

## **Mood Alternations in Old High German Subordinate Clauses**

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**Abstract** In this paper, Old High German mood alternations in the different types of subordinate clauses (complement, adverbial and relative clauses) are discussed. The use of the subjunctive in subordinate clauses is notoriously more frequent than in Modern German and has not yet been thoroughly investigated. Based on a comprehensive corpus study, the paper will show that the licensing conditions for the subjunctive in Old High German are determined by notions such as veridicality and – in relative contexts – specificity. These conditions are thus similar (but not always identical) to those observed for Modern Greek and Romance languages. Furthermore, a syntactic analysis is provided in order to account for the licensing of the subjunctive in each type of subordinate clause.

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**Keywords** Old High German. Mood alternation. Subordinate clause. Complement clause. Adverbial clause. Relative clause. Subjunctive. Indicative. Corpus study. Veridicality. Specificity.

## 1 Introduction

As illustrated in (1), Modern German (henceforth MG) has almost completely lost the use of the subjunctive in favour of the indicative in subordinate clauses (apart from indirect speech and other special contexts, cf. Thieroff 2010):<sup>1</sup>

- (1) Anna möchte, dass sie ihr einen Pinguin **kaufen** / \***kauf**ten.  
Anna would.like that they her a penguin buy.IND / buy.SUBJ  
'Anna wants them to buy her a penguin.'

In contrast, Old High German (OHG)<sup>2</sup> subordinate clauses could exhibit the subjunctive (cf. Schrodtt 1983, 133 ff.):<sup>3</sup>

- (2) bāt hér inan thaz her íz  
asked he him.ACC that he it.ACC  
fon erdu / **arleitti** (T 19, 5)  
from shore.DAT pushed.SUBJ.3SG  
'He asked him to push it [the boat] away from the shore'

- (3) Er wolta in álawari, thaz ér ouh sín **wari** (O II, 4, 15)  
He wanted in truth that he also his was.SUBJ.3SG  
'Indeed, he [the devil] wanted him [Jesus in the desert] to be his own [servant]'

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1 Both MG and OHG display two forms of the subjunctive, depending on the stem form of the inflected verb, namely the so-called subjunctive I, which is derived from the present stem of the inflected verb, as in MG *er gebe* (he give.SUBJ.I.3SG), and the subjunctive II, which is derived from the preterit stem, as in MG *er gäbe* (he give.SUBJ.II.3SG). While these two forms display relevant semantic differences in main clauses, they are often interchangeable in subordinate ones, including reportative uses (see Fabricius-Hansen, Sæbø 2004). As the present paper deals with subordinate clauses only, the distinction between subjunctive I and II both in the analysis and in the glosses will be ignored.

2 In the absence of different indications, the OHG examples are taken from the *Referenzkorpus Altdeutsch* (see § 4).

3 Note that, while one could argue that the reason for the choice of the subjunctive in (3) is the rhyme with *álawari*, it will be shown in § 4.1 below that *wellen* (want) requires the subjunctive in its finite complements across the board in OHG.

From the observation of the data above, two obvious questions arise:

1. How can we explain the contrast between the OHG and the MG data?
2. What are the factors licensing the subjunctive in OHG subordinate clauses?

In this paper, we will first discuss mood alternations in subordinate clauses from a cross-linguistic perspective (§ 2). We will then consider mood alternations in OHG and we will present some hypotheses on the licensing of the subjunctive in this language stage (§ 3). In § 4, we will conduct a corpus-based investigation into the licensing of subjunctive mood in different types of subordinate clauses. A syntactic analysis and proposal for the licensing of mood is presented in § 5.

## 2 Mood Alternations in Subordinate Clauses Cross-Linguistically

In recent years, mood alternations – especially the licensing of the subjunctive in subordinate clauses – have received attention in different languages, especially in Modern Greek and Romance languages, but also in many other languages (cf. Farkas 1985, 1992; Ledgeway 2012; Quer 2001; Giannakidou 2009; Roussou 2009; Rothstein, Thieroff 2010; Lühr 2013; etc.). In this section, we will sum up the main results of the discussion on the cross-linguistic properties of mood alternations in complement, adverbial and relative clauses, respectively.

### 2.1 Mood Alternations in Complement Clauses

Let us start with complement clauses. Contrasts like (4)-(5) for Catalan have been interpreted in several ways. The availability of the indicative or subjunctive has been considered as a reflex of (non-)veridical properties of the embedding predicates, or of the *realis vs irrealis* interpretation of a certain event, and so on.

- (4) L' Anna pensa que els pingüins  
the Anna think.3SG that the penguins  
**volen** / \***volin** (Quer 2001, 83)  
fly.IND.3PL / fly.SUBJ.3PL  
'Anna thinks that penguins fly'

- (5) L' Anna vol que li **comprin** / **\*compren**  
 the Anna want.3SG that her buy.SUBJ.3PL / buy.IND.3PL  
 un pingüí (Quer 2001, 83)  
 a penguin  
 'Anna wants them to buy her a penguin'

With respect to Modern Greek, Giannakidou (2009) distinguishes between indicative or veridical verbs (6), for which "at least one epistemic agent (the speaker or the subject of the main verb) is committed to the truth of the complement sentence" (Giannakidou 2009, 1887) and subjunctive or non-veridical predicates (7), for which there is no such commitment (with language-specific exceptions, cf. Giorgi, Pianesi 1997).

- (6) *Indicative or veridical verbs* (adapted from Giannakidou 2009, 1887 ff.)  
 a. assertives (Greek equivalents of the verbs *say, read, claim*)  
 b. fiction verbs (*dream, imagine*)  
 c. epistemics (*believe, think*)  
 d. factive verbs (*be glad, know, regret*)  
 e. semifactives (*discover, remember*)
- (7) *Subjunctive or non-veridical predicates* (adapted from Giannakidou 2009, 1887 ff.)  
 a. volitionals (*want, hope, plan*)  
 b. directives (*order, advise, suggest*)  
 c. modals (*must, may*)  
 d. permissives (*allow, forbid*)  
 e. negative (*avoid, refuse*)

Giannakidou (2009, 2013) can thus capture Modern Greek contrasts like (8)-(9) based on the classification above. In Greek, two different complementizers – *oti* and *na* – are used to introduce indicative and subjunctive complement clauses, respectively, as in the examples below (adapted from Giannakidou 2013, 23):<sup>4</sup>

- (8) O Pavlos nomizi **oti** / **\*na** efije i Roxani.  
 the Paul think.3SG that.IND / that.SUBJ left.3SG the Roxani  
 'Paul thinks that Roxanne left.'
- (9) Thelo **\*oti** / **na** erthi o Pavlos.  
 want.1sg that.IND that.SUBJ come.PNP.3SG the Paul  
 'I want Paul to come.'

