Complementizers and negative polarity in German hypothetical comparatives[*]

Julia Bacskai-Atkari

Abstract. The article examines the synchronic and diachronic relation between German hypothetical comparatives and ordinary comparatives. While the presence of an overt equative complementizer is not universally obligatory, it is so in hypothetical comparatives, whereas a conditional complementizer may be absent. This is because the equative complementizer in hypothetical comparatives functions as the licenser of the conditional clause in monoclausal hypothetical comparatives, and in this sense, it is a polarity marker. This difference regarding function accounts for the fact that German allows *als* in hypothetical comparatives but not in equatives: while the combinations *als ob* and *als wenn* historically derive from biclausal constructions, the reanalysis into monoclausal constructions allowed the fossilization of a complementizer without reference to changes affecting ordinary equatives.

1. Introduction

There are two basic types of comparative clauses: equatives and comparatives proper, as illustrated for English in (1) below:

(1)   a. Mary is as tall **as** Peter is.

       b. Mary is taller **than** Peter is.

In (1), both of the subclauses are degree clauses: they are selected by the degree element in the matrix clause (see Bresnan 1973, Izvorski 1995, Lechner 2004, Bacskai-Atkari 2014) – *as*

in (1a) and -*er* in (1b), and in both cases there is a gradable property expressed by the lexical

AP *tall*. However, there are also instances of non-degree comparisons, as in (2):

(2)   a. Mary is pale **as** a ghost.

        b. Mary is pale, **as** is Peter.

        c. He is rather my sister's friend **than** mine.

In (2a), there is no matrix degree element and the sentence expresses similarity rather than

degree comparison (naturally, the comparison to the color of a ghost implies a high degree of

paleness, yet there is no equation expressed between the paleness of Mary and the paleness of

a ghost). In (2b), again mere similarity is expressed: the two entities Mary and Peter are

similar in that both of them are pale, yet the respective degrees of paleness and their

difference or sameness is not specified.[1] Finally, in (2c) the element *rather* is not a degree

element proper in that there is no gradable property expressed here (as the AP *tall* in (1)

above), and the sentence rather expresses a choice between two possibilities. The importance

of examples like (2) lies in that they indicate that comparison does not necessarily involve the

presence of a degree relation.

A special construction related to comparatives is that of hypothetical comparatives.[2] Consider:

---

[1] The types given in (2a) and (2b) are subsumed under the label *open comparison* (*offener Vergleich*) by Jäger (2010), indicating that comparison is involved, without binding a degree. The type in (2a) is an instance of *comparison of mode* (*Modalvergleich*): Mary's paleness is compared to the color of a ghost; the type in (2b) is a *comparison of factivity* (*Faktizitätsvergleich*): two facts (Mary is pale and Peter is pale) are compared. The type in (2b) is in this respect similar to additive coordination: indeed, in German the additive particle may appear in the subclause. Consider:

    (i)   Maria   ist   blass, **wie (auch)** Peter.
            Mary   be.3SG pale as   too   Peter
            'Mary is pale, as is Peter.'

See also Thurmair (2001: 165–182).

[2] Hypothetical comparatives are often referred to as *conditional comparatives* or *unreal comparatives* in the literature. I will consistently refer to the constructions as *hypothetical comparatives*, for the following reasons. First, as opposed to the notion *unreal comparatives*, this term suggests that the clause type is a complex one involving a conditional/hypothetical and a comparative specification. Second, while the notion *conditional*

(3)   My daughter is shouting **as if** she were at the dentist's.

Here the hypothetical comparative clause is introduced by the combination *as if*. The first of these, *as*, is used regularly in degree comparison, see (1a), and in non-degree comparison, see (2a) and (2b). The complementizer *if* is used in conditionals, as in (4) below:

(4)   Mary would be pale **if** she saw a ghost.

Hence, at the first sight, it appears that the combination *as if* in (3) is compositional: it involves the mere combination of the regular equative complementizer expressing similarity and the regular conditional complementizer. One might wonder whether combinations of the form AS IF are always compositional cross-linguistically. However, there is counter-evidence for this from German hypothetical comparatives with *als ob*:[3]

(5)   Meine   Tochter   schreit,   **als**   **ob**   sie   beim   Zahnarzt   wäre.
              my.F   daughter   shout.3SG   than   if   she   at.the.M.DAT   dentist   be.SBJV.3SG
             'My daughter is shouting as if she were at the dentist's.'

The pattern in (5) demonstrates a combination that is not compositional in the way (3) appears to be. On the one hand, the complementizer *als* is used in comparatives proper in Modern High German but not in equatives. Consider:

---

(6) a. Maria ist   größer **als**   Peter.
      Mary be.3SG taller   than Peter
      'Mary is taller than Peter.'

   b. Maria ist   so groß **wie/*als** Peter.
      Mary be.3SG so tall   as/than   Peter
      'Mary is as tall as Peter.'

On the other hand, the complementizer *ob* is used, similarly to English *if*, in embedded

interrogatives in Modern High German, see (7a), but not in conditionals, where the

complementizer is *wenn*, see (7b):

(7) a. Ich frage   mich,   **ob** sie   auch in Berlin wohnt.
      I   ask.1SG myself.ACC if she   too in Berlin live.3SG
      'I wonder if she also lives in Berlin.'

   b. Maria würde   erschrecken, **wenn/*ob** sie   ein   Gespenst sehen
      Mary would.3SG frighten   if/if   she   a.N   ghost   see
      würde.
      would.3SG
      'Mary would be frightened if she saw a ghost.'

Hence, hypothetical AS IF is not the mere combination of an AS-clause and an IF-clause. In

languages like English the combination is indeed compositional while in languages like

German non-compositional combinations are attested as well. At the same time, *als* (a

cognate of English *as*) is attested in equatives in earlier stages of High German,[4] and *ob* (a

cognate of English *if*) is likewise attested in conditionals earlier,[5] see Jäger (2010), which

---

[4] As described by Jäger (2010), the element *(al)so* was present in Old High German equatives already and it started to be replaced by *wie* in Early New High German, from the second half of the 16th century onwards.
[5] The element *ob* as a conditional complementizer is attested in Old High German (see the data of Schrodt 2004: 157–158 and the recent corpus study of Bacskai-Atkari 2016b), and it continued to be the dominant pattern until Middle High German, when it started to be replaced by *wenn*, see Rudolph (1996: 388), citing Paul (1920). As described by Ferrell (1968: 109), citing the data of Behaghel (1928: 347–348), there are instances of *ob* as a conditional complementizer even in Early New High German but the number of examples diminishes drastically in this period.

indicates that compositionality was given originally (and hence *als ob* was essentially similar to present-day German *wie wenn* 'as if' and to English *as if*).

