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**RESEARCH**

# The syntax of comparison constructions in diachronic and dialectal perspective

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The paper discusses the internal and external syntax of comparison constructions in the light of diachronic as well as dialectal German data. As far as the syntactic position of comparison particles is concerned, the data present evidence against the widespread analysis as prepositions or complementizers and in favour of a syntactic position above the standard-of-comparison CP. This is demonstrated in detail for the German comparison particles *als* and *wie*. Concerning the syntactic status of the standard of comparison, diachronic and dialectal data support the so-called direct analysis, according to which the standard of comparison may consist of the comparison particle and a mere DP, PP etc. without assuming an elided full clause in all cases. With respect to their link to the remainder of the clause comparisons show characteristics both of subordinate clauses, notably relative clauses, as well as of coordination. The diachronic and dialectal data underline this Janus-headed nature of comparison constructions which is tentatively attributed to a historically underlying correlative construction and syntactic reanalysis as an embedded clause on this basis.

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## 1 Comparison constructions: Basic types, development and variation

Comparison constructions represent intriguing complex sentences which – despite decades of research not least within the generative tradition (Bresnan 1973; Chomsky 1977; Kennedy 1999; Lechner 2004; Osborne 2009 among others) – posit a number of syntactic puzzles until today. As this paper will demonstrate, diachronic and dialectal data may shed some new light on these questions and thus represents crucial additional evidence for or against specific syntactic analyses regarding both their internal and external syntax.<sup>1</sup>

As Kayne (2000) points out, the analysis of diachronic and dialectal microvariation comes close to the method of laboratory experiments in natural science as only a limited set of parameters varies from one regional variety or one diachronic stage of a language to another one. This enables one to pinpoint structural similarities and differences more accurately. As the language systems of the respective varieties are maximally similar, data from one variety may reveal basic properties of the syntactic structure that also hold in the other variety but might be veiled for instance by the fact that certain elements remain unexpressed for independent reasons. On the other hand, a contrast that cannot be explained under the assumption of an identical syntactic structure may illustrate what

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<sup>1</sup> The paper builds on and extends parts of Jäger (2010) and (2018). I am grateful to four anonymous reviewers as well as to Łukasz Jędrzejowski for helpful comments.

a language looks like that is otherwise extremely similar but where for instance one item is placed in a different syntactic position leading to clearly different syntactic properties such as further word order differences etc. As will be shown, the same kind of arguments from similarity and contrasts in historical and dialectal microvariation can be applied in the realm of comparison constructions. This paper is mostly based on Modern Standard German as well as dialectal and historical German data, but much of the discussion and analysis carries over to English and other languages.<sup>2</sup>

By way of providing the necessary background for the ensuing discussion, we will first introduce some basic terminology concerning comparisons and give a rough overview of their diachronic development in German. In a prototypical comparison construction, two entities – the comparandum and the standard of comparison – are compared with respect to some manner/set of properties or to the degrees of some property which is expressed by an AP (or AdvP) referred to as *Tertium Comparationis*. While most of the world's languages use functional (esp. local/directional) cases to mark the standard of comparison, cf. Stassen (1985), English and German as well as many other European languages employ a comparison particle. This is the case both in comparatives (comparisons of inequality), cf. (1a), as well as equatives (comparisons of equality). Among the latter, we will distinguish between two types: Degree equatives as illustrated in (1b) (in typological literature also just referred to as equatives, cf. Haspelmath & Buchholz 1998) relate two sets of degrees of a gradable property on a scale, like comparatives. Non-degree equatives as in (1c) (in typological literature also referred to as similatives, cf. Haspelmath & Buchholz 1998) differ semantically in not being (solely) degree-based, but comparing manner etc. Therefore, they typically lack the *Tertium Comparationis* referring to a gradable quality.<sup>3</sup> In German, degree-equatives obligatorily and non-degree equatives optionally contain a degree/manner demonstrative (*so* 'as') in the matrix clause, the so-called equative correlate. Both types of equatives may also occur as so-called hypothetical or irrealis comparisons. Semantically, these constitute a combination of equative and conditional and accordingly show a range of introductory elements including combinations with conditional complementizers, cf. (1d). As indicated in (1), the standard of comparison may, on the syntactic surface, consist of a full clause or a mere phrase, most commonly a DP.

- (1) a. Comparative  
 Anna läuft schneller **als** Maria (läuft).  
 Anne walks faster than Mary walks  
 'Anne walks faster than Mary (does).'
- b. Equative (degree equative)  
 Anna läuft so schnell **wie** Maria (läuft).  
 Anne walks as fast as Mary walks  
 'Anne walks as fast as Mary (does).'

<sup>2</sup> The diachronic observations are based on a corpus analysis of texts from the *Referenzkorpus Altdeutsch*, the *Referenzkorpus Mittelhochdeutsch* as well as the *Bonner Frühneuhochdeutschkorpus*. In the following, for historical examples and quantitative data, the concrete source texts are given and also listed in the references. For details on the entire diachronic corpus used see Jäger (2018: 21–30). The dialectal evidence in this paper consists of data elicited from individual dialect speakers, internet searches and data from the Wenker dialect survey, complemented by data from dialect grammars, dictionaries and other relevant publications as cited.

<sup>3</sup> While the semantics of comparatives and degree equatives has been well-researched (cf. von Stechow 1984; Heim 1985; 2000; Kennedy 1999; Beck 2011 among others), not much research has been devoted to non-degree equatives, but see Umbach/Gust (2014) for an analysis in terms of multidimensional vector spaces and Hohaus/Zimmermann (submitted) for an analysis in terms of relations of sets of properties.

- c. Equative (non-degree equative)  
 Anna läuft so **wie** Maria (läuft).  
 Anne walks so as/like Mary walks  
 ‘Anne walks as Mary does. / Anne walks like Mary.’
- d. Hypothetical comparison  
 Anna läuft (so schnell), **als ob/als wenn/wie wenn** sie um ihr  
 Anne walks/runs as fast as if she for her  
 Leben liefe /**als** liefe sie um ihr Leben.  
 life ran as ran she for her life  
 ‘Anne is running as if she was running for her life.’

In German, the modern standard language shows the comparison particle *als* in comparatives and *wie* in degree as well as non-degree equatives. However, there is considerable variation both in diachronic as well as in synchronic (dialectal) respect. Alongside a number of other changes regarding comparison constructions, a noteworthy repeated stepwise distributional shift of comparison particles from non-degree equatives to degree equatives to comparatives can be observed over the course of the language history. This development is referred to as the comparative cycle (Jäger 2010; 2018; the term was taken over in subsequent research e.g. Reinarz et al. 2016). It is illustrated in Table 1.

Thus *als(o)*, which represents an adverbially strengthened form of the original Old High German (OHG) equative particle (*al* ‘fully’ + *so* ‘as’ > *als(o)* ‘as’), was predominantly used in non-degree equatives in Middle High German (MHG). It was then extended to degree-equatives in Early New High German (ENHG) and became the main particle used in comparatives in New High German (NHG). Similarly, *wie* supplanted *als* first in non-degree equatives in ENHG. It then became the main pattern also in degree equatives in NHG. This development is continued in most High German but also certain Low German dialects, which show *wie* also in comparatives. Dialectal variation, however, includes a number of further comparison particles as well as combinations of these with subordinating complementizers and phenomena such as complementizer inflection. Hypothetical

**Table 1:** The comparative cycle in German.

	Equatives		Comparatives
	Non-degree equatives	Degree equatives	
OHG	<i>so</i>		<i>danne</i>
MHG	<i>also</i>	<i>so</i>	<i>dann/denn</i>
ENHG 15th cent.	<i>als</i>		<i>denn</i>
ENHG 16th cent.	<i>wie</i>	<i>als</i>	<i>denn</i>
NHG 17th/18th cent.	<i>wie</i>	<i>als</i>	<i>als</i>
NHG 19th cent. / Mod. Standard German	<i>wie</i>		<i>als</i>
Colloquial German / most High German dialects	<i>wie</i>		

comparisons diachronically started out as formally identical to ordinary equatives but, over the course of language history, developed formally distinct types. Furthermore, they show a noteworthy change in verbal placement indicative of a change of the syntactic position of the comparison particle.

As will become evident, the complex patterns of diachronic and dialectal variation constitute valuable evidence with respect to a number of questions regarding the syntactic analysis of comparison constructions. In particular, three specific questions will be addressed in this paper, suggesting concrete syntactic analyses on the basis of the new data for the first two while with respect to the third question, the data and discussion mainly serve to sharpen our understanding of the contradictory characteristics of the construction and only a tentative solution will be indicated, leaving scope for future research.

Section 2 focusses on the question of the syntactic position of comparison particles. Whereas comparison particles are widely assumed to constitute complementizers or prepositions, it will be argued on the basis of dialectal, diachronic and partly cross-linguistic data that neither analysis holds, but that comparison particles such as Modern German *als* and *wie* reside in a syntactic head position  $\text{Conj}^0$  above CP. In Section 3, the question of the syntactic status of the standard of comparison is discussed. It will be demonstrated that the diachronic and dialectal data clearly speak in favour of the so-called direct analysis of phrasal comparisons rather than assuming that the standard of comparison is always clausal in nature as under the reduction analysis. While Sections 2 and 3 discuss issues in the internal syntax, Section 4 focuses on the external syntax of comparisons, viz. the question of their linking to the rest of the clause. The discussion here contributes to highlight the contradictory, at once relative-clause like and coordination-like characteristics of comparisons also evident in diachronic and dialectal data. In view of these, shortcomings of the widely assumed relative-clause like analysis but also of the recent coordination-like analysis of comparisons are demonstrated, sharpening our understanding of the syntactic characteristics any future analysis will have to account for. While a final answer to this third question will be left to future research, the option of assimilating comparisons to other structures in between coordination and subordination is reviewed and a tentative analysis in terms of reanalysis of a diachronically underlying correlative construction as subordination is sketched.

## 2 The syntactic position of comparison particles

### 2.1 Comparison particles as prepositions or complementizers?

As far as the internal syntax of comparison constructions is concerned, one central issue is the syntactic position of the comparison particles such as English *as/than* or German *als/wie*. In the literature, it is widely assumed that they constitute either prepositions or complementizers. Some authors such as Napoli (1983), Hoeksema (1983), Hendriks (1995), van Gelderen (2004: 124f.), SAND (2005: 13), Quirk et al. (2008: 1132), and Hubers/de Hoop (2013: 93) propose a prepositional analysis only for comparisons in which the standard of comparison on the surface consists of a mere DP.<sup>4</sup> Others hold that comparison particles are generally prepositions, cf. Chomsky (1977), Kennedy (1999) for English *than*, Zimmermann (1987) for German *als*.<sup>5</sup> The question of the syntactic position of the comparison particle is thus also related to the question of the syntactic status of phrasal vs. clausal comparisons that will be discussed in Section 3.

<sup>4</sup> Some languages do indeed employ prepositions to mark the standard of comparison as the only strategy or as an alternative to comparison particles. However, these prepositions are functional equivalents of comparative case marking and are thus typologically different from particle comparisons which are discussed here (e.g. preposition *od* in Polish, preposition *di* vs. comparison particle *que* in Italian etc.).

<sup>5</sup> Similarly also Bücking (2015: 270) for German *als* specifically in hypothetical comparisons.

Besides the fact that comparison particles may, like prepositions, combine with mere DPs, the main argument for a supposedly prepositional status of comparison particles is that, in these phrasal comparisons, a pronominal DP often appears in a morphological shape corresponding to an oblique case form rather than to the form it would take in a full comparison clause. This is illustrated for English, Dutch and French in (2)–(4), cf. Hoeksema (1983), Hendriks (1995), Hubers & de Hoop (2013: 93), SAND (2005: 13) on Dutch, Quirk et al. (2008: 1132) on English, see also Haspelmath & Buchholz (1998: 308f.) on Swedish and Bulgarian.

- (2) a. He is taller than **I** / **me**.  
 b. He is taller than **I** / \***me** am.
- (3) a. Hij is groter dan **ik** / **mij**.  
 b. Hij is groter dan **ik** / \***mij** ben.
- (4) a. Il est plus grand que \***je** / **moi**.  
 b. Il est plus grand que **je** / \***moi** (ne) suis.

However, I would like to argue that the special morphological form of the pronoun is not due to case government by the comparison particle. It rather constitutes the strong form of the respective pronoun in the sense of Cardinaletti & Starke (1999), which, in the same languages, is optionally or obligatorily used in typical contexts such as coordination, cf. (5) (other such contexts include cleft-constructions, contrastive focus etc.). While data such as (2)–(4) do therefore not constitute arguments for a prepositional analysis of comparison particles, they are significant with respect to the syntax of phrasal vs. clausal comparisons as well as the link to the rest of the clause, cf. Sections 3 and 4.

- (5) a. We talked a lot, my father and **I** / **me**.  
 b. Wij hebben veel gepraat, mijn vader en **ik** / **mij**.  
 c. Nous avons beaucoup parlé, mon père et \***je** / **moi**.

In German, there is no case government by the comparison particle either (whether past or present). *Als* and *wie* do not govern case but are followed by DPs in all cases available in the language, including nominative case, cf. (6), which again strongly speaks against a prepositional analysis because prepositions do not combine with nominative DPs. Duden (2016: 636) also rejects the prepositional analysis because of the obvious lack of case government by the comparison particles.

- (6) Anna liebt mich mehr als {**dich** / **du**}.  
 Anne loves me more than you.ACC you.NOM  
 ‘Anne loves me more than {(she loves) you / you (do)}.’

Besides these morphosyntactic observations, further syntactic evidence against the prepositional analysis comes from the fact that not only a DP but also for instance a mere AP may follow the comparison particle cf. (7a), which is ungrammatical with prepositions, cf. (7b).<sup>6</sup> Furthermore, the comparison particle may be followed by a PP or even a PP embedded within a PP, cf. (8a). While stacking of two PPs is attested (but, as one anonymous reviewer points out, restricted to *von* ‘from/about’ as in (8a), and *bis* ‘until’), stacking of

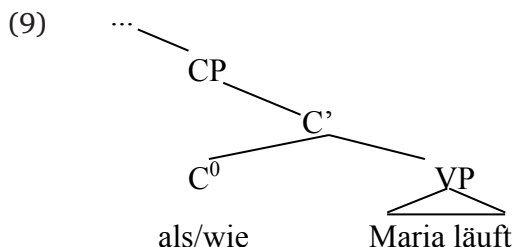
<sup>6</sup> A preposition may combine with a nominalized adjective, which then, however, constitutes a DP, not an AP.



three PPs does not seem to be possible in German, cf. (8b). These data therefore corroborate the fact that comparison particles are not prepositions.

- (7) a. Die Tür ist breiter **als** [<sub>AP</sub> hoch.]  
 the door is wider than high  
 ‘The door is wider than high.’
- b. \*{**in/ mit/ auf/ an/ über/ von/ bis/ ...**} [<sub>AP</sub> hoch]  
 in with on at over from until high  
 ‘in/with/on/at/over/from/until high’
- (8) a. Er erzählt öfter von nach dem Krieg **als** [<sub>PP</sub> von [<sub>PP</sub> vor dem Krieg.]]  
 he talks more-often about after the war than about before the war  
 ‘He talks more often about after the war than about before the war.’
- b. \*{**in/ mit/ auf/ an/ über/ von/ bis/ ...**} [<sub>PP</sub> von [<sub>PP</sub> vor dem Krieg]]  
 in with on at over from until about before the war  
 ‘in/with/on/at/over/from/until about before the war’

The second common syntactic analysis of comparison particles treats them as complementizers, cf. for English the classic analysis by Bresnan (1973) and much subsequent research. For German, this has been proposed by Bierwisch (1987), Bergerová (1997), Eggs (2006) and Helbig & Buscha (2013).<sup>7</sup> A central argument for the complementizer analysis, besides the fact that comparison particles may also introduce full clauses, comes from word order: In German clausal comparisons, the finite verb obligatorily occurs in final position just as in regular subordinate clauses introduced by a complementizer (or *wh*-item). The classic explanation for the word order asymmetry of verb-final (*Ve*) order in complementizer clauses versus verb-second (*V2*) order in main clauses goes back to den Besten (1989): The complementizer occupies the landing site of the finite verb ( $C^0$ ) and thus prevents verb movement to the left periphery of the clause. Accordingly, the comparison particle could be taken to occupy  $C^0$  so that the structure would look as in (9) illustrated for sentences (1a–c), cf. Bresnan (1973) for English and Bierwisch (1987) for German. However, data from the present-day standard language as well as from dialectal and diachronic variation constitute important arguments against this analysis and in favour of an analysis according to which the comparison particle resides in a functional head above the standard-of-comparison CP, as will be demonstrated in Sections 2.2 and 2.3.

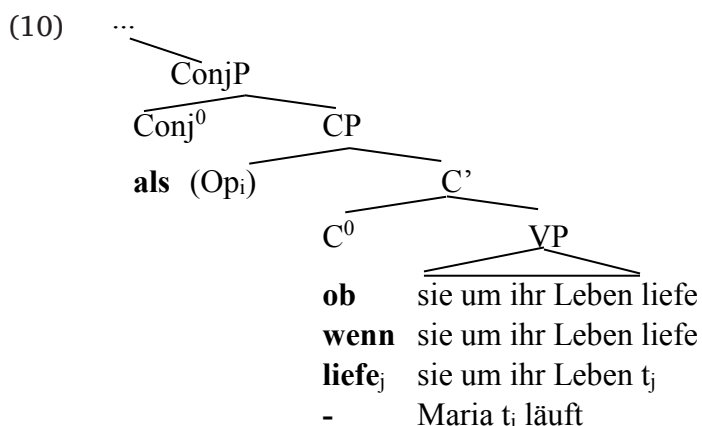


<sup>7</sup> Cf. also Duden (2016: 641) for clausal comparatives, whereas the comparison particles in phrasal comparatives are not analysed as complementizers (“subjunctions”), but as “comparing conjunctions” (Duden 2016: 636f.; 854f.). In clausal non-degree equatives, the comparison particle is partly analysed as a relative adverb, partly as a relative particle (“relative subjunction”) (Duden 2016: 1052), in phrasal non-degree equatives also as a “comparing conjunction” (Duden 2016: 636f.; 854f.).