4 In addition, the verb in the subjunctive clause displays the special morphological form of the perfective non-past, glossed PNP.

Analogous alternations have also been reported for a number of other languages, such as Romance languages (Poletto 1995, 2000; Damonte 2010; Ledgeway 2012; Mensching 2012), Cimbrian (Bidese p.c.; Padovan 2011), etc. (also cf. Rothstein, Thieroff 2010).

## 2.2 Mood Alternations in Adverbial Clauses

Mood alternations in adverbial clauses are investigated, among others, by Giannakidou (1994, 1998, 2009), Giannakidou, Zwarts (1999) and Quer (2001). They show that the following types of adverbial clauses license the subjunctive in Modern Greek and Catalan/Spanish: purpose clauses (10)-(11), concessive conditionals (12), temporal *before*-clauses (13), *without*-clauses (14):<sup>5</sup>

- (10) I Ariadne irthe  
the Ariadne came  
**ja na** mas voithisi. (adapted from Giannakidou 2009, 1892)  
for SUBJ us helps.PNP  
'Ariadne came (in order to) help us.'

- (11) L'ha convidada **perquè**  
her-has invited so.that  
no **s'enfadi** (adapted from Quer 2001, 89)  
not herself-gets.angry.SUBJ  
'S/he has invited her so that she will not get angry.'

- (12) **Encara que** no **sigui** major d'edat, [...] (adapted from Quer 2001, 93)  
although not is.SUBJ major of-age  
'Even if he is not of age, [...].'

- (13) I Ariadne efije  
the Ariadne left  
**prin** na erthi o Janis. (adapted from Giannakidou 2009, 1892)  
before SUBJ came.PNP the John  
'Ariadne left before John arrived.'

<sup>5</sup> Note, however, that factive emotive verbs like *complain*, *be glad*, *wonder* etc. are special within the veridical group (see the discussion in Giannakidou 2012, §§ 3.1 and 4). Quer (2001) shows that clauses embedded under such predicates display optionality between the indicative and the subjunctive across different Romance varieties, while in Greek, the complementizer can vary between the canonical assertive *oti* and *pu* (Giannakidou 2012, §§ 1 and 3).

- (14) I Ariadne milise **xoris** na  
 the Ariadne talked without SUBJ  
 xrisimopiisi mikrofono (adapted from Giannakidou 2009, 1892)  
 uses.PNP microphone  
 'Ariadne talked without using a microphone.'

Discussing data from Greek, Giannakidou (1998, § 3.3) argues that these contexts are non-veridical in terms of entailment, i.e., the proposition expressed by the adverbial clause of the respective type is not entailed by the matrix event, although it is set completely in the past. E.g., in (13), Ariadne's departure does not entail the event that John came, just as *p before q* does not entail *q*. Similarly, in (14), *without a microphone* entails *not using a microphone*. This is different in the case of temporal *when*-clauses, which are entailed by the respective matrix clause, i.e., *p after q* entails *q*. In Modern Greek, such clauses do not display the subjunctive complementizer *na* (Giannakidou 2012, § 3.1).

### 2.3 Mood Alternations in Relative Clauses

Mood alternations are also attested in relative clauses, for instance in the Romance languages (cf. Cinque 1988; Farkas 1992; Quer 1998; Zwart 2005). According to Quer (2001), the subjunctive is typically licensed in restrictive relative clauses (and in free relatives in generic contexts).

Giannakidou (1998) argues that in Greek, the indicative correlates with the existence of a referent described by the antecedent of the relative clause, while the subjunctive leaves it open whether such a referent is present. This property shows up in relative clauses modifying an indefinite antecedent in negative contexts. The basic difference between the relative clauses in (15) and (16) is that in the indicative one, the indefinite takes scope over the negative operator, which results in an interpretation according to which there is an individual with the respective properties present in the context. By contrast, in (16) it is not assumed that such an individual exists:

- (15) Dhen idha enan andra pu forai kokino kapelo (Giannakidou 2009, 1888)  
 not saw a man that wear red hat  
 'I didn't see a certain man wearing a red hat'
- (16) Dhen idha enan andra  
 not saw a man  
 pu **na** forai kokino kapelo (Giannakidou 2009, 1888)

that SUBJ wear red hat  
'I did not see any man wearing a red hat'

Thus, in relative clauses, veridicality is a property of the referent and not of the matrix verb (von Heusinger 2002; also cf. Coniglio 2017). Accordingly, Giannakidou (2013, 34) describes Greek mood alternations as follows:

the function of the subjunctive in the relative clause is to bring in the speaker's subjective point of view, in particular, her uncertainty about the existence of a value for the NP. I will call this epistemic weakening of the subjunctive.

This is equivalent to the interpretation for mood alternations provided by Catasso and Hinterhölzl (2016) for Standard Italian. Based on the minimal pair in (17a-b), they interpret the alternations based on the *de re* / *de dicto* interpretation of the referent of the relative clause:

- (17) a. Gianni cerca una donna che **ha** gli occhi blu. *de re*  
Gianni looks.for a woman that has.IND the eyes blue  
b. Gianni cerca una donna che **abbia** gli occhi blu. *de dicto*  
Gianni looks.for a woman that has.SUBJ the eyes blue  
'Gianni is looking for a woman that has blue eyes'

(Catasso, Hinterhölzl 2016, 109)

Thus, if the referent receives a *de re* interpretation (which means that it is specific), then the indicative is used (17a). In contrast, the subjunctive is used if the referent receives a *de dicto* interpretation (non-specific) (17b). This is true at least for Standard Italian, since in Colloquial Italian, the indicative is also available in non-specific contexts.

Catasso and Hinterhölzl (2016) describe a striking analogy between mood in Italian relative clauses and verb position in MG relative clauses. It is a well-known fact that, apart from special contexts (such as reported speech and counterfactual contexts), the subjunctive is ruled out from relative clauses in MG. But still the *de re/de dicto* interpretation of the referent may play a role with respect to verb placement. As illustrated by the following examples, besides V-final relative clauses (18a), which allow for both the *de re* and the *de dicto* interpretation, MG also exhibit V2 relative clauses (18b), which only allow for the *de re* interpretation (cf. Gärtner 2001, 138; 2002, 35; Ebert, Endriss, Gärtner 2007; Catasso, Hinterhölzl 2016; etc.):

- (18) a. Hans sucht eine Frau, die blaue Augen **hat**. *de re / de dicto*  
 Hans looks.for a woman who blue eyes has  
 b. Hans sucht eine Frau, die **hat** blaue Augen. *de re / \*de dicto*  
 Hans looks.for a woman who has blue eyes  
 'Hans is looking for a woman that has blue eyes.'