The data discussed so far raise two important research questions regarding hypothetical comparatives. First, the question is how a transparent construction is grammaticalized into a non-compositional one. This presumably has a structural reflex, too. A transparent construction can be viewed as a combination of two clauses (hence: biclausal structure), where the first clause is regularly elided except for the complementizer (e.g. *my daughter is shouting* AS ~~she were shouting~~ IF *she were at the dentist's*). By contrast, a non-transparent construction necessarily involves a single clause (hence: monoclausal structure) with two complementizers immediately following one another (e.g. *my daughter is shouting* AS IF *she were at the dentist's*). Second, it must be clarified how the relevant grammaticalization processes are related to polarity, as both comparative and conditional subclauses constitute negative polarity environments.

In the present article, I propose the following analysis. First, I assume that grammaticalization is essentially governed by transparency (the idea going back to the "Transparency Principle" of Lightfoot 1979; see Biberauer & Roberts 2017 for a recent discussion): if the original derivational processes are no longer transparent for the language learners based on primary linguistic data during language acquisition, then they will assign a more transparent structure to the surface string which involves less derivational steps. Second, clause union is possible since both degree clauses and conditional clauses are negative polarity environments (as they are downward entailing environments, see Ladusaw 1979 on the relation between downward entailment and negative polarity contexts, and the later analyses of von Stechow 1984 and Heim 1985, 2000, and for newer analyses, Hohaus & Zimmermann 2014, Bacskai-Atkari 2016a). Third, by way of this clause union, the original matrix clausal licensor of the embedded conditional clause is lost (the licensor is regularly elided), and the equative C head

takes over the function. Fourth, an equative C head may be grammaticalized for polarity marking.

2. The typology of hypothetical comparatives

Regarding the various types of hypothetical comparatives attested cross-linguistically, there are three major aspects that have to be taken into consideration: first, the transparency of the combination (if there is any combination at all); second, the reconstructability of the comparative clause; third, whether the conditional clause has realis or irrealis mood. The English patterns are illustrated in (8) below (cf. the data in Pfeffer 1985):[6]

(8)   a. My daughter is shouting **as if** she were at the dentist's.

       b. My daughter is shouting **as though** she were at the dentist's.

       c. %My daughter is shouting **like** she were at the dentist's.

As can be seen, two of the patterns involve a combination: *as if* in (8a) and *as though* in (8b); the substandard pattern with *like* in (8c) involves only a single element. A full clause can be reconstructed if the combination is transparent: this is possible in the case of *as if* but not in the case of *as though*.[7] Consider:

---

(9) a. She walks **as** she would walk **if** she were afraid.

b. *She walks **as** she would walk **though** she were afraid.

The difference between realis versus irrealis mood is illustrated in (10):

(10) a. She walks **as if** she were afraid.

b. She walks **as if** she is afraid.

As can be seen, the verb in the subclause has irrealis mood in (10a) and realis mood in (10b); there is no difference in their meaning.[8]

The possible German patterns[9] are illustrated below (cf. Jäger 2010, Eggs 2006):

(11) a. Sie   schreit   (so), **als   wäre**   sie   beim   Zahnarzt.
          she   shout.3SG   so   than be.SBJV.3SG   she   at.the.M.DAT dentist
          'She is shouting as if she were at the dentist's.'

b. Sie   schreit   (so), **als   ob** sie beim   Zahnarzt wäre.
          she   shout.3SG   so   than if   she at.the.M.DAT dentist   be.SBJV.3SG
          'She is shouting as if she were at the dentist's.'

---

[8] English is not exceptional in this respect: there are several languages where both the indicative and the subjunctive are licensed, without there being any difference in the meaning. Jensen (1990: 393–394) makes a similar observation concerning Old French (in clauses introduced by the combination *com se* 'as if').

[9] The issue of realis versus irrealis mood in German will be addressed below (this section), as the indicative is used in so-called *complex comparatives*, which are surface-similar to proper hypothetical comparatives, yet they do not constitute a single clause type. Apart from these cases, the indicative is restricted in Standard German and rarely shows up in the written language, see Duden-Grammatik (2009: 522–532). Consider:

(i)   Vor   der   Wohnung stehend   hörten   wir ein Scheppern, **als   ob**
      before   the.F.DAT   flat   heard.1PL   we   a.N bang   than if
      jemand   gefallen   ist.
      someone   fallen   be.3SG
      'Standing in front of the flat, we heard a bang, as if someone has fallen.'
      (*Berliner Zeitung* 2005; Duden-Grammatik 2009: 523)

The subjunctive mood was the only possibility in German hypothetical comparatives historically, up until the beginning of the New High German period, as pointed out by Jäger (2016: 72), quoting Behaghel (1928: 623f.). Note that hypothetical comparatives originally did not show combinations at the left periphery but were introduced by exactly the same complementizers as equative clauses (see the discussion in Section 4), and hence subjunctive mood had an important function in distinguishing clause type, see Jäger (2016: 72).

  c. Sie schreit (so), **als** **wenn** sie beim   Zahnarzt wäre.
    she shout.3SG so than if she at.the.M.DAT dentist be.SBJV.3SG
    'She is shouting as if she were at the dentist's.'

  d. Sie schreit (so), **wie** **wenn** sie beim   Zahnarzt wäre.
    she shout.3SG so as if she at.the.M.DAT dentist be.SBJV.3SG
    'She is shouting as if she were at the dentist's.'

As indicated, the matrix correlative element *so* is optional in all these cases (cf. the data in Jäger 2016: 16). This contrasts with degree equatives such as (6b), where matrix *so* is obligatory, appearing together with a gradable argument. In (11), there is no gradable predicate in the matrix clause and *so* is optional indicates that hypothetical comparatives are closer to similative constructions and cannot be analyzed on a par with degree comparatives (see also the discussion concerning (14) below).