## 2.2 The syntactic position of *als* and its diachrony

Regarding the German comparison particle *als*, one crucial set of data against the analysis as a complementizer comes from hypothetical comparisons, cf. (1d) above, repeated and analysed in (10). Within the left clausal periphery in these constructions, *als* does not only co-occur with the complementizers *ob* ('if') or *wenn* ('if'), which have occasionally been considered to form one syntactic unit with *als* in these cases (Pasch et al. 2003; Eggs 2006), but also with the finite verb in its left-peripheral position (cf. *als liefe ...* in (1d)). The position C<sup>0</sup> is thus clearly available to be filled by other elements (complementizer or finite verb).<sup>8</sup> *Als* must therefore be in a syntactic position above C<sup>0</sup>.<sup>9</sup>

As *als* is not phrasal and does not pass typical constituency tests (fronting, substitution, coordination, question test etc.) it cannot occupy SpecCP. It must accordingly be placed in a syntactic position above the standard-of-comparison CP as also argued in Jäger (2010).<sup>10</sup> Because this position cannot obviously be equated for instance with one of the split-CP sublayers in terms of Rizzi's (1997) account, it will simply be labelled Conj<sup>0</sup> for conjunction, the relevant part of speech, signaling that *als* is neither a preposition nor a complementizer. The suggested structure of comparisons with *als* in present-day German thus looks as in (10), illustrating hypothetical comparisons with *ob*, *wenn* and verb-initial (V1) order, cf. (1d), as well as comparatives, cf. (1a), in which the C<sup>0</sup> position is phonetically empty, as will be motivated below.<sup>11</sup> (Note that this analysis is in itself neutral as to the external syntax of comparisons, i.e. the way the standard of comparison is linked to the rest of the clause. It only concerns the internal syntax of the standard of comparison. However, it obviously sits very naturally with a coordination-like link to the rest of the clause discussed in Section 4.)



<sup>8</sup> All of these mark the respective clause as a combination of comparison and conditional, *ob* being the older conditional complementizer in German (now obsolete in this function), *wenn* the historically younger one, and verb-first being another typical marker of conditional clauses already since OHG (cf. Schrodtt 2004: 156; Axel & Wöllstein 2009) and throughout the entire history of the language.

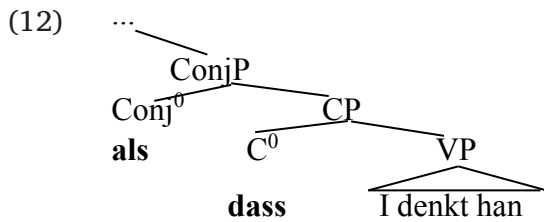
<sup>9</sup> Note that, in contrast to Bücking (2015), a uniform syntactic position is assumed here for comparison particles in hypothetical comparisons and other comparisons in view of obvious parallels. For instance, both can be used not only adverbially or predicatively (as also discussed in Bücking 2017) but also as attributes, and occur with degree and non-degree readings as other equatives, too, e.g. *Anna hatte {einen solchen/so einen großen} Hunger, als/wie wenn sie seit Tagen nicht gegessen hätte*. A uniform analysis of comparison particles in hypothetical and other comparisons in fact forms a prerequisite for the kind of compositional analysis of hypothetical comparisons that Bücking (2017) aims at. (Syntactic differences between hypothetical and other comparisons with respect to the availability of coordination-like characteristics such as Gapping etc. discussed in Section 4.2 are not due to a different position of the comparison particle but due to the fact that hypothetical comparisons constitute combinations of equatives with conditionals and that the latter do not allow for Gapping etc., see also fn. 56.)

<sup>10</sup> Building on this account, this is also assumed in Demske (2014) and Bücking (2015; 2017).

<sup>11</sup> SpecCP is filled in degree-based comparisons by an operator coindexed with the embedded degree phrase and responsible for semantic abstraction over degrees as well as island effects typical of wh-movement, cf. Chomsky (1977), Kennedy (1999), Lechner (2004), see also Section 4.1.

While the C<sup>0</sup> position remains phonetically empty in comparatives with *als* in Modern Standard German as illustrated in the last line in (10) for the sentence in (1a), this position may be filled even in this type of comparison by a complementizer such as *dass*, *was* etc. (Doubly Filled Comp/DFC) in some dialects such as certain Swiss German varieties, see (11). These dialectal data thus constitute further evidence for a syntactic position of the comparison particle *als* above C<sup>0</sup>, as illustrated in (12).<sup>12</sup>

- (11) *Swiss German* (Friedli 2012: 4)  
 Si isch grosser **als** {**was** / **dass** / ...} i dänkt ha.  
 she is taller than what that I thought have  
 ‘She is taller than I thought.’



The assumption that *als* is placed in a functional head above the standard-of-comparison CP is further corroborated by diachronic data. The contrast with historical stages of the language in which *als* did in fact occur as a complementizer underlines the fact that it stands in a hierarchically higher position (Conj<sup>0</sup>) today.<sup>13</sup>

Based on non-degree equatives in which the OHG equative particle *so* ‘as’ occurred immediately following an adverbial *al* ‘fully’ in the matrix clause, *also* (> *alse/als*) was beginning to be grammaticalized into a new equative particle in late OHG.<sup>14</sup> As indicated in Section 1, it already occurred as the main particle used in non-degree equatives and occasionally in degree equatives in MHG. In late OHG, MHG and at the beginning of the ENHG period, the new equative particle *also* took up the C<sup>0</sup> position, unlike in Modern German. One piece of evidence for this comes from phonology: With *also*, so-called synaloepha occurs, that is, in order to avoid a hiatus, a following word starting in a vowel cliticizes to *also* under vowel elision. This is illustrated in the MHG example in (13) for *also* + pronoun *er* ‘he’ forming *alsor*.

<sup>12</sup> Similarly, DFC in German dialects is generally employed as evidence for a position of wh-pronouns and adverbs above C<sup>0</sup> also in the standard language, cf. Sternefeld (2008: 364f.) with reference to Bayer (1984) etc. (see also Haegeman 1991: 122 for a parallel argument for English based on English dialects).

<sup>13</sup> Note that *so*, which *also* is derived from, (like *wie* cf. (41) Section 2.3) originally constituted a full phrase in SpecCP that was in a first step reanalysed as a C<sup>0</sup> element in line with van Gelderen’s (2004) Head Preference Principle.

<sup>14</sup> While, as Axel-Tober (2012) argues convincingly, reanalysis of a matrix-internal element into the subordinate clause is not the origin of *dass* ‘that’ in German complement clauses, the grammaticalization of a new comparison particle on the basis of univerbation of a common matrix-internal element with the adjacent original comparison particle can be observed quite regularly in equatives in various languages. Besides a degree modifier such as ‘fully’, ‘completely’ as in the case of German *al-so* or English *as* (< *eall swa* ‘fully as’), other matrix-internal elements typically involved are for instance equative correlates ‘as/so’ (cf. Latin *sic* + *ut* > *sicut*, Dutch *zo* + *als* > *zoals* etc., see Jäger 2018: 370f.). The grammaticalization typically happens in non-degree equatives. In these, both elements frequently occur in adjacent position and may be perceived as one unit because, unlike in degree equatives, no Tertium Comparationis AP intervenes that would block the reanalysis (see also (72) below). Contexts with matrix-final *al* and adjacent equative particle *so* are evidenced for instance in Otfrid: *bi namen uuéiz ih thih ál. só man sinan drút scal*. ‘By your name, I know you just/fully as one should one’s friend.’ (Otfrid V, 8, 38) This is reanalysed as follows: [<sub>CP1</sub> ... *al* [<sub>CP2</sub> [<sub>C2<sup>0</sup></sub> *so*] ...]] > [<sub>CP1</sub> ... [<sub>CP2</sub> [<sub>C2<sup>0</sup></sub> *also*] ...]]. As one anonymous reviewer points out, this contraction of *al* with the C<sup>0</sup> *so* element constitutes further evidence that the resulting *also* fills the C<sup>0</sup> position rather than for instance SpecCP because head-to-Spec developments seem to be ruled out on principled grounds, cf. van Gelderen (2004).





The tree marker in (16) illustrates the syntactic structure of the ENHG example (15a) in contrast with the corresponding Modern German sentence (15c) in the line below. In the historical example, *als* fills C<sup>0</sup> and thus blocks verb movement to this position. By contrast, *als* occurs in the higher functional head Conj<sup>0</sup> in Modern German so that the finite verb can move to C<sup>0</sup>. The observed change in verbal placement indicates that the change of *als* from C<sup>0</sup> to Conj<sup>0</sup> took place approximately during the 16th century. A number of further constructions that started to occur around the same time further support this: During the second half of the 16th century, *als* is attested in combination with complementizers such as *dass* and, in hypothetical comparisons, *wenn* and *ob*, cf. (17)–(19), indicating that *als* is positioned higher than C<sup>0</sup>.<sup>16</sup> Furthermore, at the same time, *als* is first attested in relative clauses before the relative pronoun and possibly a pied-piped preposition, cf. (20), showing that *als* is also hierarchically higher than SpecCP.

- (17) Johann Gropper (15v, 26f.)  
 Filweiniger soellet jr darab vrsach nemmen/ an meinen worten zu  
 much-less should you therefore cause take at my words to  
 zweifelen/ **als das** jch solchs zu thun nit vermoechte.  
 doubt as that I such to do not might  
 ‘All the less should you therefore doubt my words as if I was not able to do this.’
- (18) Helene Kottannerin (14, 7f.)  
 da erkam der man als hart, daz er die varib verkerat, **als ob** er halber  
 then feared the man as much that he the colour turned as if he half  
 tod wër  
 dead was  
 ‘The man was frightened so much that he changed colour as if he was half-dead.’
- (19) Ludwig Lavater (18v, 10–12)  
 so bedunckt jn zun zyten er ho’re etwas susen oder prastlen **als**  
 so seems-to him at times he heard something whistle or crackle as  
**wenn** es windete  
 if it was-windy  
 ‘So it seemed to him at times as if he heard a whistling or crackling as if it was windy.’
- (20) Johann Gropper (8v, 8–10)  
 Die speiß die jch euch geben werde ( wolche wort hie Emphatica sein)  
 the food which I you give will which words here Emphatica are  
**als durch wólche** der Herr nit ein gemein/ aber ein sondere speiß [...]  
 as through which the Lord not a common but a special food  
 zuverstehen geben wil ...  
 to-understand give wants  
 ‘The food which I will give you (which words are Emphatica here) by which the Lord did not want to denominate a common food but a special one ...’

The diachronic movement of *als* from C<sup>0</sup> to Conj<sup>0</sup> represents a common type of syntactic change, viz. upwards reanalysis typically involved in grammaticalization (cf. Roberts & Roussou 2003). In terms of van Gelderen (2004: 28) it can be explained on the basis of the

<sup>16</sup> The combination of *als* and *ob* is already very occasionally attested in MHG, where it arguably still constituted an elliptical combination of an equative and a conditional clause. It is becoming more frequent in ENHG (cf. Jäger 2018: 145; 215f.).

syntactic economy principle Late Merge, which states that it is economical to merge an item maximally late in the derivation, and therefore leads to diachronic upwards movement. The history of comparisons in German thus constitutes another area in which this principle, which has been formulated independently for a range of other phenomena, can be shown to apply. Besides, as indicated above, the historical data and the syntactic changes observed represent additional valuable evidence in favour of an analysis of the Modern German comparison particle *als* as a functional head (Conj<sup>0</sup>) above the actual standard-of-comparison CP.

### 2.3 The syntactic position of *wie* and its diachrony

For the Modern German comparison particle *wie*, I would like to argue that – like *als* in (10) – it is placed in the head position Conj<sup>0</sup> above the actual standard of comparison. As such, it is syntactically distinct both from the homophonous modal/degree wh-item *wie* ‘how’, which occupies SpecCP, as well as from the homophonous complementizer *wie* ‘that/when’ in C<sup>0</sup>, supporting the view that the comparison particle *wie* occupies neither position but is placed higher in the structure.

At first sight, it might seem straightforward to analyse the comparison particle *wie* in the same way as the modal/degree wh-adverb *wie* ‘how’, illustrated in (21), i.e. as a phrasal element (AdvP) occupying SpecCP. This approach is taken by Duden (2016: 1052: in sentential comparisons, *wie* as relative adverb, but partly also as relative particle) and Bücking (2015; 2017: *wie* in SpecCP in hypothetical comparisons, but as PP rather than an adverb).<sup>17</sup> As we will see below, the wh-adverb *wie* in SpecCP in modal free relatives indeed formed the original historical source for the grammaticalization of this comparison particle. However, in the present-day language, the syntactic behaviour of *wie* ‘as’ in degree and in non-degree equatives, cf. (24), is distinctly different from that of the homophonous modal/degree wh-adverb *wie* ‘how’ as well as generally of wh-items in free or headed relatives, cf. (22a/b) and (23a/b).<sup>18</sup> This is evident from – depending on the analysis (see Section 3) – the possibility of ellipsis or (according to the direct analysis argued for in Section 3) of connecting mere DPs, PPs etc., cf. (24). This is entirely ungrammatical with the wh-adverb *wie*, cf. (21), as well as with other wh-items whether argumental as in (22) or non-argumental as in (23). (For differences with respect to the possibility of Gapping see (45a vs. b) below.) The comparison particle *wie* is thus syntactically distinct from the wh-adverb *wie* and should not be analysed as a SpecCP element. Further support for this view comes from the fact that, in many languages, the equative comparison particle is also phonologically clearly distinct from the modal/degree wh-item, cf. English *as/like* vs. *how* or French *comme* vs. *comment* (see also Eggs 2006).

- (21) Ich weiß, **wie** Anna lebt, aber ich möchte mal wissen, **wie** Maria \*(lebt).  
 I know how Anne lives but I like PTCL know how Mary lives  
 ‘I know how Anne lives but I would like to know how Mary lives.’

<sup>17</sup> A prepositional analysis of *wie* even for phrasal comparisons consisting of *wie* + DP is not convincing for the same reasons as given above for *als*, notably the observable case transparency of *wie*, cf. *Peter mag dich genau so sehr wie* [<sub>NOM</sub> *er*]/[<sub>ACC</sub> *ihn*] ‘Peter likes you just as much as he/him’. This is also problematic for Bücking’s (2015) analysis of *wie* as PP in hypothetical comparisons. His argument for a supposedly phrasal status of the comparison particle *wie* on the basis of modification by *ungefähr* ‘approximately’ (Bücking 2015: 287; 2017: 996) does not hold, either: The modifier is in fact matrix-internal, modifying the (optional/silent) correlate *so*, not *wie*: ...[ *ungefähr* (so) [*wie* ...] ] ‘approximately (thus) like’.

<sup>18</sup> Bücking (2017: 997), who treats hypothetical comparisons as ordinary free relatives with *wie* in SpecCP, accordingly cannot explain the contrasts with other free relatives (even adverbial ones with *wo*) and refers to this as a “significant puzzle”.

- (22) a. Anna mag {den Menschen / den(jenigen)}, **den** Maria \*(mag).  
 Anne likes the person the (one) whom Mary likes  
 ‘Anne likes the person / him whom Maria likes.’  
 b. Anna mag, **wen** Maria \*(mag).  
 Anne likes whom Mary likes  
 ‘Anne likes whom Mary likes.’
- (23) a. Anna möchte { an dem Ort / da} leben, **wo** Maria \*(lebt).  
 Anne wants at the place there live where Mary lives  
 ‘Anne wants to live at the place/(there) where Mary lives.’  
 b. Anna möchte leben, **wo** Maria \*(lebt).  
 Anne wants live where Mary lives  
 ‘Anne wants to live where Mary lives.’
- (24) a. Anna möchte { in der Art / so / so gut} leben, **wie** Maria (lebt).  
 Anne wants in the way so as well live as Mary lives  
 ‘Anne wants to live the way that / as well as Mary lives.’  
 b. Anna möchte leben, **wie** Maria (lebt).  
 Anne wants live as Mary lives  
 ‘Anne wants to live as Mary does/like Mary.’

Besides being used as a wh-item meaning ‘how’ as in (21), *wie* also occurs as a complementizer in Modern German, viz. instead of *dass* ‘that’ especially with verbs of perception, cf. (25), and instead of *als* ‘when’ as a temporal complementizer, cf. (26).<sup>19</sup> Again, dialectal data provide additional evidence for this use: As illustrated in (27), Bavarian, *wie* (*wia*) may be used as a complementizer in relative clauses (i.e. relative particle) following the relative pronoun which is positioned in SpecCP, and thus clearly occurring in the C<sup>0</sup> position itself (DFC). (For differences between comparison particle *wie* and complementizer *wie* with respect to the possibility of Gapping see (45a vs. c) below.)

- (25) Er hörte, **wie** der Schlüssel im Schloss herumgedreht wurde.  
 he heard how the key in-the keyhole around-turned was  
 ‘He heard that (/how) the key was being turned in the keyhole.’
- (26) **Wie** sie sich dem Haus näherten, bemerkten sie, dass es ganz  
 as they REFL the house approached noticed they that it rather  
 verfallen war.  
 dilapidated was  
 ‘As (/when) they were approaching the house, they noticed that it was  
 rather dilapidated.’
- (27) *Bavarian* (Eroms 2005)  
 so das ma do ned iba de norm khema san, [de **wia** se  
 so that we there not above the norm come have which as they  
 aufgschdaid ham]  
 put-up have  
 ‘so that we could not surpass the norm which they had established’

<sup>19</sup> Note that the tendency for *wie* to replace *als* also in its temporal use is reminiscent of the same replacement within the comparative cycle first in non-degree equatives, then in degree equatives and in comparatives, cf. Table 1. This can be explained on the basis of the assumption that the temporal use, both of *als* and later of *wie*, is derived from the equative use (equation of points in time).

The question is thus, whether the comparison particle *wie* could instead be assimilated to this use and be analysed as a C<sup>0</sup> element (cf. Bierwisch 1987; Jäger 2010; Duden 2016: *wie* partly relative particle in sentential comparisons see fn. 7). However, the same kind of syntactic contrasts as illustrated above between *wie* as a comparison particle and *wie* as a SpecCP item obtain with *wie* as a complementizer: Again, the occurrence of a mere DP, which is possible with the comparison particle *wie* cf. (28), is ungrammatical with the complementizer *wie* (just as with *dass*), cf. (29), since it needs to occur in a full CP. Note that this holds even if the elided material is phonetically identical to material earlier in the clause. Accordingly, the comparison particle *wie* cannot be analysed as a complementizer occupying C<sup>0</sup>, either.

