properties of the antecedent of the relative clause (Brandt & Fuß 2014, to appear):
 - ❖ *das* is inserted in the presence of a lexical head noun (characterized by specified gender features on *n*)
 - ❖ *was* is the underspecified elsewhere case
- Development of (headed) wh-relatives in the history of German:
 - ❖ In contrast to English, it seems that the majority of early cases of headed wh-relatives involve the non-personal form *was* ‘what’.

¹⁵ Cf. Boef (2012) for a theoretical analysis.

- ❖ wh-forms keep a low profile up to the mid ENHG period (quasi-non-existing in OHG, and still rare in MHG/early ENHG).
- ❖ In the 16th century, *das* is rapidly replaced by *was*, eventually leading to the distribution still found in present-day (standard) German.
- ❖ The transition from *das* to *was* is part of a larger change, in which German developed a new set of determiners. This grammaticalization process disrupted the licensing environment for d-relatives in certain contexts.
- ❖ *was* continues to gain a wider distribution in present-day German, moving on from indefinite antecedents to all kinds of neuter nouns, see appendix II.
- Personal wh-pronouns could not turn into relative pronouns (in headed RCs), since they carry a (+interpretable) gender feature, which gives rise to a feature mismatch in the contexts where headed wh-relatives are licensed in German.

Appendix I *Allies, das/was* in the Bonn ENHG corpus

	Middlebav.		Swabian		East Franconian		Upper Saxon		Riparian		East High Alemannic		East Swabian		Alsatian		Hessian		Thuring.	
	<i>das</i>	<i>was</i>	<i>das</i>	<i>was</i>	<i>das</i>	<i>was</i>	<i>das</i>	<i>was</i>	<i>das</i>	<i>was</i>	<i>das</i>	<i>was</i>	<i>das</i>	<i>was</i>	<i>das</i>	<i>was</i>	<i>das</i>	<i>was</i>	<i>das</i>	<i>was</i>
1350-	4	0	2	1	4	0	0	0	0	0	0	0	12 ²⁸	0	9	0	2 ²⁹	0	0	0
1400																				
1450-	0	0	3	0	2	0	9 ³⁰	0	0	0	1	0	3	0	0	0	0	0	0	0
1500																				
1550-	0	0	(1x <i>welches</i>)	0	0	4	1	0	1	2	2	0	2	3	2	1	0	1	0	1
1600																				
1650-	0	0	0	2	0	4	0	0	0	6	0	2	0	2	0	2	0	0	0	1
1700																				

Table 7: *Allies, das/was* in the Bonn ENHG Corpus

²⁸ plus 2x *des*

²⁹ plus 1x *des*

³⁰ plus 1x *des*

Appendix II: Present-day German

- In some Low German dialects, it 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):

- (42) a. dat Peerd, [wat ik köfft heb]
 the horse.NEUT what I bought have (Wiesenhann 1936: 27)
- b. də mān, [wāt dāʳ we:r]
 dhe man.MASC what there was (Pirk 1928: 26-27)
- c. Alle Mannslüd [wat dor sind ...]
 all men what there are (Bock 1933: 104)

- Related developments can be observed in oral/colloquial Standard German varieties, where *was* is used instead of *das* with all kinds of neuter singular antecedents, including lexical nouns:

- (43) Sein Trainer Dieter Hecking haderte mit der spielerischen Leistung:
 his manager Dieter Hecking railed with the gameplay
 „Wir waren zu statisch in der 2. Halbzeit.
 we were too static in the 2nd half
 Das 0:0 ist ein Ergebnis, [was für uns nicht zufriedenstellend ist].“
 the 0:0 is a result what for us not satisfactory is
 “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)

- A search conducted in the DeReKo shows that the use of *was* in combination with lexical nouns is linked to direct speech:

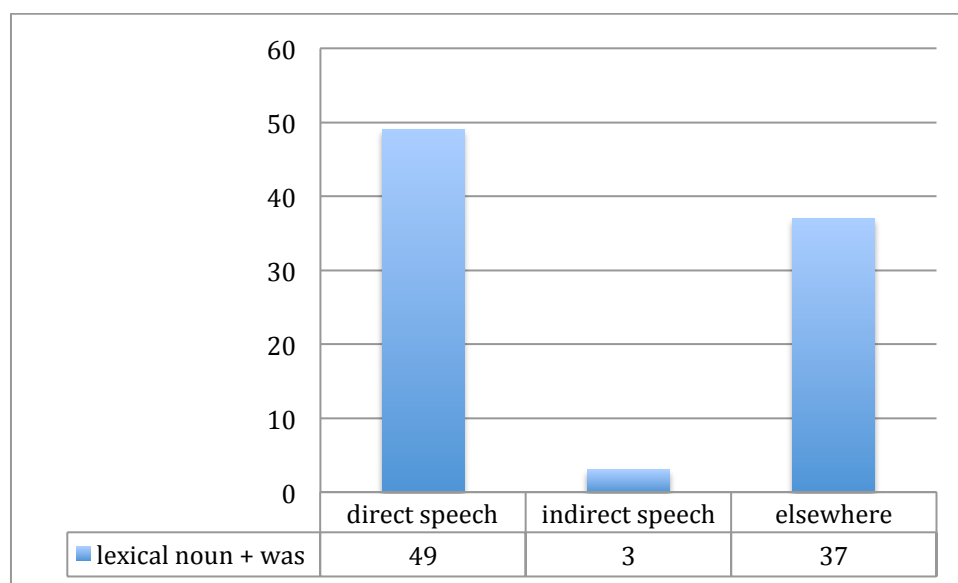


Figure 2: Use of *was* in connection with lexical nouns; results based on a sample of 600 out of 3.319 hits for the search pattern *ein/das N, was* (DeReKo, Connexor Teilarchiv, 02.03.2016)

- In contrast, *wer* ‘who’ is only very rarely used in headed relatives, compare the following examples from DeReKo:

(44) Schließlich trägt jeder, [**wer** bei Schnee und Glatteis
hence carries each who in snow and ice
vor die Tür geht], selbst auch ein gewisses Risiko.
outside the door goes himself too a certain risk
(BRZ10/MAR.00890 Braunschweiger Zeitung, 02.03.2010; Nicht gestreut? Rentnerin rutscht vor
Laden aus und bricht sich Brustwirbel)

(45) Auch hier muss niemand, [**wer** Lust auf China-Döner hat],
also here must nobody who appetite for China-Döner has
auf seinen Drehspieß-Imbiss verzichten.
on his rotisserie-takeaway pass
(BRZ06/MAR.16216 Braunschweiger Zeitung, 29.03.2006; Döner Kebab & #8211; rotierendes
Grillfleisch verdrängt Pizza, Bratwurst & Co.)

- The extension of *was* to all neut.sg. contexts can be captured by assuming that the phonological exponent *was* has been extended to all kinds of neut.sg. relative pronouns, basically reinstalling the original system (albeit with a different morpho-phonological form).

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