Should a conditional marker arise ... The diachronic development of conditional sollen in German

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Like other Germanic languages, German has a modal verb that, when used in the protasis of a conditional, does not have one of the modal meanings it has in other contexts, but only seems to underline the conditional meaning. The current paper looks at the diachronic development of conditional sollen, and shows how the past (subjunctive) form sollte, particularly in V1-protases, is in the process of developing into a pure conditional marker. Following Breitbarth (2015) and Breitbarth et al. (2016), this development is analysed in a framework combining Roberts & Roussou’s (2003) Minimalist approach to grammaticalization with a cartographic analysis of modality and conditionals based on Cinque (1999) and Haegeman (2010b).

Keywords: conditional clauses; modal verbs; grammaticalization; upward reanalysis; sollte; German

1 Introduction
1.1 Background
All West Germanic (and some Romance) languages have “conditional” uses of certain modal verbs, in which the modal verb does not express a modal (root or epistemic) meaning, but acts more like a conditional marker (Nieuwint 1989; van der Auwera & Plungian 1998; Nuyts et al. 2005; Boogaart 2007; Haegeman 2010b; Van Den Nest 2010). In German, this modal verb is sollen, or rather, its past (subjunctive) form sollte.

Interestingly, while V1-conditionals cannot be substituted for a wenn ‘if’-conditional in all syntactic and semantic contexts, V1-conditionals with sollte ‘should’ seem to be much less sensitive to this distinction (e.g. Reis & Wöllstein 2010). They are allowed in contexts where V1-conditionals with other verbs are excluded, such as relevance conditionals like (1) (Reis & Wöllstein 2010: 137), which Reis & Wöllstein attribute to the fact that the idiosyncratic meaning of “conditional” sollte, highlighting the hypothetical character of the antecedent proposition (Welke 1965: 99; Glas 1984: 86) and focussing its potential character, serves as overt marking of conditionality, and can therefore override the restrictions of V1-protases.

(1) a. Wenn Peter anruft — ich bin im Café Einstein.
   if Peter calls I am in the Café Einstein
   ‘If Peter calls, I’m at Café Einstein.’

1 Cf. French devoir, Italian dovere ‘must’, e.g. Je ne pense pas qu’elle sera due mais si elle devait l’être, on fera la fête ‘I don’t think she will be elected, but should she be elected, we will have a party’ (example from Liliane Haegeman, p.c.).
b. Sollte Peter anrufen — ich bin im Café Einstein.
   should Peter call    I am in the Café Einstein
   ‘Should Peter call, I’m at Café Einstein.’

c. *Ruft Peter an — ich bin im Café Einstein.
   calls Peter PRT I am at Café Einstein

*Sollte* is not restricted to V1-protases, but also occurs in combination with *wenn* ‘if’ (or *falls* ‘in case’), with seemingly no or little difference in distribution. Reis & Wöllstein (2010: 137) call German *sollte*-V1-conditionals a *Sonderfall* (‘special case’) and state that

Die Analyse von konditionalem *sollte* muss sicher viel weiter getrieben werden, sowohl was das Verhältnis zum Modalverb *sollen* bzw. dessen epistemischen und futurischen Abarten angeht, als auch die Verbindung des *sollte* zugeschriebenen stärker hypothetischen Charakters mit der ihm gleichfalls zugeschriebenen Fokussierung möglicher Erfüllbarkeit.²

They add in a footnote

Hierzu gehört auch eine vergleichende Untersuchung mit englischen *should*-Konditionalen (s. hierzu Nieuwint 1989, Dancygier 1998: 192 f.), die jedenfalls auf den ersten Blick den deutschen *sollte*-Konditionalen völlig parallel scheinen.³

Synchronically, Breitbarth et al. (2016) give such a comparison between the distribution and the different degrees of grammaticalization of English *should* and German *sollte*, together with (Netherlands and Standard) Dutch *mocht* and (Belgian Colloquial) Dutch *moest*, while Breitbarth (2015) proposed a formal account for the diachronic development of conditional *should* in English. The question of how German *sollte*, originally a modal verb expressing obligation, could come to express a potential or conditional meaning, and how *sollte*-conditionals acquired their special distribution, has not yet been discussed in detail in the literature. Building on Breitbarth (2015) and Breitbarth et al. (2016), the current paper therefore sets out to describe the diachronic development of conditional *sollte*, and analyses it in a framework using insights from Roberts & Roussou’s (2003) Minimalist approach to grammaticalization in a cartographic analysis of modality and conditionals based on Cinque (1999) and Haegeman (2010a).

1.2 Methods

The diachronic case study presented in this paper is based on a Middle High German (MHG; 1050–1350) and a New High German (NHG) corpus. The MHG data come (a) from the Middle High German Conceptual Database (MHDBDB; 185,632 tokens in 595 texts)⁴ and (b) from the newly available Referenzkorpus Mittelhochdeutsch (ReM; 2.5 million tokens in 395 texts),⁵ Klein & Dipper (2016). The NHG data are drawn from the written

² ‘The analysis of conditional *sollte* certainly needs to be advanced much more, both concerning the relationship with the modal verb *sollen* and its epistemic and futuric variants, and the connection between the stronger hypothetical character attributed to *sollte* and the focussing on potential realizability also attributed to it.’ [AB]

³ ‘To this belongs a comparative investigation of English *should*-conditionals, which, at least at first sight, seem to be entirely parallel to the German *sollte*-conditionals.’ [AB]

⁴ http://www.mhdbdb.sbg.ac.at, queries: (Sob +) @suln (finding clauses with a form of *suln* ‘shall’, with or without conditional complementizer *ob* ‘if’). Examples from this corpus are cited with the orthography, capitalization, and punctuation as found in the corpus.

⁵ https://www.linguistics.rub.de/annis/annis3/REM/, queries: (ia) for clauses beginning with *suln* and (ib) for clauses ending with *suln*. 
archive of the German Reference Corpus (DeReKo; ca. 7.3 billion words in total), which contains texts from Germany, Austria and Switzerland, and were subdivided into two periods, (i) historical texts from 1741–1915 (older NHG) and (ii) selected sources from the archive of written language between 1985–2012 (Present-Day German, PDG).

Any conditional clauses with the modal verb sollte in conditional protases were extracted, both syndetic and asyndetic, regardless of the modal meaning of the verb. The results of these queries were manually checked, and false hits (i.e. cases that were not conditional clauses with sollte/should) were removed. In the end, 428 clauses were obtained for MHG (362 from the MHDBDB and 66 from ReM). From the older NHG and the PDG subcorpora of the DeReKo, a random first selection of 200 clauses each was made, which after deselection of false hits resulted in 186 and 195 clauses, respectively. These were coded for (i) the meaning of the modal verb (e.g. circumstantial, or conditional), (ii) whether or not they are syndetic, (iii) the semantic linkage level (content/event, inferential or illocutionary), (iv) the degree of probability for content-level protases, (v) the tense of the verb (soll/sollen) in the protasis, and (vi) the tense of the verb in the apodosis.