(Catasso, Hinterhölzl 2016, 109)

Notice that V2 relative clauses – on a par with restrictive V-final relative clauses – exhibit a continuation rise tone (cf. Gärtner 2001), as shown in (19a-b):

- (19) a. Das Blatt hat eine Seite, (/) [ die **ist** ganz schwarz ].  
 the sheet has a side that is completely black  
 b. Das Blatt hat eine Seite, (/) [ die ganz schwarz **ist** ].  
 the sheet has a side that completely black is  
 'The sheet has one side that is completely black'

(based on Gärtner 2001, 112)

However, in contrast to V-final relative clauses, V2 relative clauses must be obligatorily extraposed (20a), and they cannot be part of the middle field of the matrix clause (20b). This restriction does not hold for V-final relative clauses, as (20c) suggests (Gärtner 1998, 2001; Endriss, Gärtner 2005; Ebert, Endriss, Gärtner 2007):

- (20) a. [<sub>CP1</sub> Die Apfeldorfer haben viele Häuser gebaut][<sub>CP2</sub> die **stehen** heute leer]  
 the inhabitants.of.Apfeldorf have lots.of houses built that stay today empty  
 b. \* [<sub>CP1</sub> Die Apfeldorfer haben viele Häuser, [<sub>CP2</sub> die **stehen** heute leer], gebaut]  
 the inhabitants.of.Apfeldorf have lots.of houses that stay today empty built  
 c. [<sub>CP1</sub> Die Apfeldorfer haben viele Häuser, [<sub>CP2</sub> die heute leer **stehen**], gebaut]  
 the inhabitants.of.Apfeldorf have lots.of houses that today empty stay built  
 'The inhabitants of Apfeldorf have built lots of houses that are empty today.'

Finally, the antecedent of a V2 relative clause must be expressed by way of an indefinite description (21a). Negative indefinites (21b) and quantified expressions (21c) cannot serve as antecedents of V2 relative clauses. This is to say that only specific (or wide-scope) indefinites that introduce individuals as discourse referents may be antecedents of V2 relative clauses (Gärtner 1998; 2001, 138; 2002, 35; Ebert, Endriss, Gärtner 2007):



- (21) a. Ich kenne **eine Frau**, die besitzt ein Pferd.  
 b. \*Ich kenne **keine Frau**, die besitzt ein Pferd.  
 c. \*Ich kenne **jede Frau**, die besitzt ein Pferd.  
 'I know a/\*no/\*each woman who owns a horse'  
 (Endriss, Gärtner 2005, 198)

In general, V2 relative clauses behave semantically as if they were subordinate structures, while they exhibit a certain degree of syntactic independence (Gärtner 1998, 2001; Endriss, Gärtner 2005).

### 3 Old High German Mood Alternations. Questions and Hypotheses

The distribution of the indicative and the subjunctive in subordinate clauses in OHG is a much debated issue, both in the traditional philological literature as well as in some more recent studies. Traditional grammarians have tried to capture this distribution along the lines of the classical *realis/irrealis* opposition, arguing that the indicative is used to signal the commitment of the speaker to the truth of the embedded proposition while the subjunctive is selected to express doubt or uncertainty towards the validity of the event in the complement clause (see the summary in Schrodtt 1983). This explanation is unsatisfactory because it fails to account for a series of cases in which the subjunctive refers to 'real' events. For instance, as Guchman and Semenuk (1981, 129) observe, the traditional explanation is untenable given that in an example like in (22), the subjunctive is attested in a complement clause which refers to the basic premise of Christian belief, i.e. the validity of the Holy Trinity:

- (22) Araugit ist in dhes aldin uuzssodes boohhum  
 revealed is in the.GEN.SG old wisdom.GEN.SG book.DAT.PL  
 dhazs fater endi sunu endi heilac gheist got **sii.** (I IV, 1)  
 that father and son end holy ghost God is.SUBJ  
 'It is revealed in the books of the Old Testament that the Father and the Son  
 and the Holy Spirit are God himself'

Schrodtt (1983) presents an alternative account trying to explain the distribution of the indicative and the subjunctive in OHG on more abstract, theoretic grounds. He claims that mood choice correlates with the truth value of the proposition, which in turn depends on the semantic type of the governing predicate and the presence or absence of negation and modality in the upper clause. In general, he claims that predicates whose comple-

ments are of a definite truth value (true or false) select the indicative while the subjunctive correlates with an unspecified truth value. Schrodtt (1983) considers as prototypical representatives of the former class of predicates implicative verbs like *irfullen* (implement) and factive verbs like *wizzan* (know), while the latter class is represented by a group of verbs called non-factive, including verbs of saying and thinking but also volitional and directive predicates (see also Schrodtt 2004, 184 ff.).

But this classification of matrix predicates is problematic, as is also observed in Petrova (2013, 46). It is well known that verbs like *say* and *believe* on the one hand, and *want*, *ask* and *demand* on the other hand display a different clause-embedding behaviour across languages (Farkas 1992; Giannakidou 1997, 1998 and subsequent work). Petrova (2013, 46) observes that there is a difference in the selecting properties of these predicates in OHG, in that verbs of saying and thinking allow both the indicative and the subjunctive in their complements, see (23) and (24), while directive verbs strictly select the subjunctive, as in (25) (see also (2) and (3) above):

- (23) Áfur      zalta      in      drúhtin      tház,  
again    told      them    Lord      that  
thaz    er      **ist**      líoht      irwélitaz      (O III, 17, 67)  
that    he      is.IND    light      chosen  
'Jesus told them again that he was the chosen light'

- (24) zált      in      in      giwíssi,      thaz      ér  
told    them    in    sure      that    he  
then      man    ní      **wéssi**      (O IV, 18, 30)  
the.ACC    man    NEG    know.SUBJ.PRES.3SG  
'He told them for sure that he did not know the man'

- (25) **gibót**      thaz      sie      **fuorin**      /  
ordered    that    they    travel.SUBJ  
ubar    then    giozon      (T 85, 20 ff., cited in Petrova 2013, 45)  
over    the    lake  
Lat. 'iussit ire / trans fr&um'  
'he ordered them to cross the lake'

These alternations are explainable if we apply Giannakidou's (2009) notion of (non-)veridicality to the data. The variation between the indicative and the subjunctive in the complements of verbs of saying and thinking – as in (23) and (24) – is not surprising given that these verbs embed indirect reports, in which context both the indicative and the subjunctive are possible from the beginning of the attestation to present days (see Petrova 2008 for OHG



than the king did.SUBJ  
'[...] in this distress better than the king could do'

## 5. Conditional clauses

- (30) **oba** ih thero buacho guati  
if I these.GEN books.GEN goodness  
hiar iawiht **missikerti**, [...] (O H.1, cited in Schrodts 2004, 157)  
here anything distorted.SUBJ  
'If I distorted anything of the goodness of these books [...]'

