Je-Desto, Je-Umso: An Analysis
of the German Comparative Correlative Construction

André Meinunger

Leibniz-Zentrum Allgemeine Sprachwissenschaft (ZAS)

This paper argues that German *je-desto*-sentences are regular verb-second structures. Unlike left-dislocation(-like) structures (such as *wenn-dann*-clauses or free relative clause constructions with case mismatch and resumption), *je-desto*-strings are normal, regular prefield structures. A proposal from the literature is developed further, according to which *je*-clauses, like relative clauses, belong structurally to the clausal constituent into which they are integrated. The head of these constituents remains in its canonical middle field position, whereas relative as well as *je*-clauses usually extrapose to the right. If the host constituent is moved to the prefield, the attributive clause is carried along with it, with the *je*-clause realized initially and the relative clause usually finally. However, relatives may also precede their head noun. Such an analysis highlights the common features of clause types that are otherwise treated as fundamentally distinct from one another, without denying the differences and postulating construction-specific verb-third realizations. In addition, various other realization options are discussed and dismissed as grammatical illusions.[*]

Keywords: comparative correlative construction, left dislocation, verb third, extraposition, grammatical illusion, DP-internal inversion

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1. Introduction.

Je-desto-clauses have been a highly debated structure in German linguistics—see, for example, Bech 1964, Beck 1997, Reis 2009, Speyer 2011, Fortmann 2016, Meinunger 2018. Often, but certainly not always, these contributions have been inspired by the work on the so-called comparative correlative construction, which has mainly been proposed for English (Thiersch 1982, McCawley 1988, Culicover & Jackendoff 1999, Borsley 2004, and particularly den Dikken 2005).

Although nearly all of the approaches cited above have been developed in the tradition of generative grammar, most of them agree that the structure has something "construction-like" about it; that is, these approaches assume specific characteristics of the *je-desto*-structure, so that it cannot be generated in a purely compositional way without preconditions. Typical sentences are given in 1.

(1) a. <u>Je</u> mehr man isst, <u>desto</u> dicker wird   man.   German
      the more one eats the   fatter becomes one
      'The more one eats, the fatter one becomes.'

    b. The more you eat, the fatter you get.   English

One of the main reasons why the proponents of this view claim that the structure is construction-like and cannot be derived straightforwardly by regular rules is the (apparent) fixed order 'dependent clause > matrix clause'. Reversing the order results in an extreme lessening of acceptability, as shown in 2.

(2) a. *You get the fatter, the more you eat.

    b. ??Man wird   desto dicker, je mehr man isst.
       one becomes the   fatter   the more one eats

    c. */??The fatter you get, the more you eat.

    d. */??Desto dicker wird   man, je mehr man isst.
       the   fatter becomes one the more one eats

Other syntactic realizations, although only slightly divergent, are fine: In English, the structure becomes acceptable without *the* in the initial matrix

clause, and in German things become acceptable if the main clause contains the element *umso* instead of *desto*:

(3) a. You get fatter, the more you eat.

    b. Du wirst umso dicker, je mehr du isst.[1]
        you become the fatter the more you eat
        'You become the fatter, the more you eat.'

    This interesting pattern suggests a line of argumentation which appears reasonable at first glance. However, such an approach creates a problem that seems to be more difficult than the issues it solves. Although this problem does not become evident and perhaps does not even have any effect in most languages (such as English), it arises in verb-second languages, especially in German. Thus, the analysis proposed here may be adopted for German (only) and disregarded for English and other languages, including Dutch, which is a verb-second language but is different from German (see den Dikken 2005). However, perhaps—and hopefully—it can be adopted more generally and finally capture the structural conditions more elegantly, convincingly, and adequately.

    The structure of this article is as follows: In section 2, I introduce two left dislocation structures that have been repeatedly discussed as parallel constructions, that is, related to the *je-desto/umso*-clauses. However, I show that there is a fundamental difference. In section 3, I discuss previous research on the status of the *je*-protasis, adopting the analysis of the *je*-clause as a clearly subordinated embedded clause, but not subscribing to any of the previous existing structural proposals, which assume a verb-third structure. In section 4, I show that none of these structural descriptions can account for realizations where the *je*-protasis surfaces in slots other than the absolute initial position. In section 5, I highlight the common features of *je*-clauses on the one hand and restrictive relative clauses on the other. First, I highlight the features that both types (of subordinated clauses) have; then I discuss actual and apparent differences. Finally, I analyze both types as attributive clauses that contain a subordinated constituent. Section 6 discusses other positional options for

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[1] For more on the issue of *umso-desto*-differences and linearization options, see the Appendix.

the *je*-clause, some of them previously undiscovered. In particular, I argue that certain linearizations usually considered ungrammatical are, in fact, well-formed; at the same time, certain attested realizations that are relatively unobtrusive are, in fact, grammatical illusions and should be analyzed as ill-formed. Section 6 provides a first rough formal structural proposal. In section 7, I argue two more detailed internally differentiated variants of this proposal. Section 8 gives a summary of the results. The appendix presents various cases in which the relevant morphemes or words (*je, umso, desto*) are interchangeable to varying degrees.

2. The Comparative Correlative and Its Relatives.

For both semantic and syntactic considerations, parallels have been drawn between *je-desto*-clauses on the one hand, and *if-then* conditionals and certain left dislocation structures on the other. Authors such as Beck (1997) and McCawley (1988) point out that the so-called protasis—the *je*-clause—expresses a condition similar to an *if*-clause:

(4) a. <u>Wenn Uli schneller gelaufen wäre,</u>
　　　 if　　Uli　faster　　run　　　were

　　　 dann wäre er umso früher angekommen.
　　　 then were he the　 earlier　arrived
　　　 'If Uli had run faster, he would have arrived all the sooner.'

　 b. <u>Je schneller Uli läuft,</u> umso früher kommt er ins　　 Ziel.
　　　 the faster　　Uni runs the　 earlier comes he into_the goal
　　　 'The faster Uli runs, the sooner he reaches the finish line.'

In addition, den Dikken (2005 for Dutch and in general) and Reis (2009) and Meinunger (2018) (for German) also observe the similarity of the *je-desto*-construction to left dislocation structures:

(5) <u>Wer keine Zeit hat, der</u>　　 braucht sich nicht anzustellen.
　　 who no　　 time has RESM.PRN needs　　 self not　　 stand
　　 'If you don't have time, don't get in line.'

However, *je-desto*-clauses differ from the other two constructions with respect to one important feature: In conditional sentences, such as 4a, as well as in canonical NP left dislocation structures, such as 5, the two

preverbal expressions are synonymous, or coreferential. That is, the left-peripheral (subordinate) clause and the resumptive element have the same referent. This, in turn, means that in the given cases, one of the two constituents can be omitted without creating an ungrammatical structure—and without changing the meaning of the complex assertion. Examples 6a,b demonstrate that the semantically empty resumptive pronoun is optional. In contrast, the possibility of omission does not exist for the semantically substantial *desto/umso*-phrase: It must be realized, as shown in 6c. Moreover, it must be realized in right adjacency to the *je*-protasis. A simple *je*-phrase topicalization with the correlative *umso*-phrase occupying the middle field position leads to ungrammaticality as well, as shown in 6d.