1.3 Overview

Section 2 presents the results of the diachronic corpus study. Section 2.1 reports on the diachronic changes in the distribution of the modal meanings of soll/sollen in conditional protases, 2.2 shows how the semantic integration of sollte-conditionals developed over time, 2.3 looks at how sollte became increasingly restricted to the past (subjunctive) form, regardless of the degree of probability expressed by the conditional, or the tense of the verb in the apodosis, and 2.4 briefly turns to the competition between mugen and sollen as conditional modals in MLG. Section 3 proposes an analysis of the syntax and semantics of conditional sollte. The diachronic development of conditional sollte is given a formal account in Section 4, and Section 5 concludes.

2 Results of the corpus study

2.1 Sollen/sollen in conditional protases

As variously observed in the literature (Welke 1965; Glas 1984; Reis & Wöllstein 2010; Breitbarth et al. 2016), sollte mostly seems to be an expression of hypotheticality or potentiality in conditional protases. The data in the corpus were coded for two main uses, modal (modifying the lexical verb), and conditional (‘in case’). Any use in which a form of sollen/sollen could be interpreted as e.g. deontic or circumstantial (‘X has to/is supposed to/expected to happen, X is necessary/possible’) or buletic (‘it is/would be preferable for

(i) a. soll*:sa
   tok_anno = “.” &
   tok_anno = /sol.*/ &
   #1 . #2

   b. soll*:sa
   tok_anno = /sol.*/ &
   punc = “$E” &
   #1 . #2

Examples from this corpus are cited with the orthography, capitalization, and punctuation as found in the corpus.

6 http://www.idsmannheim.de/cosmas2/, queries: (ia) for clauses beginning with a form of sollen and (ib) for clauses with conditional complementizer wenn and a form of sollen within the same sentence.

7 The tense distinction in fact correlates with a mood distinction in conditional protases: if the verb is in present tense, it is also indicative. In past tense, both indicative and subjunctive are possible in principle. However, already in MHG, past indicative and past subjunctive forms of sollen/sollte are syncretic. Therefore, mood was not marked separately.
X to/Y wants X to happen’) were coded as modal. (2) illustrates this with examples from the three periods.

(2)  

a. **Middle High German** *(Der Trojanische Krieg, I.3246–3247; 1230–1275)*

in dūhte ein swaere bürde, ob er sīn âne solte sīn.

him seemed a heavy burden if he his.gen without should be

'It seemed a heavy burden to him, if he had to be without him.'

b. **Older New High German** *(HK3/A83.00003; 1799)*

Wenn mir das Bedeutende Spaß machen soll, so kann ich wohl leiden,

if me the important fun make shall so can I well bear

das jemand das Bedeutende ernsthaft aufführt.

that someone the important seriously performs

'If the important is supposed to entertain me, I can bear someone performing the important seriously.'

c. **Present-Day German** *(A97/OKT.28020; 1997)*

Wenn es im Februar blühen soll, müssen die Blumenzwiebeln jetzt

Wenn it in the February blossom shall must the flower bulbs now

in die Erde.

into the ground

'It is supposed to blossom in February, the flower bulbs must be planted into the ground now.'

The conditional meaning (roughly, ‘in case’) is illustrated for the three periods in (3).

(3)  

a. **Middle High German** *(Pfaffe Konrad, Rolandslied (P); 1172)*

ſcolde ich die wale han. fo ne irchunte ich nie deheinin man

should I the choice have so NEG recognized I never no man

‘If I had the choice, I would never recognize any man.’

b. **Older New High German** *(meg/GAJ.00491; 1843)*

Sollten Sie mir daher in dieser Angelegenheit Rath und Aufschlüsse

should you me therefore in this affair advice and information

geben wollen, so werde ich sehr dankbar sein.

give want so will I very grateful be

‘Should you want to give me advice and information in this affair, I would be very grateful.’

c. **Present-Day German** *(A10/MAR.01716; 2010)*

Sollten wir tausend werden, stellen wir Forderungen.

should we thousand become pose we requests

‘If we become a thousand, we will make requests.’

The conditional meaning is already prominently present in MHG, as Table 1 shows. In PDG, it is the dominant meaning. Throughout all three stages, the conditional meaning is c. 20% more frequently attested in asyndetic protases than in syndetic ones.

Also the tense and mood of suln/sollen interact differently with the conditional meaning in conditional protases: present indicative becomes increasingly restricted to the modal meaning(s), while past (subjunctive) becomes more tightly associated with the conditional meaning. In MHG, and very marginally still in older NHG, the conditional meaning could
Table 1: Modal meaning of suln/sollte in syndetic and asyndetic protases.

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<thead>
<tr>
<th></th>
<th>syndetic</th>
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<tbody>
<tr>
<td></td>
<td>modal</td>
<td>conditional</td>
<td>total</td>
</tr>
<tr>
<td>MHG</td>
<td>21 (45.7%)</td>
<td>25 (54.3%)</td>
<td>46</td>
</tr>
<tr>
<td>older NHG</td>
<td>54 (56.7%)</td>
<td>35 (39.3%)</td>
<td>89</td>
</tr>
<tr>
<td>PDG</td>
<td>28 (29.2%)</td>
<td>68 (70.8%)</td>
<td>96</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>asyndetic</th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td></td>
<td>modal</td>
<td>conditional</td>
<td>total</td>
</tr>
<tr>
<td>MHG</td>
<td>96 (25.1%)</td>
<td>286 (74.9%)</td>
<td>382</td>
</tr>
<tr>
<td>older NHG</td>
<td>45 (46.4%)</td>
<td>52 (53.6%)</td>
<td>97</td>
</tr>
<tr>
<td>PDG</td>
<td>6 (6.1%)</td>
<td>93 (93.9%)</td>
<td>99</td>
</tr>
</tbody>
</table>

also be expressed by suln/sollen in the present indicative, (4). In PDG, while the conditional meaning can only be expressed using the past (subjunctive) form sollte(n), the modal meaning is still expressed by the past (subjunctive) in about a quarter of all cases, illustrated by (5).

(4)  a. Middle High German (Pfaffe Konrad, Rolandslied (P); 1172)
ſcol er da warden erlagen . er ſturbe doch da haime
shall he there be slain he die. sbjv yet there home
‘(Even) if he is slain there, he shall still be buried at home.’

b. Older New High German (meg/GAJ.00491; 1843)
Soll an diesen Zeugen nicht genug sein, so Weiss ich nicht, wenn
shall with this witness NEG enough be so know I NEG when
überhaupt deren genug sein werden at all them gen enough be will be
‘In case this witness is not enough, I don’t know when there will ever be
enough of them.’

c. Present-Day German (A10/MAR.01716; 2010)
Sollten die Blumen jedoch an junge Hühner verfüttert werden, so
should the flowers however to young chickens fed be so
durften sie auf keinen Fall abgebrochen worden sein.
must they under no circumstance broken been be
‘If the flowers were intended/supposed to be fed to young chickens,
under no circumstances could they have been broken off.’

(4b) may potentially also be construed as evidential, that is, ‘If someone says that/if it turns out that one witness is not enough …’.
In the following subsections, we restrict the discussion to *suln/sollen* in the conditional meaning. We return to the analysis of the conditional meaning of *sollte* and its diachronic development from modal to conditional in Sections 3 and 4.