Importantly, all of the patterns in (11) involve some combination: (11a) is different in that the complementizer *als* is followed by a fronted verb, while (11b)–(11d) all include the combination of two complementizers.[10]

Full transparency is attested only in (11d), where the entire structure can be reconstructed:

---

[10] The fronting of the verb is, as will be discussed later, a way of filling a lower C otherwise filled by the lower complementizer (English *if*, German *ob* and *wenn*). The same phenomenon can be observed in Dutch, where hypothetical comparatives are either introduced by *alsof* 'as if', in which case the verb occupies a clause-final position, or by *als* 'as' and a fronted verb. Consider:

  (i) **als** **ware**   het een verplichting
    as was.SBJV.3SG it a   commitment
    'as if it were a commitment' (Thieroff 2004: 338, ex. 50a, quoting Klooster 2001: 115)

  (ii) **alsof** het een verplichting **was**
    as.if it a   commitment was.3SG
    'as if it were a commitment' (Thieroff 2004: 338, ex. 50b, quoting Klooster 2001: 115)

As can be seen, the verb is in the subjunctive only in the fronted position in (i) and in the indicative in (ii). Dutch is in this respect more innovative than English inasmuch as the subjunctive has completely disappeared from (ii), unlike in English, see (10) above. Note also that, as Thieroff (2004: 338) describes, the preterite subjunctive is essentially a fossil in Dutch and is reduced to constructions like (i) and to certain fixed expressions; Dutch is in this respect more similar to English than to German. As Stefan Sudhoff mentions (p.c.), in Dutch (i) is rather old-fashioned and/or confined to the written language, as opposed to what can be observed in German.

(12) Sie   schreit   (so), **wie** sie   schreien würde,   **wenn** sie beim
      she   shout.3SG so   as   she   shout   would.3SG if   she at.the.M.DAT
      Zahnarzt wäre.
      dentist   be.SBJV.3SG
      'She is shouting as if she were at the dentist's.'

As can be seen, both *wie* and *wenn* take a finite clause of their own. This indicates that there are two independent subordinate clauses in (11d) as well underlyingly. The reconstruction of the AS-clause is not possible for (11a)–(11c). In (11a)–(11c), the lack of transparency and the impossibility of reconstruction suggest that the hypothetical comparatives in these cases represent a complex clause type involving multiple CPs in the same clausal periphery.[11] The difference is schematized in (13):

(13) a.   CP (=clause 1)   b.   CP (= clause 1)
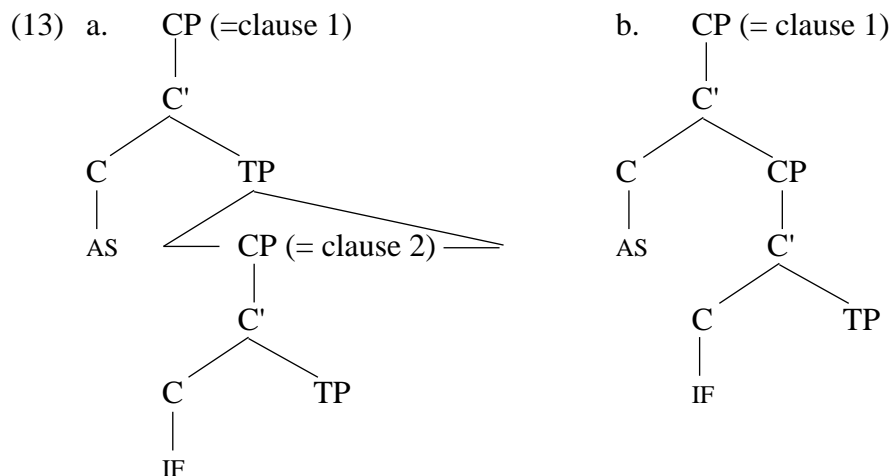
I will return to the details of the analysis in Section 4. For the time being, the point is just that combinations in AS IF clauses either involve two clauses (biclausal structure), as in (13a), or a single clause with a double CP (monoclausal structure), as in (13b). Importantly, while there are two CPs in both (13a) and (13b), they are located in two different clauses in (13a) but not

---

[11] Note that I adopt a non-cartographic approach and assume that the number of projections is as minimal as possible, cf. Sobin (2002) and Bacskai-Atkari (2015b). Contrary to Rizzi (1997), the analysis proposed here does not assign pre-defined, designated functions to the individual CPs and various features can be present on the same head simultaneously.

in (13b), where they constitute a complex left periphery of a single clause. Note that the higher clause indicated in (13a) is typically elliptical (as it is redundant) and hence the element lexicalizing AS is immediately followed by the element lexicalizing IF in the linear string, as in (11d). Nevertheless, in underlyingly biclausal structures a full first clause is always an option, see (12) above. Further, it must be stressed that, as discussed above, the element lexicalizing IF can be a fronted verb in languages like German in (13b), thus (13b) applies not only to (11b) and to (11c) but also to (11a).

However, even *wie wenn* in (11d) is different from *complex comparatives* (Eggs 2006: 167–168). In complex comparatives, a *wenn*-clause is in the scope of *als* or *wie*, depending on whether equation or comparison proper is expressed. In these cases, a degree-like element (e.g. *so*) is always present in the matrix clause, just like in ordinary comparatives (see the examples in (6) above). With the combination *wie wenn*, the *wenn*-clause is in the indicative (realis), while with the combination *als wenn*, the *wenn*-clause is in the subjunctive. In the latter case, an irrealis conditional clause is in the scope of *als*, which is an overt marker of negative polarity (see Bacskai-Atkari 2016a) and licenses irrealis mood, too. Both cases represent true comparative clauses, which are always recoverable (cf. Kaufmann 1973). An example for each type is given in (14) below:

> (14) a. Das   Geräusch klang   so, **wie** (es klingt,)   **wenn** eine Säge
>   the.N noise   sounded.3SG so as   it sound.3SG if   a.F   saw
>   hartes Holz zerschneidet.
>   hard.N   wood up.cut.3SG
>   'The noise sounded like a saw cutting up hard wood.'
>   (based on Eggs 2006: 167–168, exx. 1/1')

b. … dann reagieren die Menschen anders, **als** (sie reagieren,) **wenn**
then react.3PL the.PL people other than they react.3PL if
der Nachbar (…) das Opfer des Verbrechens
the.M neighbor the.N victim the.M.GEN crime.GEN
wäre oder sein könnte.
be.SBJV.3SG or be can.SBJV.3SG
'(…) then people react differently from how they react when the victim is (or could be) a neighbor.'
(based on Eggs 2006: 167–168, exx. 4/4')

In these cases, the *wenn*-clause stands for the standard value of comparison.