(6) a. Wer zu   spät kommt, (der)   kriegt kein Bier mehr.
    who too late comes (RESM.PRN) gets no   beer more
    'If you're late, you don't get any more beer.'

  b. Wenn Uli schneller gelaufen wäre,
    if   Uli faster   run   were

    (dann) wäre er früher angekommen.
    (then) were he earlier arrived
    'If Uli had run faster, (then) he would have arrived earlier.'

  c. Je schneller Uli läuft,
    the faster   Uli runs

    *(desto/umso früher) kommt er ins   Ziel.
    *(the earlier)   comes he into_the goal
    'The faster Uli runs, the sooner he reaches the finish line.'

  d. *Je schneller Uli läuft,
    the faster   Uli runs

    (_) kommt er umso früher ins   Ziel.
    (_) comes he the   earlier into_the goal
    Intended: The faster Uli runs, the sooner he reaches the finish line.

Under the traditional analysis sketched in more detail in the next section, the *je-desto*-construction would be the only construction where the initial

constituent must be realized; this makes it the only obligatory verb-third structure. In any other case, where the finite verb is in C° and where the pre-prefield (initial) constituents have been argued to be structurally (syntactically) affiliated with their respective clauses, these initial constituents can be omitted without any consequences for the grammaticality of the sentence. This important difference should lead to a reconsideration of the structure.

3. Main or Subordinate Clause Status?

There is no doubt that the *je*-clause (or the respective protasis) is a syntactically subordinated clause (much like conditional *wenn*-clauses or free relative clauses). The previously influential approach of Culicover & Jackendoff (1999), which argued for a paratactic structure, has been successfully refuted by many researchers, for instance, by den Dikken (2005) for English (or generally) and by Reis (2009) for German. There are several arguments in favor of a structure in which the *je*-protasis is integrated into the complex sentence.[2] The most convincing one to be mentioned here is (semantic) binding, as shown in 7 (Beck 1997:236; for more details concerning binding, see section 5).

(7) Je   schleimiger [ein Anwalt]$_i$ aussieht,
    the slimier   an attorney looks

   desto   erfolgreicher   ist er$_i$.
   the   more_successful   is he
   'The slimier an attorney looks, the more successful he is.'

   a. Every x, y [attorney (x) & attorney (y) & [x looks slimier than y]
      → [x is more successful than y]]
   b. Gen x [attorney (x)] [Every t1, t2 [x is slimier at t1 than at t2] → [x
      is more successful at t1 than at t2]]

This pattern is exactly the same as with donkey anaphora inside conditionals, such as 8, where an indefinite in the protasis delivers a variable bound by the (same) operator that also binds the pronoun in the matrix clause, that is, in the consequence.

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[2] There are more binding configurations and facts that are more delicate, but also more compelling. They are introduced and discussed later.

(8) Wenn <u>ein Anwalt</u> schleimig aussieht, ist <u>er</u> erfolgreich.
    if   an attorney slimy   looks   is he successful
    'If an attorney looks slimy, he is successful.'

Examples 7 and 8 show that unselective donkey sentence binding in *je-desto/umso*-clauses clearly parallels binding in conditional *wenn*-clauses.

   The other arguments are based on the illocutionary independence of the apodosis and the inherent nonspeech act status of the *je*-clause. Related to this is the incompatibility of a (question) tag with the *je*-part and its exclusive attachment to the root (that is, the matrix *desto/umso-*) clause.[3]

   Taking these observations as evidence for the embedding constellation, Beck (1997)—elaborating on and referring to von Fintel 1994—proposes the structure in 9a. Reis (2009) proposes essentially the same structure shown in 9b (as does den Dikken 2005). Both structures contain a left-dislocated CP.

(9) a. Beck 1997
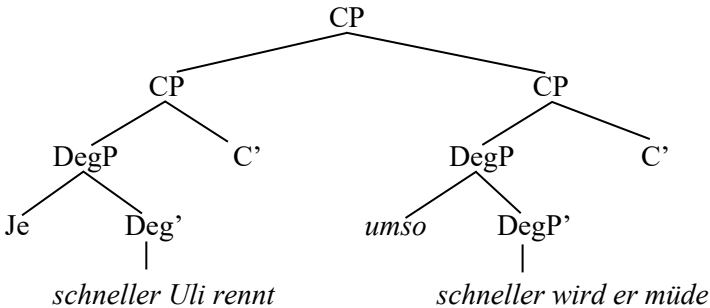
   b. Reis 2009

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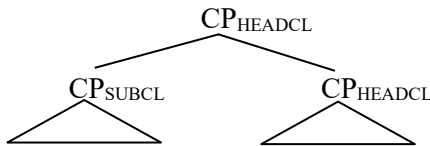
[3] Another argument comes from the behavior of verbal mood licensing (subjunctive). This is, however, not as obvious in German as it is in English (den Dikken 2005:511) or in Romance (Abeillé et al. 2006).

However, these trees do not account for one feature, which remains perplexing. Curiously, an indispensable part of the construction—whether a clausal constituent (of the first degree) or an attribute—is or must be realized outside the core clause: The obligatory *je*-clause, if it appears sentence-initially, appears detached from and (right) before the prefield, which only contains the *desto/umso*-adjectival phrase (DegP in Beck's representation). In Beck's as well as in Reis's structure, the *je*-protasis is adjoined to the CP, which, in principle, is already a complete clause. Such an analysis does not seem satisfactory.

4. Further Weaknesses of the Left Dislocation Approaches.

In light of the root versus nonroot distinction, the left dislocation approaches have other problems. Two further interrelated reasons to reject the CP-adjunction analysis are as follows. The analyses in 9 treat *je-desto/umso*-structures on a par with i) *wenn-dann* (or *wenn-so*, both: *if-then*) structures (see 4a, 6b, 8) and/or ii) free relatives in combination with resumption (see 5 and 6a). Both of these allegedly parallel structures are instances of left dislocation. Left dislocation is a phenomenon of the left periphery (alternatively called the C-domain; Altmann 1981, Grewendorf 2002, Frey 2004). In fact, the preverbal string—with its two parts—cannot surface in any lower position, which means that it cannot be placed in the middle field. In contrast, the complex *je-umso*-constituent can appear in a lower position. Reis (2009:233) cites 10a and Fortmann (2016:132, 133) gives the examples in 10b,c, with the latter even showing that the *je*-clause provides a binding domain for the subject of the matrix clause.

(10) a. Er hat, je später es wurde, umso intensiver   gearbeitet.
       he has the later it became the   more_intensely worked
       'The later it got, the more intensely he worked.'

    b. Wer hat, je mehr er hatte, umso mehr
       who has the more he had   the   more

       zu verlieren gehabt?
       to lose   had
       'Who had the more to lose, the more he had?'

    c. Man wird, je länger man Geduld   übt,
       one will the longer one patience practices

umso eher   einen Barsch an der Angel haben.
the   earlier a   perch on the line   have
'The longer you are patient, the more likely you are to have a perch
on the line.'

d. Jeder$_i$ wird, je länger er$_i$ Geduld   übt,
   everybody will the longer he patience practices

   umso eher   einen Barsch an der Angel haben.
   the   earlier a   perch on the line   have
   'The longer you are patient, the more likely you are to have a perch
   on the line.'