### 2.2 Linkage levels

The semantic relationship between the protasis and the apodosis in a conditional may be situated on (i) the content (or predictive) level, (ii) the epistemic (or inferential) level, or (iii) the speech-act (or illocutionary) level (Sweetser 1990; Dancygier & Sweetser 2005). In a predictive conditional, the content of the proposition in the protasis forms the prerequisite for the truth of the apodosis proposition in the real world, (6). In an epistemic conditional, the protasis forms the epistemic basis for an inference as to the truth of the apodosis proposition, (7). In a speech-act (or relevance) conditional, the protasis expresses a circumstance under which the apodosis provides relevant information, (8).

(6)  

**a. Middle High German** (*Buch der Könige* (D1); 1274/75–1282)  
sold ich die in minem alter brechen so soll mich got verdämen  
should I this in my age break so should me God damn  
‘If I should break it in my (old) age, God should damn me.’

**b. Present-Day German** (HMP12/MAI.02111; 2012)  
Wenn das gelingen sollte, warden wir viel Spaß haben.  
if that succeed should, will we much fun have  
‘If that should succeed, we will have a lot of fun.’

(7)  

**a. Middle High German** (*Barlaam und Josaphat*, l.11021–11022; 1200–1250)  
sold=er bî den dînen wesen, sô waere er leides ungesenesen.  
should=he with the your be so were he suffering unsaved  
‘Should be be with your [group], he would not be saved of suffering.’

**b. Present-Day German** (K97/OKT.76696; 1997)  
Sollte es Raub gewesen sein, dürfte die Beute gering ausgefallen sein, sagen die Ermittler.  
be say the investigators  
‘In case it was robbery, the loot would have been marginal, according to the investigators.’
Table 3: Linkage levels in suln/sollen-conditional sentences.

<table>
<thead>
<tr>
<th></th>
<th>content</th>
<th>epistemic</th>
<th>illocutionary</th>
<th>total</th>
</tr>
</thead>
<tbody>
<tr>
<td>MHG</td>
<td>187 (64.5%)</td>
<td>70 (24.1%)</td>
<td>33 (11.4%)</td>
<td>289</td>
</tr>
<tr>
<td>older NHG</td>
<td>55 (63.2%)</td>
<td>12 (13.8%)</td>
<td>20 (23%)</td>
<td>87</td>
</tr>
<tr>
<td>PDG</td>
<td>142 (88.8%)</td>
<td>16 (10%)</td>
<td>2 (1.2%)</td>
<td>160</td>
</tr>
</tbody>
</table>

(8) a. **Middle High German** (Burkart von Hohenfels, *song 6*, stanza 4, l.9–11; 1200–1250)

solt si liebe gen dir lêren: tuo’r niht wê, si ist doch guot.
should she love against you teach do=her NEG pain she is yet good
‘Should she teach love against you, don’t hurt her, she is still good.’

b. **Present-Day German** (M06/FEB.13877; 2006)

Sollte die Vogelseuche noch andernorts ausbrechen, wären die meisten
should the avian.flu yet other.places break.out would the most
districts and communities still well prepared
‘Should avian flu break out in other places as well, most districts and
communities would still be well prepared.’

Content-level linkage is the most frequent type in all three subcorpora (Table 3), but there are clear differences between them. In MHG, nearly a quarter of all conditionals with conditional suln are epistemically linked, while in older NHG, the share of conditionals linked at the speech-act level is much larger with 23%. PDG has the highest share of predictive conditionals, ca. 25% more than in MHG and older NHG.

2.3 **Tense-mood patterns**

Predictive conditionals can express three degrees of probability: realis, potentialis, and irrealis/counterfactual (Quirk et al. 1985; Leech 2004). The distinction is normally marked by specific tense/mood patterns (*consecutio temporum*/sequence of tenses), illustrated for suln/sollen-conditional sentences with examples from the corpus in (9a)–(9c). As variously noted in the literature on German and English (Welke 1965; Van Den Nest 2010: 117–118, 123; Breitbarth 2015), protases with conditional sollte and *should* often diverge from these patterns, leading to a tense mismatch between protasis and apodosis. (9d) is a realis conditional, but the tense of sollen is formally past (subjunctive).

(9) a. **Pattern A** (realis)

*Middle High German* (*Weltchronik*, l.25085–25086; 13th c.)
süllen diu lant niht mit frid wesent, só laz ich nieman niht genesen.
shall the(se) lands NEG with peace be so let I no=one not be saved
‘Should (lit. shall) those lands not receive peace, I will not allow anyone to
be saved.’

b. **Pattern B** (hypothetical)

*Present-Day German* (BRZ06/MAI.09095; 2006)

Sollte der VfL den 35-Jährigen nicht mehr haben wollen, müsste er
should the VfL the 35-year.old NEG anymore have want should it
ihn abfinden.
him indemnify
‘Should the VfL no longer want the 35-year-old, it would have to indemnify
him.’
c. Pattern C (counterfactual)

*Middle High German* (*Prosa-Lancelot* (part 1), p.63, l.14–15; 13th c.)

Soltestu han gelebet all din rechten leptag, du hettent der should = you have lived all your rightful life you had the GEN burden so vil off yn geworffen das er darunder must sin burden so many on him thrown that he thereunder must be gevallen, er wolt oder en = wolt. fallen he wanted or NEG = wanted

‘Should you have lived all your rightful life, you would have thrown too many of your burdens on him that he must have had fallen underneath, whether he wanted or not.’

d. Mixed/tense mismatch

*Present-Day German* (HMP12/MAL02111; 2012)

Wenn das gelingen solte, werden wir viel Spaß haben. if that succeed should, will we much fun have

‘If that should succeed, we will have a lot of fun.’

Table 4 shows that MHG still adhered to the classical *consecutio temporum*. In NHG, counterfactual conditionals are no longer possible with conditional *sollen*, which is probably due to its meaning, which Reis & Wöllstein (2010: 137) circumscribe as hypothetical, but focussing the potential realization of the event, hence excluding counterfactual construal. While older NHG still has a small share of conditional *sollen* in present tense, (10), leading to pattern A (10) (see also Section 2.1), the only possibilities in PDG are pattern B (9b), or the mixed pattern (9d).

(10) *Older New High German* (HK3/C74.00001; 1803–1805)

Soll sich der Staatsmann [...] seiner erinnern, so muß ihn die Ungnade shall refl the statesman him GEN remember so must him the disfavour des Fürsten während der Arbeit überfallen. the GEN prince during the work over.come

‘Should the statesman remember him, the disfavour of the prince will certainly come over him during his work.’

The share of tense mismatches has increased from c. 13% in MHG to nearly 62% in older NHG, and to nearly 70% in PDG, making it the neutral pattern in the language today.

2.4 *Competition between suln and mugen in MHG*

As observed by Van Den Nest (2010) and Breitbarth et al. (2016: 302), *suln* is not the only modal verb able to express a conditional meaning in MHG, *mugen* ‘may’ is attested with this meaning as well, besides a number of modal meanings, (11), which show a certain

| Table 4: Tense/mood patterns in content-level *suln/sollte*-conditionals. |
|---|---|---|---|---|
|   | A | B | C | mixed | total |
| MHG | 55 (29.4%) | 98 (52.4%) | 9 (4.8%) | 25 (13.4%) | 187 |
| older NHG | 3 (5.5%) | 18 (32.7%) | 0 | 34 (61.8%) | 55 |
| PDG | 0 | 41 (30.6%) | 0 | 93 (69.4%) | 134 |

As discussed in more detail in Breitbarth (2015), this is another parallel with the development of conditional *should* in English, which in Middle English also competed with *mouen* ‘may’. This is interesting from a comparative perspective, as the ‘may’-modal is the conditional modal in (Netherlands and Standard) Dutch (Breitbarth et al. 2016). See also Section 4.1 below.
correlation with the position of the finite verb in the protasis, but are altogether more frequent than the conditional meaning, as Table 5 shows.