(28) Anna stieg die Treppe (so schnell) hinauf, **wie** Maria (die Treppe  
 Anne climbed the stairs as quickly up as/like Mary the stairs  
 hinaufstieg).  
 up-climbed  
 ‘Anne climbed up the stairs (as quickly), as/like Mary (climbed up the stairs).’

(29) Als Anna die Treppe hinaufstieg, hörte sie, {**dass** / **wie**} Maria  
 when Anne the stairs up-climbed heard she that how Mary  
 \*(die Treppe hinaufstieg).  
 the stairs up-climbed  
 ‘When Anne was climbing up the stairs she heard that/how Mary was climbing  
 up the stairs.’

Depending on the analysis of hypothetical comparisons including *wie*, the position of *wie* in a syntactic head (Conj<sup>0</sup>) above C<sup>0</sup> is further corroborated by these constructions. In hypothetical comparisons, *wie* may co-occur with *wenn* ‘if’, which is clearly a C<sup>0</sup> element, cf. (30), see also (1d) above. One option would be to analyse this as an instance of elliptical CP stacking: an elliptical *wie*-clause embedding a *wenn*-clause (cf. Jäger 2010). However, Bücking (2015: 268) has argued that the supposed ellipsis cannot always be reconstructed under identity of the overall semantics, cf. also Pasch et al. (2003: 356ff.; 619).<sup>20</sup>

(30) Hanno hustet, **wie wenn** ein Hofhund bellt.  
 Hanno coughes as if a watchdog barks  
 ‘Hanno is coughing (as if/) like a watchdog barks.’  
 = (i) Hanno hustet. Der Husten klingt, wie es klingt, wenn ein Hofhund bellt.  
 ‘Hanno is coughing. The cough sounds as it sounds if a watchdog barks.’  
 ≠ (ii) Hanno hustet, wie er hustet, wenn ein Hofhund bellt.  
 ‘Hanno is coughing as he is coughing if a watchdog barks.’

If accordingly, *wie wenn* is not analysed as an instance of elliptical CP stacking, this is additional evidence that *wie* fills a position above C<sup>0</sup>.<sup>21</sup> As mentioned above, I assume that, like *als*, the comparison particle *wie* is positioned in the functional head Conj<sup>0</sup> above CP. The structure of comparisons with *wie* that is suggested here thus looks as given in (31).

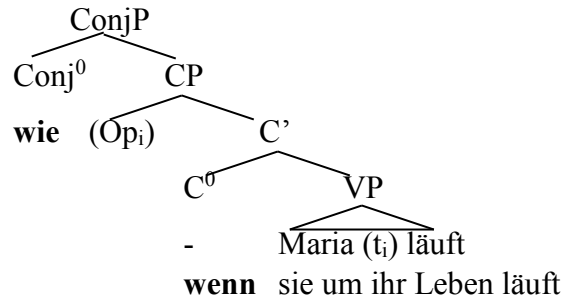
<sup>20</sup> Bücking (2015: 299) nonetheless assumes a CP-stacking structure with *wie* in the higher CP and the *wenn*-clause embedded in its otherwise empty VP, which constitutes the silent consequent for the conditional antecedent, see also Bücking (2017: 996).

<sup>21</sup> Note, however, that we obtain the reading in (ii) if *wie wenn* in (30) is replaced by *als ob* (*Hanno hustet, als ob ein Hofhund bellt.*) *Als ob* is the historically older connector in hypothetical comparisons, which never allows for reconstruction today (*\*Hanno hustet, als er hustet, ob ein Hofhund bellt./\*Der Husten klingt, als es klingt, ob ein Hofhund bellt.*). While *als ob* thus clearly never constitutes elliptical CP stacking in Modern German, this contrast indicates that things are slightly different with *wie wenn*.



In hypothetical comparisons including *wie wenn*, the CP contains *wenn* in its C<sup>0</sup> position, as illustrated in the second line. In ordinary equatives, the C<sup>0</sup> position is empty (with a degree operator in SpecCP in degree equatives see fn. 11).

- (31) Anna läuft so (schnell), ...  
Anna läuft, ...



Note that the comparison particle *als wie*, which occurs both in historical and dialectal variants of German, does not constitute an argument against the suggested analysis. In contrast to what is assumed in the previous literature (DWB 1: 249; 29: 1475; Dücker 1961: 208f.; Ebert et al. 1993: 478; and on this basis also Jäger 2010), this particle does not constitute a combination of the two comparison particles *als* and *wie* that occurred diachronically as an intermediate step when *als* was replaced by *wie*, or in dialects in areas where an *als*-area and a *wie*-area partly overlap. Diachronically, it occurs first in equatives, but only after *wie* had firmly supplanted *als* as an equative particle, cf. Jäger (2018). The observation that it is first used in non-degree equatives indicates that *als wie* in fact constitutes a comparison particle that was, like Latin *sicut*, Gothic *svasve*, Dutch *zoals* etc. grammaticalized on the basis of the reanalysis of a matrix-final correlate ‘as’ – in historical German, specifically in MHG and ENHG (cf. Jäger 2018: 140f.; 196), mostly *als(o)* rather than simple *so* – and the adjacent equative particle (see also fn. 14 and (72)). Also in Modern German dialects, *als wie* is not areally restricted to overlaps between *als* and *wie* areas, but mostly occurs within larger *wie* areas, supporting this diachronic scenario. Synchronically, *als wie* is therefore (despite the common separate spelling) to be considered as one syntactic unit which, like *als* and *wie*, occurs in Conj<sup>0</sup> in the syntactic structure.

With *wie* occupying Conj<sup>0</sup> just as *als*, one might expect that it should be possible to combine *wie* with V1 clauses in hypothetical comparisons, too, as the C<sup>0</sup> position would be available for the finite verb. Yet, this is ungrammatical in Modern Standard German. However, this ungrammaticality is probably due to independent reasons (e.g. garden-path effects due to ambiguity with embedded *wie*-wh-questions):<sup>22</sup> In fact, there are Modern German dialects in which V1 in hypothetical comparisons introduced by *wie* is indeed attested, cf. (32) and (33),<sup>23</sup> showing that the C<sup>0</sup> position is available for the finite verb as predicted by the analysis.<sup>24</sup>

<sup>22</sup> For a different approach see Bücking (2015; 2017). He proposes that V1-conditionals, being obligatorily unintegrated and thus not related to their matrix-VP, could presumably not identify the silent VP consequent he postulates in hypothetical comparisons (see also fn. 20). However, under his approach, the fact that *als* may occur with V1 conditionals poses a problem (cf. Bücking 2017: 1019).

<sup>23</sup> The example in (33) is contained in the data of the Wenker dialect survey that formed the basis for the *Deutscher Sprachatlas*. The handwritten questionnaires can be accessed via <https://www.regionalsprache.de/>. While most informants translated the given standard German hypothetical comparison in sentence 20 (*Er tat so, als hätten sie ihn zum Dreschen bestellt* ‘He behaved as if they had called him for flailing’) as in the standard German formulation with *als* + V1 clause or using *als wenn/wie wenn* + Ve clause, some informants also rendered it as *wie* + V1 clause. Other informants also used *so wie* or *als wie* + V1 clause, for instance: *Hei thia sau, [awi härrn sei ihna taun Draschen bastallt]* (Zwinge, Wenker questionnaire 06426), which supports the analysis proposed here that *als wie* – like *als* and *wie* – is positioned in Conj<sup>0</sup> above C<sup>0</sup>.

<sup>24</sup> The ungrammaticality of the combination of *wie ob* in hypothetical comparisons (vs. grammaticality of *als ob*) is not due to the structural position of *wie*, either, but due to the historical development: *Ob* (cognate

- (32) *Saarbrücken dialect* (Steitz 1981: 331)  
 De Vader dirmeld (so) [wie **häd** er gesuf].  
 the father staggers (so) as had he drunk  
 ‘The father is staggering as if he was drunk.’
- (33) *Iklad dialect* (Wenker questionnaire 54921, sentence 20)  
 Ear hot szo to [wie **hätt**n szi eam zum Treschn otinnka].  
 he has so done as had they him to-the flailing ordered  
 ‘He behaved as if they had called him for flailing.’

Furthermore, there is another set of dialectal data supporting the suggested analysis. Just as with *als* cf. (11), the comparison particle *wie* may co-occur with a complementizer such as *dass* ‘that’ (DFC) in certain, especially Upper German dialects, demonstrating that *wie* does not occupy C<sup>0</sup> but a higher position.<sup>25</sup> This occurs for instance in degree as well as non-degree equatives, cf. the Bavarian examples in (34a–c), and also in comparatives, in which *wie* is also overwhelmingly used in most High German dialects (see Table 1), cf. the Swabian and Swiss German examples in (34d/e).<sup>26</sup> As illustrated in (35), both hypothetical comparisons with *wie* + V1 clause as well as comparisons with *wie* followed by a complementizer are adequately captured by assuming that the comparison particle *wie* is positioned in a functional head above CP. Dialectal data thus constitute valuable additional evidence for the syntactic analysis suggested here.

- (34) a. *Bavarian* (Helmut Weiß, p.c.)  
 D’Sabine laaft so schnej **wie dass** d’Anna raalfod.  
 the Sabine walks as fast as that the Anne cycles  
 ‘Sabine walks as fast as Anne cycles.’
- b. *Bavarian* (Helmut Weiß, p.c.)  
 D’Sabine mochts asoo **wie dass**d’ as du imma gmocht hosd.  
 the Sabine does-it so as that.2.SG it you always done have  
 ‘Sabine is doing it as/like you have always done it.’

of *if*) constitutes the diachronically older conditional complementizer in German, whereas *wenn* is more recent. Together with the older equative particle *als*, the old conditional *ob* could be used in (originally elliptical) hypothetical comparisons and was fossilized in this context. When *wie* eventually replaced *als* as an equative particle, however, the old conditional *ob* was already obsolete and had been replaced by *wenn*. Therefore, we do not find the combination *wie ob* but only *wie wenn* for ‘as if’. Note that *wie ob* is, however, attested in certain dialects that preserved the conditional use of *ob* longer, cf. the following Swiss German example: ‘*s chonnt mer vor, wie öb si Hunger hett*. ‘It seems to me as if she was hungry’ (Schweizerisches Idiotikon, XV: 81).

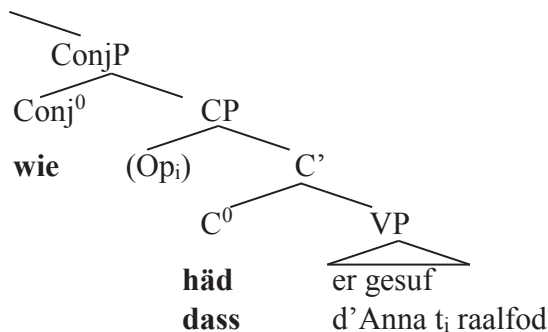
<sup>25</sup> According to Bayer (1984), all wh-items can be combined with *dass* in Bavarian. More recently, however, he states that, unlike full wh-phrases, single wh-words can hardly or not at all occur in DFC constructions, including *wie* (Bayer 2015). Yet, his 40–78 year old informants rate *wie dass* at a medium value of 3.6 on a scale from 1 (fully grammatical) to 6 (ungrammatical), i.e. certainly not ungrammatical. (Note that Bayer does not differentiate between wh-item/interrogative *wie* ‘how’ and comparison particle *wie* ‘as/like’.)

<sup>26</sup> The complementizer *dass* also co-occurs both in equatives and in comparatives with *als wie*, cf. the Bavarian examples in (i) and (ii), which constitutes one comparison particle within Conj<sup>0</sup> as discussed above (see also example (58) below):

- (i) (<https://www.muskelbody.info/forum/showthread.php/48446-Cofloh-hat-Geburtstag> [18/01/2011])  
 i wünsch da ois guade und bleib a so, **ois wia das**’ d bist !!!!  
 I wish you all good and stay so as that you are  
 ‘I wish you all the best and stay as you are!’
- (ii) (<https://fcbayern.com/by/kolumne/sohammagspuit/2017/12/so-hamma-gspuit-ja-vareck-kaf-feehaus>)  
 wennst as genau nimmst, miassatn de vui mehra Punkte ham, **ois wia dass** ham.  
 if-you it precisely take must they much more points have than that-they have  
 ‘Strictly speaking, they should have a lot more points than they have.’

- c. *Bavarian* (<https://casowi.me/page/39/?cat=-1>)  
 Und drum z'bittn, dass aa so bleibt **wia dass** is: friedli.  
 and for-that to ask that-it so stays as that-it is peaceful  
 'And to ask for it to stay as it is: peaceful.'
- d. *Swabian* (Schwäbisches Tagblatt 08/04/2013,  
<https://www.tagblatt.de/Nachrichten/Die-Waeldlesburzler-fuehrten-am-Wochenende-ihren-neuen-Mundartschwank-auf-124954.html>)  
 Die hen eh alle meah Geld, **wia dass** se's braucha kennat.  
 they have anyway all more money than that they-it use can  
 'They all have more money than they can use, anyway.'
- e. *Swiss German* (Wegenstetten)<sup>27</sup>  
 Die Wäie isch jo schlimmer, **wia dass** si usgseet.  
 the cake is PTCL worse than that it looks  
 'The cake is worse than it looks.'

(35) De Vader dirmeld (so), ...  
 D'Sabine laaft so schnej, ...



Further support for this analysis comes from historical data. As mentioned above, the use of *wie* as a comparison particle is based originally on its use as a wh-item (interrogative/relative 'how'). Accordingly, its syntactic behaviour at earlier stages of the language contrasts with the behaviour of the comparison particle *wie* today, providing additional evidence for the above analysis. In OHG, the predecessor *wio* was used only as a wh-item. In classical OHG, it is indeed attested exclusively as a modal/degree interrogative adverb 'how' in SpecCP position. Over the course of the OHG period, it is beginning to occur also as a modal relative adverb in free relatives, notably in combination with correlative *so ... so*, which is typical of free relatives in OHG (*so wio so* 'how(ever)', cf. also *so wer so* 'who(ever)', *so waz so* 'what(ever)' etc.). As illustrated in (36), the first *so* arguably originally constituted a correlate within the matrix CP (CP1) while *wio* filled the specifier position of the free relative clause CP (CP2),<sup>28</sup> and the second *so* appeared as a relative complementizer (relative particle) in the C<sup>0</sup> position of this latter CP. However, already in the 9th century, *so wio so* occurs as a complex inside CP2, as evidenced by a caesura in poetic texts such as Otfrid's gospel book, cf. (37), i.e. the first *so* has been reanalysed as part of the relative clause. In fact in MHG, *so* and the wh-item are fused into one word, viz. *swie*. Also single *wio* occurs in modal free relatives in OHG which resemble non-degree equatives, cf. (38), constituting another source for the later comparison particle *wie*. At any rate, its predecessors always occur in SpecCP and only in full clauses, cf. DWB

<sup>27</sup> This example is from the data that was elicited for Friedli (2012) (questionnaire 3, 2.6). I am grateful to Matthias Friedli for providing me with this data.

<sup>28</sup> See also Harm (2001: 256f.) for arguments that *wio* was always relative-clause internal vs. Erdmann (1874–1876, I), Schrodtt (2004: 170) and Weiß (2016) who take it to be matrix-internal, originally. For a more detailed discussion see Jäger (2018: 86–90).

(29: 1474–1480), Lerch (1942: 345), Dückert (1961: 205f.). First rare instances of non-degree equatives including (s)wie are attested in MHG, cf. (39).

(36) [CP1 ... so [CP2 wio [C2<sup>0</sup> so] ...]] > [CP1 ... [CP2 so wio [C2<sup>0</sup> so] ...]]

(37) Otfrid (V, 1, 7)  
 er bi unsih tod thulti · **so wio so** er selbo wolti  
 he with us death suffered so how so he self wanted  
 ‘He suffered death among us just as (/however) he himself wanted to’

(38) Notker: Boethius (89, 9–11)  
 Iâ uuóltôn îuere fôrderen . also dû uuâno îh kehúgest . **uuûo** dû lâse .  
 PTCL wanted your ancestors as you believe I remember as/how you read  
 úmbe dîa úbermûoti dero consulum . tîligôn iro ámbácht  
 because-of the presumption of-the consuls efface their post  
 ‘Because of the presumption of the consuls, your ancestors, as you will, I trust, remember, as you read, wanted to efface consulship’

(39) Walther (48, 7; after Paul 2007)  
**swie** si sint, sô wil ich sîn  
 how/as they are so want I be  
 ‘However/as they are, so do I want to be.’

A first syntactic change of *wio/wie* itself occurred when it was reanalysed from SpecCP to C<sup>0</sup>. As this reanalysis does not affect general word order such as verb placement, it is challenging to find conclusive diagnostica for when this change actually occurred. A number of arguments suggest, however, that this change can be dated to MHG: Firstly, (s)wie also starts to occur as a complementizer in other functions at that time, notably as a temporal or concessive complementizer, cf. (40), see also DWB (29: 1450–1452), Paul (2007: 417; 419). In these functions, it is clearly positioned in C<sup>0</sup> (note also the occurrence of synaloephe in (40): *swie + er > swier*).

(40) Nibelungenlied (1819, 2f.)  
 ir habt mirs noch vil wenich her ce lande braht **swier** mîn  
 you have me-it still very little here to country brought although-he my  
 eigen wære  
 own was  
 ‘You have as yet brought very little of it [= the treasure] to me into this country, although it used to be my own’

Secondly, as mentioned above, the second *so* of the original *so wio so* is dropped in MHG (while the first one fuses with the *wh*-item). This can be explained if *swie* indeed changed from SpecCP into C<sup>0</sup> so that this position was no longer available for the relative complementizer *so* and accordingly, it disappeared, cf. (41).<sup>29</sup>

(41) [CP1 ... [CP2 so wio [C2<sup>0</sup> so] ] ] > [CP1 ... [CP2 [C2<sup>0</sup> (s)wie] ...]]

<sup>29</sup> A third kind of evidence comes from MHG hypothetical comparisons introduced by simple *wie*, such as *darumbe ist in, [wie sie ûz einem touwe in einen fiurigen berc aller erste fliehen müesten]* ‘Therefore they feel as if they had to flee from a dew into a fiery mountain first.’ (Berthold II, 23, 20). The finite verb is in final position here, presumably because *wie* occurs in the C<sup>0</sup> position and prevents the verb from moving there (in contrast to Modern dialectal hypothetical comparisons with *wie + V1* as in (32); in Modern Standard German, on the other hand, hypothetical comparisons may not be introduced by simple *wie*).