## 6. 'Exceptive' clauses (always with the subjunctive, Schrodts 2004, 195)

- (31) [...] mit gót er iz ni **wirke!** (O II, 12, 10, cited in Schrodts 2004, 195)  
with God he it not works.SUBJ  
'[...] unless he does it with God's help'

Finally, with respect to OHG relative clauses, already the traditional grammarians observe that the negation of the antecedent plays a role in the licensing of the subjunctive (cf. Abraham, Nishiwaki forthcoming). For instance, Erdmann (1874, 135) argues that the indicative in OHG is used in relative clauses modifying an antecedent of affirmative clauses (32), while the subjunctive is categorical in relative clauses whose antecedent is negated (33). Thus, the use of the subjunctive in attributive relative clauses in OHG seems to depend on the existence of the referent in the actual world that is expressed by the antecedent.

- (32) senu mín kneht then ih **gicós** (T 69, 9)  
look my child whom I chose.IND.1SG  
'look, my child, whom I chose'

- (33) nioman nist in thinemo cunne  
noone NEG-is in your kinship  
thie thar ginemnit **sī** thesemo namen. (T 4, 11)  
who PRT called is.SUBJ this.DAT name.DAT  
'Nobody in your kinship has been given this name'

However, Schrodts (2004, 195 ff.) points out that mood alternations in these types of subordinate clauses should be investigated in a more systematic way. In a recent investigation, Coniglio (2017) shows that in OHG relative clauses, mood correlates with the (non-)specificity of the referent of the antecedent (note that the existence of a referent is a necessary condition ena-

bling the specific interpretation of a noun phrase, see von Heusinger 2011). This is reminiscent of the situation described for the Romance languages.<sup>6</sup>

Following this state of the art, we will pursue an explanation of the following questions:

- a. What are the factors determining mood alternations in OHG? Are these the same as described for Greek (Giannakidou 2009) or for Romance languages (Quer 1998)?
- b. Is there one overarching factor responsible for the licensing of the subjunctive (for example, 'overt marking of information about model interpretation', Quer 2001, 109)? Alternatively, do we have to resort to different explanations for each type of subordinate clause?
- c. How can mood distribution in OHG be modelled morpho-syntactically?
- d. What can be said about the diachronic change that led to the situation in MG? Which morpho-syntactic and semantic features or properties responsible for the licensing of the subjunctive were ultimately lost in later stages of the language?

## 4 Corpus Investigation and Discussion

For the present goals, mood distribution (in particular, the licensing of the subjunctive) in OHG subordinate clauses is investigated based on the Old German Reference Corpus (*DDD-Referenzkorpus Altdeutsch*, henceforth ReA): Donhauser, Karin; Gippert, Jost; Lühr, Rosemarie; ddd-ad (Version 1.0), Humboldt-Universität zu Berlin <http://hdl.handle.net/11022/0000-0003-37E5-D> (searchable via ANNIS, Krause, Zeldes 2016, <http://corpus-tools.org/annis/>).

In this corpus, clause types and mood are annotated on dedicated tiers. All types of main and subordinate clauses (n=28,387) were retrieved under the exclusion of non-OHG examples (Latin and Old Saxon). Additionally, the corpus involves tagging of inflectional morphology, including verbal mood. Using this annotation, we retrieved all subordinate clauses includ-

<sup>6</sup> Furthermore, a well investigated fact is the diachronic link between MG V2 relative clauses and historical ones (Axel-Tober 2012), such as the following example:

- (i) Ein ander tier ist, daz **heizzent** die Chrieche Hinam. (WPh VI, 1, cited in Axel-Tober 2012, 246)  
 an other animal is that call.IND the Greeks hyena  
 'There is another animal which the Greeks call hyena'

Now, given that the antecedents in these constructions are obligatorily specific indefinites, and given that specificity is also related to mood alternations in OHG, one could wonder whether mood alternations and verb position are the reflex of one and the same phenomenon (cf. Coniglio 2017).

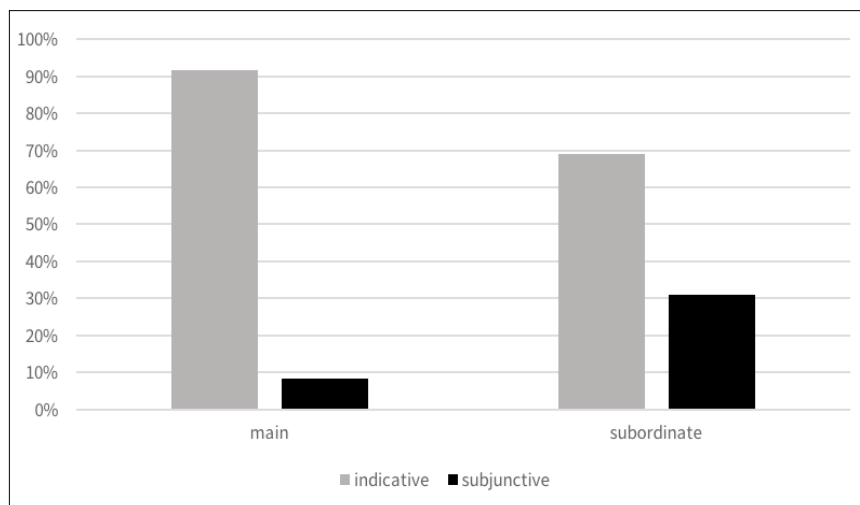


Figure 1. Mood in main and subordinate clauses

ing a finite verb in the indicative or in the subjunctive. The results of this first general query yielded the results presented in table 1 and represented in fig. 1.

	main		subordinate	
<b>indicative</b>	15,902	92%	7,600	69%
<b>subjunctive</b>	1,475	8%	3,410	31%

Table 1. Mood in main and subordinate clauses

The traditional observation that the subjunctive is used more often in subordinate clauses than in main clauses is thus borne out by the distribution in ReA.