Such a distribution is completely excluded for the two other true left-dislocation structures:

(11) a. *Muss, wer   keine Zeit hat, der   sich anstellen?
        must   who no   time has rel.pron self get-in-line

   b. *Wäre Uli, wenn er schneller gelaufen wäre,
       were Uli if   he faster   run   had

      dann/so früher angekommen?[4]
      then/so sooner arrived

   c. *Auf dem Sportfest   neulich   wäre Uli, wenn er
       at   the   sports.festival the.other.day were Uli if   he

      schneller gelaufen wäre, dann/so schneller angekommen.
      faster   run   were then/so faster   arrived

   What is more, left dislocation is a main clause phenomenon (Frey & Meinunger 2019). Main, or root clause phenomena are argued to be

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[4] The problematic examples with *dann* in 11b,c sound somewhat better than the ones with *so*, which are completely unacceptable. The reason is that *dann* may get (re-)interpreted as a temporal adverb. Research has shown, however, that *dann* and *so* are fully equivalent in this construction (Redder 1987, Hennig 2006). Thus, the ungrammaticality with *so* clearly illustrates the impossibility of a middle field occurrence.

possible in root clauses only. Such phenomena include, for example, the so-called modal particles (in German), speaker-oriented adverbials, certain expressive items, specific types of topicalization, tags, etc. In most cases, clauses containing root (clause) phenomena are syntactically independent and have illocutionary force. However, it has been known for some time that these phenomena are also licit in a very restricted set of dependent clauses. Such dependent clauses are arguments of assertive predicates, such as verbs of saying, thinking, evidential predicates, and the like. Factive verbs, in contrast, (and response stance verbs) are assumed to not license root phenomena. Frey & Meinunger (2019) report the contrast in 12.

(12)   A: Haben Sie auch Otto eingeladen?
          have   you also Otto invited
          'Did you invite Otto?'

    a. B: *Nein, weil   jeder   bedauern würde, der Otto,
          no   because everybody regret   would the Otto

          dass der   dabei   ist.[5]
          that RESM.PRN there   is
          'No, because everybody would regret it if Otto were part of it.'

    b. B: Ja, weil   jeder   denkt, der Otto,
          yes because everybody thinks the Otto

          dass der   dabei sein   sollte.
          that RESM.PRN there be   should

    c. B: Ja, weil   jeder   denkt, der Otto,
          yes because everybody thinks the Otto

          der   sollte dabei sein.
          RESM.PRN should there be

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[5] Frey (2004) additionally provides the following example:

(i) *Maria bezweifelt, [CP seinem₁ Doktorvater
    Maria doubts   his   doctor-father

    [CP   dass   [IP jeder Linguist₁ dem   Geld   ausleihen wird]]]
           that   every linguist him   money lend   will

'Yes, because everybody thinks Otto should be part of it.'

For the sake of completeness, it should be mentioned that the same degree of unacceptability is observed in other versions of 12a. For example, in 13a, the complementizer *wenn* 'if' is used, which would be another very natural option in this context. Compare it with the acceptable example in 13b, where the factive verb *bedauern* 'regret' is followed by verb second (or verb third); in 13b, the name *Otto* is not topicalized but appears inside its regular clause. Example 13c is already excluded due to the ban on verb fronting (verb second) under factive predicates.

(13) a. *Nein, weil jeder bedauern würde, der Otto, <u>wenn</u> der dabei ist.
    b. Nein, weil jeder bedauern würde, wenn der Otto dabei <u>ist/wäre</u>.
    c. *Nein, weil jeder bedauern würde, der Otto, der ist/wäre dabei.

Note that the ban on the occurrence of verb fronting under factive and response stance verbs does not seem to apply in *je-desto/umso*-structures, which embed quite naturally:

(14) a. Wir bedauern/ bezweifeln, dass, je höher
         we   regret / doubt   that   the higher

         die Preise steigen, umso mehr Kunden abspringen.
         the prices rise   more   more clients back.out

    b. Wir bedauern/ bezweifeln, dass umso
       we   regret / doubt   that   more

       mehr Kunden abspringen, je höher   die Preise steigen.
       more clients back.out   the higher the prices rise
       'We regret / doubt that the higher prices go, the more customers
       leave.'

As one can see, however, the embedding in 14 is not a left dislocation structure. The *je*-clause surfaces either in the middle field, as in 14a, or in the extraposition site (postfield), as in 14b. An attempt to mimic 12b, where the *je*-clause as a left-peripheral constituent precedes the core CP

introduced by *dass* and would hence count as an instance of left dislocation, results in ungrammaticality:[6]

(15) *Uli glaubt, je schneller er   läuft,
        Uli believes the faster   he runs

        dass er umso früher ins   Ziel   kommt.
        that he the   earlier into_the goal   comes

An example from Fortmann (2016:133) in 16, where a *je-desto/umso*-structure appears inside a regular central adverbial clause, points to the same conclusion.

(16) Man lässt den Wein ein Weilchen lagern,
        one   lets   the wine   a   while   store

        weil   er, je länger er lagert, umso   besser wird.
        because it the longer it stores the   better becomes
        'The wine is left to age for a while because the longer it is stored, the better it gets.'

Thus, in all of the pertinent cases, the *je-desto/umso*-structure occurs in the middle field. This placement is incompatible with the left dislocation analysis.

     Another piece of evidence that the two allegedly parallel left dislocation structures are actually different comes from the following observation. If the initial string is a *je*-clause, it may also surface in a short(ended) form. Fortmann (2016:128) discusses this variant (and related ones) in more detail. If the clause is or corresponds to a copular construction, the relevant verbal part of *sein* 'be' can remain silent:

(17) Je fetter der Braten (ist),
        the fatter the roast   (is)

        desto schwerer liegt er im   Magen.
        the   heavier lies it in_the stomach

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[6] The corresponding embedded "root version" is fully grammatical:

(i)   Uli glaubt, je schneller er läuft, umso früher kommt er ans Ziel.

'The fatter the roast, the heavier it sits in the stomach.'

Looking at the other two types, one sees clearly that this type of ellipsis is not possible, as shown in 18.

(18) a. Wenn der Braten fett *(ist),
        if   the roast   fat (is)

        (dann) liegt er schwer im   Magen.
        (then) lies it heavy   in_the stomach
        'If the roast is fat, it sits heavy in the stomach.'

    b. Was fett *(ist), (das) liegt schwer im   Magen.
       what fat (is)   (that) lies heavy in_the stomach
       'What is fat sits heavy in the stomach.'

This uneven pattern indicates that the structures are different, that is, *je-desto/umso*-clauses are not (completely) syntactically parallel to the left dislocation structures—conditional *wenn-dann*-clauses or free relatives with resumption. In section 6 I give an explanation for this observation.

5. The Alternative.
5.1. Je-*Clauses and Relative Clauses.*
There is a relatively unnoticed side path in German linguistics that advocates for another structural representation of the construction. The present paper builds on this approach and ends up with a structural proposal that analyzes *je-desto/umso*-sentences as regular verb-second clauses. The main idea to which this analysis can be traced back is laid down in Speyer 2011. Speyer argues that *je*-clauses should be considered analogous, or parallel to canonical restrictive relative clauses. Such an idea does not seem unreasonable in view of the structures in 19.