(11) a. Ability
   (Kaiserchronik A ms. V; ca. 1140/50)
   *maht* = *er* iz gefügen . *er* wolte unfer fröde gerne getrõben
   may = he it realise he would our joy gladly diminish
   ‘If he were able to make it happen, he would gladly diminish our joy.’

b. Possibility/permission
   (*Der Schwanritter*, l.951; 1230–1275)
   *daz* wil ich rechen ob ich *mac*
   that will I avenge if I may
   ‘If I can/may, I will avenge it.’

c. Volition
   (Kaiserchronik, l.2640–2641; 12th c.)
   *mehtes* dû arbeiten, verlêh dir got ganze hende
   might you work granted you God whole hands
   ‘If you wanted to work, God would grant you whole hands.’

d. Conditional
   (*Rennewart*, l.25758–25759; 1245)
   *moehete* ich von leide han erkorn | den tot, ich waer lange tot.
   might of suffering have chosen the death I was long dead
   ‘If I had chosen death as my way of suffering, I would long be dead.’

Like conditional *suln* in MHG, conditional *mugen* still seems to obey the rules of the *consecutio temporum*, (12). Tense mismatches between protasis and apodosis are not attested in the corpora used.

(12) a. Pattern A (realis)
   (*Liet von Troye*, l.7875–7876; 1190–1200)
   *Mac* ez geschehen also | So sin wirs alle vil fro
   may it happen thus so are we=it all much happy
   ‘Should it happen this way, we are all very happy.’

b. Pattern B (hypothetical)
   (Frau Ava, *Leben Jesu*; before 1127)
   *Mohte* er iemer frum wefn . fo wær er fælbe geniefen
   might he ever more pious be so were he self saved
   ‘Should he be pious from now on, he would be saved himself.’

c. Pattern C (counterfactual)
   (*Steirische Reimchronik*, l.7336–7338; 1301–1319)
   *daz* hieten etliche getân | *möhten* si vernomen hân | die Valbschen
   that had several done might they heard have the Valbish
   language
   ‘Several (people) would have done that, if they had heard the Valbish language’

<table>
<thead>
<tr>
<th></th>
<th>modal</th>
<th>conditional</th>
<th>total</th>
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<tbody>
<tr>
<td>syndetic</td>
<td>142 (87.7%)</td>
<td>20 (12.3%)</td>
<td>162</td>
</tr>
<tr>
<td>asyndetic</td>
<td>242 (55.5%)</td>
<td>194 (44.5%)</td>
<td>436</td>
</tr>
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</table>

*Table 5*: Modal meaning of *mugen* in syndetic and asyndetic protases in MHG.
In older NHG and PDG, conditional uses of mögen ‘may’ are no longer attested.

2.5 Summary
The diachronic corpus study has shown that conditional protases with suln/sollen increasingly occur in predictive conditionals, and increasingly with (formally) past (subjunctive) of the modal (sollte), regardless of the degree of probability expressed. The initial competition for the conditional meaning between MHG suln and another modal verb, mugen ‘may’, was early on overcome, and is no longer attested in the older NHG and PDG corpora. It can be concluded that from MHG to PDG, suln > sollte becomes increasingly restricted in its paradigmatic and syntagmatic variability, which following e.g. Lehmann’s (1995) parameters points to a higher degree of grammaticalization. In what follows, we first look at the syntax and semantics of conditional sollte from a synchronic point of view before proposing an account for its grammaticalization that led to the current state of affairs.

3 Semantics and syntax of conditional sollte
Before the empirical observations discussed in Section 2 can be analysed syntactically, the nature of the conditional meaning of sollte must be clarified. Reis & Wöllstein (2010: 137) allude to this meaning as hypothetical, but focussing the potential realization of the event, excluding counterfactual construal. More explicitly, Nishiwaki (2013: 232) identifies the meaning of conditional sollte as irrealis mood. In conditional protases, sollte expresses this meaning whether or not a conditional complementizer wenn is present, (13).

(13) a. (http://www.dw.de/dw/article/0,,15985179,00.html; 31/05/2012)
Sollte Griechenland den Euro verlassen, könnte dies zu einem
should Greece the Euro leave could this to a
Zusammenbruch der Währungsgemeinschaft führen.
break-up of.the monetary.union lead
‘Should Greece leave the Euro, this could lead to a break-up of the monetary union.’

b. Wenn Griechenland den Euro verlassen sollte, könnte dies zu einem
if Greece the Euro leave should could this to a
Zusammenbruch der Währungsgemeinschaft führen.
break-up of.the monetary.union lead
‘If Greece should leave the Euro, this could lead to a break-up of the monetary union.’

Sollen, etymologically deriving from the preterite present sculan ‘to owe’, expresses deontic necessity, with the speaker or a third party expressing a requirement (Diewald 1999), or a bouletic ordering source, as it expresses an evaluation of the proposition it modifies in view of what is desired or desirable (by the speaker or an external entity) (Glas 1984; Kratzer 1991; Ehrich 2001). Besides, sollen is known to have a higher modal meaning, which is often called epistemic, in the literature, but is more specifically evidential, as the source of information is a third party (Kratzer 1991; Diewald 1999). In these uses, sollen usually appears in the (present) indicative, (14a). Only past subjunctive (‘Konjunktiv II’ in German) sollte can (rarely) have a purely epistemic reading, exemplified in (14b), with the speaker being the source of information/evaluating the proposition, not a third party, as under the evidential reading (Glas 1984; Fritz 1997b; Nishiwaki 2013). This meaning is related to the dubitative interpretation (14c), equally in the past subjunctive. A further use of past subjunctive sollte is “future in the past”, or “epic reference”, (14d).

As variously noted in the literature, the exact interpretation of *sollen* very much depends on the context – (in)definiteness of the subject (definite subjects invite an epistemic/evidential interpretation), Aktionsart of the main verb (telic verbs invite a deontic reading), and, not least, the mood of the modal (indicative vs. subjunctive) (Abraham 1989; Heine 1995; Diewald 1999; Mortelmans 2003; Leiss 2008; Nishiwaki 2013). It is therefore not so clear at first sight whether the conditional meaning of *sollen* that is relevant for the present article is not at least partially due to the fact that the verb occurs inside a conditional protasis. I return to this in Section 4.1.

Under a cartographic approach such as taken by Cinque (1999), modal expressions are hierarchically ordered in the functional clause structure, and interact with other functional material in this hierarchy. A partial hierarchy showing only the mood, modality and tense heads is given in (15).