Hypothetical comparatives differ from the patterns in (14) in two major respects. First, the standard value is regularly not in the indicative, contrary to (14a); second, the standard value is not in the scope of a complementizer expressing difference, contrary to (14b). Hence, the element AS in hypothetical comparatives has different properties from those of ordinary equative complementizers: it is not selected by a matrix degree-like element and it does not introduce regular equative clauses.

3. Operators and polarity

As generally established in the literature on comparatives, there is operator movement in ordinary equative/comparative clauses because the comparative operator is a relative operator itself. The comparative operator moves to the left periphery of the subclause by virtue of its relative feature and not specifically because it is comparative, see Bacskai-Atkari (2016a). The analysis of operator movement in comparatives as a kind of relative operator movement goes back to Chomsky (1977); see also Kennedy & Merchant (2000), Kennedy (2002). Naturally, comparative operators are special due to the fact that they are associated with degree as well, but this does not affect their distribution as relative and not as interrogative

operators. In the same vein, comparative clauses are standardly taken to be kinds of relative clauses, not just in generative grammar (see the references above) but also descriptively (Duden-Grammatik 2009: 1040–1041). While in Standard English the comparative operator is zero, overt operators are also possible cross-linguistically (with considerable cross-linguistic and intra-language variation, see Bacskai-Atkari 2014). Consider:

(15) a. %Mary is as tall **as how tall** Peter is.

       b. %Mary is taller **than how tall** Peter is.

On the other hand, there is an operator in conditional clauses, too: a covert yes/no operator ('whether') is located at the left periphery of the clause, marking the scope of a covert *or* (Larson 1985, taken up by Bhatt & Pancheva 2006, Danckaert & Haegeman 2012); in effect, conditionals are free relatives, see Bhatt & Pancheva (2006), Arsenijević (2009). The operator *whether* is essentially a *wh*-operator; the negative polarity of the clause is regularly given. As demonstrated already by Seuren (1973), comparatives also have negative polarity. This is shown by the availability of negative polarity items such as *lift a finger* in (16) below:

(16) She would rather die than **lift a finger** to help her sister.

The licensor of negative polarity elements is ultimately located in the CP-domain, where the operator is located, too. However, the comparative operator itself is not a negative operator; hence, the negative polarity marker in comparatives has to be lexicalized by a different element, which is the complementizer (cf. Bacskai-Atkari 2015a, 2016a). Moreover, this element has to be overt, as negation and negative polarity always have to be marked overtly (morphologically), as shown by the typological study of Dryer (2013).

Regarding the relationship between complementizers and negative polarity, the following points can be established. An overt complementizer is obligatory in comparative clauses expressing inequality (but not in equatives, where an overt operator may suffice, see Bacskai-Atkari 2015a, 2016a).[12] This is presumably related to the fact that the maximality operator (which is ultimately responsible for negative polarity in the particular clauses, since it creates downward entailing environments) can be lexicalized by various projections (cf. the semantic analysis of Hohaus & Zimmermann 2014). While it can be tied to the matrix equative element in equatives, the matrix element in comparatives is unable to function in the same way, thus comparatives expressing equality must always have an overt complementizer fulfilling this function. The idea is that in hypothetical comparatives an element in the comparative (non-degree equative) clause has to fulfil this function: there is no matrix equative element, as hypothetical comparatives are not degree clauses. Hence, it is either a predicate in the comparative clause that serves as a matrix predicate for the conditional clause, or, when there

---

[12] There are various languages in which the equative subclause can be introduced by an overt operator, and in certain languages this is in fact the only option, there being no equative complementizer. Consider the following data from Czech (cf. the discussion in Bacskai-Atkari 2016: 398–399):

(i)   Ten stůl je stejně dlouhý, **jak široká** je ta   kancelář.
     the table is same long   how wide is the   office
     'The table is as long as the office is wide.'

(ii)   Ten stůl je stejně dlouhý, **jak** je ta   kancelář **široká**.
     the table is same long   how is the office   wide
     'The table is as long as the office is wide.'

(iii) ᵀTen stůl je delší, ***(než) jak   široká** je ta   kancelář.
     the table is longer than how   wide   is the   office
     'The table is longer than the office is wide.'

(iv) Ten stůl je delší, ***(než) jak**   je ta kancelář **široká**.
     the table is longer than how   is the office   wide
     'The table is longer than the office is wide.'

As shown by (i) and (ii), degree equatives in Czech contain the operator *jak* 'how', which either takes the AP to the [Spec,CP] position as in (i), or the AP is stranded as in (ii). The availability of (i) clearly indicates that *jak* is an operator located in [Spec,CP] and not a C head. (Note that the stranding option is preferred due to information structural properties of Czech: the AP is contrastive and preferably occupies the clause-final position where main sentence stress falls.) The examples in (iii) and (iv) show degree comparatives: while the operator *jak* is possible, just like in equatives, the presence of the overt complementizer *než* 'than' cannot be obviated.

is a single clause only, involving a double CP, the equative complementizer has to fulfil the function of licensing negative polarity in the clause.[13]

In hypothetical comparatives, the combination of a comparative C and a conditional C is well attested, but the conditional C may be absent, which indicates that the actual polarity marker is the comparative (equative) C head. Evidence for this comes from German hypothetical comparatives, which may be introduced by the combination of *als* and a fronted verb, see (11a), and from English hypothetical comparatives involving *like*, see (8c), where a single comparative element is overt in the left periphery. Historically, both single *as* and single *als* are attested. In English, *as* 'as if' is attested even in Early Modern English, and is still preserved in the frozen form *as it were*, see Kortmann (1997: 318). An example is given in (17) below:

(17) What's he that knocks **as** he would beat down the gate?
[Shakespeare, *Taming of the Shrew*]
(Kortmann 1997: 318, ex. 28f, quoting Franz 1939: 464)

In German, *als* 'as if' without verb movement is attested in Middle High German (see Jäger 2010, Eggs 2006). Consider:

(18) so ligit   er, **also** er tôt sî
so lie.3SG he as   he dead be.SBJV.3SG
'He is lying as if he were dead.' [*Physiologus*]
(Jäger 2010: 472, ex. 17)

---

[13] See the analysis in Section 4. Note that the two negative polarity environments (comparatives and conditionals) cannot cancel each other out either in a biclausal or in a monoclausal configuration. In the biclausal structure, the comparative complementizer licenses negative polarity in the comparative clause (there being no matrix degree element), while the conditional clause (together with its negative polarity) is licensed by a predicate in the comparative clause (the comparative clause is a matrix clause with respect to the conditional clause in biclausal configurations). In the monoclausal structure, there is no comparative clause, and the comparative complementizer licenses the conditional CP as its complement.