(19) a. Wir werden umso leichter wandern,
        we will   the   easier   hike

        je weniger Gepäck wir haben.
        the less   baggage we   have
        'The less baggage we have, the more easily we will hike.'

b. Wir haben das Stück ausgesucht,
   we   have   the piece   chosen

das uns am besten gefallen hat.
that us   the best   pleased   has
'We chose the piece that we liked the best.'

In both cases, the anchor expression is in the middle field and the associated subordinate clause—the *je*-clause in 19a and the relative clause in 19b—is in the so-called postfield, which is the target area of extraposition.[7]

Note once more that all the proponents of the construction's left dislocation status (Beck 1997, den Dikken 2005, Reis 2009, and others) explicitly deny the relatedness of this structure—with the linearization 'main clause > *je*-clause'—to the "real" correlative structure displaying the order '*je*-clause > main clause'. However, interestingly enough, they all refer to the order in 19a whenever they want to argue for a specific point that cannot (easily) be made clear with the '*je*-clause > main clause' linearization. Reis (2009), for example, refers to it as a plausibility argument ("Plausibilitätsargument") when she discusses the degree of integration of the *je*-clause. Despite all the good and valid arguments that she presents for the dependence of a *je*-clause on the main clause, she argues for a very loose connection between the two clauses (disintegration, unembeddedness; Reis 2009:230). There is some literature on the serialization of subordinate clauses in the postfield (for example, Reis 1997 or Haider 1997, 2010).[8] In order to demonstrate the relatively high independence of the *je*-clause (in general), Reis shows that a *je*-clause in the postfield must be "outermost" in the periphery, as opposed to a relative clause, which tends to appear first.

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[7] Both subordinate clauses could also be adjacent to the reference expressions in the middle field. In this case, both sentences sound marked. For more on this, see below.

[8] Roughly, the earlier an extraposed clause is (or must be) realized, the more integrated it is considered to be: 'relative clauses > complement clauses > central adjunct clauses > peripheral adjunct clauses > disintegrated dependent clauses'. For deviations from this order, see also section 5.3.

(20) a. Der verpetzt dich an jemanden, den du   kennen solltest,
        he   squeals you to someone   who you know   should

   [wenn du   kneifst].
    if   you back_down
   'He'll rat you out to someone you should know if you chicken
   out.'

   b. Der verpetzt dich an jemanden, [wenn du kneifst], den du kennen
      solltest.

   c. Man vermisst jemanden umso mehr,
      one misses   someone   the   more

      den   man liebhat, [je trauriger man ist].
      whom one loves   the sadder   one   is
      'You miss someone you love all the more the sadder you are.'

   d. *Man vermisst jemanden umso mehr, [je trauriger man ist], den
      man liebhat.

In section 5.3, I elaborate on the ordering options in the right periphery.
The main goal here is to confront Reis with the following question: If there
is no real kinship between left- and right-placed *je*-clauses, why put
forward such an argument? Also, Beck (1997:236), while denying the
basic relatedness of left- and right-peripheral *je*-clause occurrences, lists
left- and right-peripheral *je*-clauses side by side in a set of examples. What
is more, Beck dedicates a great deal of space to an impressive formal
derivation showing that 21a,b (her 15 and 48) (can) have the same meaning
(a point, which Reis makes as well).

(21) a. Je besser Otto vorbereitet ist,
        the better   Otto prepared   is

      desto besser wird sein Referat   werden.
      the   better will his presentation   become
      'The better Otto is prepared, the better his presentation will be.'

   b. Ottos Referat   wird umso besser werden,
      Otto's presentation will the   better become

je besser er vorbereitet ist.
the better he prepared   is
'Otto's presentation will become all the better the better prepared
he is.'

In contrast, in Speyer's analysis, *je*-phrases, like regular relative
clauses, are originally and actually subconstituents of a larger phrase:
(Restrictive) relative clauses are embedded in a nominal phrase whose
head is a noun; *je*-clauses, for their part, are embedded within a complex
constituent that contains the *umso*-phrase as a (sort of) head. In this
respect, relative clauses are attributive clauses just like *je*-clauses, that is,
they are not first-degree clausal constituents in their matrix clause.

(22) a. [MatrixCP [DP [relative clause]]]
    b. [MatrixCP [umso __ [je-clause]]]

To make the structural relationship between the two types of sentences
plausible, Speyer compares them—for the most part inspired by the
remarks in Reis's article—and shows how and to what extent they behave
in the same way. In particular, *je*-clauses and regular restrictive relative
clauses share the following essential properties: Both are incompatible
with root clause phenomena and are infelicitous as elliptical answers.
Furthermore, they provide a domain for variable and operator binding, and
they cannot occur unaccompanied in the prefield. Each of these properties
is discussed in the next section.

5.2. Similarities Between Je-*Clauses and Relative Clauses.*
The first similarity between the two types of clauses concerns their
incompatibility with so-called root, or main clause phenomena, such as
speaker-oriented or other high sentence adverbials, modal particles,
epistemic adverbial expressions, etc. (see discussion in section 4). As
shown in section 3, *je*-clauses are incompatible with root phenomena,
which suggests that they are subordinate structures. Speyer (2011) clearly
and convincingly demonstrates that restrictive relatives pattern with *je*-
clauses in that respect. In contrast, appositive relative clauses, which are
unintegrated and can often be considered quasi-independent, syntactically
as well as semantically, allow root clause phenomena. Tag questions are
another example of a structure that is only compatible with root clauses:

Tag questions do not attach to *je-* or restrictive relative clauses, but are fine with appositives (see, among others, Frey & Meinunger 2019).

The second important feature is that *je*-clauses and relative clauses are both problematic if used as a stand-alone answer to a question (as a so-called TERM ANSWER). Examples 23 and 24 show that they can only figure as true subconstituents. In this respect, a kind of pied-piping effect is observed.

(23) Um wie viel länger wird er leiden müssen?
  'How much longer will he have to suffer?'

  a. Umso länger, je mehr er sich   wehrt.
     the   longer the more he himself defends
     'The longer, the more he resists.

  b. *?Je mehr er sich wehrt.

(24) Welcher Fußballer hat zwei gelbe Karten bekommen?
  'Which soccer player received two yellow cards?'

  a. Der (Fußballer),   der   in der vierten Minute
     the soccer_player who in the fourth   minute

     das 1:0 geschossen hat.
     the 1:0 shot   has
     'The (footballer / one) who scored the 1:0 in the fourth minute.'

  b. *?Der gleich in der vierten Minute das 1:0 geschossen hat.

Another clear similarity between the two sentence types is (semantic) binding. Certainly, binding into unambiguously integrated, that is, subordinated, sentences is straightforward. It is argued and generally accepted that quantifier binding is an unambiguous sign of subordination (see section 3): A pronoun in a subordinate clause can be interpreted as bound only if it is c-commanded by the associated quantifier. This, in turn, is only possible if the quantifier in the host clause is syntactically higher than the host clause of the pronoun. If binding is not possible, this suggests a higher position—perhaps even structural independency—of the pronoun's host clause. Again, *je*-clauses and restrictive relative clauses behave the same way in that they

allow binding, as shown in 25a and 25b, respectively. In contrast, appositive clauses do not, as shown in 25c.

