

The underlying complexity of *welch*-relatives: Some effects of (in)definiteness on grammaticalisation

Julia Bacskai-Atkari

University of Amsterdam / University of Potsdam

j.bacskaiaatkari@uva.nl / julia.bacsikai-atkari.1@uni-potsdam.de

WRAPP 26 – Wh-elements in Relative and Adverbial clauses: Perspectives on Polyfunctionality

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1 Introduction

relative clauses in present-day Standard German: mostly introduced by *d*-pronouns, which can alternate with *welch*-pronouns:

- (1) a. Wir sehen bestimmt das Kind, **welches** immer dieses Buch liest.
we see.1PL surely the.N child which.N.NOM always this.N book reads
'We will surely see the child who is always reading this book.'
- b. Wir sehen bestimmt das Kind, **das** immer dieses Buch liest.
we see.1PL surely the.N child that.N.NOM always this.N book reads
'We will surely see the child who is always reading this book.'

historical development (Coniglio & Paul 2019):

- (*s*)*welch*-pronouns attested already in Old High German and Middle High German (↔ Behaghel 1928)
- consolidation as *welch*- in Early New High German (Fleischmann 1973: 152, citing Wunder 1965: 414)

welch-pronouns stylistically more elevated and less frequent in modern everyday language, including regional dialects (Fleischer 2004b; 2026, Bösiger 2026: 74–75)

→ question: whether the differentiation between *d*-pronouns and *welch*-pronouns is only stylistic, or whether grammatical factors also play a role

proposal: alternation also influenced by grammatical factors – the reason lies in underlying differences in complexity

2 Relative pronouns in German

d-pronouns already in Old High German (Axel-Tober 2017, Coniglio 2019):

- (2) pî demo Satanase, **der** inan uarsenkan scal:
by the.DAT Satan that.M.NOM him ruin shall
'by Satan, who will ruin him' (*Muspilli* 45; Coniglio 2019: 140)

most frequent option (alongside the complementiser strategy and doubling) already in Old High German (Schrodt 2004: 176)

no reanalysis of *d*-pronouns into relative complementisers (\leftrightarrow English) – *d*-pronouns remain in the language and constitute the dominant option in headed relatives

welch-pronouns come into the system as an additional option – origin from the *so*-WH-*so* construction (Coniglio & Paul 2019)

- (3) alliu so **uuelihiu** Ioannis quad fon desemo uuario uuarun
all so which John said of this true were
'Everything that John said about this was true.'
(*Tatian* 134; Coniglio & Paul 2019: 36)

no borrowings from French but French may have fostered their spread in the 13th century (Coniglio & Paul 2019)

3 Relativisation and syntactic function

markedness hierarchy for adnominal relative clauses: the Noun Phrase Accessibility Hierarchy of Keenan & Comrie (1977):

- (4) SU > DO > IO > OBL > GEN > OCOMP

implicational hierarchy: if a language relativises a certain function, then it can also relativise all other functions to the left (tendency – exceptions possible, see Keenan & Comrie 1979, Fleischer 2004a)

more marked functions missing (e.g. OCOMP in German)

motivation in language processing (Keenan & Hawkins 1987, Hawkins 1995, Kirby 1996)
– unmarked functions easier to process

hierarchy especially important if the system has more than one relativisation strategy

general observation for systems with relative pronouns and relative complementisers: relative pronouns more attested in the more marked functions of the hierarchy (Herrmann 2005 for British dialects, Bacsikai-Atkari 2020a;b for Early Modern English, Fleischer 2004a for German dialects) – also grounded in language processing (Romaine 1984, Kirby 1996, Fleischer 2004a, Hawkins 1999)

no relative complementisers in Standard German – but in various dialects (see Brandner & Bräuning 2013, Salzmann 2017, Fleischer 2004a; 2016, Weiß 2013, Kaufmann 2018, Bacskai-Atkari 2023b)

variation in Alemannic:

- (5) Der Mercedes, **wo** / **der** / **der** **wo** do im Hof
 the Mercedes REL that.M.NOM that.M.NOM REL there in.the courtyard
 schtoht, ghert de Müllers.
 stands belongs the Müllers
 ‘The Mercedes standing there in the courtyard belongs to the Müller family.’
 (Bräuning 2020: 22)

choice also influenced by the grammatical category of the gap:

- *d*-pronouns have a higher proportion in the lower function of the Hierarchy – cut-off point below the DO-function and above the OBL-function (Fleischer 2004a, Bräuning 2020)
- IO behaves either like DO or like OBL (Fleischer 2004a) – indirect objects comparatively rare in corpora (see Fleischer 2004a, Herrmann 2005, Bacskai-Atkari 2020b)

results from SynAlm¹ (Bacskai-Atkari 2025):

- questionnaire FB2/5: responses for a gapped text
- *d*-pronouns have a higher proportion in the lower functions
- what is decisive is whether the relative pronoun is overt or not (doubling behaves like the *d*-pronoun strategy)

results for Baden-Württemberg:

	SU	DO	IO
<i>d</i> -pronoun (+ <i>wo</i>)	3627	554	698
<i>wo</i>	2240	302	150

asymmetric system with a preference for *wo* for SU/DO and for *d*-pronouns for IO

analysis:

- significant difference between DO and IO: $X^2(1, N = 1704) = 67.641, P < 0.01$
- no significant difference between SU and DO: $X^2(1, N = 6768) = 2.6704, P = 0.10$

results for Switzerland:

	SU	DO	IO
<i>d</i> -pronoun (+ <i>wo</i>)	414	47	165
<i>wo</i>	3348	493	373

¹The project was led by Ellen Brandner. The database can be accessed via the following link: <https://ilg-server.ling.uni-stuttgart.de/synalm/html/de/index.html>.

symmetric system with a preference for *wo* throughout

analysis:

- significant difference between DO and IO: $X^2(1, N = 1078) = 82.304, P < 0.01$
- no significant difference between SU and DO: $X^2(1, N = 4302) = 2.6134, P = 0.11$

→ asymmetries between *wo* and *d*-pronouns in line with the predictions associated with the Accessibility Hierarchy – relative pronouns facilitating processing in the lower functions (Romaine 1984, Kirby 1996, Fleischer 2004a, Hawkins 1999)

4 Relative pronouns in Luther's Bible translation

single system: Luther Bible (1545)

- influenced by the Latin Vulgata (containing also Latin words and sentences)
- Luther's own dialect: Upper Saxon (Schmidt 1984) – no direct contact from French

examined part: Five Books of Moses

examples for *welch*-relatives as SU and DO:

- (6) a. des Vmbhangs am Vorhoff / vnd des Tuchs in der
the.GEN screen.GEN at.the court and the.GEN hanging.GEN in the.DAT
thür des Vorhoffs / **welcher** vmb die Wohnung vnd vmb
door the.GEN court.GEN which.M.NOM around the tabernacle and around
den Altar her gehet / vnd seiner Seile / vnd alles was zu seinem
the.ACC altar from goes and his.GEN cord and all what to his.DAT
dienst gehöret.
service belongs
'the screen for the door of the court, the hangings of the court which are
around the tabernacle and the altar, and their cords, according to all the
work relating to them.' (Numbers, 3:26)
- b. Vnd lies die Wasserbrünne wider auffgraben / die sie zu
and let.PST the wells again dig.up.INF that.PL.NOM they to
Abrahams zeiten seines Vaters gegraben hatten / **welche** die
Abraham's times his.GEN father.GEN dig.PTCP had.3PL which.F.ACC the
Philister verstopffet hatten nach Abrahams tod / Vnd nennet sie
Philistines stop.PTCP had.3PL after Abraham's death and called them
mit den selben namen da sie sein Vater mit genant hatte.
with the same name since they his father with name.PTCP had.3SG
'And Isaac dug again the wells of water which they had dug in the days of
Abraham his father, for the Philistines had stopped them up after the death
of Abraham. He called them by the names which his father had called them.'
(Genesis, 26:18)

examples for *welch*-relatives as IO and OBL:

- (7) a. Welcher des samens Aarons aussetzig ist / oder einen
 which.M.NOM the.GEN semen.GEN Aaron.GEN leper is or a.ACC
 flus hat / Der sol nicht essen von dem Heiligen / bis
 discharge has that.M.NOM shall not eat.INF from the.DAT holy till
 er rein werde. Wer etwa einen vnreinen Leib anrüret / Oder
 he clean becomes who perhaps a.ACC unclean body touches or
welchem der Same entgehet im schlaff
 which.M.DAT the semen emits in.the sleep
 ‘Whatever man of the descendants of Aaron, who is a leper or has a discharge,
 shall not eat the holy offerings until he is clean. And whoever touches any-
 thing made unclean by a corpse, or a man who has had an emission of semen’
 (Leviticus, 22:4)
- b. Vnd sol den Bock / **auff welchen** des HERRN los fellet /
 and shall the.ACC goat on which.M.ACC th.GEN Lord.GEN lot falls
 opffern zum Sündopffer.
 sacrifice.INF to.the sin.offering
 ‘And Aaron shall bring the goat on which the Lord’s lot fell, and offer it as a
 sin offering.’ (Leviticus, 16:9)

d-pronouns and *welch*-pronouns: *welch*-pronouns altogether a minority option (5.85%),
 cf. Fleischer (2026)

both *d*-pronouns and *welch*-pronouns occur both in headed and headless relatives

note: *welch*-relatives already in the 1534 edition (first complete version)

equivalents in the 1534 version (missing examples due to Luther’s notes missing):

	SU	DO	IO	OBL (PP)
welch-pronouns (85)	<i>welch</i> -: 43 missing: 1	<i>welch</i> -: 22 <i>d</i> -: 3 missing: 1	<i>welch</i> -: 2	<i>welch</i> -: 12

→ *welch*-pronouns not a late introduction to the text

distribution of *welch*-pronouns and *d*-pronouns (1545 version):

	SU	DO	IO	OBL (PP)
d-pronouns (1353)	749 (94.45%)	566 (95.61%)	16 (88.89%)	22 (64.71%)
welch-pronouns (85)	44 (5.55%)	26 (4.39%)	2 (11.11%)	12 (35.29%)

analysis (Fisher's Exact Test):

- no significant difference between SU and DO (P=0.3858)
- significant difference between DO and PP (P<0.01)
- altogether very few examples for IO (recall Fleischer 2004a, Herrmann 2005, Bacskai-Atkari 2020b) – data not reliable; no significant differences between DO and IO (P=0.1978) or between IO and PP (P=0.09983)

→ grammatical differentiation below DO and above OBL – similarly to the differences between *d*-pronouns and *wo*

5 The role of morphological case

Hawkins (1999: 260–261): the distribution of relative pronouns is governed by processing factors

- lower functions more difficult to process
- relative pronouns have a higher proportion in the lower functions of the Accessibility Hierarchy
- relative pronouns can overtly mark the gap – case inflection

→ difference between [+case] relative pronouns and [–case] relative complementisers (and potentially uniform pronouns)

→ distribution of *d*-pronouns versus *wo* in Alemannic is accounted for

↔ but: in Luther's system the distinction is between two series of [+case] relative pronouns

→ morphological case alone does not explain the asymmetries

not a unique situation: same applies for the variation between *that* vs. *which* in English

- *which*-relatives appearing already in Middle English (Mustanoja 1960, Rydén 1983, van Gelderen 2004, Gisborne & Truswell 2017, Bacskai-Atkari 2020b; 2022)
- *which* not inflected for case at any point, also possible for [+personal] referents till Early Modern English (Johansson 2012)
- cut-off point between SU and DO – already in Middle English texts (Bacskai-Atkari 2023b; 2024a;b)

→ grammatical distinctions along the Accessibility Hierarchy not necessarily related to differences in morphological case marking:

- English: morphological case marking does not account for *which/that*, but there is a syntactic distinction
- German (Luther's text): *welch*-pronouns and *d*-pronouns do not differ in terms of morphological case and both are relative pronouns

→ distribution apparently not grounded in surface distinctions

6 Syntactic complexity

distribution: more marked form for the more marked functions

→ possible motivation:

- iconicity
- differences in the underlying syntax

two series of relative pronouns have different origins:

- *d*-pronouns stem from demonstrative pronouns (see Pittner 2009, following Behaghel 1928, Johansen 1935, Wunder 1965, Dal 1966, Helgander 1971, Lehmann 1984, Lühr 2004, Harbert 2007; cf. also Lenerz 1984 and Axel-Tober 2012)
- *welch*-pronouns stem from interrogative pronouns, via the comparative *so*-WH-*so* construction (Fleischmann 1973, Coniglio & Paul 2019, Fuß 2021), where the *wh*-element is an indefinite (see also Schrodtt 2004, Watanabe 2009, Gisborne & Truswell 2017)