Hence, the comparative C head can license the irrealis in itself: there is no separate head for attracting the polar operator and no visible polar operator either.

A final point to be made in this section concerns the etymology of German *als* and English *as*. as pointed out by Jäger (2010), German *als* stems from Old High German *also*, which in turn stems from the Old High German combination of *all* 'all' and *so* 'so'. The various patterns can be observed in the history of English, too: apart from *as* 'as if' mentioned before, the forms *swelce* (*swilce, such*) and *so* (*swa*) were also possible, and the form *as* derived from *eallswa* (*all + so*), similarly to German *als*. See Kortmann (1997: 315–317); see also López-Couso & Méndez-Naya (2014: 312–314) and references there. What matters for us here is that clause types introduced by *so* or *als*, including hypothetical comparatives, are essentially the same regarding their status.

4. Syntax and grammaticalization

As given in (11), there are four variants in German hypothetical comparatives in the present-day standard language; first, let us discuss their diachronic relation (based on Jäger 2010, and Eggs 2006: 178, following Dückert 1961). The variants are: single *als* (with or without verb movement to the CP), *als ob*, *als wenn*, and *wie wenn*.

Regarding the variant involving only single *als*, Eggs (2006: 178), following Dückert (1961), mentions that this variant appeared occasionally in Middle High German already, though most typically without verb movement to the left periphery (the verb occupying a clause-final position). The position of the verb changed during Early New High German (Jäger 2010: 473–474). Contrary to Eggs (2006: 178), Jäger (2010: 471) shows that the variant involving single *als*, more precisely, *(al)so*, was present already in Old High German (with the verb at
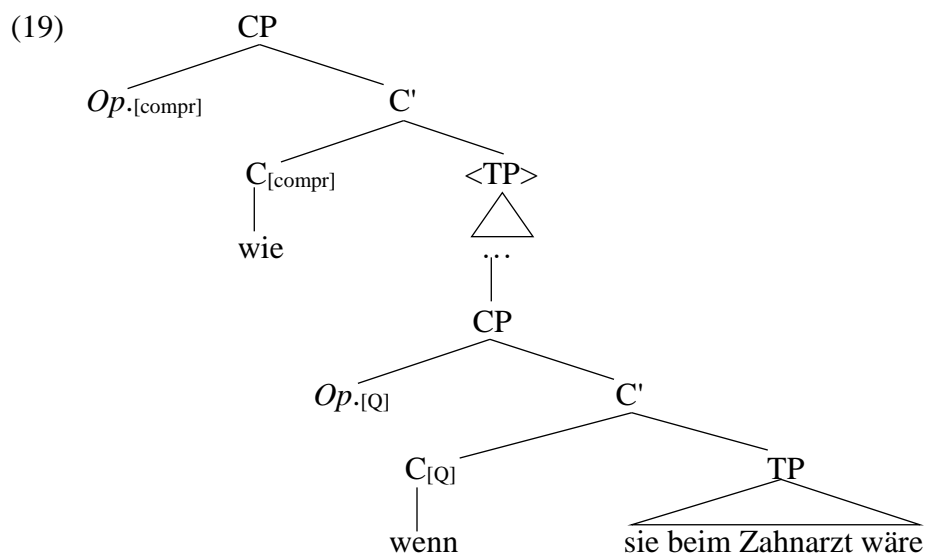
the end of the clause): hypothetical comparatives show exactly the same clause-initial elements as regular equative clauses do in the same period (Jäger 2010: 470–471). Recall that *als* stems from Old High German *also*, the combination of *all* 'all' and *so* 'so', hence hypothetical comparatives introduced by *so* and its cognates, including *also*, should be regarded as the same type as hypothetical comparatives introduced by *als*. For this reason, I follow Jäger (2010) in identifying single *als* as the earliest of the hypothetical comparative patterns.

The second oldest pattern, involving the combination *als ob*, which Eggs (2006: 178) identifies wrongly as the first one, appeared already in Middle High German, and continues to be used in Modern German, too. The pattern involving *als wenn* is attested since Early New High German (Eggs 2006: 178; see also Jäger 2010). Finally, the combination *wie wenn* is attested since the 17th century, first only in complex comparatives (in parallel with the replacement of *als* by *wie* in equatives), then also in hypothetical comparatives (Eggs 2006: 178; cf. also Jäger 2010). At the time of the appearance of *wie* in hypothetical comparatives, *ob* was already obsolete in conditional clauses; hence, the combination *wie ob* was not possible.

Regarding the grammaticalization of complementizer combinations such as *als ob*, *als wenn* and partly *wie wenn*, I suggest that a reanalysis from a biclausal into a monoclausal structure took place. As mentioned before, the comparative clause is generally elliptical in hypothetical comparatives (since it expresses redundant information that can be recovered from the conditional clause, too), hence the only remnant is the C head itself, which cliticizes onto the embedded C head. Reanalysis is driven by transparency: the structure is more transparent if the higher C takes the lower CP as a complement and no ellipsis is needed. This is an instance of clause merge, and it is possible because both clauses represent negative polarity contexts, whereby the comparative complementizer marks negative polarity and as such is able to
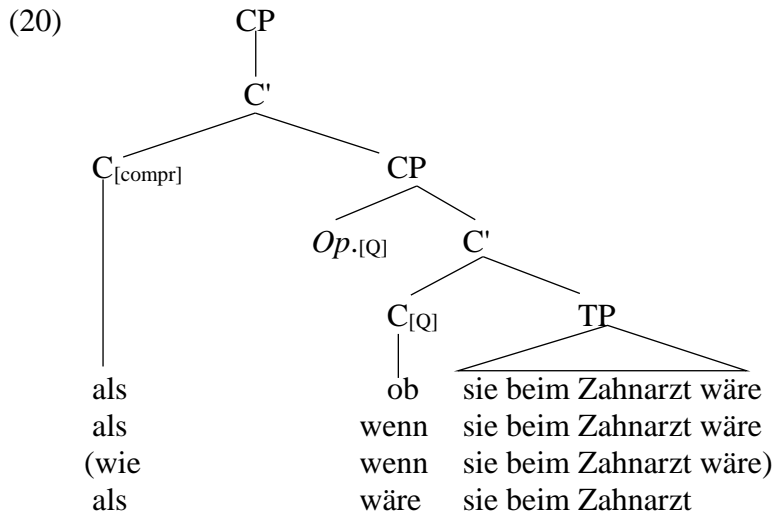
overtake the function of licensing the IF-CP (headed by e.g. *wenn*) from the original

underlying predicate. With the disappearance of the original comparative clause, into which

the conditional clause was embedded, the higher C head takes up the function of licensing the

polarity context (the conditional clause is dependent on a matrix clause otherwise). Note that

the comparative complementizer in hypothetical comparatives is not associated with degree at

all, there being no matrix degree element, and the C head encodes mere similarity/comparison

(see Bacskai-Atkari 2016c on the differences between degree comparatives and non-degree

similatives/equatives). In this way, the comparative C head in hypothetical comparatives may

fossilize a complementizer that is no longer used in equatives.