(25) a. Jeder$_i$ wird umso leichter wandern können,
      everybody will   the   easier   hike   can

      je weniger Gepäck er$_i$ mitschleift.
      the less   baggage he drags_along
      'Everybody will be able to hike all the more easily the less baggage they drag along.'

    b. Jeder$_i$ schwärmt von   demjenigen neuen Film, den er$_i$
      everybody raves   about that(!)   new   Film that he

      seit diesem Wochenende im   Kino   anschauen kann.
      since this   weekend   in_the cinema watch   can
      'Everybody is raving about that new movie, which they have been able to watch in the cinema since last weekend.'

    c. *Jeder$_i$ schwärmt von   dem neuen Film
      everybody raves   about the   new   movie

      "Gouvernator V", den er$_i$ seit   diesem Wochenende
      "Gouvernator V" that he since this   weekend

      im   Kino   anschauen kann.
      in_the cinema watch   can
      'Everybody is raving about that new movie "Governor V", which they have been able to watch in the cinema since last weekend'

Things are trickier with the order in which the binder appears linearly after the bindee. As shown in section 3, unselective "donkey sentence" binding in *je-desto/umso*-clauses clearly parallels binding in conditional clauses. The work of Haegeman (2004, 2006) and Frey (2011)—as well as von Wietersheim (2016) on the experimental side—shows that subordinate clauses expressing a condition originate as deep in the matrix clause as an adverbial clause can possibly originate, that is, below the canonical subject position. In this sense, they are "central" adverbial

clauses (Haegeman's term).[9] Example 26a illustrates a conditional construction parallel to the *je*-construction in 25a: The subordinate *je/wenn*-clause appears on the right side, and the binding works in the parallel fashion, with the 'binder > bindee' order. However, canonical variable binding as in 26a becomes marginally more difficult when the *if*-clause is sentence initial, as in 26b.[10]

(26) a. Jeder Mensch$_i$ wird   wütend,
        every human   becomes furious

        [wenn er$_i$ lange genug   gereizt   wird].
         if   he long   enough provoked gets

   b. ?[Wenn   er$_i$ lang genug gereizt   wird],
       if   he   long enough provoked gets

      wird   jeder Mensch$_i$ wütend.
      becomes every human   furious
     'Every human will become furious if they are provoked for long enough.'

The same is true for *je*-clauses. For Reis, 27a is fully acceptable, and 27b gets a single question mark, which means it is slightly marked but quite grammatical. For Frey (and many more, pers.commun.), 27d,e are perfectly grammatical, whereas 27c is not.

(27) a. Umso froher, je mehr er$_i$ verdient, dürfte jeder$_i$ sein.
       the   happier the more he earns   should everybody be
       'Probably everybody is (the) happier the more they earn.'

   b. ?Je mehr sie$_i$ verliert,
      the more   it   loses

---

[9] Regular *wenn*-conditionals exclude sentences such as *If you are thirsty, there is beer in the fridge* or *If I may say so, …* For details, see Haegeman 2004, 2006.

[10] It has been shown that cataphoric uses are prone to parsing and similar processing difficulties (van Gompel & Liversedge 2003 or Häussler & Bader 2014) specifically for German. Nevertheless, the options are clear and the data robust.

desto mehr Staatshilfe erhält jede Bank$_i$.
the more state_support receives every bank
'The more it loses, the more government assistance every bank receives.'

c. *Je mehr jeder$_i$ bezahlt,
the more everybody pays

umso besser wird er$_i$ behandelt.
the better is he treated

d. Je mehr er$_i$ bezahlt,
the more he pays

umso besser wird jeder$_i$ auch behandelt.
the better is everybody also treated
'The more they pay, the better everybody is treated too.'

e. Jeder$_i$ wird auch umso besser behandelt,
everybody is also the better treated

je mehr er$_i$ zahlt.
the more he pays
'Everybody is also treated all the better, the more they pay.'

These data show clearly that *je*-clauses are subordinated and (originally) embedded deeply enough.

The third clear parallel between *je*-clauses and restrictive relatives involves variable binding. It is commonly accepted that in order to allow for variable binding, relative clauses can—but do not have to—reconstruct, as in 28b. The same is true for *je*-clauses, as shown in 27a,b,d. Thus, no principle C effects arise with preposed relative clauses: A name (an R-expression) and a coreferential pronoun can appear in either the matrix or the subordinated clause. The same holds for *je-desto*-clauses.

(28) a. Ich habe jedem$_i$ [das Buch,
I have everybody the book

das er$_i$ gesucht hat], gegeben.
that he searched has given

'I have given everybody the book that they were looking for.'

b. [Das Buch, das er$_i$ gesucht hat], habe ich jedem$_i$ gegeben.[11]

c. Die Arie, die Edita$_i$ gesungen hat,
   the aria that Edita sung   has

   hat sie$_i$ sich selber ausgesucht.
   has she self self   chosen
   'The aria that Edita sang she chose herself.'

d. Die Arie, die sie$_i$ gesungen hat, hat Edita$_i$ sich selber ausgesucht.

e. Je höher   sie$_i$ singen darf,
   the higher she sing   may

   desto mehr freut   [Edita$_i$] sich.
   the   more be_happy Edita   self
   'The higher she is allowed to sing, the happier Edita is.'

f. Je höher [Edita$_i$] singen darf, desto mehr freut sie$_i$ sich.

These data thus once more point to commonalities between restrictive relative clauses and *je*-clauses.

Finally, neither *je*-clauses nor restrictive relative clauses can appear alone in the prefield. This commonality is very clear and straightforward, yet it is not mentioned anywhere. As a true attribute, a relative clause cannot be moved to the sentence-initial position while leaving the head noun behind, as shown in 29a; nor can a *je*-clause be separated in this way from the *umso*- or *desto*-constituent, as shown in 29b.

(29) a. *Den   er gekauft hat,
        he-ACC he bought   has

---

[11] Interestingly, the same grammatical illusions—or confusions—arise in the case of relative clauses and *je*-clauses in the preposed variant of 28b.

(i) *?Das Buch das jeder$_i$ gesucht hat, habe ich ihm$_i$ gegeben.
      the   book that everybody searched has have I   him   given

hat er den Mantel im   Laden vergessen.
has he the coat   in_the shop   forgotten
Intended: 'He forgot the coat in the shop which he had bought.'

  b. *Je weniger Gepäck wir haben,
     the less   baggage we   have

   werden wir umso/desto leichter wandern.
   will   we   the   easier   hike
   Intended: 'The less baggage we have, the more easily we will
   hike.'

To summarize the discussion so far, all these parallels suggest that both clause types are of a very similar structural make-up. Restrictive relative clauses as well as *je*-clauses are attributes, that is, they originate inside a larger sentential constituent, where they are c-commanded by an essential element of the host: i) the determiner in relative clause structures or ii) the *desto/umso*-item in connection with the comparative morpheme(s).

5.3. Apparent (and Real) Differences.
Despite the similarities outlined above, there seem to be some ways in which restrictive relative clauses and *je*-clauses behave differently. I argue, however, that the differences are only apparent. It was pointed out by Speyer (2011) that relative clauses and *je*-clauses contrast with respect to their linearization options. This observation can be traced back to an (apparent) discovery by Haider (1997, 2010) that in the postfield, relative clauses necessarily precede argument clauses, as in 30a,c. If the order is reversed, as in 30b,d, the sentence is ungrammatical (in the examples below the relative clauses appear in square brackets and the argument clauses are underlined). Speyer's evidence for this claim is given in 30a,b; the original examples from Haider are in 30c,d.