The inspection of indicative/subjunctive alternations *vis-à-vis* the different types of subordinate clauses reveals that only 11.2% of (attributive) relative clauses exhibit the subjunctive, in clear contrast to complement and adverbial clauses with 43.9% and 34.4%, respectively (cf. table 2 and fig. 2).<sup>7</sup>

<sup>7</sup> The low number for the subjunctive in relative clauses (n=332) has probably to do with its particular licensing conditions: only weak determiners that are not in the scope of a nega-

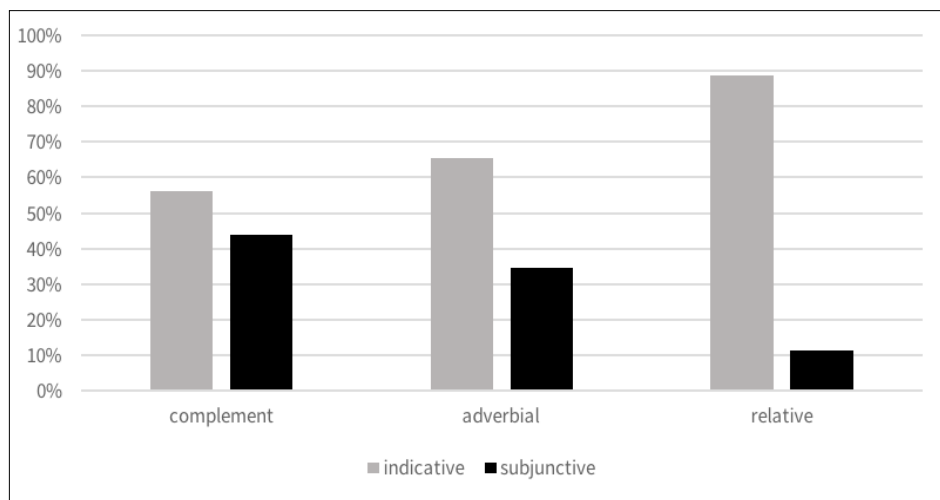


Figure 2. Mood in complement, adverbial and relative clauses

	complement		adverbial		relative	
<b>indicative</b>	1,800	56%	3,178	66%	2,622	89%
<b>subjunctive</b>	1,409	44%	1,669	34%	332	11%

Table 2. Mood in complement, adverbial and relative clauses

In the next sections, we will discuss the single clause types separately.

#### 4.1 Complement Clauses

As pointed out in Section 3 above, mood alternations in complement clauses in OHG depend on the semantic properties of the embedding predicate, which also interact with negation, modalization, and other semantic operators in the matrix clause, see Schrodtt (1983, 2004, 184 ff.), Petrova (2013), Abraham and Nishiwaki (forthcoming) (also cf. Behaghel 1928, 571 ff.).

The interaction of the semantic properties of the matrix predicate and the presence of questions, negation or modalization in the matrix clause are demonstrated for the verb *wizzan* (know). This verb selects a comple-

tive, conditional or interrogative operator can license the subjunctive in relative clauses (cf. Catasso, Hinterhölzl 2016; Coniglio 2007).

ment whose content is claimed to be true by the subject, i.e. the complement clause is in the indicative if the matrix clause is a non-modalized affirmative clause as in (34). But the presence of semantic operators overwrites the selecting properties of the governing predicate, i.e., if *wizzan* is in the scope of a modal or an interrogative operator, the complement clause displays the subjunctive, as shown in (35).

(34) wir **wízun** thaz gizámi, thaz thu fon góte **quami** (O II, 12, 8)  
we know this well that you from God.DAT came.IND  
'We know that you came from God'

(35) Wio meg ih **wízzan** thanne, thaz uns kínd **werde** (O I, 4, 55)  
how can I know then that us child becomes.SUBJ  
'How can I get to know that we will have a child?'

In addition, we referred to the observation put forward by Petrova (2013) that the notion of (non-)veridicality, as outlined for Modern Greek and Romance, plays a role in the selection of verbal mood in OHG, in that complements of veridical verbs like those in (6a-e) display both the indicative and the subjunctive, while non-veridical verbs like those in (7a-e) strictly select the subjunctive.

To test this hypothesis, we conducted a corpus study determining the mood choice of complement clauses of selected representatives of the respective classes. We only accounted for complements of matrix clauses which are affirmative and non-modalized. The results of the corpus search in ReA are given in (table 3).<sup>8</sup>

	veridical verbs				non-veridical verbs		
	<i>sagen</i> 'say'	<i>quedan</i> 'say'	<i>zellen</i> 'tell'	<i>gilouben</i> 'believe'	<i>bitten</i> 'ask, request'	<i>gibiotan</i> 'order, command'	<i>wellen</i> 'want'
<b>indicative</b>	9	6	1	33	0	0	0
<b>subjunctive</b>	2	15	1	0	24	21	13

Table 3. Mood alternations in adverbial clauses

8 We used the query in (i) applied to all verbs in table 3 to retrieve those cases in which they select *daz* 'that'-complements, and determined the verbal mood in these clauses. Note that the low numbers of conclusive examples are due to the restrictedness of the data set, which only includes complements of predicates in affirmative non-modalized matrix clauses.

(i) clause & clause & lemma="sagen" & lemma="daz" & pos="KOUS" & #1\_i\_#3 & #2\_i\_#4 & #4\_=#5 & #1.#2





of adverbial clauses, with the subjunctive – for instance – scoring 87.7% in intentional contexts like purpose clauses, but only 3.4% in causal clauses (see also fig. 3).

	causal		temporal		local		modal	
<b>indicative</b>	821	97%	880	87%	101	82%	656	80%
<b>subjunctive</b>	28	3%	129	13%	22	18%	159	20%

	conditional		consecutive		concessive		purpose	
<b>indicative</b>	455	61%	98	41%	33	32%	114	12%
<b>subjunctive</b>	288	39%	141	59%	71	68%	817	88%

Table 4. Mood alternations in adverbial clauses

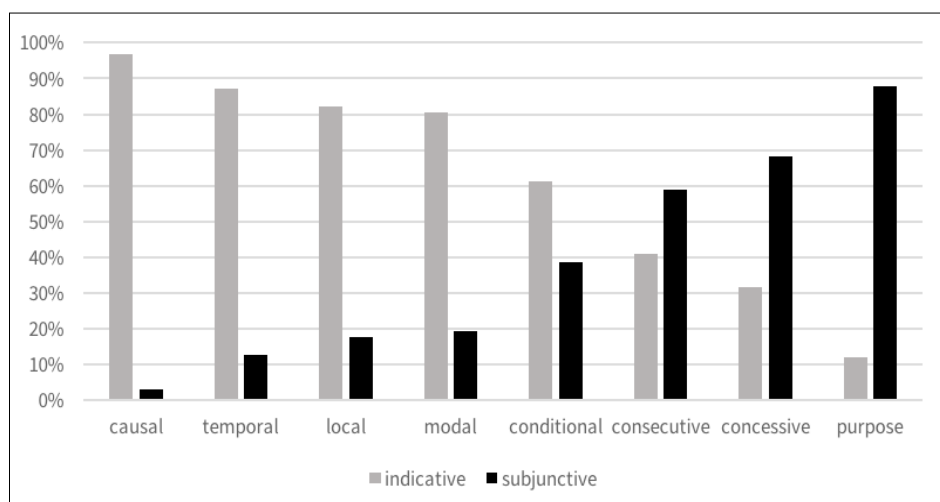


Figure 3. Mood alternations in adverbial clauses

We expect to discover differences between various classes of one and the same type of adverbial clause. By way of example, we will discuss two group of adverbial clauses, one in which it is the semantic type of the adverbial that determines the mood of the subordinate clause (temporal clauses) and one in which it is the lexical type of the subordinator that defines mood (concessive clauses).