Let us now look at the syntactic representation of the biclausal structure (with an elided TP):

(19)

```
                     CP
              _____/ _____
        Op.[compr]           C'
                        _____/ \_____
                  C[compr]           <TP>
                     |                △
                    wie              ...
                                      |
                                      CP
                                ____/ \____
                          Op.[Q]           C'
                            |         ____/ \____
                          C[Q]                   TP
                            |              ___/  \___
                          wenn          sie beim Zahnarzt wäre
```

As can be seen, each C head licenses a separate operator in its specifier. This underlying

structure is available only in the case of *wie wenn* in Modern High German.

Let us now have a look at the monoclausal structure (with two C heads on the same clausal

periphery):

(20)

```
                          CP
                          |
                          C'
              _____/ _____
             |                         |
          C[compr]                     CP
             |              _____/ _____
             |             |                       |
             |          Op.[Q]                     C'
             |                          _____/ _____
             |                         |                       |
             |                      C[Q]                       TP
             |                         |            _____/ _____
            als                       ob            sie beim Zahnarzt wäre
            als                      wenn            sie beim Zahnarzt wäre
           (wie                      wenn            sie beim Zahnarzt wäre)
            als                      wäre            sie beim Zahnarzt
```
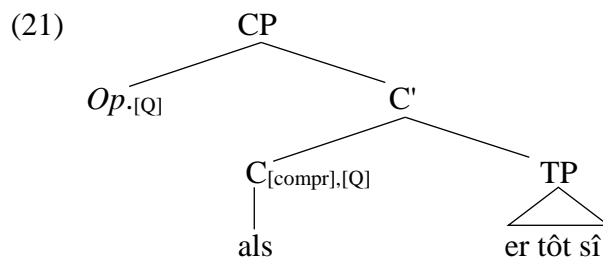
In this case, the lower C head licenses the invisible polar operator (disjunctive operator). Further, the lower CP is an embedded clause with a [Q] specification (standing for disjunction more generally, hence not only applicable to interrogatives but also to conditionals); hence, it must be licensed. Licensing is carried out by the higher C head, since there is no matrix predicate (which used to be present in the elided TP). Therefore, the higher C head has to be overt for two reasons. First, it lexicalizes the negative polarity licenser. Second, it lexicalizes the comparative nature of the clause, which cannot be done by any other element, as there is no matrix element or operator. The structure in (20) is the only valid option for the combinations *als ob* and *als wenn* and for the combination of *als* and a fronted verb. Further, the combination *wie wenn* can most probably be assigned this structure as well, yet in this case (20) has not taken over (19), which is still productive, as can be seen from the availability of non-elliptical examples, too.

Regarding the overtness of the lower C head, the following points can be established. An operator with a [Q] specification (the disjunctive operator) has to be located in a position specified for this feature, but the comparative C head is not [Q] in itself. Hence, the lower CP is generated to host the operator, but, just like in regular conditional clauses, the operator is covert. In turn, again like in regular conditional clauses, the lower C head has to be filled by

an overt element to license the projection and to lexicalize the [Q] property. However, the element responsible for lexicalization does not have to be [Q]: while it can be a [Q] complementizer (such as *ob* or *wenn*), it can also be a moved verb.

The question arises whether it is possible that a single C head encodes both [compr] and [Q] (note that I adopt a model of a feature-based, flexible left periphery, see Bacskai-Atkari 2015b). In that case, the comparative C head has to acquire the [Q] feature, resulting in a single CP. A single CP structure is underlying hypothetical comparatives involving a single element *(al)so* without verb movement in Old High German and Middle High German. The construction is illustrated in (21) below:

(21)

```
                    CP
              ┌──────┴──────┐
          Op.[Q]           C'
                      ┌──────┴──────┐
                  C[compr],[Q]      TP
                      │            ╱ ╲
                     als      er tôt sî
```

The pattern illustrated in (21) ultimately disappeared from the language (not just in German but also in English). First, regarding German, the pattern *als ob* continued to be used, and the new patterns *als wenn*, *wie wenn* and *als* + fronted V similarly involved two CPs. Hence, the original pattern involving a single CP was exceptional in the syntactic paradigm (compare (21) to the representations in (19) and (20) above), and it was considerably less transparent than all the other ones, where the properties [Q] and [compr] are encoded on separate C heads. Second, related to transparency, there is yet another issue with patterns like (21): single *als* in hypothetical comparatives, specified as [Q] and [compr], is not morphophonologically distinct from the general equative complementizer *als* (before the Early New German period) lacking the [Q] specification. Naturally, this does not mean that such homophony would be

principally excluded or disfavored, since the pattern survived both in German and in English for a long time; the point is rather that if there are other, more transparent patterns available in the language, the homophonous pattern is more likely to disappear. Third, the feature specification of a [Q] and [compr] comparative complementizer is peculiar inasmuch as comparative complementizers are otherwise associated with relative clauses, not with interrogative/conditional clauses (which require the [Q] feature, also in hypothetical comparatives), the comparative operator being a relative operator and not an interrogative one.[14] The three factors mentioned above all contributed to the loss of configurations like (21), even though none of them made this necessary by itself.

Regarding English, the situation is similar in terms of single *as* marking hypothetical comparatives: the complex forms *as if* and *as though* eventually contributed to its loss. The element *like*, mentioned in Section 2, is different in that it does not appear as the regular equative complementizer, contrary to the case of *as*.[15] Hence, while it is unique in the paradigm inasmuch as it constitutes the only non-compositional form, its morphophonological properties distinguish it from the proper equative complementizer,[16] eliminating the second and the third issue discussed above in connection with German *als*.