The change from a specifier to the head of the same projection is again a common kind of syntactic change, notably since both generally agree with respect to crucial grammatical features (Spec-head agreement, cf. Chomsky 1995). It also occurred for instance in relative clauses with English *that*, French *que* and German *dass* as part of the relative cycle, cf. van Gelderen (2004: 81–88), Axel-Tober (2012).<sup>30</sup> Again, this change is caused by syntactic economy as formulated in van Gelderen's (2004) Head Preference Principle (or Spec to head principle) which demands for a syntactic item to be a head rather than a phrase, if possible. A head comes with less syntactic structure than a full phrase. Accordingly, the learner will assume head status in ambiguous cases, which leads to the common diachronic reanalysis from Spec to head.

A second syntactic change of *wie* occurred during the ENHG period – the time when *wie* started to be increasingly used in equatives, notably in non-degree equatives, cf. Table 1. As illustrated in (42), *wie* changed from C<sup>0</sup> of the second CP to Conj<sup>0</sup>, the position that it still occupies in the present-day language. This change from C<sup>0</sup> to Conj<sup>0</sup> can, as in the case of *als*, be explained on the basis of the syntactic economy principle of Late Merge (van Gelderen 2004) as an instance of upward reanalysis (Roberts & Roussou 2003).

(42) [CP1 ... [ConjP [Conj<sup>0</sup> *wie*] [CP2 [C<sup>2</sup> ] ...]]]

As discussed above, before the ENHG period, i.e. during OHG and MHG, *wio/wie* had been restricted entirely to full clausal contexts. Only these contain a CP layer in which it could occur – first as a *wh*-item in SpecCP, then as a complementizer in C<sup>0</sup>. If one assumes that phrasal comparisons, on the other hand, may constitute single phrases (DPs, PPs etc.) connected to the rest of the clause by the comparison particle (so-called direct analysis, cf. Section 3), phrasal comparisons do not include a CP layer. Accordingly, *wie* could only appear in phrasal comparisons once the reanalysis from C<sup>0</sup> to the higher functional head Conj<sup>0</sup> had taken place, providing a diagnostics for when this change occurred. Phrasal comparisons including *wie* are first attested in the 15th/16th century as illustrated in (43). For some time after this, however, *wie* continues to be preferably used in clausal comparisons (see also Table 2, Section 3).

(43) Johann Mathesius (51v, 16–20)  
 Darumb sie auch also schmezlich vnd Gotteslesterlich/ [**wie** die  
 for-which they also as ignominiously and blasphemously as the  
 Mahometisten] vom Abendmal des HERRN [...] gedencken vnd reden.  
 muslims of-the supper of-the Lord think and talk  
 ‘because of which they also think and talk of the Lord’s supper as ignomi-  
 niously and blasphemously as the muslims’

Three further sets of data also constitute evidence for the reanalysis of the comparison particle *wie* from C<sup>0</sup> to Conj<sup>0</sup> during the ENHG period. At this time, *wie* is first used in comparisons including Gapping (deletion of the finite verb with several constituents remaining, e.g. subject and object), cf. (44). This type of ellipsis is typical of coordination-like structures, but is ungrammatical in subordinate clauses introduced by a *wh*-item or complementizer, as discussed in more detail in Section 4. Until today, the possibility of Gapping after the comparison particle *wie*, cf. (45a), is another distinctive feature in contrast to the ungrammaticality of Gapping after the interrogative *wh*-phrase *wie*, cf. (45b), and the complementizer *wie*, cf. (45c). In the investigated diachronic corpus, Gapping is first attested with *wie* in the 16th century. Furthermore, during the same time, coordinating use of *wie* is first attested cf. (46), see also DWB (29: 1450–1452). This fact again constitutes evidence that

<sup>30</sup> The same reanalysis from SpecCP to C<sup>0</sup> also occurred with *so*, see fn. 13.



*wie* is positioned in a higher – possibly coordination-like position (cf. Section 4). Around the same time, viz. since the 15th century, *wie* co-occurs with the complementizer *dass* ‘that’, as illustrated in (47), so that *wie* must clearly be in a higher syntactic position than C<sup>0</sup>. The diachronic data thus support the analysis that, since ENHG times, *wie* is placed in Conj<sup>0</sup>.

- (44) Ludwig Rauwolf (32, 22–24)  
 ein Erden/ die sie Iusabor nennent/ welche jre Weiber offt vnd  
 a soil which they Iusabor call which their women commonly and  
 dick essen/ **wie** [bey vns] [etwa] [die schwangere] [Kolen vnd  
 often eat as with us perhaps/at-times the pregnant coal and  
 andere ding].  
 other things  
 ‘a soil which they call Iusabor, which their women commonly and often eat as  
 here, pregnant women (eat) coal and other things.’
- (45) a. Maria hat die Büchse so (schnell) aufgemacht, **wie** [Anna]  
 Mary has the box so/as fast opened like/as Anne  
 [die Schachtel].  
 the case  
 ‘Mary opened the box (as fast) as/like Anne (opened) the case.’  
 b. \*Ich weiß, wie Maria die Büchse aufgemacht hat, aber ich frage mich,  
 I know how Mary the box opened has but I ask myself  
**wie** [Anna] [die Schachtel].  
 how Anne the case  
 ‘I know how Mary opened the box but I wonder how Anne (opened) the case.’  
 c. \*Als Maria die Büchse aufmachte, hörte sie, **wie** [Anna] [die Schachtel].  
 when Mary the box opened heard she how Anne the case  
 ‘When Mary opened the box she heard how/that Anne (opened) the case.’
- (46) Johann Bange (9r, 22f.)  
 Wer durch seine vernunftt Recht fand vnnnd Recht thet dem Armen **wie**  
 who by his reason justice found and justice did to-the poor-one as  
 dem Reichen  
 to-the rich-one  
 ‘whoever by his reason found and did justice to the poor as to the rich’
- (47) Helene Kottannerin (14, 41–15, 1)  
 Do kamen dem purkgrafen die mër, **wie daz** ich këm nach den  
 then came to-the count the stories how that I came after the  
 Junkchfrawn.  
 maidens  
 ‘At that time, the story that I was coming for the maidens reached the count.’

### 3 Phrasal vs. clausal comparisons

Another crucial question concerning the internal syntax of the standard of comparison relates to its syntactic status. As already mentioned above, the standard of comparison may, at the surface, take the form of a full clause or a single phrase, e.g. DP cf. (1), AP cf. (7), PP cf. (48) or AdvP cf. (49), which is connected to the rest of the clause by the comparison particle.<sup>31</sup> These are referred to as clausal vs. phrasal comparisons. Several

<sup>31</sup> This holds both for comparatives and equatives. Hypothetical comparisons, on the other hand, are necessarily sentential because the conditional that is combined with the equative comparison has to appear as a

studies have shown that phrasal comparisons are in fact far more common than clausal ones. Hahnemann (1999: 55) reports for a Modern German newspaper corpus that only six percent of all comparisons are clausal. This tendency also holds in present-day dialects: Friedli's (2012: 50) Swiss German corpus contains 14 percent clausal comparisons. Phrasal standards consisting of comparison particle and DP or PP occur most frequently.

(48) In Köln regnet es öfter **als** [<sub>PP</sub> in Halle].  
 in Cologne rains it more-often than in Halle  
 'In Cologne, it rains more often than in Halle.'

(49) Heute ist besseres Wetter **als** [<sub>AdvP</sub> gestern].  
 today is better weather than yesterday  
 'Today, the weather is better than yesterday.'

There are two basic approaches in the literature regarding phrasal comparisons. According to the so-called reduction analysis, phrasal comparisons always constitute elided clausal comparisons, cf. Bresnan (1973), Chomsky (1973; 1977), Bierwisch (1987), Lechner (2004), Bhatt & Takahashi (2011), and Hohaus et al. (2014). According to the so-called direct analysis, on the other hand, one is not always dealing with an underlying full comparison clause, but the standard of comparison may indeed consist of a comparison particle and a mere DP or PP etc., cf. Hankamer (1973), Napoli (1983), Hoeksema (1983), Zimmermann (1987), Kennedy (1999), Thurmair (2001), Pancheva (2006), and Osborne (2009).<sup>32</sup>

Besides the advantage of a uniform analysis for all comparisons, what speaks in favour of the reduction analysis is the fact that ellipsis is possible and has to be assumed in comparisons at any rate. Thus, the Tertium Comparationis and possibly further elements are typically elided even in clearly clausal standards – phenomena referred to as comparative deletion and comparative subdeletion, illustrated in (50) and (51). Furthermore, as mentioned above, Gapping may occur within the standard of comparison, i.e. deletion of the finite verb leaving several independent constituents behind, evidencing a clearly clausal underlying structure, cf. (52).

(50) Anna läuft so schnell, **wie** Maria ~~schnell~~ läuft.  
 Anne walks as fast as Mary fast walks  
 'Anne walks as fast as Mary does.'

(51) Anna hat mehr Feinde **als** Maria ~~viele~~ Freunde hat.  
 Anne has more enemies than Mary many friends has  
 'Anne has more enemies than Mary has friends.'

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full clause.

<sup>32</sup> The exact syntactic analysis under this approach varies, but it is widely assumed that the comparison particle in phrasal comparisons represents a preposition embedding a DP or a Small Clause (for arguments against a prepositional analysis see Section 2). Both, the direct analysis as well as the reduction analysis are, however, also compatible with the analysis proposed here, of comparison particles as occupying Conj<sup>0</sup>. The difference between the reduction analysis and the direct analysis then amounts to the question whether the comparison particle in Conj<sup>0</sup> invariably takes a (possibly elliptically reduced) CP as its complement, or whether its arguments can be mere DPs, PPs etc. For proportional comparisons (also referred to as dynamic comparisons, comparative correlatives or comparative conditional constructions, English *the ... the*, German *je-desto* constructions), which are not discussed in the present paper, Fortmann (2016) has suggested a version of the direct analysis proposing that *je ... desto* ('the ... the') may not only combine with full CPs but also with a mere AP/AdvP.

- (52) Anna liest ihren Studenten mehr Bücher vor, **als** Maria ihren Kindern.  
 Anne reads her students more books PTCL than Mary her children  
 ‘Anne reads more books to her students than Mary (reads) to her children.’

Another observation that is considered as supporting the reduction analysis is the fact that in languages such as German, in a standard consisting of a simple DP following the comparison particle, this DP may occur in different cases with the semantic interpretation varying accordingly. According to the reduction analysis as indicated in (53a/b), the different cases are licensed by different parts of the elided clausal structure (e.g. accusative by V<sup>0</sup>, nominative by I<sup>0</sup>/Agr<sup>0</sup>).<sup>33</sup>

- (53) a. Anna liebt mich mehr **als** sie dich **liebt**.  
 Anne loves me more than she you.ACC loves  
 ‘Anne loves me more than (she loves) you.’  
 b. Anna liebt mich mehr **als** du **mich liebst**.  
 Anne loves me more than you.NOM me love  
 ‘Anne loves me more than you (do).’

Finally, a syntactic argument in favour of the reduction analysis comes from the fact that in German, the standard of comparison is preferably extraposed, even with phrasal comparisons, as illustrated in (54). This position generally remains empty within the sentence except for subordinate clauses which are also typically extraposed. Thus comparisons – even phrasal ones – seem to pattern with subordinate clauses rather than with simple DPs (especially in the case of pronouns) or AdvPs etc., the extraposition of which results in degraded if not ungrammatical sentences, cf. (55). On the other hand, centre embedding appears to be better with phrasal than with sentential comparisons, cf. (56 a vs. b). (This is in fact evidence for a syntactic difference between phrasal and clausal comparisons as assumed under the direct analysis.)

- (54) a. wenn Anna mehr sieht **als** [<sub>DP</sub> Maria / sie]  
 if Anne more sees than Mary she  
 ‘if Anne sees more than Mary / her’  
 b. wenn Anna dort mehr sieht **als** [<sub>AdvP</sub> hier]  
 if Anne there more sees than here  
 ‘if Anne sees more there than here’  
 c. wenn Anna mehr sieht, **als** [<sub>CP</sub> Maria sieht]  
 if Anne more sees than Mary sees  
 ‘if Anne sees more than Mary sees’
- (55) a. \*wenn Anna sieht [<sub>DP</sub> Maria / sie]  
 if Anne sees Mary her  
 ‘if Anne sees Mary / her’  
 b. \*/??wenn Anna Maria sieht [<sub>AdvP</sub> hier]  
 if Anne Mary sees here  
 ‘if Anne sees Mary here’

<sup>33</sup> If, on the other hand, the DP can only occur in one specific case, this is often taken as evidence for the direct analysis applying in the respective language, e.g. with Polish *od*. In these cases, however, we are in fact dealing with a functional preposition that is equivalent to comparison case, i.e. a completely different construction type, rather than a comparison particle (see the remarks on typology in Section 1 and fn. 4, Section 2.1).

- c. wenn Anna Maria sieht [<sub>CP</sub> nachdem sie ankommt]  
 if Anne Mary sees after she arrives  
 ‘if Anne sees Mary after she has arrived’
- (56) a. wenn Anna mehr **als** [<sub>DP</sub> Maria / sie] sieht  
 if Anne more than Mary she sees  
 ‘if Anne sees more than Mary / her’
- b. ??wenn Anna mehr, **als** [<sub>CP</sub> Maria sieht], sieht  
 if Anne more than Mary sees sees  
 ‘if Anne sees more than Mary sees’

It is often implied that the semantics of comparisons constitutes another argument in favour of the reduction analysis. Within the standard semantic theory of comparisons (cf. von Stechow 1984), it is generally assumed that phrasal comparisons constitute elliptical clausal comparisons and are interpreted as such, so that one uniform interpretation can be given for the comparative morpheme *-er* and the equative correlate *as*, respectively. However, the correct interpretation for phrasal comparisons can also be derived in line with the direct analysis without an underlying clausal structure by assuming a separate interpretation for *-er* in phrasal comparisons as has been suggested by Heim (1985) and Kennedy (1999), see also Beck (2011).<sup>34</sup> Accordingly, it is not necessary to assume a uniform underlyingly clausal structure for all standards of comparison in order to derive the correct interpretation.<sup>35</sup>

The different cases that can be observed for DPs in phrasal comparisons in languages such as German, as illustrated in (53), can equally be explained under the direct analysis. The reduction analysis appeals to elided syntactic structure (e.g. V<sup>0</sup>, I<sup>0</sup>/Agr<sup>0</sup> etc.) for licensing the case of the standard-of-comparison DP. Under the direct analysis, the case can instead be explained in terms of case agreement with another DP in the rest of the clause, e.g. the subject, object etc., as is generally assumed in small clauses, for instance also for predicative DPs.<sup>36</sup> This approach is explicitly held for German in Duden (2016: 985). It is furthermore implicit in Haspelmath & Buchholz (1998: 306f.), who speak of case transparency of the comparison particles here. The similarity to predicative constructions is also obvious from a diachronic perspective: In German, phrasal equatives with the historical equative particle *als* formed the basis for the development of *als*-predicatives in which there is also case agreement with another DP in the clause (rather than case government by *als*) and accordingly DPs in different cases may appear after *als* (e.g. *Anna kennt* [<sub>ACC</sub> *Maria*] **als**

<sup>34</sup> The comparative morpheme in clausal comparisons is interpreted as in (i), in phrasal comparisons it receives the interpretation in (ii):

(i) [[-er]] =  $\lambda d1. \lambda d2. \max(d2) > \max(d1)$

(ii) [[-er]<sub>phrasal</sub>] =  $\lambda y. \lambda R. \lambda x. \max(\lambda d. R(d)(x)) > \max(\lambda d'. R(d')(y))$

<sup>35</sup> An anonymous reviewer mentions as another potential argument in favour of the reduction analysis the fact that in phrasal comparisons, the standard may additionally contain an adverbial clause that would be evidence for an elided verbal/clausal projection that it is linked to, e.g. *Peter spricht wie immer, wenn er wütend ist* ‘Peter speaks as (he) always (does) when he is angry’, cf. Bücking (2017). Note, however, that first of all, the direct analysis does amount to saying that there never is ellipsis in comparisons; in cases with Gapping, for instance, an underlying sentential structure with verbal ellipsis has to be assumed. More importantly, in this concrete example, evidence from topicalization ([<sub>AdvP</sub> *Immer* [<sub>CP</sub> *wenn Peter wütend ist*]] *spricht er sehr laut*. ‘Always when Peter is angry, he speaks very loudly.’) suggests that the *wenn*-clause modifies *immer* directly in a relative-clause like fashion, and that both form a single constituent (AdvP) that can straightforwardly be analysed as the complement of *wie* under the direct analysis, so that sentences such as this one do not constitute conclusive evidence for the reduction analysis.

<sup>36</sup> Case agreement can also hold with a phonetically empty phrase, cf. the agreement with the subject PRO (rather than e.g. the accusative of the object *ihn* ‘him’) in the following infinitive construction: *Anna bat* [<sub>ACC</sub> *ihn*]<sub>P</sub>, PRO<sub>I</sub> *sich wie* [<sub>NOM</sub> *ein Erwachsener*]/\* [<sub>ACC</sub> *einen Erwachsenen*] *zu benehmen*. ‘Anne asked him to behave like an adult.’

[<sub>ACC</sub> *schnelle Läuferin*] ‘Anne knows Mary as a fast runner’ vs. *Maria gratuliert* [<sub>DAT</sub> *Anna*] *als* [<sub>DAT</sub> *schnellster Läuferin*] ‘Anne congratulates Mary as the fastest runner’).<sup>37</sup> According to Haspelmath & Buchholz (1998: 322f.), similar predicative expressions – “role phrases” in their terminology – have developed from equatives in most European languages, which is why the particle in these is often identical to the equative particle.