(i) clause=/\*Temp/& inflection=/IND.\*/& #1\_i\_#2 & meta::language="ahd."

(ii) clause=/\*Temp/& inflection=/SUBJ.\*/& #1\_i\_#2 & meta::language="ahd."

Temporal clauses expressing a posterior or an anterior event differ with respect to whether they are entailed (or not) by the matrix clause. As already outlined above, only anterior temporal clauses, i.e. those introduced by the equivalent of English *before*, represent a type of a non-veridical context requiring the subjunctive in Modern Greek. In contrast, posterior temporal clauses, i.e. those introduced by *when*, act as veridical contexts displaying the indicative. This distribution can be exemplified for OHG by virtue of (38) vs (39). But note that Erdmann (1973, 123) accounts for cases in which the indicative is also used in temporal *er*-clauses in OHG, see (40):

- (38) Er sé joh hímil **wurti** (O II, 1, 3)  
before sea and sky became.SUBJ.3SG  
'Before sea and sky were created'
- (39) Thô sie thar **uuarun** (T 5, 13)  
when they there were.IND.3PL  
'When they were there'
- (40) er er wórolt **worahta** (O V, 23, 26)  
before he world created.IND.3SG  
'before he created the world'

We conducted a pilot study aiming to determine the distribution of the indicative and the subjunctive in temporal clauses introduced by *er* (before) and *do* (when) in OHG. The results are displayed in table 5.

	indicative	subjunctive	total
<b>do (when)</b>	145 (100%)	0	145
<b>er (before)</b>	14 (29%)	34 (71%)	48

Table 5. Distribution of mood in temporal clauses introduced by *do* and *er*

It turns out that the sharp contrast between the indicative and the subjunctive in the two classes of temporal clauses known from Modern Greek only partly applies to OHG. While the subjunctive never occurs in *do*-clauses, *er*-clauses display a high preference for the subjunctive, accounting for 71% of the cases, but the indicative is attested in the remaining 29% of the data. We cannot detect any semantic difference between the indicative and the subjunctive in *er*-clauses that might account for the choice of the one mood over the other in these cases. So we argue that there is free variation between the various mood forms in *er*-clauses already in OHG, which potentially will give rise to the loss of the subjunctive in this domain in the later development of the language.

Another correlation applies between the lexical type of the subordinator and the selection of mood forms in one and the same semantic class of adverbial clauses, as exemplified by concessive clauses in OHG. As the results in table 4 revealed, the subjunctive is preferred over the indicative in this type of adverbial clauses. At the same time, there is variation regarding the lexical type of concessive subordinators in OHG. The default concessive subordinator is *thoh* (although), but subordinators like *mit thiu*, *ob* and *sôwio* are also attested. We determined the rate of the subjunctive in clauses introduced by *thoh* and any alternative in concessive clauses in ReA.<sup>10</sup> The results are represented in table 6:

	indicative	subjunctive
<i>thoh</i>	9	59
other	24	12
<b>total</b>	33	71

Table 6. Distribution of mood in concessive clauses

Following table 6, the tendency to use the subjunctive in concessive clauses introduced by *thoh* is significantly higher than for concessive clauses in general. Note that if we look into the annotation, we discover that among the 9 forms annotated for the indicative, the mood form is actually ambiguous between the indicative and the subjunctive in 6 of the cases. In only 3 cases do we find unambiguous indicative forms in a concessive clause introduced by *thoh*. Note, however, that in view of the fact that there is verb movement in one of these clauses (see 41), it is plausible to assume that these are main clauses displaying an adverbial connector *thoh* (despite this) in first position, which is homonymous with the concessive adverbial subordinator *thoh* in adverbial concessive clauses.

- (41) *thoh*            *ni*            ***hábat***        *er*        *iro*            *méra*            (O IV, 6, 9)  
 despite.this    NEG        has.IND        he        of.them        more  
 ‘despite this, he does not have more of them’

<sup>10</sup> We specified the original queries for concessive clauses in the indicative and the subjunctive for the condition that these clauses should be introduced by the lemma *doh* or by any alternative subordinator:

- (i) `clause=/*Cnc/ & inflection=/IND./ & lemma="doh" & #1_i_#2 & #1_l_#3 & meta::language="ahd."`  
 (ii) `clause=/*Cnc/ & inflection=/SUBJ./ & lemma="doh" & #1_i_#2 & #1_l_#3 & meta::language="ahd."`

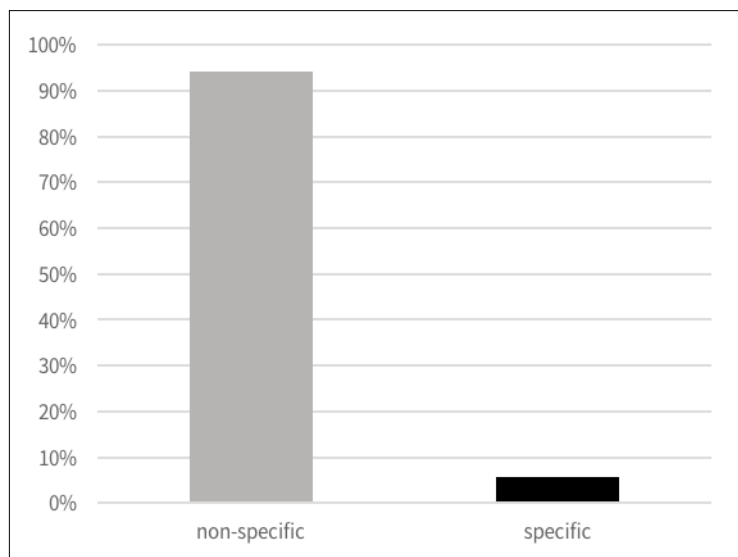


Figure 4. Distribution of the subjunctive in (non-)specific contexts

<b><i>thoh</i>-indicative</b>	3 (4.8%)
<b><i>thoh</i>-subjunctive</b>	53 (85.5%)
<b><i>thoh</i>-indicative=subjunctive</b>	6 (9.7%)

Table 7. Distribution of mood in concessive clauses introduced by *thoh*

To conclude, the subjunctive is not licensed across the board, but rather by adverbial complementizers in those adverbial clauses that do not presuppose the truth of the proposition (non-veridical contexts, Giannakidou 1994).