(15) Mood\textsubscript{evidential} \textgreater Mod\textsubscript{epistemic} \textgreater Tense\textsubscript{past} \textgreater Tense\textsubscript{future} \textgreater Mood\textsubscript{irrealis} \textgreater Mod\textsubscript{(alethic) necessity} \textgreater Mod\textsubscript{(alethic) possibility} \textgreater Mod\textsubscript{volitional} \textgreater Mod\textsubscript{obligation (\textgreater)} \textgreater Mod\textsubscript{ability/permission}

In order to determine which of the functional heads in (15) conditional *sollte* realises, its stackability with other modal expressions can be tested. First, it can co-occur with and takes scope over the dynamic and deontic meaning of *können* 'can' (16), but not its epistemic meaning. It should be noted, however, that epistemic modals are independently unavailable in conditional clauses (Leirbukt 1997; Haegeman 2010b), which is also demonstrated by the ungrammatical translation in (16).\textsuperscript{11} This also entails that while *sollte* can be used epistemically, as shown by (14b), conditional *sollte* cannot be epistemic itself.

\textsuperscript{11} Copley (2006) argues for English epistemic *should* that it asserts that the proposition expressed is true in the most plausible epistemically accessible world, but that a more informative epistemic state is possible. Conditional *should*, and arguably also conditional *sollte*, which is diachronically and synchronically very similar (Breitbarth 2015; Breitbarth et al. 2016), makes no such assertion. Instead of referring to epistemic states (of the speaker), it refers to states of the world.
(16) **Sollte** er um 6 schon zu Hause sein **können**, …
should he at 6 already at home be can
*ability*: ‘should he be able to be home at 6, …’
*permission*: ‘should he be allowed to be home at 6, …’
*epistemic*: ‘should it be a possible/plausible assumption that he is home at 6, …’

This points to it being merged in a position above the positions where root modality is encoded, following the logic based on which such functional hierarchies are established, though the exact ordering with respect to Mod\_epistemic is not yet clear. Like epistemic modals, conditional **sollen** can only be finite. The example in (17a) from Holl (2001) shows the unavailability of non-finite forms of epistemic **müßen** (here, a present participle). It was seen above that conditional **sollen** is only available in the past subjunctive in PDG. But even though in general, an analytic past subjunctive can be formed from any verb with the help of the auxiliary **würde** ‘would’, this option is excluded for conditional **sollen**, showing that, like epistemic modals, it cannot be non-finite, (17b).

(17) *non-finite epistemic modal/*non-finite conditional modal

a. (after Holl 2001: 230)

*der sich jetzt sicher ärgern müssende Erwin*

the REFL now certainly annoy must Erwin
‘the certainly annoyed with himself must-be(ing) Erwin’

b. *Wenn Griechenland den Euro verlassen **sollen würde**, könnte dies zu
if Greece the Euro leave shall\_INF would could this to
einem Zusammenbruch der Währungsgemeinschaft führen.
a break-up of.the monetary.union lead
‘If Greece would/should leave the Euro, this could lead to a break-up of the
monetary union.’

Recall that Nishiwaki (2013) takes the meaning of conditional **sollte** to be irrealis mood. Haegeman (2010b) proposes to analyse the conditional modals in Dutch and Flemish ('**mocht** may\_PAST\_SUBJN’ and **moest** ‘must\_PAST\_SUBJN’, respectively) as realising Cinque’s Mood\_irrealis head, which under her movement analysis of conditional clauses (cf. also Bhatt & Pancheva 2006) is also the launch site of the conditional operator. In case of asyndetic protases, Haegeman assumes that the modal moves to C along with the operator (which moves to SpecCP).

(18) \[[\text{cp OP}_w [\text{c C [\text{tp [t\text{Mood\_irrealis}\_p t\_w moest ]}]\]}]]

I therefore tentatively apply Haegeman’s analysis to German and propose to analyse conditional **sollen** as the realization of a Mood\_irrealis head, and provide more arguments from a diachronic perspective in Section 4 below.

4 Analysing the diachronic development

The question arising now is how conditional **sollen** got to be in Mood\_irrealis, historically, and whether it has undergone further changes that can explain the diachronic developments discussed in Section 2. It has variously been argued that modal meanings are stages of a grammaticalization cline; epistemic meanings appear historically later than root meanings (Diewald 1999 for German, Roméro 2005 for English), while on the other hand, original lexical meanings (’know’ for **can** or ‘owe’ for **shall**) are lost. In order to account for the development of conditional **sollte**, Roberts & Roussou’s (2003) approach to grammaticalization will be adopted. The general pattern of change is an ‘upwards reanalysis’
of an element as the exponent of a higher functional head, to which it originally moved from a lower position.

In other words, the lexical item that formerly realized a lower head has now become the realization of a higher functional head. This can be schematically represented as [...]:

\[ [\text{XP} Y + X [\text{YP} \ldots t_{\text{Y}} \ldots ]] > [\text{XP} Y=X [\text{YP} \ldots Y \ldots ]]. \]

(Roberts & Roussou 2003: 198)

This type of reanalysis is so common because by assumption, there are economy constraints operative in natural language, and the reanalysed structure is more economical in certain respects. Roberts & Roussou adopt Longobardi’s (2001) simplicity metric (19):

(19) A structural representation \( R \) for a substring of input text \( S \) is simpler than an alternative representation \( R’ \) iff \( R \) contains fewer formal feature syncretisms than \( R’ \).

(Roberts & Roussou 2003: 201)

Essentially, in a structure with movement, the moving element is merged with two features, one allowing it to merge in the lower position and one triggering it to move to the higher position. After reanalysis, the formerly moving element has only the feature triggering merge in the higher position.

Although Roberts & Roussou (2003) assume a more simplified functional hierarchy, their account is in principle able to handle the rise of different modal and postmodal meanings if coupled with a more fine-grained hierarchy, as also acknowledged by Roberts (2010; 2012). Roberts mentions the diachronic meaning development of the English premodal \textit{motan/must} (cf. Solo 1977; Traugott and Dasher 2002: 122f) as a potential case demonstrating a change from \textit{Mod}_{\text{ability/permission}} to \textit{Mod}_{\text{obligation}} and then to \textit{Mod}_{\text{epistemic}} on Cinque’s (1999) hierarchy.

Combining Cinque’s functional hierarchy with the grammaticalization approach of Roberts & Roussou (2003) has the advantage of allowing one to capture two properties often connected to grammaticalization, viz. synchronic gradience of grammatical categories and diachronic gradualness of category changes. Although Roberts (2010: 47; note 3) is careful to hedge that the correlation between the two is not straightforward, Roberts & Roussou’s (2003: 36) statement that “much of the allegedly continuous or cline-like nature of grammaticalization is due to multiple ‘lexical splits’; [whereby] the different readings attributed to a single lexical item correspond to different positions in which it may be merged in the clause structure” covers both synchronic gradience and diachronic gradualness. Multiple lexical splits lead to the association of a certain element with different functional heads, giving rise to gradience. Further, new, more grammaticalised, meanings of lexical items associated with “higher” functional heads appear to always arise historically later than such associated with lower heads. This leads to the often observed grammaticalization clines. An older association between a lexical item and a given functional head does not automatically disappear as soon as a new one becomes possible (“divergence” in grammaticalization; Hopper 1991: 24f).