Several further observations clearly speak in favour of the direct analysis. Thus, while it cannot be used as an argument for a prepositional analysis on the basis of presumed case government by the comparison particle (see Section 2 above), the special morphological form in which pronominal standards of comparison appear in some languages and varieties constitutes a strong argument for the direct analysis. As discussed above, in languages such as English, French or certain Dutch varieties, a pronoun occurring in a phrasal comparison – but not in a clausal comparison – may appear in its strong form in the sense of Cardinaletti & Starke (1999), e.g. English *me* in (57). (For Dutch *mij* and French *moi* see examples (3)–(4) above.) This strong pronoun is homophonous with the object case form. It also appears for instance in cleft or coordinating constructions. In clausal comparisons, on the other hand, the pronoun *I* (Dutch *ik*/French *je*) has to be used instead. Phrasal comparisons including strong pronouns accordingly cannot be analysed as elliptical variants of underlying clausal comparisons because the corresponding full versions are ungrammatical.

- (57) a. He is taller than **I** / **me**.  
 b. He is taller than **I** / \***me** am.

The direct analysis is further supported by dialectal and diachronic data. As already mentioned in Section 2, the comparison particle in comparatives and equatives may co-occur with a complementizer such as *dass* ‘that’ (DFC) in various German dialects including Swiss German varieties, Swabian and Bavarian, cf. (58) and (59), see also examples (11) and (34) above.

- (58) *Bavarian* (Helmut Weiß, p.c.)  
 a. S’Resl fod besser Raal **ois wie dass** da Sepp Raal fod.  
     the Resl drives better bicycle than that the Sepp bicycle drives  
 b. \*S’Resl fod besser Raal **ois wie (\*dass)** da Sepp.  
     the Resl drives better bicycle than that the Sepp  
     ‘Resl cycles better than Sepp (does).’

- (59) *Bavarian* (Helmut Weiß, p.c.)  
 a. D’Sabine laaft so schnej **wie dass** d’ Anna laaft.  
     the Sabine walks as fast as that the Anne walks  
 b. \*D’Sabine laaft so schnej **wie (\*dass)** d’ Anna.  
     the Sabine walks as fast as that the Anne  
     ‘Sabine walks as fast as Anne (does).’

Crucially, this pattern is restricted to clausal comparisons and ungrammatical in phrasal comparisons, cf. (58)/(59) a vs. b. This is unexpected if phrasal comparisons always constitute elliptical variants of clausal comparisons. Under ellipsis of phonetically identical material, the complementizer following the comparison particle and preceding the DP (or PP etc.) should remain. There is no obvious reason for why it would obligatorily be elided.

<sup>37</sup> On *als*-predicatives see also Flaate (2007), Zobel (2016).



A second set of dialectal data supporting the direct analysis consists of examples including so-called complementizer inflection (complementizer agreement, on this phenomenon see also Bayer 1984; Weiß 2005; Fuß 2014 among others). This agreement morphology reflecting phi-features of the subject may occur in dialects such as Bavarian on the comparison particle or on a complementizer following it in DFC constructions of the type discussed above, both in equatives and comparatives, cf. (60)/(61) a and b. However, it is only licit in clausal comparisons but not in phrasal ones such as (60)/(61) c/d, where only the variants without complementizer inflection (and without DFC) are grammatical, cf. (60)/(61) e. (This descriptive fact was already noted in passing by Bayer (1984: 269, fn. 49), but not further discussed.)

(60) *Bavarian* (Helmut Weiß p.c., (60a/c/e) after Bayer 1984: 269, fn. 49)

- a. S'Resl is gresser **ois wiest** du bisd.  
the Resl is taller than.2.SG you are
- b. S'Resl is gresser **ois wie dassd** du bist.  
the Resl is taller than that.2.SG you are
- c. \*S'Resl is gresser **ois wiest** du.  
the Resl is taller than.2.SG you
- d. \*S'Resl is gresser **ois wie dassd** du.  
the Resl is taller than that.2.SG you
- e. S'Resl is gresser **ois wie** du.  
the Resl is taller than you  
'Resl is taller than you (are).'

(61) *Bavarian* (Helmut Weiß p.c.)

- a. S'Resl is genau so groass **ois wiest** du bisd.  
the Resl is just as tall as.2.SG you are
- b. S'Resl is genau so groass **ois wie dassd** du bisd.  
the Resl is just as tall as that.2.SG you are
- c. \*S'Resl is genau so groass **ois wiest** du.  
the Resl is just as tall as.2.SG you
- d. \*S'Resl is genau so groass **ois wie dassd** du.  
the Resl is just as tall as that.2.SG you
- e. S'Resl is genau so groass **ois wie** du.  
the Resl is just as tall as you  
'Resl is just as tall as you (are).'

If clauses with a simple phrase following the comparison particle were always elliptical versions of constructions with a full sentential standard of comparison, one would expect (60)/(61) c/d as the result of verbal ellipsis on the basis of (60)/(61) a and b, respectively. The fact that the c and d examples are ungrammatical as opposed to the e examples remains unexplained under the reduction analysis. According to the direct analysis, on the other hand, complementizer agreement is straightforwardly predicted not to be possible in phrasal comparisons because these do not include the relevant clausal functional projections licensing complementizer agreement (and optionally offering a position for *dass*), viz. CP. The observed grammaticality contrasts thus find a natural explanation.

Finally, the diachronic development of *wie* into a comparison particle also speaks in favour of the direct analysis. As described above in Section 2.3, this item started out as a wh-phrase in interrogatives and later on in free relatives in OHG ((*so*) *wio* (*so*))

‘how(ever)’ and was beginning to occur very rarely in non-degree equatives only in MHG. At that time, equative (s)*wie* was still restricted to full sentential contexts, i.e. clausal comparisons, cf. (39), see also DWB (29: 1474–1480), Lerch (1942: 345), Dückert (1961: 205f.). Only over the course of the ENHG period do first rare examples of a simple phrase following *wie* occur in comparisons, cf. (43), while clausal comparisons including *wie* are far more frequent. This distributional preference of *wie* for clausal comparisons in contrast to the preference of the former equative particle *als* for phrasal comparisons is evident in corpora even in early NHG and echoes the stepwise development of *wie* from clausal to phrasal comparisons. The diachronic corpus analysis of texts from the *Bonner Frühneuhochdeutschkorpus*<sup>38</sup> reveals that in degree and non-degree equatives of the second half of the 16th century, the comparison particle *als* mostly occurs in phrasal comparisons while *wie* by contrast is used on average four times as often in clausal as in phrasal comparisons, cf. Table 2. Although the share of phrasal *wie* rises slightly in early NHG texts of the second half of the 17th century, *wie* is still overwhelmingly used in clausal comparisons in clear contrast to *als*.

The stepwise diachronic development of *wie* from clausal to (also) phrasal comparisons would be unexpected if there was no syntactic difference between the two as under the reduction analysis. If one assumes such a structural difference, however, as under the direct analysis, this syntactic-structural difference correlates with the steps in the development. The first cases of a mere phrase following *wie* may indeed have constituted elliptical versions of clausal comparisons. These would have formed the basis for a syntactic reanalysis of the elliptical clausal comparisons as phrasal comparisons (and of *wie* from C<sup>0</sup> into a higher functional head Conj<sup>0</sup> able to combine with mere phrases, cf. Section 2.3). This reanalysis can be explained on the basis of syntactic economy principles that drive the learner to assume the simplest syntactic structure compatible with the input (Subset Principle in Berwick 1985; Least Effort Principle in Roberts 1993).

In sum, the dialectal and diachronic data support the direct analysis of phrasal comparisons. Accordingly, while the comparison particles were argued to be positioned in Conj<sup>0</sup> in all comparisons, the standard of comparison that they combine with may vary in syntactic complexity, i.e. may consist of a full clause (CP) or a mere phrase (DP, PP etc.). This further explains the contrasts observed in 2.3 between the comparison particle *wie* on the one hand and phrasal interrogative *wie* as well as complementizer *wie* on the other hand, and at the same time provides additional support for the analysis of comparison particles as Conj<sup>0</sup> elements: As the evidence suggests that comparison particles may indeed combine with mere DPs, PPs etc. they clearly differ from both, SpecCP and C<sup>0</sup> elements, for which this is not possible, and therefore have to be placed in a different position that allows this.

**Table 2:** ENHG and early NHG equative particles *als* and *wie* in phrasal vs. clausal comparisons.

Equative particle	<i>als</i>		<i>wie</i>	
	phrasal	clausal	phrasal	clausal
2nd half of 16th century	59% (41)	41% (29)	20% (85)	80% (339)
2nd half of 17th century	67% (56)	33% (27)	30% (99)	70% (234)

<sup>38</sup> The investigated texts from the *Bonner Frühneuhochdeutschkorpus* include Johann Gropper, Sigmund Herberstein, Ludwig Lavater, Veit Dietrich, Leonhart Rauwolf, Walter Raleigh, Johann Bange, Johann Mathesius from the second half of the 16th century, and Johann Rosenthal, Christoph Schorer, Georg Göz, Sigmund von Birken, Deo Gratias, Christian Weise, Gotthard Heidegger, Hiob Ludolf from the second half of the 17th century.

#### 4 The syntactic link to the rest of the clause

With respect to the external syntax of the standard of comparison i.e. its linking to the remainder of the clause, different analyses have been suggested due to the fact that comparison constructions share crucial characteristics with subordinate clauses, especially relative clauses, on the one hand, but also with coordinate structures, on the other hand. Diachronic and dialectal data provide further evidence for this Janus-headed nature of comparisons on the basis of which previous syntactic analyses are critically reviewed and options to pursue in future research are discussed.

##### 4.1 Relative-clause like characteristics of comparisons

Traditionally, comparisons are considered as subordinate clauses and are treated in the context of adverbial clauses, cf. Schrodtt (2004: 167–172), Paul (2007: 425–428), or analysed as a kind of relative clauses, cf. already Erdmann (1874–1876, I: 111), more recently Reich & Reis (2013), Bücking (2015; 2017 for hypothetical comparisons), Duden (2016: 1052f. for clausal non-degree equatives and hypothetical comparisons).<sup>39</sup> Indeed, syntactically, comparison constructions resemble relative clause constructions. Thus, the standard of comparison in the equatives in (63) just like the relative clauses in (62) may occur with a head noun or (demonstrative) proform (correlate) as in the examples in a, free (headless) as in b, or continuatively as in c.<sup>40</sup>

- (62) a. Anna mag {den Menschen / den(jenigen)}, den Maria mag.  
Anne likes the person the (one) that Mary likes  
'Anne likes the person / the one that Mary likes.'
- b. Anna mag, wen Maria mag.  
Anne likes whom Mary likes  
'Anne likes whom Mary likes.'
- c. Anna mag Maria, was ich bereits vermutet habe.  
Anne likes Mary what I already suspected have  
'Anne likes Mary, as I have already suspected.'
- (63) a. Anna möchte { in der Art / so (gut)} leben, wie Maria lebt.  
Anne wants in the way as well live as Mary lives  
'Anne wants to live in the way / so / as well as / like Mary lives.'
- b. Anna möchte leben, wie Maria lebt.  
Anne wants live like Mary lives  
'Anne wants to live like Mary lives.'
- c. Anna mag Maria, wie ich bereits vermutet habe.  
Anne likes Mary as I already suspected have  
'Anne likes Mary, as I have already suspected.'

Generative syntactic theory has revealed further similarities between comparisons and relatives: As illustrated in (64) and (65), extraction from the standard of comparison produces *wh*-island effects (both in equatives and comparatives) as it does with relative clauses and other *wh*-clauses. While extraction from a *that*-clause embedded inside the standard of comparison is possible, cf. (64b)/(65b), extraction from a *wh*-clause embedded in the standard of comparison, cf. (64a)/(65a), results in ungrammaticality as it does

<sup>39</sup> For a relative-clause like analysis of proportional comparisons see Fortmann (2016).

<sup>40</sup> (63a) demonstrates that this holds both for degree (*so gut leben wie ...*) as well as non-degree equatives (*so leben wie ...*).

with embedded *wh*-clauses as opposed to embedded *that*-clauses inside relative clauses. According to Chomsky (1977), this is because the *wh*-phrase – unlike the syntactic head *that* – blocks the intermediary landing position thus preventing successive-cyclical movement and causing a subjacency violation. He concludes that, as in relative clauses, *wh*-movement takes place within the standard of comparison and comparison clauses should accordingly be analysed as free relatives.<sup>41</sup>

- (64) a. \*Er hat so viele Bücher gelesen, **wie** sie sagte, **wer** gelesen hat.  
 he has as many books read as she said who read has  
 ‘He has read as many books as she said (that) who read.’
- b. Er hat so viele Bücher gelesen, **wie** sie sagte, **dass** er gelesen hat.  
 he has as many books read as she said that he read has  
 ‘He has read as many books as she said that he read.’
- (65) a. \*Er hat mehr Bücher gelesen, **als** sie sagte, **wer** gelesen hat.  
 he has more books read than she said who read has  
 ‘He has read more books than she said (that) who read.’
- b. Er hat mehr Bücher gelesen, **als** sie sagte, **dass** er gelesen hat.  
 he has more books read than she said that he read has  
 ‘He has read more books than she said that he read.’

These syntactic similarities correspond to semantic parallels between comparison and relative constructions. According to the standard semantics of comparisons (von Stechow 1984; Heim 1985; 2000), just as in relative clauses, in comparisons semantic abstraction takes place due to the movement of a (possibly empty) operator leaving behind a bound variable (an individual variable in relatives, a degree or property variable in comparisons).<sup>42</sup>

Diachronic data also highlight similarities of comparison and relative constructions. In historical German, asyndetic comparison clauses, i.e. standards of comparison not introduced by a comparative particle as in (66)<sup>43</sup> are attested. These are reminiscent of asyndetic relative clauses that are also found in historical German, cf. (67), see also Behaghel (1923–32, III: 742–745), Schrodtt (2004: 174f.), Axel-Tober (2012: 230–234). Both kinds of constructions are ungrammatical in Modern German.

- (66) Mitteldeutsche Predigten (4r, 31f.)  
 so schiere ich danne mines vatir pfallince ane gesehin mac so laz mich sterbin  
 as soon I then my father’s palace at look may so let me die  
 ‘As soon as I can see my father’s palace, let me die.’

<sup>41</sup> In comparisons, the *wh*-movement is assumed to involve movement of an empty operator (see also the structures in (10) and (31) as well as fn. 11) as in English asyndetic relative clauses or relatives introduced by *that*. For an alternative explanation of the observed *wh*-island effects on the basis of A’-movement (topicalisation/focus-movement) or QR see Matos & Brito (2008).

<sup>42</sup> Brandner & Bräuning (2013) also argue for basic semantic similarities between relatives and comparisons, specifically equatives. In both cases, there is an equivalence relation: in equatives an equivalence of degrees or manner/properties, in relatives an equivalence of entities bearing certain properties. Besides, they propose that relative as well as comparison constructions both contain a hidden coordination (on coordination-like features of comparisons see also Section 4.2).

<sup>43</sup> In this text, virtually the same construction is also attested with the comparison particle *so* (*vñ so schire so sie irs vatir palas ane gesach do sprach sie*. ‘And as soon as she saw her father’s palace, she said: ...’ Mitteldeutsche Predigten 4r, 33f.) supporting the assumption that we are dealing with an asyndetic variant in (66). This is also typologically interesting because according to Haspelmath (2017: 25), the standard of comparison is normally always formally marked in languages.

- (67) Otfrid I (17, 24)  
 in droume sie in zelitun then uueg sie faran scoltun  
 in dream they them told the way they go should  
 ‘In the dream, they told them the way (that) they should go.’

The link between relatives and comparisons is furthermore evident in a diachronic perspective from the fact that equative comparison particles are commonly grammaticalised into relative particles (relative complementizers), cf. Erdmann (1874–1876, I: 56f.), DWB (16: 1341–1385), Paul (2007: 426f.), Ferraresi & Weiß (2011).<sup>44</sup> The equative particle *so* occasionally occurs in (modal/temporal) relative clauses already in the course of OHG, develops into a general relative particle in the 12th century and is attested as such well into the early NHG period, cf. (68), see also Paul (1920: 238), Behaghel (1923–32, III: 285–288; 729f.), DWB (16: 1341–1385), Schrodtt (2004: 168f.). Since MHG, *also* is predominantly used as a comparison particle in equatives (for an overview of the development of comparison particles in German see Table 1). It is secondarily also attested in relative clauses into the ENHG period, cf. Paul (2007: 426), MWB (1: 168–173), Ebert et al. (1993: 447) – partly preceding a relative pronoun as in (20) above, see also Ebert et al. (1993: 446), partly on its own as in (69). In MHG, *und(e)* is also very occasionally used as an equative particle, cf. (87) below. It has developed into a relative particle on this basis, too, as illustrated in (70), see also Paul (2007: 427), Ferraresi & Weiß (2011). *Wie*, which is becoming widespread in equatives in ENHG, also developed into a relative particle during this period as illustrated in (71), see also Ebert et al. (1993: 448; 479). It is still evidenced as such in Modern German dialects such as Bavarian, cf. (27) above.

- (68) Alberus: Fabeln (20, 26; after DWB 16: 1384)  
 Der hielts dafür, das jm der zan, so jhm zuvor hat weh gethan, solt  
 the took-it-for-that that him the tooth so him before had pain done should  
 hehlen.  
 heal  
 ‘He assumed that the tooth that had hurt him before should heal.’
- (69) Frankfurter Urkunden (138; after Ebert et al. 1993: 447)  
 die zwene gulden, als sie yme, wie vorstet, geben han  
 the two guldens as they him as before-stands given have  
 ‘the two guldens that they gave to him as mentioned before’
- (70) Wiener Genesis (3687f.; after Paul 2007: 406)  
 in elliū diu und er tete, so hête er gûte site.  
 in all that and he did so had he good demeanour  
 ‘in everything that he did, he had a good demeanour’
- (71) Wickram (57; after Ebert et al. 1993: 479)  
 der ein war aber insunderheit ein nidrige hadermetz wie man ir wol  
 the one was however in-particular a lowly shrew as one of-them well  
 mer findt  
 more finds  
 ‘one of them in particular was a mean shrew that you probably find more of’

<sup>44</sup> This development from equative to relative particles is also attested in other languages, cf. *som* in Scandinavian languages.



In many European languages<sup>45</sup> and in historical German, too, we can also witness a grammaticalisation path from *wh*-items (relative adverbs) used in free modal relatives into equative particles, again due to the closeness of comparisons and relatives. As discussed in Section 2.3 above, OHG (*so*) *wio* (*so*)/MHG (*s*)*wie* ‘how(ever)’ turned into an equative particle on the basis of its use as a *wh*-item in free modal relatives (and on this basis was later reanalysed into a relative particle, see above).