### 4.3 Relative Clauses

As to the licensing of mood in relative clauses in OHG, Coniglio (2017) points out the interaction between specificity and mood that is familiar from modern Romance languages. His pilot study is based on a small corpus of Early OHG texts (in ReA). The following examples illustrate the case of a specific referent with the indicative mood in the relative clause and a non-specific referent associated with the subjunctive mood in the dependent clause respectively:

- (42) [...] drúhtin got [...], ther únsih **irlósta** (O I, 10, 3f.)  
 Lord god who us redeemed.IND  
 ‘God, our Lord, [...] who redeemed us’
- (43) [...] er [...] then lésan iz **gilústi** (O I, 1, 10)  
 he whom read it pleased.SUBJ  
 ‘whoever felt like reading.’

The investigation of all subjunctive relative clauses in the whole reference corpus (n=422)<sup>11</sup> leads to very similar results, as is shown by table 8 and fig. 4.<sup>12</sup>

	non-specific		specific	
<b>subjunctive</b>	340	94%	21	6%

Table 8. Distribution of the subjunctive in (non-)specific contexts

Only very few cases are attested for the subjunctive occurring with a specific referent in the matrix DP. These can be explained by rhyme requirements, presence of modal verbs (or modalizing words), of negative polarity items, of a Latin source displaying the subjunctive, etc. In the following example, both rhyme and the presence of the negative polarity item *io* could be the reason for the use of the subjunctive in the relative clause:

- (44) [...] thio brústi, thio Kríst io **gikústi** (O I, 11, 39)  
 the breasts that Christ ever kissed.SUBJ  
 ‘the breasts that Christ ever kissed’

11 na=61. Here, the total number of relative clauses diverges from the number indicated above because, for this calculation, also free relative clauses are considered, which - unfortunately - are annotated as complement clauses in ReA.

12 An anonymous reviewer points out that it would be interesting - by way of comparison - to report the data for the use of the indicative in the same contexts. Unfortunately, it is not possible to do so with respect to the whole corpus, since ReA is not annotated for specificity. However, Coniglio (2017, 254) discusses data from a smaller corpus that indicate that, in contrast to the subjunctive, the indicative is not more frequently used with non-specific referents (with a statistically significant difference between the indicative and the subjunctive, p=.0012).

## 5 Syntactic Analysis and the Licensing of Mood

In syntax, one can find different approaches arguing that the licensing of mood affects the CP or the IP, or both domains (cf. Calabrese 1993; Poletto 1995, 2000; Giorgi, Pianesi 1997; Rivero 1988; Cinque 1999; Roberts, Roussou 2003, 88; Costantini 2009; Giorgi 2009; Damonte 2010; Ledgeway 2012; Mensching 2012). For the present analysis, we will assume that the CP and the projection Mood in the I-domain are responsible for the licensing of indicative/subjunctive mood alternations (cf. Damonte 2010; Rivero 1988; Calabrese 1993). Furthermore, we will adopt Zeijlstra's (2012) notion of (upward) Agree (deviating from Chomsky 2000, 2001; Pesetsky, Torrego 2007; Bošković 2007), as defined below:

(45) *Agree*:

$\alpha$  can Agree with  $\beta$  iff:

- a.  $\alpha$  carries at least one uninterpretable feature and  $\beta$  carries a matching interpretable feature.
- b.  $\beta$  c-commands  $\alpha$ .
- c.  $\beta$  is the closest goal to  $\alpha$ .

(Zeijlstra 2012, 514)

Elaborating on Coniglio (2017), we will consider below how the licensing of the indicative/subjunctive alternations takes place in the different types of subordinate clauses.

### 5.1 Mood Licensing Configuration in Subordinate Clauses

We will argue that, in all types of subordinate clauses, the inflected verb exhibits an uninterpretable mood feature ([uInd] or [uSubj]), which probes for its counterparts in Mood (cf. Ledgeway 2012 for a similar approach). Furthermore, the heads C (or – in a cartographic approach – some head in the complex (split) C-domain) and Mood are assumed to exhibit a feature encoding (non-)veridicality in complement and adverbial clauses, but possibly (non-)specificity in relative clauses (cf. Coniglio 2017). Thus, due to the different syntax and semantics of complement, adverbial and relative clauses, the Agree mechanism is assumed to be slightly different in each of the three types of subordinate clauses. In the literature, (non-)veridicality and (non-)specificity have been shown to be encoded or licensed in different syntactic projections in the C- and D-domain.

As to complement clauses, at least certain types are assumed to be syntactically and semantically dependent on the matrix clause (cf. Hooper, Thompson 1973; Haegeman 2006). It is plausible that the syntactic integration of non-veridical/non-assertive complements favours the licensing

of the subjunctive in contexts required by the matrix predicate. Extending the approach in Coniglio (2017), we assume that, in complement clauses, the uninterpretable feature for (non-)veridicality is licensed via Agree with the correspondent feature on the verb in the matrix clause:<sup>13</sup>

- (46)  $\left[ \begin{array}{l} \text{CP}_1 \dots V_{[i\text{-Verid}]} \dots \left[ \text{CP}_2\text{-Compl } C_{[u\text{-Verid}]} \dots \text{Mood}_{[i\text{Ind}][u\text{Verid}]} \dots V_{[u\text{Ind}]} \right] \\ \text{CP}_1 \dots V_{[i\text{-Verid}]} \dots \left[ \text{CP}_2\text{-Compl } C_{[u\text{-Verid}]} \dots \text{Mood}_{[i\text{Ind}][u\text{Verid}]} \dots V_{[u\text{Ind}]} \right] \end{array} \right]$  Agree  
→ indicative
- (47)  $\left[ \begin{array}{l} \text{CP}_1 \dots V_{[i\text{-Verid}]} \dots \left[ \text{CP}_2\text{-Compl } C_{[u\text{-Verid}]} \dots \text{Mood}_{[i\text{Subj}][u\text{-Verid}]} \dots V_{[u\text{Subj}]} \right] \\ \text{CP}_1 \dots V_{[i\text{-Verid}]} \dots \left[ \text{CP}_2\text{-Compl } C_{[u\text{-Verid}]} \dots \text{Mood}_{[i\text{Subj}][u\text{-Verid}]} \dots V_{[u\text{Subj}]} \right] \end{array} \right]$  Agree  
→ subjunctive

For this Upward Agree mechanism to work under Chomsky’s (2001) phase theory, one must obligatorily assume – following Zeijlstra (2012) – that the feature for veridicality is present at the phase edge, i.e. in C-domain. This is straightforward, given that mood alternations (and other properties of adverbial clauses) seem to only depend on the lexical form of the complementizers in many languages (cf. Rivero 1988; Calabrese 1993; Damonte 2010; Ledgeway 2005, 2012; Giannakidou 2009; Padovan 2011).