---

[14] As was established earlier (see Section 3), comparative operators are special kinds of relative operators and not interrogative operators. Note that comparative operators are not licensed in situ even in languages that allow *wh*-in-situ precisely because they are relative operators, see Bacskai-Atkari (2014). On the other hand, several languages allow relative complementizers in comparatives in combinations, see Bacskai-Atkari (2016a).

[15] Consider the following sentences (cf. the observations of Pulgram 1983: 124):

(i)   *Mary is as tall **like** Peter is.

(ii)   % Mary is tall **like** Peter is.

As can be seen in (i), *like* is not grammatical in degree equatives, but it may occur (as a substandard variant) in non-degree comparisons such as (ii), a construction similar to (2b) discussed in Section 1.

[16] The phenomenon of a single C head appearing in hypothetical comparatives but not in ordinary degree equatives is not restricted to English but can be detected cross-linguistically. In Latin, for instance, the elements *quasi* and *tamquam* became specialized for the introduction of hypothetical comparatives, and they were also available as non-degree equative complementizers appearing in "generic similatives" (Tarriño 2011: 400–407). Note that both of these elements are morphologically complex, though:

(i)   *tamquam* 'as if' < *tam* 'so' + *quam* 'how, as, than'

(ii)   *quasi* 'as if' < *quam* 'as' + *si* 'if'

5. Conclusion

This article examined the syntax of German hypothetical comparatives, concentrating on the differences between compositional and non-compositional combinations. Biclausal structures represent a combination of a comparative (more precisely, a non-degree equative) clause and of a conditional clause, both of which are polarity contexts. Biclausal structures may grammaticalize into monoclausal ones: this is governed by economy and transparency, in that the surface structure is more faithful to the base-generation structure, and hence the derivation involves fewer steps and is more transparent for the learner. Still, a monoclausal structure may retain some degree of compositionality, as there are two CPs with two distinct functions, but the changes affecting grammaticalized combinations in hypothetical comparatives are independent from those affecting the original source types (equative clauses and conditional clauses). In this way, the fossilization of older patterns no longer attested in the source types is possible in hypothetical comparatives.

Hence, these examples represent a loss of transparency of the original combination and this loss is also morphophonologically represented. As described by Tarriño (2011: 407), in Late Latin the combinations *quamodo si* and *quemadmodum si* appeared, both of which are transparent:

(iii) *quamodo si* 'as if' < *quamodo* 'how, in what way' + *si* 'if'

(iv) *quemadmodum si* 'as if' < *quemadmodum* 'how, in what manner' + *si* 'if'

The Latin patterns indicate two important directions in the changes of elements introducing hypothetical comparatives quite clearly. First, the grammaticalization of biclausal into monoclausal structures may preserve non-transparent combinations, which in turn may lead to the fusion of the original heads. Second, if there are new elements appearing in the source clause types, these will also appear in hypothetical comparatives in biclausal structures.

References

Arsenijević, Boban. 2009. Correlatives as types of conditional. In *Correlatives cross-linguistically*, Anikó Lipták (ed), 131-156. Amsterdam: Benjamins.

Bacskai-Atkari, Julia. 2014. *The syntax of comparative constructions: Operators, ellipsis phenomena and functional left peripheries*. Potsdam: Universitätsverlag Potsdam.

Bacskai-Atkari, Julia. 2015a. Degree semantics, polarity, and the grammaticalisation of comparative operators into complementisers. Paper presented at: 17th Diachronic Generative Syntax Conference (DiGS17), Reykjavík, University of Iceland, 29–31 May 2015. http://www.ling.uni-potsdam.de/~bacskai-atkari/pdf/handout_digs17_bacskai_atkari.pdf (Date accessed: 19 September 2016).

Bacskai-Atkari, Julia. 2015b. German dialects and an anti-cartographic approach to the CP-domain. Paper presented at: SaRDiS 2015: Saarbrücker Runder Tisch für Dialektsyntax, Saarbrücken, Universität des Saarlandes, 6–7 November 2015. http://www.ling.uni-potsdam.de/~bacskai-atkari/pdf/handout_sardis2015_bacskai_atkari.pdf (Date accessed: 19 September 2016).

Bacskai-Atkari, Julia. 2016a. Equative elements in comparative constructions and in relative clauses in the history of German and English. Paper presented at: Equative Constructions, Cologne, Universität zu Köln, 15 December 2016. http://www.ling.uni-potsdam.de/~bacskai-atkari/pdf/handout_koeln_bacskai_atkari.pdf (Date accessed: 31 March 2017).

Bacskai-Atkari, Julia. 2016b. Towards a cross-linguistic typology of marking polarity in embedded degree clauses. *Acta Linguistica Hungarica* 63 (4): 389-409.

Bacskai-Atkari, Julia. 2016c. Variation in the grammaticalisation of polar operators in West Germanic. Paper presented at: Potsdam Summer School in Historical Linguistics 2016. Word Order Variation and Change. Diachronic Insights into Germanic Diversity, Potsdam, Universität Potsdam, 7–9 July 2016. http://www.ling.uni-potsdam.de/~bacskai-atkari/pdf/handout_sumup_bacskai_atkari.pdf (Date accessed: 30 September 2016).

Behaghel, Otto. 1928. *Deutsche Syntax: Eine geschichtliche Darstellung. Band 3: Die Satzgebilde.* Heidelberg: Winter.

Bhatt, Rajesh & Pancheva, Roumyana. 2006. Conditionals. In *The Blackwell companion to syntax. Vol. I*, Martin Everaert & Henk van Riemsdijk (eds), 638-687. Oxford: Blackwell.

Biberauer, Theresa & Roberts, Ian. 2017. Parameter setting. In *The Cambridge handbook of historical syntax*, Adam Ledgeway & Ian Roberts (eds), 134–162. Cambridge: Cambridge University Press.

Bresnan, Joan. 1973. The syntax of the comparative clause construction in English. *Linguistic Inquiry* 4 (3): 275-343.

Chen, Guohua. 2000. The grammaticalization of concessive markers in Early Modern English. In *Pathways of change: Grammaticalization in English*, Olga Fischer, Anette Rosenbach & Dieter Stein (eds), 85-110. Amsterdam: Benjamins.

Chomsky, Noam. 1977. On WH-movement. In *Formal syntax*, Peter W. Culicover, Thomas Wasow & Adrian Akmajian (eds), 71-132. New York: Academic Press.