Another parallel between relative and comparison constructions is finally evident from the development of new equative particles on the basis of originally matrix-internal elements and the original equative particle. Due to the lack of a possibly intervening Tertium Comparationis in non-degree equatives, recurring matrix-internal elements such as the equative correlate or a matrix-internal noun referring to manner, extent etc. regularly occur in a position adjacent to the equative particle. They are then reanalysed as part of the introduction of the standard of comparison, forming a new equative particle by univerbation with or substitution of the former equative particle. This process is repeatedly attested in historical German, cf. (72a) for the OHG equative particle *soso*, early NHG *als wie* and *inmassen* ‘like/as’, as well as in many other languages (cf. Latin *tamquam*, *sicut*, Gothic *svasve*, Dutch *zoals* etc.). Similarly, on the basis of degree equatives, the equative correlate and Tertium-Comparations AP may be reanalysed into a complementizer, cf. (72b).

These developments are reminiscent of the common grammaticalisation of new complementizers on the basis of a relative clause and its immediately preceding matrix-internal head noun. This can for instance be observed in the development of the noun *wîle* ‘time (span)’ with adjacent relative clause into the complementizer *weil* introducing a temporal, later causal adverbial clause, as illustrated in (73), see also Paul (2007: 406; 417; 430), Szczepaniak (2011: 175–178), Weiß (2012: 147). The combination of an equative comparison clause and its equative correlate (and possibly Tertium Comparationis) thus behave in the same way as the combination of a relative clause and its head noun. This syntactic change, too, can be argued to be driven by economy: Due to the univerbation with or substitution of the element originally introducing the subordinate clause, one item less needs to be merged in the derivation. As the original relative clause is simply merged in the place of its former head element, the syntactic structure is reduced by one layer in line with the Subset Principle (Berwick 1985) or Least Effort Principle (Roberts 1993).<sup>46</sup>

- (72) a. ... so [so ...] > ... [soso...]  
           ... als [wie ...] > ... [als wie ...]  
           ... in massen [als/wie ...] > ... [inmassen (wie) ...]  
           ‘...{so/as / to the extent} like/as ...’ ‘... like/as ...’
- b. ... so lange [so/als ...] > ... [solange ...]  
           ‘... as long as ...’ ‘... while ...’
- (73) ... die wîle [so/daz/unde ...] > ... [(die)weil ...]  
       ‘... the time that ...’ ‘... while/because ...’

<sup>45</sup> This is also attested for instance in Greek, Bulgarian, Albanian and Serbo-Croatian, cf. Haspelmath & Buchholz (1998: 293).

<sup>46</sup> While Axel-Tober (2012: 91–105) argues against a reanalysis from the matrix clause into the subordinate clause for the complementizer *dass* ‘that’, she does assume this development for the complementizer *weil* (Axel-Tober 2012: 255f.). As argued above, the development of new comparison particles on the basis of a reanalysis involving matrix-internal elements follows this latter pattern.

Accordingly, the diachronic data suggest that the standard of comparison is linked to the equative correlate and, if present (i.e. in degree equatives), the Tertium-Comparationis AP/AdvP in a relative-clause like fashion.<sup>47</sup>

This syntactic analysis is also supported by topicalisation data as illustrated for Modern German in (74)–(76). In degree equatives, the standard of comparison forms one constituent with the equative correlate *so* and the Tertium-Comparationis AP, as it may be topicalised together with them, i.e. moved to SpecCP, which can be filled by only one constituent in German, cf. (75). By the same argument, the standard of comparison can be demonstrated to form a constituent with the (optional) correlate in non-degree equatives, cf. (76), and with the Tertium-Comparationis AP in comparatives, cf. (74). Notably, this holds in exactly the same way for the head noun of a relative clause or a relative clause correlate (demonstrative proform) together with its relative clause, cf. (77).

(74) [Schneller **als** Maria (läuft)]<sub>i</sub> läuft<sub>j</sub> Anna t<sub>i</sub> t<sub>j</sub>.  
faster than Mary walks walks Anne  
'Faster than Mary (walks), Anne walks.'

(75) [So schnell **wie** Maria (läuft)]<sub>i</sub> läuft<sub>j</sub> Anna t<sub>i</sub> t<sub>j</sub>.  
as fast as Mary walks walks Anne  
'As fast as Mary (walks), Anne walks.'

(76) [(So) **wie** Maria (läuft)]<sub>i</sub> läuft<sub>j</sub> Anna t<sub>i</sub> t<sub>j</sub>.  
so as Mary walks walks Anne  
'Like/as Mary (walks), Anne walks.'

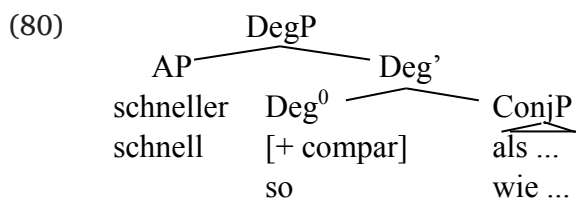
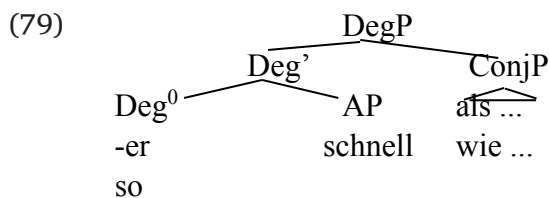
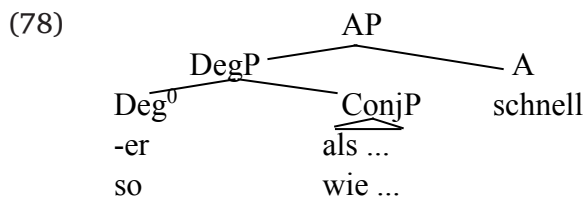
(77) [{ Den Menschen / den(jenigen) }, den Maria mag]<sub>i</sub> mag<sub>j</sub> sicher auch  
the person the one whom Mary likes likes probably also  
Anna t<sub>i</sub> t<sub>j</sub>.  
Anne  
'The person / the one whom Mary likes, Anne probably likes, too.'

Relative-clause like analyses in which the standard of comparison forms one constituent with the Tertium-Comparationis AP and/or the equative correlate have been suggested various times in the literature, as illustrated for German in (78)–(80). It is generally assumed that the equative correlate (in degree equatives) and the comparative morpheme *-er*, respectively, form the head of a degree phrase. The analyses differ in detail as to the relative position of this DegP, the Tertium Comparationis AP and the standard of comparison. Under one approach, the degree phrase acts as a modifier within the AP as in (78),<sup>48</sup> cf. Bresnan (1973), Heim (2000) and Bhatt & Pancheva (2004) for English and Zimmermann (1987) and Bierwisch (1987) for German. Alternatively, the DegP dominates the Tertium-Comparationis AP, taking it as an argument, too – either as its comple-

<sup>47</sup> As one anonymous reviewer points out, this suggests that recent approaches according to which a number of subordinate clauses such as complement clauses or adverbial clauses are essentially relative clauses (cf. Arsenijević 2009; Axel-Tober 2012 among others) also hold for comparisons.

<sup>48</sup> This structure corresponds to the one assumed by von Stechow & Sternefeld (1981) for relative clauses and their correlate (*derjenige* 'the one') according to which the correlate positioned in D<sup>0</sup> takes the relative clause as its complement which is then obligatorily extraposed: [<sub>NP</sub> [<sub>DP</sub> [<sub>D</sub> *derjenige*] [<sub>CP</sub> *der das Pulver erfand*] [<sub>N</sub> *Mann*]] ('the man who invented gunpowder'). This structural parallel would capture the similarity of comparisons and relative clauses. This similarity is also the basis of McCoy's (2017) analysis. He assumes a structure in which the Tertium Comparationis is moved upwards out of the standard of comparison similarly to the raising analysis of relatives. However, this analysis fails to derive comparisons with two different APs (subcomparatives/subequatives) such as (7a) above.

ment with the standard of comparison occurring in the specifier of DegP as in (79),<sup>49</sup> cf. Abney (1987) and Kennedy (1999), or as its specifier while the standard of comparison forms the complement of Deg<sup>0</sup> as in (80),<sup>50</sup> cf. Lechner (2004). (In the tree markers in (78)–(80), I have kept the label ConjP introduced in Section 2 above for the standard of comparison while, depending on their analysis of the syntactic category of comparison particles, the respective authors refer to it as CP/S, PP, or – somewhat agnostically – as *than*-phrase.)



In all of these structures, some additional movement operation is necessary to derive certain types of comparison constructions: In (78) rightward-movement of the complete DegP in comparatives and of the standard of comparison (here called ConjP) in equatives has to take place. In (79) rightward-movement of Deg<sup>0</sup> in (synthetic) comparatives has to be involved, whereas equatives and English analytic comparatives with Deg<sup>0</sup> *more* are straightforwardly derived. In (80) leftward-movement of the Deg<sup>0</sup> correlate in equatives is necessary, whereas comparatives are straightforwardly derived (note that the comparative morpheme on the adjective is in Spec-Head-Agreement with a comparative feature in Deg<sup>0</sup>, here).<sup>51</sup> They all share the assumption, however, that the standard of comparison is an argument of a Deg<sup>0</sup> that forms one constituent together with the Tertium-Comparationis AP. Depending on its syntactic function (predicative: ... *ist so schnell wie* ... ‘is as fast as’/adverbial: ... *läuft so schnell wie* ... ‘walks as fast as’/attributive: *eine so schnelle*

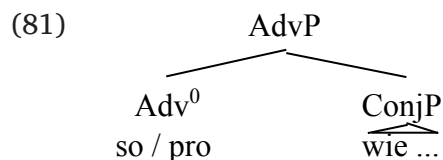
<sup>49</sup> This structure corresponds to the one suggested by Sternefeld (2008: 379) for relative clauses and their correlate (*derjenige* ‘the one’) within a DP-approach. He assumes that the NP as well as the relative clause are arguments of D<sup>0</sup>: [<sub>DP</sub> [<sub>D'</sub> [<sub>D</sub> *derjenige*] [<sub>NP</sub> *Mann*]] [<sub>CP</sub> *der ...*]] (‘the man who ...’). Within the comparison construction, Deg<sup>0</sup> would correspond to D<sup>0</sup>, AP to NP, and the standard of comparison to the relative clause. This analysis, too, would thus capture the similarity of comparisons and relative clauses.

<sup>50</sup> A similar analysis is also suggested by Bacskai-Atkari (2014), who additionally assumes a further projection QP above DegP where English *more* is derived from Q<sup>0</sup> *much* and the raised Deg<sup>0</sup> *-er*, following an earlier analysis by Lechner (1999).

<sup>51</sup> For independent reasons, additional movement (for instance rightward-movement of the standard of comparison) is necessary in all three approaches in attributive comparisons where the noun intervenes between the Tertium-Comparationis adjective and the standard of comparison (*eine schnellere Läuferin als Anna* ‘a faster runner than Anne’/*eine so schnelle Läuferin wie Anna* ‘a runner as fast as Anne’).

*Läuferin wie ...* ‘as fast a runner as’), this entire constituent (AP or DegP) will in turn be linked to the rest of the clause just as other predicative phrases (e.g. within a Small Clause or AgrP), adverbials (e.g. adjoined to VP/V’),<sup>52</sup> or attributive phrases/nominal modifiers (e.g. adjoined to N or NP), respectively.<sup>53</sup>

Applying these syntactic approaches to non-degree equatives, which have not been considered in the literature so far, the minimal structure to assume would be the one in (81). The standard of comparison is again an argument of the equative correlate *so*. Since we are dealing with non-degree equatives, the latter is not taken to constitute a Deg<sup>0</sup> but is simply labelled Adv<sup>0</sup>, here.



Since the equative correlate is optional in non-degree equatives (similarly to the optional correlate of a free relative clause e.g. ... (*das*), *was ...*), one could assume a phonetically empty correlate (*pro*) in these cases, cf. Axel-Tober (2012) for historical predecessor constructions of *dass*-clauses. Alternatively, the standard of comparison may be linked to the rest of the clause not only via the AdvP shell assumed in (81) but also directly, like a free relative clause. It is conceivable that linking via *pro* vs. direct merger of ConjP constitute two consecutive diachronic stages as in the case of *dass* clauses. Depending on its syntactic function, the AdvP (or possibly mere ConjP) will be linked to the rest of the clause again as an adverbial (... *läuft (so) wie ...* ‘walks like’),<sup>54</sup> predicative phrase (*Das ist (so) wie ...* ‘That’s like ...’) or attributive phrase, i.e. nominal modifier ((*so*) *ein Läufer wie ...* ‘(such) a runner as/like’). Clausal non-degree equatives that are used as attributes (nominal modifiers) are thus particularly close to ordinary relative clauses, structurally, as they constitute subordinate clauses that modify a noun directly (rather than via an overt equative correlate or Tertium-Comparationis AP). This is the basis for the frequent development of equative particles into relative particles discussed above, cf. (68)–(71).<sup>55</sup> On the other hand, adverbial clausal non-degree equatives without an overt correlate correspond to adverbial free relative clauses – thus the frequent development of modal free relative wh-items into comparison particles.

<sup>52</sup> Bücking (2017: 1006f.) argues for an adjunction as low as V<sup>0</sup> in the case of a modal/manner interpretation.

<sup>53</sup> The fact that the entire phrase shares the range of syntactic functions (predicative, adverbial, attributive) and accordingly its syntactic distribution with APs can be taken as an argument that it should be an AP supporting the analysis in (78).

<sup>54</sup> In the case of adverbial use, different positions and resulting interpretations occur (involving +/- integrated subordinate clauses in the sense of Reich/Reis 2013). In this respect, too, there are parallels between hypothetical comparisons and other equatives allowing both a low (VP-internal) modal/manner position and interpretation (cf. Thurmair’s 2001 “Modalvergleiche” as a subtype of what is here referred to as non-degree equatives; for manner interpretation of hypothetical comparisons see Bücking 2017) and high positions/interpretations including one where facts or, according to Bücking (2017), topic situations are stated to be equivalent (cf. Thurmair’s 2001 “Faktizitätsvergleiche” as another subtype of non-degree equatives in the present terminology; for the analogous interpretation of hypothetical comparisons see Bücking 2017, who assumes adjunction to the matrix CP in this case).

<sup>55</sup> Under the assumption of a phonetically empty correlate as an alternative to *so*, this development amounts to a syntactic reanalysis by which the structure is simplified in omitting the empty correlate that the standard of comparison is an argument of and adjoining it directly to NP, thus effectively turning it into an ordinary attributive/relative clause: [DP [D<sup>0</sup> *ein*] [NP [NP [AdvP [Adv<sup>0</sup> *pro*] t<sub>i</sub>] [N<sup>0</sup> *Läufer*]]] [ConjP *wie ...*], ] > [DP [D<sup>0</sup> *ein*] [NP [NP [N<sup>0</sup> *Läufer*]]] [ConjP *wie ...*]].

## 4.2 Coordination-like characteristics of comparisons

While the widely-held relative-clause like analysis of comparisons can thus explain a number of crucial syntactic and diachronic observations, there are also several characteristics of comparisons that clearly set them apart from (free and headed) relatives as well as other subordinate clauses and that they share with coordinate structures.<sup>56</sup> The most notable of the coordination-like features of comparisons is the fact that, as mentioned above, the standard of comparison may consist of the comparison particle and a mere phrase such as DP, PP or AP (phrasal comparisons, see Section 3). This is ungrammatical in relatives, see examples (22)/(23) vs. (24) above, and in subordinate clauses introduced by a complementizer, cf. (28) vs. (29). However, it is perfectly grammatical in coordination where also infinitival constructions, mere syntactic heads or even elements below the word level (e.g. verbal particles) may be conjoined, as is also possible in comparisons, cf. (82) and (83). In these examples (a) and (b) exemplify comparisons, with (a) illustrating a comparative and (b) a degree and a non-degree equative, (c) exemplifies coordination, (d) a (free) relative clause, and (e) a subordinate clause introduced by a complementizer, respectively. Thus the External Homogeneity Condition (syntactic identity of conjuncts) typical of coordination also appears to play a role in comparisons.

- (82) a. Anna liebt es mehr, [ zu trinken] **als** [ zu essen].  
 Anne loves it more to drink than to eat  
 ‘Anne loves to drink more than to eat.’
- b. Anna liebt es so (sehr) [zu trinken] **wie** [zu essen].  
 Anne loves it so/as (much) to drink as to eat  
 ‘Anne loves to eat (as much) as to drink. / Anne loves to drink like she eats  
 (i.e. to drink and to eat in the same manner).’
- c. Anna liebt es, [zu trinken] **und** [zu essen].  
 Anne loves it to drink and to eat  
 ‘Anne loves to eat and to drink.’
- d. \*Es liebt [zu trinken], **wer** [zu essen].  
 it loves to drink who to eat  
 ‘He who (loves) to eat loves to drink.’
- e. \*Anna liebt es, [zu trinken], **weil** [zu essen].  
 Anne loves it to drink because to eat  
 ‘Anne loves to drink because (she loves) to eat.’
- (83) a. Maria steigt eher [auf] **als** [ab].  
 Mary climbs rather up than down  
 ‘Mary will rather go up than down.’
- b. Maria steigt so(viel) [auf] **wie** [ab].  
 Mary climbs so/as much up as down  
 ‘Mary will go up as much as down. / Mary will go up like she goes down.’
- c. Maria steigt [auf] **und** [ab].  
 Mary climbs up and down  
 ‘Mary will go up and down.’

<sup>56</sup> The fact that hypothetical comparisons do not show this coordination-like behaviour does not, as Bücking (2015: 267) suggests, constitute an argument against a uniform analysis of the position of comparison particles but is due to the conditional that forms part of hypothetical comparisons and that does not license Gapping, Right Node Raising etc.



- d. \*Es steigt [auf], **wer** [ab].  
it climbs up who down  
'He who (goes) down will go up.'
- e. \*Maria steigt [auf], **nachdem** [ab].  
Mary climbs up after down  
'Mary goes up after (she has gone) down.'

Another feature that comparisons share with coordination is the possibility of Gapping already mentioned above, see examples (45) and (52), repeated here as (84a) with an additional example of degree and non-degree equatives in (84b). While this is also typical of coordination, cf. (84c), it is ungrammatical in relatives (including free relatives) and subordinate clauses introduced by a complementizer, cf. (84d/e).