In adverbial clauses, the licensing of mood is basically independent from the properties of the matrix clause, and thus semantically independent from it. Furthermore, Axel-Tober (2012) argues that the syntactic status of adverbial clauses in OHG and (early) MHG is that of non-integrated clauses. This supports the view that the subjunctive is not licensed via the matrix clause in adverbial clauses. Hence, the feature for (non-)veridicality must be interpretable in the C-domain of the adverbial clause (at the latest) and thus be independent from the properties of the main clause, as illustrated below:

- (48)  $\left[ \begin{array}{l} \text{CP}_1 \dots \left[ \text{CP}_2\text{-Adv } C_{[i\text{-Verid}]} \dots \text{Mood}_{[i\text{Ind}][u\text{Verid}]} \dots V_{[u\text{Ind}]} \right] \\ \text{CP}_1 \dots \left[ \text{CP}_2\text{-Adv } C_{[i\text{-Verid}]} \dots \text{Mood}_{[i\text{Ind}][u\text{Verid}]} \dots V_{[u\text{Ind}]} \right] \end{array} \right]$  Agree  
→ indicative
- (49)  $\left[ \begin{array}{l} \text{CP}_1 \dots \left[ \text{CP}_2\text{-Adv } C_{[i\text{-Verid}]} \dots \text{Mood}_{[i\text{Subj}][u\text{-Verid}]} \dots V_{[u\text{Subj}]} \right] \\ \text{CP}_1 \dots \left[ \text{CP}_2\text{-Adv } C_{[i\text{-Verid}]} \dots \text{Mood}_{[i\text{Subj}][u\text{-Verid}]} \dots V_{[u\text{Subj}]} \right] \end{array} \right]$  Agree  
→ subjunctive

This comes as no surprise since, in adverbial clauses, beside the semantic type of the clause, it is the lexical form of the subordinator that determines mood in many languages (Giannakidou 2009). Both the semantic type of the clause and the subordinator are assumedly encoded in C.

13 See Abraham, Nishiwaki (forthcoming), who adopts Coniglio’s (2017) analysis to explain the licensing of OHG and MHG negated complements. See a similar proposal in Ledgeway (2012) with respect to some Southern Italian dialects.



In (restrictive) relative clauses, mood licensing depends on the semantic properties of the referring expression (cf. Quer 1998; Giannakidou 2013, etc.), in particular on its (non-)specificity (cf. Schrodtt 2004, 195 ff.). Syntactically, restrictive relatives are embedded in the matrix DP in which their antecedent is hosted.<sup>14</sup> Specificity is argued to be encoded on the D head of the antecedent (cf. Enç 1991; Cardinaletti, Giusti 1992, 2002; Campbell 1996; Zamparelli 2000; Guillemin 2007; Sio 2008). The head with the feature for (non-)specificity probes for its counterpart in the superordinate D:<sup>15</sup>

- (50)  $\left[ \begin{array}{l} \text{DP } D_{[i\text{Spec}]} \dots \left[ \text{CP-Rel } C_{[u\text{Spec}]} \dots \text{Mood}_{[i\text{Ind}][u\text{Spec}]} \dots V_{[u\text{Ind}]} \right] \dots \text{NP} \\ \text{DP } D_{[i\text{Spec}]} \dots \left[ \text{CP-Rel } C_{[u\text{Spec}]} \dots \text{Mood}_{[i\text{Ind}][u\text{Spec}]} \dots V_{[u\text{Ind}]} \right] \dots \text{NP} \end{array} \right]$  Agree  
→ indicative
- (51)  $\left[ \begin{array}{l} \text{DP } D_{[i\text{Spec}]} \dots \left[ \text{CP-Rel } C_{[u\text{Spec}]} \dots \text{Mood}_{[i\text{Subj}][u\text{Spec}]} \dots V_{[u\text{Subj}]} \right] \dots \text{NP} \\ \text{DP } D_{[i\text{Spec}]} \dots \left[ \text{CP-Rel } C_{[u\text{Spec}]} \dots \text{Mood}_{[i\text{Subj}][u\text{Spec}]} \dots V_{[u\text{Subj}]} \right] \dots \text{NP} \end{array} \right]$  Agree  
→ subjunctive

Notice that the explanation for appositive relative clauses is different. They are semantically and syntactically more independent and their mood is not licensed by properties of the D head in which their antecedent is hosted (cf. Coniglio 2017, 262).

## 5.2 Diachronic Loss of Mood Alternations in Subordinate Clauses

As already pointed out, the indicative is not only attested in OHG veridical contexts, but also very frequently in non-veridical ones. This reminds of a phenomenon that may be observed in Colloquial or Substandard Italian, in which the indicative is replacing the subjunctive in many contexts (cf. Catasso, Hinterhölzl 2016). If this is true also for OHG, then the loss of the subjunctive in MG subordinate clauses would come as no surprise. In fact, Coniglio (2017) links this loss to well-known morphological changes taking place in the history of German (the impoverishment of verb morphology and the ensuing loss of clear mood distinctions, the emergence of periphrastic forms for realising mood alternations, etc.).

14 See Cinque (2008a, 2008b, 2013) for the base position of relative clauses in the DP.

15 A further (uninterpretable) feature [uV] could be assumed to be optionally present in C in indicative cases (cf. Coniglio 2017, 262 fn. 7). This would require the movement of the verb to C in V2 relative clauses. This would allow for the event argument of the predicate in the relative clause to be anchored to the utterance situation, as hypothesized in Catasso, Hinterhölzl (2016, 20).

Based on this empirical fact, we could speculate that the lack of clear morphological distinctions on the verb might have led to the reinterpretation of the feature on V and Mood as a default [Ind] feature in all contexts, independently of the value of the feature for veridicality/specificity (also in non-veridical/specific contexts):

$$(52) \begin{array}{l} \left[ {}_{CP1} \dots \left[ {}_{CP2-Adv} C_{[i-Verid]} \dots Mood_{[iInd][u-Verid]} \dots V_{[uInd]} \right] \right] \quad \text{Agree} \\ \left[ {}_{CP1} \dots \left[ {}_{CP2-Adv} C_{[i-Verid]} \dots Mood_{[iInd][u-Verid]} \dots V_{[uInd]} \right] \right] \quad \rightarrow \text{indicative} \end{array}$$

The investigation of this diachronic development (probably taking place in the ENHG period) must be left for future research.

## 6 Conclusions

To sum up, the factors determining mood alternations in OHG were shown to be the same as those described for Greek and Romance languages. In general, it was argued that there are possibly two factors responsible for the licensing of the subjunctive in OHG, namely veridicality in complement and adverbial clauses, whilst relative clauses seem to require non-specific contexts for the licensing of the subjunctive. We modelled the licensing of mood alternations in OHG according to a feature-based Upward Agree mechanism, which makes the licensing of mood dependent on the internal and external syntax of the subordinate clause, as well as on the semantic and pragmatic properties of the matrix clause. An in-depth investigation of MHG and ENHG data is still necessary to describe the change scenario that has led to the loss of mood alternations in subordinate clauses in the following stages of the language.

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