Danckaert, Lieven & Haegeman, Liliane. 2012. Conditional clauses, main clause phenomena and the syntax of polarity emphasis. In *Comparative Germanic syntax: The state of the art*, Peter Ackema, Rhona Alcorn, Caroline Heycock, Dany Jaspers, Jeroen van Craenenbroeck & Guido Vanden Wyngaerd (eds), 133-168. Amsterdam: Benjamins.

Dryer, Matthew S. 2013. Negative morphemes. In *The world atlas of language structures online*. Leipzig: Max Planck Institute for Evolutionary Anthropology. http://wals.info/chapter/112 (Date accessed: 14 May 2015).

Dückert, Joachim. 1961. Das geschichtliche Verhältnis des vergleichenden 'als' und 'wie'. *Beiträge zur Geschichte der deutschen Sprache und Literatur* 83: 205-230.

Duden-Grammatik. 2009. *Die Grammatik*. 8th ed. Berlin: Dudenverlag.

Eggs, Frederike. 2006. *Die Grammatik von 'als' und 'wie'*. Tübingen: Narr.

Ferrell, James. 1968. On some conditional clause indicators in Slavic and Germanic languages. *WORD* 24 (1-3): 99-111.

Franz, Wilhelm. 1939. *Die Sprache Shakespeares in Vers und Prosa*. Halle: Niemeyer.

Heim, Irene. 1985. Notes on comparatives and related matters. University of Texas. http://semanticsarchive.net/Archive/zc0ZjY0M/Comparatives%2085.pdf/ (Date accessed: 30 March 2017).

Heim, Irene. 2000. Degree operators and scope. *Proceedings of Semantics and Linguistic Theory (SALT)* 10: 40-64.

Hohaus, Vera & Zimmermann, Malte. 2014. Equatives outside the domain of degree constructions. Paper presented at: Linguistic Evidence 2014, Tübingen, 13–15 February 2014.

Izvorski, Roumyana. 1995. A DP-shell for comparatives. In *Console III Proceedings*, Antonietta Bisetti (ed), 99-121. The Hague: Holland Academic Graphics.

Jäger, Agnes. 2010. Der Komparativzyklus und die Position der Vergleichspartikeln. *Linguistische Berichte* 224: 467-493.

Jäger, Agnes. 2016. Vergleichskonstruktionen im Deutschen: Diachroner Wandel und synchrone Variation. Habilitationsschrift, Universität zu Köln.

Jensen, Frede. 1990. *Old French and comparative Gallo-Romance syntax*. Berlin: de Gruyter.

Kaufmann, Gerhard. 1973. Zu den durch 'als' , 'als ob', 'wie wenn', 'als wenn' eingeleiteten 'Komparativsätzen'. *Zielsprache Deutsch* 4: 91-111.

Kennedy, Christopher. 2002. Comparative deletion and optimality in syntax. *Natural Language & Linguistic Theory* 20 (3): 553-621.

Kennedy, Christopher & Merchant, Jason. 2000. Attributive comparative deletion. *Natural Language and Linguistic Theory* 18 (1): 89-146.

Klooster, Willem Gerrit. 2001. *Grammatica van het hedendaags Nederlands: Een volledig overzicht*. The Hague: Sdu Uitgevers.

König, Ekkehard. 1985. Where do concessives come from? On the development of concessive connectives. In *Historical semantics – historical word-formation*, Jacek Fisiak (ed), 263-282. Berlin: de Gruyter.

Kortmann, Bernd. 1997. *Adverbial subordination: A typology and history of adverbial subordinators based on European languages*. Berlin: de Gruyter.

Ladusaw, William. 1979. Polarity sensitivity as inherent scope relations. PhD dissertation, University of Texas.

Larson, Richard. 1985. Bare NP-adverbs. *Linguistic Inquiry* 16 (4): 595-621.

Lechner, Winfried. 2004. *Ellipsis in comparatives*. Berlin: de Gruyter.

Lightfoot, David. 1979. *Principles of diachronic syntax*. Cambridge: Cambridge University Press.

López-Couso, María José & Belén Méndez-Naya. 2014. On comparative complementizers in English: Evidence from historical corpora. In *Creation and use of historical English corpora in Spain*, Nila Méndez-Naya Vazques (ed), 311-333. Newcastle upon Tyne: Cambridge Scholars Publishing.

Paul, Hermann. 1920. *Deutsche Grammatik IV*. Halle: Niemeyer.

Pfeffer, J. Alan. 1985. Comparative subordinating conjunctions in modern American English. *International Review of Applied Linguistics in Language Teaching* 23 (4): 323-330.

Pulgram, Ernst. 1983. The reduction and elimination of redundancy. In *Essays in honor of Charles F. Hockett*, Frederick B. Agard & Gerald Kelly (eds), 107-125. Leiden: Brill.

Quirk, Randolph. 1954. *The concessive relation in Old English poetry*. New Haven: Yale University Press.

Rizzi, Luigi. 1997. The fine structure of the left periphery. In *Elements of grammar*, Liliane Haegeman (ed), 281-337. Dordrecht: Kluwer.

Rudolph, Elisabeth. 1996. *Contrast: Adversative and concessive relations and their expressions in English, German, Spanish, Portuguese on sentence and text level*. Berlin: de Gruyter.

Schrodt, Richard. 2004. *Althochdeutsche Grammatik II*. Tübingen: Niemeyer.

Seuren, Pieter. 1973. The comparative. In *Generative grammar in Europe*, Ferenc Kiefer & Nicholas Ruwet (eds), 528-564. Dordrecht: Reidel.

Sobin, Nicholas. 2002. The Comp-trace Effect, the Adverb Effect and minimal CP. *Journal of Linguistics* 38 (3): 527-560.

Tarriño, Eusebia. 2011. Comparative clauses. In *Complex sentences, grammaticalization, typology*, Philip Baldi (ed), 373-426. Berlin: de Gruyter.

Thieroff, Rolf. 2004. The subjunctive mood in German and in the Germanic languages. In *Focus on Germanic typology*, Werner Abraham (ed), 315-358. Berlin: Akademie.

Thurmair, Maria. 2001. *Vergleiche und Vergleichen: Eine Studie zu Form und Funktion der Vergleichsstrukturen im Deutschen*. Berlin: de Gruyter.

von Stechow, Arnim. 1984. Comparing semantic theories of comparison. *Journal of Semantics* 3 (1-2): 1-77.