→ two series of relative pronouns differ in the original [\pm def] feature – consequences:

- difference in the [rel] feature (Bacskai-Atkari 2023a;b): *d*-elements are [i-rel], *wh*-elements are [u-rel]
- difference in the lexical NP complement

matching analysis of relative clauses (Lees 1960; 1961, Chomsky 1965, Sauerland 1998; 2003, Salzmann 2017, Pankau 2018, Fuß 2021)

relative pronoun in D takes an NP (nP) complement that is the copy of the antecedent – deleted under identity:

(8) [DP the book [CP which ~~book~~ [TP the child is reading ~~which book~~]

English: NP-complement of *which* usually silent but sometimes visible:

(9) He rode twenty miles to see her picture in the house of a stranger, **which stranger** politely insisted on his acceptance of it.
(Radford 2019: 9, citing Jespersen 1949: 126)

German: similar examples attested with *welch*-pronouns but not with *d*-pronouns

- (10) Freilich zwei ganz gleiche Hälften waren es nicht, konnten es nicht
admittedly two exactly same halves were.3PL it not could.3PL it not
sein, weil natürlich nur eine Hälfte den Stängel hatte,
be.INF because naturally only one half the.M.ACC stem had.3SG
welcher Stängel denn auch Veranlassung zu Beginn einer
which.M.NOM stem then also motivation to begin a.F.GEN
Unterhaltung wurde, wonach sich die Schmolke schon seit lange
conversation became.3SG after.which self the.F Schmolke already since long
sehnte.
longed.3SG
'Admittedly, they were not exactly two identical halves; they could not have
been, because naturally only one half had the stem, which stem then became the
starting point for a conversation that Schmolke had been longing for for a long
time.'
(Theodor Fontane, *Frau Jenny Treibel*)

English: visible NP complement can be different from the matrix NP:

- (11) He had hired a vessel to convey him to Constantinople, **for which city** he should
sail in a few hours.
(Mary Shelley, *Frankenstein*)

German: similar examples attested with *welch*-pronouns but not with *d*-pronouns

- (12) Hans bat Anna, den Fußboden zu putzen, **welche Bitte** sie
Hans asked.3SG Anna the.ACC floor to mop.INF which.F.ACC request she
entschieden ablehnte.
flatly refused.3SG
'Hans asked Anna to mop the floor, which request she flatly refused.'
(Webelhuth 2011: 171, citing Holler 2005: 101)

examples like (9)–(12) continuative relative clauses (Holler 2005, Webelhuth 2011; see
also Radford 2019), which differ in their anchoring (see Blümel et al. 2017, Fuß 2021)
– such relative clauses regularly formed with *was* in German, without attachment to
a lexical noun (see Webelhuth 2011, Brandt & Fuß 2014; 2018; 2019, Fuß 2021)

but: difference shows that *welch*- is compatible with an overt NP

welch + overt NP combinations also in Luther’s translation (18 SU and 3 OBL, all of them already in the 1534 translation) – pattern attested also in Luther’s other writings (Fleischer 2026)

- (13) Darumb hies sie den Brunnen / ein brunnen des
 therefore called.3SG she the.ACC well a.NOM well the.GEN
 Lebendigen / der mich angesehen hat / **welcher Brun** ist
 living that.M.NOM I.ACC looked.at.PTCP has which.M.NOM well is
 zwischen Kades vnd Bared.
 between Kades and Bared
 ‘Therefore she called the well a well of the living, who saw me, which well is
 between Kadash and Bered.’
 (Genesis, 16:14)

welch-pronouns with an NP originally more frequent in German than without it

Coniglio & Paul (2019: 35) for Middle High German:

Time	<i>swelch-</i> + NP	<i>swelch-</i>	<i>welch-</i> + NP	<i>welch-</i>
11th century	3 (0.39%)	3 (0.39%)	–	–
12th century	53 (0.82%)	47 (0.72%)	1 (0.02%)	–
13th century	221 (1.62%)	63 (0.46%)	20 (0.15%)	1 (0.01%)
14th century	121 (1.31%)	38 (0.41%)	16 (0.17%)	6 (0.07%)

Coniglio & Paul (2019: 36) for Middle Low German:

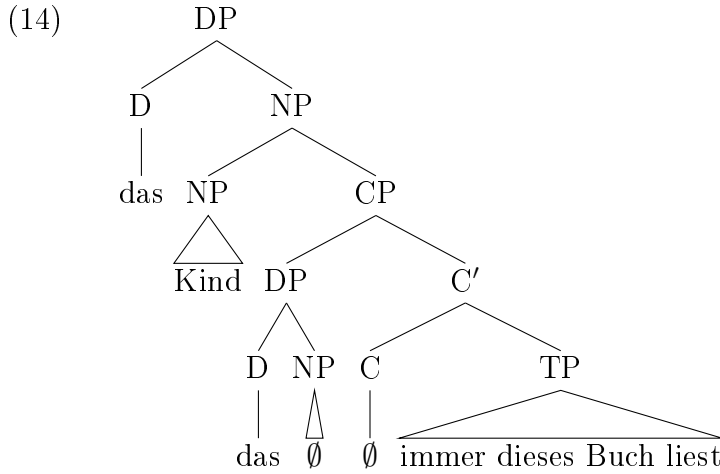
Time	<i>swelch-</i> + NP	<i>swelch-</i>	<i>welch-</i> + NP	<i>welch-</i>
13th century	60 (5.14%)	3 (0.26%)	8 (0.69%)	–
14th century	121 (1.31%)	38 (0.41%)	16 (0.17%)	6 (0.07%)
15th century	1 (0.05%)	1 (0.05%)	20 (0.94%)	26 (1.22%)
16th century	–	–	22 (0.95%)	36 (1.56%)

proposal: syntactic difference between *d*-pronouns and *welch*-pronouns regarding the NP complement

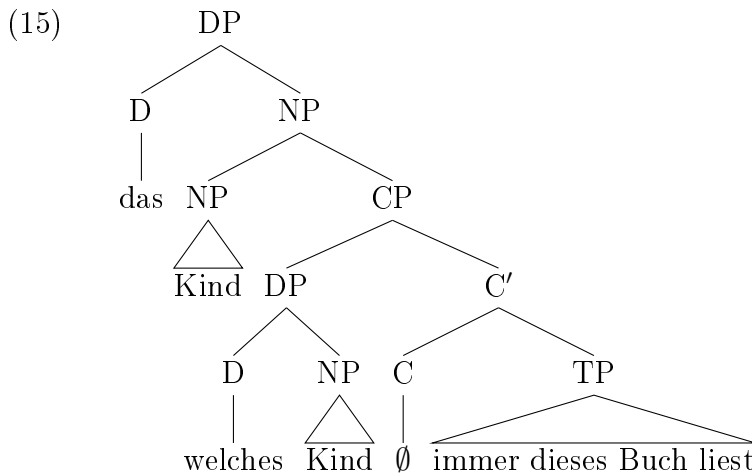
- *welch*-pronouns take a genuine NP complement (with a root N) that is deleted under identity
- *d*-pronouns take no NP complement

difference relates to referentiality and the original [\pm def] feature

d-pronouns essentially deictic – reference taken from the matrix D head (agreement in inherent inflectional features, i.e. number and gender, with the matrix D – phonologically zero in free relatives, van Riemsdijk 2006), NP complement reconstructed under identity (if there is any NP)



welch-pronouns have the same features as the matrix D head in a matching configuration, and they regularly take an NP complement – this can be deleted in a relative configuration under identity (recoverability)



→ *welch*-relatives inherently more complex – distribution in line with the Accessibility Hierarchy

implication for diachronic processes:

- *d*-pronouns can lack an NP complement – reanalysis into a C head possible for the unmarked form (*that* in English, see van Gelderen 2004; 2009, Bacskai-Atkari 2020b) – also *wh*-based elements without an NP complement, e.g. English *what* and Bavarian *was* (see Bacskai-Atkari 2023b for discussion)
- *welch*-pronouns equipped with an NP complement – no reanalysis into a C head (also for English *which*)

→ syntactic differentiation predicts further asymmetries

7 Conclusion

distribution of *welch*-pronouns versus *d*-pronouns

- alternation in many contexts apparently purely stylistic
- single system: Luther's Bible translation – asymmetries between *d*-pronouns and *welch*-pronouns
- syntactic difference in terms of referentiality and the status of NP complement – motivation also from other differences

→ asymmetries along the Accessibility Hierarchy not necessarily tied to $[\pm\text{case}]$ differences
– other notions of complexity may also play a role

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