4.1 The grammaticalization of conditional \textit{sollte}

I propose that the conditional use of \textit{sollte} developed out of lower modal meanings by upward reanalysis (Roberts & Roussou 2003) through the functional hierarchy. The question now is in which steps this development proceeded. In the literature, three options are sketched: First, according to van der Auwera & Plungian (1998), who discuss the
grammaticalization paths of modal meanings more generally, “postmodal” meanings such as conditional develop out of epistemic necessity or possibility. Second, for the development of sollen more specifically, Van Den Nest (2010) surmises a deontic input meaning. Finally, according to Fritz (1997a), the conditional meaning of sollen arises from a combination of the futurity sollen could express in older stages of the language up to ENHG and the uncertainty of the past subjunctive.12

The problem with a development from epistemic necessity or possibility to conditional as envisaged by van der Auwera & Plungian is the unavailability of epistemic modals in conditional protases. Also in terms of Cinque’s hierarchy, epistemic modality, expressing a speaker’s belief about a proposition, is hierarchically higher than the modification of a proposition as achieved by expressions of modality.

In favour of the hypothesis that the temporal (future) use of soln was the input to the grammaticalization of the conditional use, soln was the most frequent periphrastic future marker in MHG (Diewald 1999: 321), and was only in the 14th through 16th centuries replaced by the periphrastic expression with werden (Ebert et al. 1993: 391f). A problem with assuming upwards reanalysis from Tense\textsubscript{future} to Mood\textsubscript{irrealis} is that Mood\textsubscript{irrealis} is below Tense\textsubscript{future} in Cinque’s hierarchy. While it is possible that the hierarchy needs a revision,13 there are two arguments that make a development out of a future use less likely. First, the future meaning of soln was never fully developed. As argued by Zeman (2013), the temporal and modal meanings of soln in MHG were highly context-dependent, making it difficult to speak of a clearly grammaticalised future periphrasis, which could be captured as merger of soln in Tense\textsubscript{future} under Roberts & Roussou’s analysis.14 Given the persistence of modal overtones even in the future use of soln (cf. also Diewald & Habermann 2005), it is more likely that soln was originally merged low, e.g. in Mod\textsubscript{volitional} (because of its bouletic meaning) or perhaps Mod\textsubscript{obligation}, and moved to Tense\textsubscript{future} (in temporal use) or Mood\textsubscript{irrealis} (in conditional use). Second, the conditional use of soln is already very well established in MHG. Furthermore, sculan already had a special role in conditionals in OHG. In Notker’s Boethius-translation, the present indicative (though not the past subjunctive) of sol ‘shall’ is used always against the Latin original, and replaces the Latin potential mood (~ ‘in case …’), while other modal verbs (mag, uuile ‘may, want’) used in conditionals largely follow the Latin original (Furrer 1971: 56–7). We can take this to indicate that the conditional use of soln/sollen is quite old, and had been established/grammaticalized earlier than the future use, though both may have arisen at similar times.

There is a fourth possibility that has not yet been discussed in the literature. Given the early availability of OHG sculan as translation of Latin potentialis in conditionals, and given the common bouletic use of sollte,15 an intermediate step in the reanalysis from root

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12 “Wir finden also durchweg den charakteristischen Zukunftszbezug von sollen, wobei der Konjunktiv das Element der Unsicherheit signalisiert” [thus we consistently find the characteristic future reference of sollen, with the subjunctive indicating the element uncertainty] (Fritz 1997a: 291).

13 Cinque does not give direct evidence for his proposed order Tense\textsubscript{future} > Mood\textsubscript{irrealis} > Mod\textsubscript{(alethic)necessity/possibility}\textsubscript{volitional} only indirect evidence coupled with the assumption that transitivity holds. Even though he provides evidence for a distinction between “epistemic” and “alethic” modality (Cinque 1999: 78f), he does not give direct evidence for Mod\textsubscript{(alethic)necessity/possibility}\textsubscript{volitional} > Tense\textsubscript{future} or Mod\textsubscript{(epistemic)} > Mod\textsubscript{(alethic)necessity/possibility}\textsubscript{volitional}. His evidence for Tense\textsubscript{future} > Mood\textsubscript{irrealis} is furthermore weak: “Evidence for this order is apparently provided by the Creole language Ndyuka …” (Cinque 1999: 73) (emphasis mine). Finally, he does not give evidence for the order Mood\textsubscript{irrealis} > Mod\textsubscript{(alethic)necessity/possibility}\textsubscript{volitional} only for Mood\textsubscript{irrealis} > Mod\textsubscript{volitional}.

14 For instance, by assuming that the movement to Tense\textsubscript{volitional} was triggered by a formal feature such as a categorial [v] feature (Roberts 2012: 359; note 5), requiring lexicalization of Tense\textsubscript{future} by a verbal head.

15 E.g. (i) Ehrich (2001: 165)
you shall now finally the lawn mow I have it you already a.hundred.times said
‘I demand you finally mow the lawn. I have already told you a hundred times.’

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modality to conditional (deontic, as surmised by Van Den Nest) may be volitional modality and alethic possibility, which lie between them on Cinque’s (1999) hierarchy, (20).

\[(20) \text{Mood}_{\text{irrealis}} \leftarrow \text{Mod}_{\text{(alethic possibility)}} \leftarrow \text{Mod}_{\text{volitional}} \leftarrow \text{Mod}_{\text{obligation}}\]

According to von Fintel (2006: 21–22), “bouletic modality […] concerns what is possible or necessary given a person’s desires”; “it has a circumstantial modal base and an ordering source based on a relevant person’s desires”. This would justify locating it in Cinque’s Mod\text{volitional}. The semantics associated with the conditional protasis as a whole could then give rise to the interpretation of solte as expressing (alethic) possibility, the meaning also seen in (14c). Both bouletic (21a) and (alethic) possibility uses (21b) are in fact attested in MHG.

\[(21) \begin{align*}
\text{a. Middle High German (Rennewart; after 1243)} & \quad \text{Siner sorgen der wart wette Da er gemaches solte pflegen} \\
& \quad \text{his sorrow he was relieved when he bedroom should remain in} \\
& \quad \text{‘He was relieved of his sorrows when he was requested to stay in the bedroom.’}
\end{align*}

\begin{align*}
\text{b. Middle High German (Kaiserchronik; 1140/50)} & \quad \text{alle clageten si den rat daz man durch sulhe getat} \\
& \quad \text{all bemoaned they the advice that one through such act the lady} \\
& \quad \text{solte uerlieſen} \\
& \quad \text{should lose} \\
& \quad \text{‘All bemoaned the advice that one should lose the lady through such an act.’}
\end{align*}\]

An additional argument in favour of the assumption that conditional solte arose via Mod\text{volitional} and Mod\text{(alethic possibility)} is the fact that conditional suln in MHG competed in its conditional use with mügen ‘may’, as shown in Section 2.4 above. Like MHG suln, mugen had (and still has) volitional and possibility uses as well, as seen in (11) in Section 2.4 above. That is, conditional suln/sollen started out as an exponent of Mod\text{volitional} and Mod\text{(alethic possibility)} in conditional protases, and over time came to merge directly in Mood\text{irrealis}, after the earlier movement from these heads was lost due to upwards reanalysis.\(^{16}\) The fact that MHG conditionally used suln still largely obeys the sequence of tenses and allows present tense in conditional protases (cf. Table 4) indicates that it was still merged in a modal projection, and that upward reanalysis had not yet taken place. That the conditional meaning is not always easy to disentangle from a “modal” meaning, cf. (22a) vs. (22b), is expected under the current analysis: “modal” meanings are possible still today, and under Roberts & Roussou’s (2003) approach, the preservation of the old meaning is a case of a lexical split, or divergence characteristic of grammaticalization.