(30) a. Der Inspektor glaubt   dem Zeugen überhaupt nicht,
        the inspector believes the witness at_all   not

     [der sich als zweiter gemeldet hatte], dass er
     who self as   second   reported had   that he

     den Vorgang genau beobachtet hat.

555555555

the event   exact observed   has

b. *Der Inspektor glaubt dem Zeugen überhaupt nicht, er habe den Vorgang genau beobachtet, [der sich als zweiter gemeldet hatte].
'The inspector does not believe the witness, who had come forward second, at all that he observed the event closely.'

c. Es fiel letztes Jahrhundert einem Grammatiker auf,
it fell last century a grammarian PTCL

[der das untersuchte], dass dieser Satz grammatisch ist.
who that investigated that this sentence grammatical is

d. *Es fiel letztes Jahrhundert einem Grammatiker auf, dass dieser Satz grammatisch ist, [der das untersuchte].
'Last century, it was noticed by a grammarian who investigated it that this sentence is grammatical.'

Speyer (2011) argues that in contrast to relative clauses, *je*-clauses in the postfield necessarily follow the argument clause. The alleged difference is illustrated in 31. The minimal pair is meant to show that *je*-clauses, unlike relative clauses, cannot be first in the postfield, but can only appear after argument clauses. This accounts for the ungrammaticality of 31b, where the *je*-clause precedes the argument clause of *glaubt* 'believe' …*dass der Angeklagte unschuldig ist* '…that the accused is innocent'.

(31) a. Das Gericht glaubt umso leichter dem Verteidiger,
the court believes the easier the defense_counsel

dass der Angeklagte unschuldig ist,
that the accused innocent is

[je schlechter die Beweise der Staatsanwaltschaft sind].
the worse the evidence of_the prosecution are

b. *Das Gericht glaubt umso leichter dem Verteidiger, [je schlechter die Beweise der Staatsanwaltschaft sind], dass der Angeklagte unschuldig ist.

'The poorer the evidence of the prosecution is, the more easily the court believes the defense counsel that the accused is innocent.'

This observation, if correct, would mean the end of parallelism between restrictive relatives and *je*-clauses. However, Schrinner & Opitz (2016) and Richter & Opitz (2018) are able to show that, contrary to Haider 1997, 2010, under certain circumstances, the linearization 'argument clause before relative clause' is not excluded. In other words, relative clauses may also sometimes follow the argument clause, just like *je*-clauses in 31a. Among the factors that play a role, finiteness is a decisive feature. It is important whether the argument clause is finite or nonfinite: Infinitival clauses are very likely to come first, as shown in 32a. However, even finite relative clauses are quite acceptable if the argument clause realizes the object and the relative clause modifies the subject, as in 32b (quite opposite to 30d, where the relative clause is linked to the object and the argument clause realizes the subject).

(32) a. Da   gab der Mann vor   _{ArgInf}   auch   weiter   abstinent
        there gave the man PTCL _{ArgInf}   also   further   abstinent
        zu   sein,
        to   be

        [_{RelCl}   der   nie   getrunken hatte].
         _{RelCl}   who   never   drunk   had
        'The man pretended to still be abstinent, even though he had never drunk (lit. 'The man pretended to still be abstinent who never drank')'

     b. Da   hat der Mann gefragt, _{ArgCl}   ob es noch
        there has the man asked   _{ArgCl}   if it still

        Freibier gibt, [_{RelCl}   der   zur   Tür   hereinkam].
        free_beer gives _{RelCl}   who   to_the door   in_came
        'The man that came in the door asked whether there was still free beer.'

Richter & Opitz (2018) argue that there is no grammatical rule or principle that excludes argument clauses after relative clauses, as shown

by the grammaticality of 32. In experiments they did indeed find that in some contexts, there was a gradient preference for relative clauses before argument clauses; however, there are no constraints that would rule out the other order categorically. With grammaticality judgment elicitations, they showed that both serializations are accepted. None of their examples in 33 were judged bad.

(33) a. Im Sommer hat es nur   die Urlauber   gestört
      in   summer   has it only the vacationers   disturbed

   [RelCl   die ohnehin sehr lichtempfindlich sind]
   RelCl   who already very light_sensitive   are

   ArgCl   <u>dass   die Sonne   so intensiv   strahlte</u>.
   ArgCl   that   the sun   so intense   shone

   b. Im Sommer hat es nur die Urlauber gestört _{ArgCl}<u>dass die Sonne so intensiv strahlte</u> [_{RelCl}die ohnehin sehr lichtempfindlich sind].
      'In summer, only those tourists that are already very light sensitive minded that the sun shone so intensely.'

   c. Jetzt kann die Kanzlerin   allen Leuten versprechen
      now   can   the chancellor all   people promise

   [RelCl   die von der   Flut   betroffen sind],
   RelCl   who by the   flood   affected are

   ArgCl   <u>dass   sie Soforthilfen   bereitstellen wird</u>
   ArgCl   that   she emergency_relief   provide   will

   d. Jetzt kann die Kanzlerin allen Leuten versprechen _{ArgCl}<u>dass sie Soforthilfen bereitstellen wird</u> [_{RelCl}die von der Flut betroffen sind].[12]

---

[12] At the time this section was being rewritten, the German newspaper *Die Welt* printed the headline in i.

(i) Der Druck, zu stillen,   der   auf Frauen ausgeübt wird, ist absurd.
    the pressure to breastfeed which on women   acted   is   is   absurd
    'The pressure on women to breastfeed is absurd.'

'Now the chancellor can promise all those people that are affected by the flood that she will provide emergency relief.'

What is more, Speyer's (2011) judgment in 31b, in which the *je*-clause follows the argument clause, is much too strong.[13] This sentence is no worse than the examples in 32, in which the relative clause follows the argument clause. In this respect, yet another commonality between the two attribute clause types can be established: Not only can they both precede the argument clause in the postfield, they can also both follow it.

In sum, then, it can be said in general terms that all the common features cited argue for a quasi-equal treatment of *je*-clauses and restrictive relative clauses. However, this is not to say that restrictive relatives and *je*-clauses are semantically and/or syntactically identical, with the one— presumably, *je*-clauses—forming a subtype of the other (restrictive relatives).[14] For example, one difference is brought up in Meinunger (2011): *je*-clauses seem to potentially be able to contain multiple operators. This is also true for (embedded) questions and free relatives, but never simple regular relative clauses. Furthermore, researchers, especially Bech (1964:56), have claimed that *je*-clauses are not (or hardly ever) compatible with negation—a situation which is completely different from the one with relatives.

What is more, although there is no grammatical difference with respect to the potential linearization options for argument clauses, regular relative clauses, and *je*-clauses, there are some differences in terms of frequency and intuitive evaluation of available options. *Je*-clauses are less likely to occupy a linearly preceding position, leaving the first postfield slots for canonical restrictive and/or object clauses (not to mention their propensity to appear initially in the fronted version, which is only exceptional for relatives, see below).