- (84) a. Anna liest ihren Studenten mehr Bücher vor, **als** Maria ihren Kindern.  
Anne reads her students more books PTCL than Mary her children  
'Anne reads more books to her students than Mary (reads) to her children.'
- b. Anna liest ihren Studenten Bücher so (oft) vor **wie** [Maria] [ihren Kindern].  
Anne reads her students books so/as often PTCL as Mary her children  
'Anne reads books to her students as often as / like Mary to her children.'
- c. Anna liest ihren Studenten Bücher vor **und** [Maria] [ihren Kindern].  
Anne reads her students books PTCL than Mary her children  
'Anne reads books to her students and Mary to her children.'
- d. \*Anna liest ihren Studenten vor, **was** [Maria] [ihren Kindern].  
Anne reads her students PTCL what Mary her children  
'Anne reads to her students what Mary (reads) to her children.'
- e. \*Anna liest ihren Studenten vor, **weil** [Maria] [ihren Kindern].  
Anne reads her students PTCL because Mary her children  
'Anne reads to her students because Mary (reads) to her children.'

Concerning deletion and movement of syntactic material, one may furthermore observe so-called Coordinate Structure Effects in comparisons. For instance, the Tertium-Comparationis AP is typically deleted in the standard of comparison (Comparative Deletion) but not in the preceding part of the clause. Similarly, identical material is deleted in the second, not the first conjunct in coordination. A fourth characteristic that comparisons share with coordination is the possibility of Across-The-Board movement (ATB). Here, several traces of the same type are linked to a single left-peripheral wh-item. As (85) illustrates, this is again possible in comparisons but not in relatives or other subordinate clauses.

- (85) a. Was<sub>i</sub> ist Anna mehr t<sub>i</sub> **als** Maria t<sub>i</sub> ist?  
what is Anne more than Mary is  
'What is Anne more than Mary is?'
- b. Was<sub>i</sub> ist Anna so (sehr) t<sub>i</sub> **wie** Maria t<sub>i</sub> ist?  
what is Anne so/as much as Mary is  
'What is Anne as much / in the same way as Mary is?'
- c. Was<sub>i</sub> mag Anna t<sub>i</sub> **und** hasst Maria t<sub>i</sub>?  
what likes Anne and hates Mary  
'What does Anne like and Mary hate?'

- d. \*Was<sub>i</sub> gibt Anna t<sub>i</sub>, **wem** auch Maria t<sub>i</sub> gibt?  
 what gives Anne whom also Mary gives  
 ‘What does Anne give to whom also Mary gives (it)?’
- e. \*Was<sub>i</sub> mag Anna t<sub>i</sub>, **obwohl** Maria t<sub>i</sub> hasst?  
 what likes Anne although Mary hates  
 ‘What does Anne like although Mary hates (it)?’

Furthermore, Right Node Raising (RNR, “Linkstilgung”) may also apply in comparisons as in coordination, but again not in relatives or other subordinate clauses, as demonstrated in (86).

- (86) a. dass Anna schneller **hinfährt** **als** zurückfährt  
 that Anne faster there-goes than back-goes  
 ‘that Anne goes there faster than she goes back’
- b. dass Anna so (schnell) **hinfährt** **wie** zurückfährt  
 that Anne so/as fast there-goes as back-goes  
 ‘that Anne goes there as fast / in the same way as she goes back’
- c. dass Anna **hinfährt** **und** zurückfährt  
 that Anne there-goes and back-goes  
 ‘that Anne will go there and back’
- d. dass **hinfährt**, **wer** zurückfährt  
 that there-goes who back-goes  
 ‘that he will go there who goes back’
- e. dass Anna **hinfährt**, **wenn** Maria zurückfährt  
 that Anne there-goes if Mary back-goes  
 ‘that Anne will go there if Mary goes back’

Finally, as discussed in Section 2.1, certain languages and varieties optionally or obligatorily use a strong pronoun in phrasal comparisons, cf. examples (2)–(5) and (57) above. Crucially, the same form of the pronoun also typically occurs in coordination (e.g. *taller than me/you and me*).

The diachronic data also constitute evidence for the intimate link between comparison constructions and coordination. As mentioned above in Section 4.1, *und(e)* which is primarily used as a coordinating conjunction in MHG and ENHG also appeared as an equative particle as illustrated in (87) (and subsequently as a relative particle, cf. (70) above), see also Paul (2007: 427), Ferraresi & Weiß (2011). The use of coordinating conjunctions as equative or comparative particles can also be observed in other languages, consider for example Latin *atque* and *et*, Ancient Greek *καί*, Lithuanian *kaĩ*, Old Norse *og*, *enn*, Old English *and* and Javanese *karo*, cf. Small (1924: 35; 55), Ziemer (1884: 199f.; 217f.) and Stassen (1985: 60; 189).

- (87) Nürnberger Stadtbuch (4rb, 11–16)  
 Ez sol auch ieclich flaischhacker seín flaisch svnd’n [...] vñ sol ieclich flaisch  
 it shall also every butcher his meat separate and shall every meat  
 da für geben, vnd es ist. als dicke, **vnd** er daz bricht, als dick gibt er  
 that for give and/that it is as often and/as he that breaks as often gives he  
 sehtzic pfenninge  
 sixty pfennigs  
 ‘Every butcher shall separate his meat and shall give each meat for what it is. As often as he breaks this (rule), as often shall he give sixty pfennigs.’

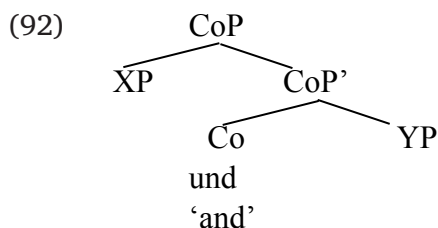
The link between comparison and coordination is also exploited diachronically in developments from comparison particles into coordinating conjunctions. In German for instance, the comparison particles *als* and *wie* secondarily developed coordinating uses on the basis of non-degree equatives during the ENHG period, cf. (88) for *als* and (46) above for *wie*. During the same time, the bipartite coordinating conjunction *sowohl ... als* was beginning to be grammaticalised on the basis of degree equatives including the Tertium-Comparationis AP *wohl* ‘well’, cf. (89) (compare also English *as well as*). On the basis of coordinating *so ... als* as in (90) and – after the substitution of equative *als* by *wie* cf. Table 1 – *so ... wie* as in (91), the coordinating conjunction *sowie* ‘and’ was formed in the 18th century.<sup>57</sup>

- (88) Johann Bange (5v, 25f.)  
 Die Bürger Reich vnd Arm/ Trachteten nicht nach eigenem sondern  
 the citizens rich and poor sought not after own but  
 nach gemeinem nutze/ dem Armen **als** dem Reichen.  
 after common benefit to-the poor as to-the rich  
 ‘The citizens rich and poor did not seek their own but common benefit for the poor as/and for the rich.’
- (89) Gotthard Heidegger (79, 21–24)  
 Und wie ein Medicus damit er **so wol** seiner eignen Wissenschaftt/ **alß**  
 and as a doctor so-that he as well his own science as  
**auch** andrer Wolstand aufhelffe/ den Außrath des Leibs besichtiget ...  
 also others’ well-being promote the excrement of-the body inspects  
 ‘And as a doctor, in order to promote his own science as well as the well-being of others inspects the excrements of the body ...’
- (90) Johann Rosenthal (16, 31f.)  
 Vnd ist nit nur mit der Schrifft/ sondern auch mit den **so** geschribenen  
 and is not only with the script but also with the as written  
**als** mündlich vbergegebenen Glaubens bekantnüssen geschehen/ was  
 as orally transmitted faith testimonies happened what  
 S. Augustinus sagt: ...  
 St. Augustin says  
 ‘And not only to the bible, but also to the written and the orally transmitted testimonies of faith, it happened as St. Augustin says: ...’
- (91) Goeckingk (1, 80 (1772), after DWB 16: 1361)  
 lasz die thoren, die zu wagen, **so wie** die zu roszt und fusz, böses  
 let the fools who in carriages so as those on horseback and foot bad  
 oder gutes sagen.  
 or good say  
 ‘Let the fools in their carriages just as those on horseback and by foot say bad or good things.’

On the basis of the similarities between comparisons and coordination, it has occasionally been suggested that comparison constructions represent instances of coordination syntactically and that comparison particles are in fact coordinating conjunctions. This has been proposed for German by Lang (1977) and Eisenberg (2013), and for English *than* by

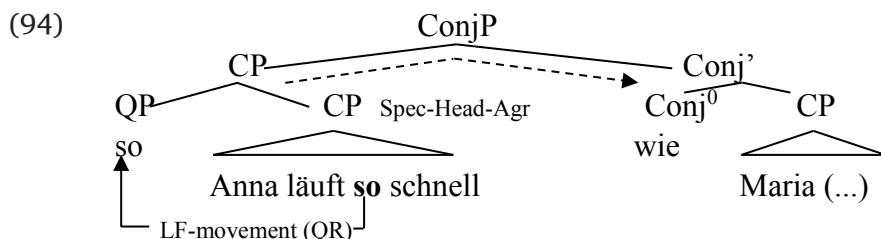
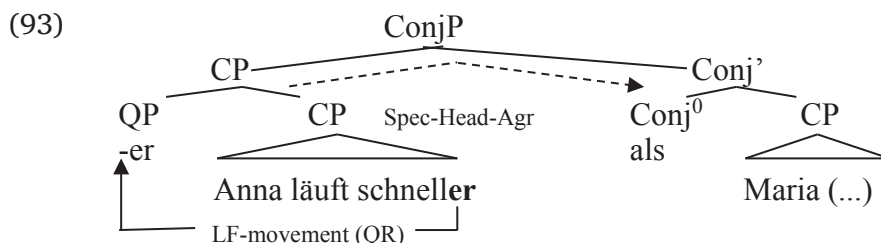
<sup>57</sup> These developments are not necessarily due to the syntactic similarity of comparison and coordination but due to their semantics: if some property applies to A as (well/much) as it applies to B it obviously applies to A **and** B.

Napoli (1983).<sup>58</sup> For coordination, a functional coordinating head is generally assumed, whose arguments – complement and specifier, respectively – are the two conjuncts as in (92) after Johannessen (1998), see also Reich & Reis (2013).



The same basic structure has been suggested for comparatives by Matos & Brito (2008). More specifically, they assume correlative coordination as in the case of bipartite coordinating conjunctions such as *either ... or*. The second part of the conjunction corresponds to the comparative particle and the first part, that is moved out of the first conjunct by quantifier raising at LF, corresponds to the comparative morpheme.

Applied to German, the structure looks as given in (93). Here, the comparison particle fills the functional head position of the coordinating conjunction, joining the standard of comparison as a second conjunct (equivalent to YP in (92)) to the rest of the clause as the first conjunct (equivalent to XP in (92)). Adapting this analysis to equatives, one could assume a syntactic structure as in (94). (The analysis of comparison particles as Conj<sup>0</sup> elements argued for in Section 2 sits very naturally with this analysis, although Conj<sup>0</sup> status of the comparison particles is in principle also compatible with a relative-clause like analysis.)



Assimilating comparisons to coordination can easily explain why typical characteristics of coordination such as Gapping, ATB movement, RNR etc. may occur in comparisons. However, an obvious problem for this analysis is the fact that, as discussed above, the Tertium-Comparationis AP and/or the correlate may be topicalised together, i.e. moved to SpecCP in German, cf. (74)–(76), suggesting that they form one constituent. In (93) and (94), the standard of comparison is situated too high within the syntactic structure

<sup>58</sup> For clausal comparisons, whereas for phrasal comparisons, she assumes that *than* is a preposition. For a critical discussion of the prepositional analysis see Section 2.1. For a coordination-based analysis of proportional comparisons see Culicover & Jackendoff (1997).

to derive this constituency in a straightforward way. The relevant constituent could only be formed by complex and hardly motivated syntactic operations such as emptying of the entire ConjP except for the Tertium-Comparationis AP and the standard of comparison (Conj') and subsequent remnant movement. Furthermore, as Reich & Reis (2013: 554) state, comparisons generally show characteristics of integration/embedding of the standard into the rest of the clause (note, however, that while Reich & Reis assume that comparisons are always integrated, non-degree equatives as well as hypothetical comparisons also allow unintegrated, e.g. continuative use, see example (63 c) and fn. 54). While it can obviously derive the coordination-like features of comparison, the coordination analysis of comparisons described above is therefore not fully unproblematic, either.

### 4.3 Comparisons between coordination and subordination

The challenge for a syntactic analysis of the external syntax of comparisons thus consists in capturing their subordinate-clause like, especially relative-like characteristics (including the option of forming a constituent with the correlate and/or Tertium-Comparationis AP) as well as their coordination-like characteristics.<sup>59</sup> As demonstrated above, both of these do not only show up in syntactic phenomena in the present-day language but are also evident from the diachronic data. The Janus-headed nature of comparisons is reminiscent of a number of other constructions that have come into the focus of syntactic research in recent years, that share this peculiar status of being somehow in between subordinate and coordinate structures, viz. instances of non-canonical sub-/coordination. Thus, one should consider the option of modelling comparisons on these.

One such kind of structure in between coordination and subordination is so-called asymmetric coordination. It consists of two clauses joined by the coordinating conjunction *und* 'and' which, however, do not conform to the External Homogeneity Condition typical of coordination or allow ATB movement etc., cf. Höhle (1990), Reich (2009). Biring & Hartmann (1998) therefore suggest a structure in which *und* 'and' does not take the conjuncts as its arguments but is adjoined to the second conjunct, which in turn is adjoined to I' of the first conjunct and thus integrated into it.<sup>60</sup> However, as asymmetric coordination exactly lacks the typical characteristics of coordination that we do find in comparisons, the latter should not be modelled on these.

Another possible model structure to be considered is V2 adverbial clauses, in particular *denn/weil*-V2 clauses. *Denn/weil* 'because' in these constructions behave similar to coordinating conjunctions because, unlike subordinating conjunctions, they do not trigger verb-final placement in the respective clause but leave the main-clause typical V2 order intact. Antomo & Steinbach (2010) therefore suggest a structure of two coordinated CPs with *weil* residing in the coordination head joining the remainder of the *weil*-clause to the main clause. Reich & Reis (2013: 549), however, argue that, since again typical characteristics of coordination are lacking, *weil*-V2 clauses as well as *denn* clauses can be characterised as unintegrated but in fact subordinate clauses and should therefore be analysed as adjoined to the matrix-CP (like e.g. continuative relatives).<sup>61</sup> Comparisons thus differ

<sup>59</sup> Osborne (2009) reaches a similar conclusion on the basis of (Modern Standard) English and German data without suggesting a concrete syntactic structure.

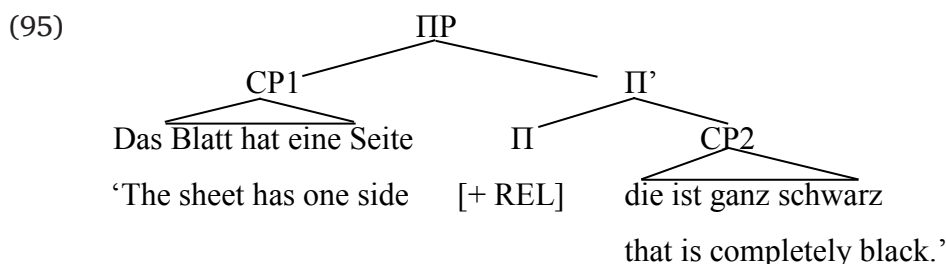
<sup>60</sup> Weisser (2015) proposes an analysis of asymmetric coordination in terms of what he calls Derived Coordination: The basic structure is that in (92), however the position of the first conjunct (specifier of the coordinating head) is only filled by movement of an element out of the second conjunct as a consequence of which subordination-like as well as coordination-like characteristics can be observed.

<sup>61</sup> An alternative analysis of German V2-adverbial clauses is suggested by Freywald (2016) who assumes that the size of the dependent clause (FinP/ForceP), the (a)symmetry of the link to the rest of the clause as well as the structural level at which it is linked determine the degree of integration and subordination of a clause with respect to another one. In V2-adverbial clauses, the complementizers (*weil* etc.) constitute paratactic conjunctions that stand 'in between the clauses' and according to her are adjoined to the second



from *denn/weil*-V2 clauses not only in showing typical characteristics of coordination (a trait that also sets them apart from asymmetric coordination), but also in generally showing characteristics of clause intergration (apart from continuative use etc.). Accordingly, comparisons should not be modelled on these structures, either.

A third kind of structure at the intersection of coordination and subordination that appears particularly promising is V2 relatives, which – like comparisons – combine relative-clause like and coordination-like characteristics according to recent analyses.<sup>62</sup> While canonical relative clauses are generally taken to be adjoined to their head NP, cf. Stockwell et al. (1973), Haegeman (1991) etc., non-canonical relative clauses in German, which differ from canonical ones in a number of syntactic and semantic features, notably in displaying V2 order, have been argued to possess the paratactic, coordination-like structure in (95), cf. Gärtner (2001), for historical German Axel-Tober (2012).<sup>63</sup> This structure is exactly identical with the structure of coordination in (92) with the relative clause and the rest of the clause constituting the two conjuncts YP and XP joined by a functional coordinating head (which here additionally possesses a relative feature). While canonical relative clauses are subordinate (dependent) as well as integrated (embedded) clauses, V2 relatives can be characterised according to Reich & Reis (2013: 554f.) as neither subordinate nor syntactically integrated clauses but as an asyndetic paratactic/coordination structure with merely prosodic integration of the second conjunct into the first one.



Applying the structure in (95) to comparisons, in fact basically yields the analysis suggested by Matos & Brito (2008) with the comparison particle filling the position of the conjoining head. However, again a number of syntactic differences between comparisons and V2-relatives speak against assigning the same structure to both: While comparisons show typical characteristics of coordination, e.g. the possibility of a simple phrase (DP, PP etc.) after the comparison particle as well as Gapping etc. as demonstrated in Section 4.2, this is again impossible in V2 relatives, cf. (96).