\[(22) \begin{align*}
\text{a. Middle High German (Alexander (R. v. E.), l.14407–14408; 13th c.)} & \quad \text{soldich mich an dich ergebn, sô möhtich ungerne lebn!} \\
& \quad \text{should=myself to you give up so would=I unwillingly live} \\
& \quad \text{root/bouletic: ‘If I had to give myself up to you/if it were desirable to someone for me to give myself up to you, I would be loathe to live.’} \\
& \quad \text{conditional: ‘In case I give myself up to you, I would be loathe to live.’}
\end{align*}\]

\(^{16}\) A potential problem for this proposal might be that this reanalysis affects only one lexical item, not a whole class (here, the modal verbs) as required under Roberts & Roussou’s account. However, this seems to be typical of the developments affecting modal verbs. For instance, not all modals have undergone a change from Mod\text{ability/permission} to Mod\text{obligation}, as must is argued to have in its history (Roberts 2010; 2012).
b. *Middle High German* (*Kaiserchronik*, l.6–8; 12th c.)
die tumber dunchet iz arebeit, sculf si iemer iht gelernen od
the foolish think it work shall they ever anything learn or
ir wistum gemëren.
their wisdom enhance

**root**: ‘The foolish consider it work if they ever have to learn anything, or
enhance their wisdom.’

While offering an account for the rise of the conditional use of *suln/sollte*, this proposed
upwards reanalysis in (20) still fails to account for the diachronic changes in the distribution
of conditional *sollte* and of *sollte*-protases, viz. the increasing restriction to past subjunctive,
the rise of the “mixed” tense-mood pattern, the increasing restriction to
content-level conditionals, and for the special behaviour of *sollte*-V1-conditionals
compared to other V1-conditionals. Such an account will be attempted in the next Subsection.

### 4.2 *Sollte* as an emerging conditional marker

As noted above, the connectedness with contextual factors, especially for older stages of
the language, makes the exact analysis of modal meaning difficult (e.g. Zeman 2013).
Note, however, that the conditional meaning is already attested in MHG, and very frequently so, too. As far as a distinction between circumstantial and conditional uses is possible (cf. ambiguities such as exemplified in (22a)), there is a striking correlation in the corpus used for the present study, which is diachronically becoming more pronounced, between the tense and mood of the modal and its interpretation: the circumstantial use
becomes restricted to present tense, while the conditional use becomes restricted to the past tense (see Table 2 in Section 2.1).

That is, the past subjunctive is increasingly associated with the hypothetical conditional,
irrealis mood, meaning of conditional *sollen*. In asyndetic conditionals, *sollte* can now only
have the conditional meaning, while in syndetic ones, where there is a conditional complementizer *wenn* ‘if’, it is still free to be interpreted as deontic. This observation points
at a syntagmatic fixation of conditional *sollte* that is expected if it is undergoing a grammaticalization process (Lehmann 1995).

Besides the loss of competing modals expressing the conditional meaning, viz. MHG *mugen*, and hence of paradigmatic variability, there are other syntagmatic restrictions building up, too, and hence, there is further grammaticalization according to Lehmann’s (1995) parameters. As seen in Section 3, example (17b), conditional *sollte*
can only be finite. This finiteness restriction points at it being interpreted above Tense
(Erb 2001). The fact that it, like epistemic modals, does not express temporal information is also witnessed by its (historically increasingly) frequent combination with present tense apodoses (cf.
Table 4), despite it invariably being past subjunctive in PDG (Table 2) suggests that it is interpreted above Tense
past. Given the (partial) hierarchy in (15), this indicates that conditional *sollte* is in the process of a further upward reanalysis.

Recall that under Haegeman’s (2010b) analysis, the conditional modal verb in Mood
irrealis fronts to left periphery together with conditional operator in verb-initial conditionals,
(23a). Reis & Wöllstein’s (2010: 137) intuition that *sollte* in V1-conditionals seems to be functionally equivalent to a conditional complementizer like *falls* can now be interpreted as conditional *sollte* being in the process of becoming an exponent of conditional C by
upward reanalysis, (23b). As shown by Van Den Nest (2010), verb-first clauses could
already early on in the history of German be used as conditional protases. Therefore, the
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(23) a. \[ CP \ OP_w [TC [C [C sollte] ([Tpast [TPfuture [Mood irrelevant] t_w [Mood irrelevant] \ldots t_i] T_{future}) T_{past}]] \]
   b. \[ CP \ OP_w [C = sollte] ([Tpast [TPfuture [Mood irrelevant] t_w [Mood irrelevant] \ldots t_i] Mood irrelevant]) T_{future}] T_{past} \]

Such a(n ongoing) reanalysis can at once account for the loss of temporal distinctions in conditional protases with sollte. In particular, conditional sollte is no longer associated with past tense (despite being morphologically past subjunctive), but just expresses conditionality. This accounts for the increased frequency of predictive conditionals in PDG compared to MHG. This sets it apart from the deontic modal which still enjoys full paradigmatic variability, demonstrating the divergence, or lexical split characteristic of grammaticalization (Hopper 1991: 24f). It can also help account for the higher incidence of conditional sollte in V1-protases, which in PDG is ca. 23% higher than in syndetic protases (see Table 1).

There are a number of potential counterarguments to conditional sollte being on its way to becoming a C-element. First, if sollte were a complementizer like falls ‘in case’, one would expect (24b) to be equally acceptable as (24a). However, the difference in acceptability with a V1-conditional without sollte (24c) is suggestive of the contribution of sollte. Generally, V1-protases cannot follow the matrix clause (Reis & Wöllstein 2010). The fact that a sollte-V1-protasis is more acceptable in this position therefore seems to suggest that there is in fact a difference between sollte-V1-protases and V1-protases without sollte.

17 For ease of exposition, irrelevant intermediate projections and possible specifiers are omitted, and right-headed projections below CP are assumed to account for sentence-final placement of sollte in syndetic conditions, with wenn ‘if’ merged in C, (i).

18 I thank three anonymous reviewers for their comments.

19 I thank an anonymous reviewer for the examples. There are further differences between regular and sollte-V1-protasial. While regular V1-protasial have been argued by to be unintegrated syntactically into their matrix clauses (Axel & Wöllstein 2009), V1-protasial with sollte show to a much lesser degree the signs of lack of syntactic integration. For instance, variable binding into the protasis (i), question-answer pairs in elliptical constructions (ii), and the availability of low construal of the protasis (iii) seem to point to a greater degree of integration than V1-protasial normally allow (cf. Axel & Wöllstein 2009). The examples in (i) and (ii) are based on Axel & Wöllstein’s examples (5) and (8), respectively. The processing study by von Wietersheim (2016) confirms the relevance of variable binding (as in (i)) for the question of whether an adverbiaal clause is syntactically embedded in the matrix clause. The example in (iii) is based on tests for the syntactic integration of left-peripheral frame-setting adverbials devised by Haegeman & Greco (2018).