In this case, the reverse order would sound marked and definitely less appropriate than the one chosen. If the object clause is so small (which implies non-finiteness), the linearization 'relative clause after argument clause' is perfectly fine.

[13] This reflects my own intuition as well as the intuition of other native speakers I have consulted.

[14] Later I demonstrate that *je*-clauses have similarities with a specific type of appositive relatives, which, however, show some signs of embedding and differ from canonical restrictive relatives (as well as regular appositives).

A similar argument comes from another tendency. Relative clauses are typically optional elements: In traditional terms, they are considered modifying adjuncts that are not required to be realized. In contrast, *je*-clauses seem to be an obligatory part of the construction. These absolute claims, however, turn out to be too strong. There is a type of restrictive relative clause that is obligatory; namely, the type that appears with the determiner *der~/die~/dasjenige* (Blümel 2011:1; see next paragraph):

(34) Dasjenige Buch *(das   auf dem Tisch liegt) ist blau.
     the_one   book   which on the   table lies is blue
     'The book that is lying on the table is blue.'

At the same time, Reis (2009:226, for example) mentions that there are *umso*-constituents that do not require a correlative *je*-part, as shown in 35.

(35) a. Klar   hat er Probleme, weshalb   er   sich umso
        certainly has he problems why   he   self the

        intensiver bemühen   sollte.
        intensive make_effort should
        'Of course he has problems, which is why he should try harder.'

     b. Ich weiß, Sie haben viel   zu tun.
        I   know you have much   to do.

        Umso dankbarer   wäre ich, wenn Sie kämen.
        the more_grateful were I   if   you came
        'I know you are very busy. I would be all the more grateful if you came.'

Conversely, *je*-clauses can also be licensed by elements other than *umso*—for example, by comparative forms of adverbs, as in 36a, or by verbs of gradual change, as in 36b (the examples are from Reis 2009:226, who credits Bech 1964).

(36) a. Er scheint immer näher zu kommen,
        he seems always closer to come

        [je   mehr sich Bernadettens Blick daran festsaugt].
         the more self Bernadetten's gaze   on_it attaches

'He seems to get closer and closer, the more Bernadetten's gaze fixes on it.'

b. Die Krankheit <u>verschlimmerte</u> sich,
   the disease   worsened   self

[je höher man die Strahlendosis   ansetzte].
 the higher one   the radiation_dose on_put
'The disease got worse the higher the dose of radiation.'

These data show that—despite the observable tendency to cluster differently—, relative clauses and *je*-clauses show no difference, in principle. However, what is important—and this is the essential point of this paragraph—is that both types of subordinate clauses, relative clauses and *je*-clauses, are attributive clauses: They are subconstituents of a single compact, complex constituent in the prefield. Thus, in the base structure, they are properly embedded within this larger phrase.

6. The Proposal.
6.1. Inversion of the Attributive Part and Its Consequences.
An analysis that comes closest to the structural proposal in this paper is provided by Fortmann (2016). His analysis is similar—or, from a certain perspective, even identical—to the one proposed in Roehrs et al. 2002 or Huber 2007. Fortmann bases his approach on Speyer's (2011) view that relative clauses and *je*-clauses should receive a similar treatment. However, unlike Speyer, Fortmann analyzes the prefinite verb string as a complex but single constituent that properly includes the initial *je*-clause. Thus, in contrast to den Dikken (2005), Beck (1997), Reis (2009), and even Speyer (2011), who all adopt the CP-adjunction structure in 37a, Fortmann adopts the structure in 37b.

(37) a. $[_{CP} [_{CP\text{-}Rel} \text{ je } ...] [_{CP} [... \text{ umso } ...] [_{C'} ...]]]$
    b. $[_{CP} [_{AP} [_{CP} \text{ je } ...]_i [\text{desto} / \text{umso} ... t_i ...]]_j [_{C'} ... t_j ...]]$

This is exactly the structure that I want to advocate here as well (for more on the derivation, see below).

Fortmann (2016) points out one feature that sets *je*-clauses and relative clauses apart, namely, the position of the clause relative to the construction head. *Je*-clauses virtually always precede the head of the AP constituent

(that is, *umso/desto*), whereas relative clauses obligatorily follow the head they belong to: "With relative clauses the unmarked order is N before relative clause, while with comparative conditionals it is the *je*-protasis before *desto*" (p. 137). I argue, however, that this difference is neither decisive nor crucial, nor is it always present. Upon closer inspection, it seems that NP-initial relative clauses do exist. Note that it is not uncommon for a nominal syntagma to consist of an article-like element with no overt head noun, followed by a relative clause. Blümel (2011), for example, discusses cases with the complex article-like element *derjenige*, which appears alone in 38.

(38) Derjenige, [der ein T-Shirt trägt], trinkt das erste Bier.
     (the one)   who a   t-shirt wears drinks the first beer
     'The one who is wearing a t-shirt drinks the first beer.'

Blümel (2011) discusses the status of *derjenige* as a determiner or a pronoun. This status is not important for the argument here. What is more crucial is that the same pattern can be observed with simple forms, typical for definite articles, as in 39.

(39) Die, [**die**   ein Kleid trug], ging zuerst rein.
     the REL a   dress wore went first   inside
     'The one who wore a dress went inside first.'

In 39, the relative clause follows the relative pronoun. However, in this type of relative clause the reverse order is possible, as in 40.

(40) a. [Die ein Kleid trug,] **die** ging zuerst rein.
         REL a   dress wore she went first   inside

     b. [Die das nicht so gut   können,] **die** fliegen raus.
         REL it not so good can   they fly   out
        'Those that are not so good at it get kicked out.'

Admittedly, it is not far-fetched to analyze these examples as instances of left dislocation. Fuß & Grewendorf (2014) have looked at these and related

constructions, and their analysis is different from the one proposed here.[15] The latter authors are also interested in those cases where a bare (headless) relative clause appears, as in 41.

(41) [Die <u>das nicht so gut   können</u>], fliegen raus.
     REL it   not   so good can   fly   out
    'Those that are not so good at it get kicked out.'

To account for 41, Fuß & Grewendorf (2014) argue for an input, or base structure, where the head determiner is present and is followed by the relative pronoun opening the relative clause. Then deletion under element repetition takes place. They further argue that this operation, which they refer to as SYNTACTIC HAPLOLOGY, reduces formally identical adjacent syllables—in this case, identical pronouns (homophonous; see Perlmutter 1971). Example 42a shows Fuß & Grewendorf's analysis: The element that gets elided is the second occurrence, that is, the relative pronoun.[16] Under this approach, one has to assume that an example such as 40b contains a left-dislocated structure; the "big" relativized constituent is outside the core clause and itself starts with a resumptive pronoun in the prefield, as shown in 42b. The alternative analysis of 40b makes use of the unorthodox stance that a relative clause can be initial and hence predeterminer positioned, as shown in 42c.[17]

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[15] In earlier stages of German, free relatives were generally introduced by d-pronouns, so the use of *w*-forms is an innovation (see Paul 1920:200–212).

[16] One of the reviewers remarks that phonological phrasing (break) speaks against the haplology approach.