- (96) a. Anna hat einen Freund, der hat Kaninchen.  
 Anne has a friend who has rabbits  
 'Anne has a friend who has rabbits.'
- b. \*Anna hat einen Freund, der Kaninchen.  
 Anne has a friend who rabbits  
 'Anne has a friend who (has) rabbits.'

clause, which is linked to the first one via discourse. A similarly high linking of the standard of comparison to the remainder of the clause would, however, also fail to derive the constituency of the equative correlate and/or Tertium-Comparationis AP and the standard of comparison visible in topicalisation.

<sup>62</sup> As mentioned above, Brandner & Bräunig (2013: 147f.) argue from a semantic perspective that coordination is a crucial component of relative clauses in general as well as of equatives in so far as logical conjunction (and an equivalence relation) is part of the interpretation of both, see fn. 42.

<sup>63</sup> In fact, Antomo & Steinbach's (2010) analysis of *weil*-V2 clauses is modelled on this analysis of V2 relatives.

However, rather than speaking against a coordination-based analysis of comparisons, this shows that comparisons are even more coordination-like than V2-relatives and thus in fact supports the coordination analysis for comparisons whilst casting some doubt on whether the coordination analysis in (95) is indeed correct for V2-relatives as it would predict these operations characteristic of coordination to be possible.<sup>64</sup> Put differently, while comparisons and V2-relatives should not receive the same analysis in view of these differences, a coordination-like structure seems more plausible for comparisons. As in the case of V2-adverbial clauses, another difference between comparisons and V2-relatives is that, whilst not constituting subordinate clauses, V2 relatives are also syntactically unintegrated, whereas, as mentioned above, comparisons typically (but not always) constitute integrated structures.

In sum, none of the non-canonical sub-/coordination constructions that are also somehow ‘in between’ subordination and coordination, viz. asymmetric coordination, *denn/weil*-V2 clauses or V2-relatives (the structures of which are partly also still under dispute), share with comparisons the typical features of coordination such as Gapping, RNR, ATB movement etc. so that comparisons cannot simply be modelled on either of these structures. Note, however, that due to their clearly coordination-like features in contrast to all other constructions discussed above, a coordination analysis seems quite feasible for comparisons.<sup>65</sup> The problem that remains is the fact that the constituency of equative correlate and/or Tertium-Comparationis AP with the standard of comparison – as well as their typically integrated behaviour – is not straightforwardly derived under this analysis.

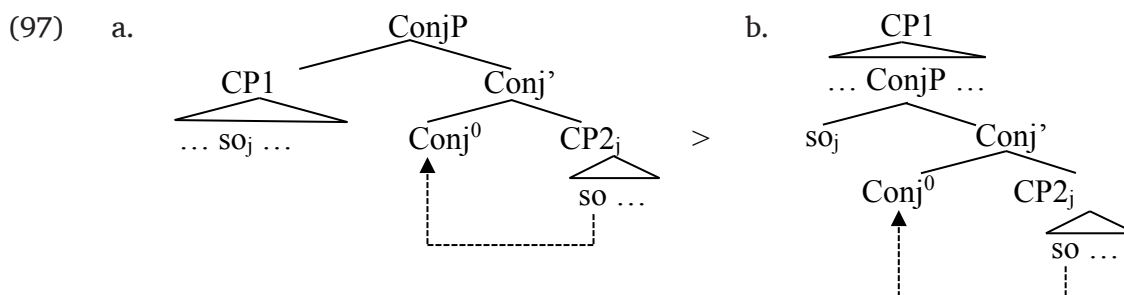
While a final analysis of the external syntax of comparisons that captures all relevant features will have to be left to future research, a tentative solution that combines a relative-like and a coordination-like analysis will be outlined here, based on the reanalysis of an original correlative construction as embedding, i.e. integration into the main clause. In most European languages, equatives are based on correlative constructions, cf. Haspelmath & Buchholz (1998). In so far as comparatives are diachronically often secondarily derived from equatives, as is also the case in German cf. Table 1, this kind of structure will also be relevant in comparatives. For OHG equative *so ... so*, Desportes (2008) explicitly assumes that this pattern is based on the Indoeuropean correlative construction. This kind of construction, also referred to as the correlative diptych, is still found in some Indoeuropean languages today. It typically consists of a free relative clause and a clause containing a demonstrative (correlate, optionally realised as *pro*) that is anaphorically linked to the relative clause (coindexing of relative clause and demonstrative). Because of the quasi-paratactic characteristics of the construction, it is generally assumed that the relative clause is not embedded, i.e. integrated, in the matrix clause as an argument or modifier but instead left- or right-adjointed to the matrix CP, cf. Keenan (1985), Kiparsky (1995), Dayal (1996). For a number of subordinate clauses in German, it has been argued recently that they originate historically from a reanalysis of this kind of correlative construction, cf. Axel-Tober (2012) for temporal adverbial clauses and *dass*-clauses.

In order to integrate the analysis of the internal syntax of comparisons including a functional head *Conj*<sup>0</sup> above the standard-of-comparison CP, as argued in Section 2, and to capture the coordination-like characteristics of comparisons, an underlying correlative structure including a coordination head will be assumed basically following Matos &

<sup>64</sup> For a critical discussion of the coordination analysis of V2-relatives based on similar arguments see Catasso (2017).

<sup>65</sup> In so far, comparisons appear to constitute coordinate (rather than subordinate) and typically (but not always) integrated structures (similar to e.g. phrasal coordination).

Brito (2008).<sup>66</sup> Based on this construction, cf. (97 a) (illustrated here for OHG non-degree equatives with *so ... so* ‘so ... as/like’), syntactic reanalysis as extraposition would have resulted in an embedding structure with the relative clause integrated into the matrix clause, however still including the functional coordination projection.<sup>67</sup> A tentative structure for this is given in (97 b).<sup>68</sup> The comparison clause thus partly resembles the V2 relatives discussed above (however, it is integrated into the matrix clause) and is also reminiscent for instance of de Vries’ (2006) analysis of non-restrictive relatives as being joined to their head DP via a functional coordination projection. The reanalysed construction accordingly shows relative-clause like features as well as characteristics of intergration, in particular the standard of comparison forms one constituent with the correlate (and/or Tertium-Comparationis AP in degree equatives/comparatives), whilst at the same time constituting a basically coordinate structure.



As indicated by the dotted lines in (97a/b), the reanalysis discussed in Section 2 of the comparison particle<sup>69</sup> into  $\text{Conj}^0$  may in principle occur before or after the reanalysis of the correlative structure into an embedding structure. (Secondarily, the sequence of correlate and equative particle may then be reanalysed into a new equative particle as discussed in Section 4.1.) The structure in (97 b) largely corresponds to the ones in (78)–(81), however, the standard of comparison is not linked to *so* (or *-er* in comparatives, respectively) as its argument but via coordination.

## 5 Conclusion

Diachronic and dialectal data constitute valuable evidence for syntactic theory, as has been demonstrated in this paper for central issues in the syntax of comparison constructions. With respect to the internal syntax, more specifically the syntactic status and position of the comparison particle, case transparency speaks against a prepositional analysis

<sup>66</sup> For an approach based on the CP-adjunction analysis of correlatives and a reanalysis as left-dislocation following Axel-Tober (2012) see Jäger (2018). However, it is not clear that the original CP-adjunction, which according to the criteria of Reich & Reis (2013) still constitutes an instance of subordination, can sufficiently explain the coordination-like features of comparatives.

<sup>67</sup> Whether and how this change, too, is driven by economy must remain open at this point.

<sup>68</sup> As discussed at the end of Section 4.1, the comparison is linked to the rest of the clause at different heights within the structure resulting e.g. in (low) manner or (high) continuative interpretation, and via different projections depending on the kind of comparison and its specific syntactic function. In comparatives and degree equatives, the  $\text{ConjP}$  is the complement of  $\text{Deg}^0$  (*-er/so*) that forms one constituent together with the Tertium-Comparationis AP, in non-degree equatives it is the complement of the correlate *so* or arguably its covert counterpart (*pro*) with which it again forms one constituent. These constituents are in turn linked to the rest of the clause according to their function as predicatives, attributes or (high or low) adverbials. Regarding the internal structure of  $\text{ConjP}$ , in phrasal comparisons the complement of  $\text{Conj}^0$  will be a mere DP, PP etc. instead of a CP. This option is diachronically only available once the comparison particle has been reanalysed as  $\text{Conj}^0$ .

<sup>69</sup> Note that, as discussed in fn. 13 and captured in (41), the comparison particle originally typically (but not always) starts out as a pronominal (*wh-*) item in  $\text{SpecCP}_2$  into  $\text{C}^0$  (development of  $\text{SpecCP}$  relative adverb to  $\text{C}^0$  relative particle/complementizer, and eventually to proper comparison particle in  $\text{Conj}^0$ ).

of comparison particles. Apparent case government by the comparison particle is in fact due to occurrences of strong pronouns in the respective languages and varieties. Co-occurrence of comparison particles with complementizers and the finite verb in its left-peripheral position in hypothetical comparisons furthermore speaks against an analysis of comparison particles as complementizers and for a syntactic position above the actual standard-of-comparison CP (Conj<sup>0</sup>). This is corroborated by dialectal co-occurrences of the comparison particle in comparatives and equatives with complementizers (DFC). The analysis is furthermore supported by diachronic data in which the comparison particle *als* used to be a complementizer, indeed, resulting in verb-final placement in hypothetical comparisons in contrast to modern verb-initial order which became possible due to a syntactic reanalysis into the higher head position. Similarly, the comparison particle *wie* can be demonstrated not to reside in SpecCP or C<sup>0</sup>, but in the higher position Conj<sup>0</sup>. This is evident not only from syntactic contrasts with relative clauses and complementizer clauses with respect to the possibilities of ATB movement, Gapping, combination with mere DPs, PPs etc. It can also be argued on the basis of dialectal combinations of *wie* and complementizers (DFC) both in equatives and comparatives as well as verb-initial word order in hypothetical comparisons introduced by *wie*. This is again supported by historical data which show a syntactic change from an original wh-interrogative/relative in SpecCP in OHG into a complementizer in MHG (accordingly at both stages a restriction to full clauses), and finally into Conj<sup>0</sup> in ENHG, enabling *wie* to occur also in phrasal comparisons and Gapping constructions.

Concerning the syntactic status of phrasal comparisons, the occurrence of strong pronouns in phrasal comparisons as opposed to weak pronouns in clausal comparisons in certain languages and varieties constitutes evidence against the reduction analysis and in favour of the direct analysis. This analysis is further supported by the dialectal and diachronic data: The restriction of DFC and complementizer inflection to clausal comparisons cannot be explained under the reduction analysis. The stepwise diachronic development of the distribution of *wie* from clausal to phrasal comparisons represents a further argument for a syntactic difference between both.

With respect to the external syntax, i.e. their linking to the rest of the clause, comparisons on the one hand display characteristics of subordinate clauses, specifically relatives. Thus wh-island effects and topicalisation data suggest that the standard of comparison is a kind of relative clause which forms a constituent, depending on the type of comparison, with the correlate and/or the Tertium-Comparationis AP. Non-degree equatives could accordingly be assumed to be complements of the equative correlate or free relative clauses in adverbial, predicative or attributive function. The relative-clause like analysis is supported by diachronic data: Wh-items in modal free relatives commonly grammaticalize into comparison particles (cf. *wie*), several comparison particles have in turn developed into relative particles (*so*, *als*, *unde*, *wie*). Asyndetic comparison clauses in earlier stages of German are reminiscent of historical asyndetic relative clauses. On the other hand, comparisons show coordination-like characteristics (Gapping, ATB movement, RNR, Coordinate Structure Effects etc.) distinguishing them from subordinate and also relative clauses. Historical data such as the use of coordinating conjunctions as comparison particles (*unde*) and the grammaticalisation of coordinating conjunctions on the basis of comparisons ((*sowohl*) *als*, *wie*, *sowie*) underline this close connection between comparisons and coordination. However, in a coordination analysis the constituency of equative correlate and/or Tertium-Comparationis AP and the standard of comparison is not straightforwardly derived. In showing characteristics both of subordinate (esp. relative) clauses and of coordination, comparisons are reminiscent of non-canonical sub-/coordination structures such as asymmetric coordination, V2-adverbial and V2-relative clauses.

However, they differ from these in a number of ways, most notably these constructions do not license the syntactic operations typical of coordination that are possible in comparisons, again supporting a coordination-based link to the remainder of the clause. While a final analysis of the external syntax of comparisons will have to be left to future research, the contradictory properties of comparisons are tentatively attributed to an embedded structure involving coordination that resulted from the diachronic reanalysis of an original correlative construction. All in all, diachronic and dialectal data represent crucial additional data that highlight properties of the construction that the syntactic analysis needs to account for.

## Abbreviations

ACC = accusative, ATB = Across-The-Board movement, DFC = Doubly-Filled Comp, ENHG = Early New High German, MHG = Middle High German, NHG = New High German, NOM = nominative, OHG = Old High German, PTCL = particle, REFL = reflexive, RNR = Right Node Raising; SG = singular

## Competing Interests

The author has no competing interests to declare.

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- Johann Bange = Thüringische Chronick oder Geschichtbuch (...) anfänglich auss einem alten geschriebenen (...) Exemplar colligirt (...) vnd ferner durch weiland Ern Friderichen Schmidt Pfarherrn zu Grossen Beruingen reuidiert vnd vermehret/dann (...) von andern (...) continuirt. Jetzo aber (...) in Druck geben/durch Johan Bangen. Mühlhausen 1599. Print: Andreas Hantzsch. (Bonner Frühneuhochdeutschkorpus Text 255).
- Johann Gropper = Vonn warer/wesenlicher/vnd pleibeder Gegenwertigkeit des Leybs und Bluots Christi (...). durch Johannem Gropperum d. Archidiaco der h. Kirchen zu Coellen. Köln 1556. Print: Jaspas Gennep. (Bonner Frühneuhochdeutschkorpus Text 155).
- Johann Mathesius = Passionale Mathesij, das ist/christliche vnd andechtige Erklerung vnd Außlegung des zwey und zwanzigsten Psalms/vnd drey vnd funffzigsten Capitels des Propheten Esaia geprediget durch M. Johannem Mathesium/weylant Pfarrer in S. Joachimsthal. Leipzig 1587. Print: Johann Beyer. (Bonner Frühneuhochdeutschkorpus Text 145).
- Johann Rosenthal = Außfuehrliche Wiederhol- und Vermehrung der kuertzen Bedencken vom bestaendigen Baw auff den Felsen vnd nicht auff den Sand (...). Durch R. P. Ioannem Rosenthal der Societaet Iesu Priestern (...).Köln 1653. Print: Hermann Mylius. (Bonner Frühneuhochdeutschkorpus Text 157).
- Leonhart Rauwolf = Leonharti Rauwölfen/der Artzney Doctorn/vnd bestelten Medici zuuo Augspurg. Aigentliche Beschreibung der Raiß/so er (...) inn die Morgenlaender (...) selbs volbracht. Lauingen 1582. Print: Leonhart Reinmichel. (Bonner Frühneuhochdeutschkorpus Text 125).
- Ludwig Lavater = Von Genspaensten Vnghüren/Faelen/vn anderen wunderbare Dingen (...) kurtzer vnd einfaltiger Bericht/gestellt durch Ludwigen Lauater Diener der Kirchen zuo Zürich. Zürich 1578. Print: Christoph Froschauer d. J. (Bonner Frühneuhochdeutschkorpus Text 215).
- Mitteldeutsche Predigten = Mitteldeutsche Predigten. Edited by Adalbert Jeitteles. *Germania* 17 (1872). 335–354.
- Nibelungenlied = Das Nibelungenlied. Paralleldruck der Handschriften A, B und C nebst Lesarten der übrigen Handschriften. Edited by Michael S. Batts. Tübingen: Niemeyer, 1971.
- Notker: Boethius = Die Werke Notkers des Deutschen. Edited by Edward H. Sehr, Tayler Starck, James C. King & Petrus W. Tax. Vol. 1: Boethius, De Consolatione Philosophiæ. Buch I/II. Edited by Petrus W. Tax. Tübingen: Niemeyer, 1986. Vol. 2: Boethius, De Consolatione Philosophiæ. Buch III. Edited by Petrus W. Tax. Tübingen: Niemeyer, 1988. DOI: <https://doi.org/10.1515/9783110930610>
- Nürnberg Stadtbuch = Nürnberg, Staatsarchiv, Reichsstadt Nürnberg, Amts- und Stadtbücher Nr. 227.
- Otfrid = Otfrid von Weissenburg: Evangelienbuch. Edited by Wolfgang Kleiber. Tübingen: Niemeyer, 2004.
- Physiologus = Der altdeutsche Physiologus. Die Millstätter Reimfassung und die Wiener Prosa (nebst dem lateinischen Text und dem althochdeutschen Physiologus). Edited by Friedrich Maurer. Tübingen: Niemeyer, 1967. (ATB 67).
- Sigmund Herberstein = Moscouia der Hauptstat der Reissen/durch Herrn Sigmunden Freyherrn zu Herberstein (...) zusammen getragen (...). Wien 1557. Print: Michael Zimmermann. (Bonner Frühneuhochdeutschkorpus Text 115).
- Sigmund von Birken = Spiegel der Ehren des (...) Erzhauses Oesterreich (...) 1212 anfahend (...) 1519 sich endend. Erstlich vor mer als C Jahren verfasst durch (...) Johann Jacob Fugger (...) nunmehr aber (...) aus dem Original neu-ueblicher uemge-

- setzet (...) erweitert (...) durch Sigmund von Birken. Nürnberg 1668. Print: Michael und Johann Friedrich Endter. (Bonner Frühneuhochdeutschkorpus Text 137).
- Veit Dietrich = Summaria vber die gantze Bibel (...). Durch M. Vitum Dieterich/weyland Prediger zu Nuernberg (...). Nürnberg 1578. Print: Katharina Gerlach und Johann von Bergs Erben. (Bonner Frühneuhochdeutschkorpus Text 135).
- Walter Raleigh = Walter Raleigh: Amerika. Frankfurt am Main 1599. Print: Matthäus Becker. (Bonner Frühneuhochdeutschkorpus Text 245).

### **Online corpora**

- Bonner Frühneuhochdeutschkorpus: <https://korpora.zim.uni-duisburg-essen.de/Fnhd/>  
Referenzkorpus Altdeutsch: <https://korpling.german.hu-berlin.de/annis3/ddd/>  
Referenzkorpus Mittelhochdeutsch: <https://www.linguistics.rub.de/rem/>  
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
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