(i) a. Sollte sein, Sohn etwas ausgefressen haben, wäre jeder Vater, besorgt.
   b. Hat sein, Sohn etwas ausgefressen, ist jeder Vater, besorgt.
   c. Hätte sein, Sohn etwas ausgefressen, wäre jeder Vater, besorgt.

(ii) Unter welchen Umständen würden Sie einen Bentley kaufen?
   a. O- Sollte ich im Lotto gewinnen.

\[ T \]

\[ T \]

\[ T \]

\[ T \]
(24) a. Wir sagen die Party ab, **falls** die Maria krank ist.  
We say the party off in case the Maria ill is  
‘We call off the party in case Maria is ill.’

b. ??Wir sagen die Party ab, **sollte** die Maria krank sein.  
We say the party off should the Maria ill be  
‘We call off the party should Maria be ill.’

c. *Wir sagen die Party ab, ist die Maria krank.  
We say the party off is the Maria ill  
(intended) ‘We call off the party if Maria is ill.’

Second, one might object that conditional **sollte** has the same interpretation in conditional protases without movement of **sollte** to C. However, I only claim here that **sollte** is in the process of becoming a conditional marker, with the potential of later becoming a C-element, but that it has not yet completed this development. The fact that the conditional interpretation (roughly, ‘in case’) has developed early, in both asyndetic and syndetic protases, but that the use in asyndetic protases becomes more frequent in PDG, is an argument in favor of such an ongoing reanalysis.

Third, a potential counterargument is the fact that a complementizer **sollte** would take a bare infinitive as its complement, and that there are no comparable C-elements in German: There are either complementizers (like **dass** ‘that’, **wenn** ‘if’, **falls** ‘in case’, …) taking a finite verb, or complementizers taking a *zu* ‘to*-infinitive (like **um** ‘in order to’ or **anstatt** ‘instead of’). Given the semantic, and partially distributional, similarity to **falls** (Reis & Wöllstein 2010), however, it is not expected that a complementizer-**sollte** would compete with non-finite complementizers. Rather, one may expect the lexical verb eventually to become finite. A transitional period with a bare infinitive would not be so unusual. There are relevant parallels in other languages where formerly finite auxiliaries undergo grammaticalization. Estonian for instance expresses negation by an invariable negative auxiliary that has historically lost all its finiteness features (unlike other Uralic languages, such as Finnish or North Sámi, where the negative auxiliary still inflects for person and number), followed by the infinitive of the main verb. That is, the loss of finiteness features on the grammaticalising auxiliary has not (yet) led to the expression of person and number on the lexical verb in Estonian. Under the cartographic approach, finiteness is represented high, in the lowest head of the C-domain (Rizzi 1997). This is above the domain of mood and modality. It is therefore theoretically not impossible for a head being reanalysed from Mood_irrealis to a head in the C-domain to continue to express finiteness information. Eventually, an emerging complementizer **sollte** would cease to carry the finiteness features.

(iii) a. Sollte ihr Auto einen Kratzer bekommen, sagt Maria, dass sie die Polizei rufen würde.  
should her car a scratch get says Maria that she the police call would  
*High construal: ‘In case her car got a scratch, Maria says that she would call the police.’  
(should → say)  
*Low construal: ‘Maria says that, in case her car got a scratch, she would call the police.’  
(should → call police)

b. Bekommt ihr Auto einen Kratzer, sagt Maria, dass sie die Polizei ruft.  
*High/*Low gets her car a scratch says Mari that she the police calls  
c. Bekäme ihr Auto einen Kratzer, sagt Maria, dass sie die Polizei rufen würde.  
*High/*/Low got.SBJV her car a scratch says Maria that she the police call would

In the current paper, however, I have chosen not to consider whether **sollte**-protases (asyndetic or not) are syntactically integrated into their matrix clauses, given the subtlety of the judgments, and the impossibility of finding relevant examples and counterexamples in a (diachronic) corpus.
of the clause. These would then be realised on the verb that was originally selected by the modal.

Interestingly, it is not hard to find typos or performance errors that could be interpreted as *sollte* having been reanalysed as a (conditional) complementizer, as there is a second finite verb, like *wird* in (25).²⁰

Sie könnten im Januar 2017, so wie brieflich angedroht, präsidiale Anordnungen von Obama zurücknehmen, *sollte* Präsident Nummer 45 aus ihren Reihen stammen *wird*. Their ranks stem become ‘In January 2017, they could, as threatened in a letter, take back presidential decrees of Obama, should President number 45 come from their own ranks.’

Such apparent performance errors are a further indication that a reanalysis of *sollte* as a conditional complementizer is already underway in German.

5 Conclusion

The current paper undertook to describe and analyse the diachronic development of conditional *sollte* in German. The corpus study looked at the diachronic development of both syndetic and asyndetic *sollte*-conditionals and found that the paradigmatic and syntactic variability of the modal verb is increasingly restricted over time, pointing at an ongoing grammaticalization process. Even though the conditional use of modal verbs, in particular *sculan/suln/sollen* seems to be very old, perhaps going back to OHG, the original sequence of tenses holding in predictive conditionals is lost when the modal becomes restricted to the past subjunctive, regardless of the degree of probability expressed. An earlier competitor for the modal function, *mugen* ‘may’ is pushed aside by *suln/sollte*.

The present paper argued to account for these developments as a grammaticalization of *sollte* in terms of upwards reanalysis (Roberts & Roussou 2003) through the functional hierarchy (Cinque 1999). Originally merged in a circumstantial modal head (Mod_{obligation} or Mod_{volition}), it moves to Mod_{alethic possibility} and from there to Mood_{irrealis} in conditional protases, the latter of which is the head of the projection “launching” the conditional operator (Haegeman 2010b)). This movement is lost when *sollte* is reanalysed as the new exponent of Mood_{irrealis}. As proposed by Haegeman (2010b), the exponent of Mood_{irrealis} moves along with OP_{w} to the left periphery in V1 conditionals. The present paper argued that it is in the process of being reanalysed as a new exponent of conditional C. This can account for the dominance of the V1-pattern, but at the same time the similarities in distribution with syndetic conditionals (without conditional *sollte*) as observed by Reis & Wöllstein (2010). In syndetic *sollte*-conditionals, *sollte* retains the possibility to be merged in Mod_{obligation} or Mod_{volition} besides Mood_{irrealis} for much longer, accounting for the greater variability in syndetic protases.

²⁰Trousdale (2012: 173) reports finding sufficient examples of this type (e.g. *Should Hillary wins the nomination fairly she will be a very good president*) to be sure that the finite inflection on the main verb is not a typo. According to Trousdale, English *should* has, at least informally and potentially still not very commonly, turned into an unambiguous conditional complementizer, possibly helped along by analogy with *say* (*Say Hillary wins the next US elections* …) (Trousdale 2012: 172).
Abbreviations

ACC = accusative, ENHG = Early New High German, DAT = dative, GEN = genitive, INF = infinitive, MHG = Middle High German, MP = modal particle, NEG = negation, NOM = nominative, OHG = Old High German, PST = past tense, PRS = present tense PDG = Present-Day German, PL = plural, PRT = particle, REFL = reflexive, SG = singular, SBJV = subjunctive

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Competing Interests

The author has no competing interests to declare.

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