[17] In fact, it seems that 40b can receive two different analyses under Fuß & Grewendorf's approach. It can also be analyzed as a left dislocation structure. Regular NPs (DPs) and free *w*-relatives must be considered the initial constituents of a left dislocation structure if they precede an unstressed morphologically agreeing *der/die/das* in front of the finite verb. Since Fuß & Grewendorf convincingly show that free *d*-relative clauses appear exactly in positions where regular DPs can surface, left dislocation is a possible alternative for headless *d*-relatives as well. What I show in the remainder of this section is that i) the Fuß & Grewendorf proposal to account for the observable pattern does not work, and ii) there are further instances of initial *d*-relatives that cannot be argued to be instances of left dislocation. A crucial difference between *w*-relatives and *d*-relatives is that the former are inherently headless relatives, that is, they have no

(42) a. Die, [~~die~~ das nicht so gut können], fliegen raus.
    b. Die, ~~die~~ das nicht so gut können, [**die** fliegen raus].
    c. [Die das nicht so gut können, [die _]] fliegen raus.

Both analyses have pros and cons. A lack of clarity in the Fuß & Grewendorf approach emerges with respect to structures with case mismatch, such as 43. Example 43a is provided by Fuß & Grewendorf themselves.

(43) a. [<u>Dem</u>   ich am meisten verdanke], <u>der</u>   lebt noch.
       the-DAT I   the most   owe   the-NOM lives still
       'The one I owe the most is still alive.'

    b. [<u>Den</u>   er ausgesucht hatte], <u>der</u>   war schon   weg.
       the-ACC he chosen   had   the-NOM was already away
       'The one he had chosen was already gone.'

With such data, the Fuß & Grewendorf analysis runs into problems. For their haplology deletion device to work, the authors are forced to assume base structures such as 44a,b. Note that it is the second occurrence of the pronominal in Fuß & Grewendorf's approach that gets deleted under formal identity. For reasons of online processing, if spoken out loud, 44a,b sound awkward and fuzzy, but not necessarily unacceptable. However, after "thinking away" the relative clause attribute—which is a reliable test—it becomes clear that the haplology approach is not straightforward, see 44c,d.

(44) a. #Dem, dem ich am meisten verdanke, der lebt noch.
    b. #Den, den er ausgesucht hatte, der war schon weg.
    c. *Dem, der lebt noch.
    d. *Den, der war schon weg.

---

potential related version with a possible head. It is only under left dislocation that a coreferential article-like pronoun can be inserted. The co-occurrence of a *w*-relative with a determiner-like head is excluded in the middle field as well as in the postfield (extraposition site). *D*-relatives, in contrast, can always come with a determiner-like overt head.

In contrast, a "reversal-by-raising" approach, as shown in 45, would work easily and elegantly.

(45) [[Dem   ich am meisten verdanke] der __]   lebt   noch.
      the-DAT I   the most   owe   the-NOM lives still
      'The one I owe the most is still alive.'

Additionally, it is even possible to have DP-internally preposed relative clauses where a nominal head is present, as in 46. Speyer (2011) quotes this example (his 24) to justify the common assumption that relative clauses cannot appear initially.

(46) *[Die <u>die Klausur verhauen haben</u>, die Studenten]
      the the test   flunked   have   the students

      können die Klausur wiederholen.
      can   the   test   repeat
      Intended: "Those students who have failed the exam may repeat it.'

However, I believe that 46 is actually acceptable, albeit somewhat "sloppy", or too colloquial. The conviction that it is ungrammatical may be due to a linguistic understanding that is very normative and oriented toward written language use. Under specific circumstances and in the right context, structures similar to 46 can be found and argued to be possible. Rarely in the literature have linguists argued that the structure [$_{DP}$ RelCl [$_{D'}$ D° [$_{NP}$ noun]]] is an option indeed (Müller 2003, Meinunger 2018). Thus, a comparable DP-internal realization has been proposed for some cases where an attributive PP precedes its head noun. In particular, Müller (2003), in order to argue for a regular verb-second structure, analyzes the cases in 47 as NP topicalization. Under his analysis, the prefield constituent is a single NP, and the PP is an NP-internal attribute that happens to precede its head.

(47) a. [$_{NP}$[$_{PP}$ An der   Wand]   das   Bild]   kommt
            on the   wall   the   picture   appears
      mir   bekannt   vor.
      me   familiar   PTCL
      'The picture on the wall seems familiar to me.'

b. [NP[PP   Mit   der Bahn] eine   Reise]   ist nicht
        with   the train a   trip   is not
geplant.
planned
'A trip with the train is not planned.'

Haider (1992) already proposed a DP-internal preposing for these cases: [[*auf dem Tisch*]ᵢ *die Bücher* tᵢ]. Müller (2003) defends the same structure in which a relative clause surfaces. Referring to Abb (1994), Müller (2003:35) argues that "Bei (72) [48a] sieht man besonders deutlich, dass es sich nicht um eine Mehrfachbesetzung des Vorfelds handeln kann, da der Relativsatz ja allein nicht vorfeldfähig ist" [one sees particularly clearly that [48a] cannot be a case of multiple occupation of the prefield because a mere relative clause cannot fill the prefield on its own].[18] In Meinunger 2018:13, I adduce the authentic find shown in 48b.

(48) a. Der die Karten hat, der Mann, soll   gleich kommen.
      the the tickets has the man   shall soon   come
      'The man that has the tickets is supposed to arrive soon.'

  b. Den   du   gesehen hast, der Rettungswagen scheint
     the-ACC you   seen   have the ambulance   seems

     wirklich beim DRK zu kurven.
     really   at_the DRK to circle
     'The ambulance you have seen really seems to be circling at the DRK.'

These examples are taken here as evidence that DP-internal relative clause inversion is possible. However, things are not so simple. It has been shown that this type of inversion is quite restricted. There is research showing that DP-internal PP fronting is not possible when the DP itself occurs inside a PP (Gallmann & Lindauer 1994 and Popp & Tebay 2019). This explains the ungrammaticality of 49, in which the DP *die Bücher auf dem Tisch* is an object of the preposition *für* 'for'.

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[18] The translation is mine.

(49) *Ich interessiere mich <u>für</u> [DP [SpecD auf dem Tisch]
    I   interest   myself for   on the   table

die Bücher].
the books
   Intended: I am interested in the books on the table.

Yet in spite of any concerns about the validity of the data and difficulties with the analysis, some interesting conclusions can be made on the inverse relative clause structure. The first observation is that the inversion option seems to only be possible if the relative clause is not straightforwardly intersective in the sense of canonically restrictive. The classic idea of Partee (1975) that a restrictive relative clause must be in the c-command domain of the determiner holds for surface structures of this kind, which means that in terms of sequence, the relative must follow its restrictor. Hence it does not come as a surprise that truly quantified expressions, which are inherently restrictive and thus not possible as appositives, are not allowed in this pattern:[19]

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[19] Note the following confusing fact. A considerable part of the present paper argues that *je*-clauses are very similar to restrictive relative clauses; at several points I show that *je*-clauses pattern together with restrictive relatives and are different in the relevant aspect from appositive clauses (binding options, main clause phenomena, speech act contribution). However, when it comes to the linearization option, I suddenly argue that *je*-clauses pattern together with appositive(-like) relative clauses in that both can appear in the initial position, while restrictive clauses cannot. This, however, is not a contradiction. As stated at the end of section 5.3, I do not claim that *je*-clauses are (equivalent to) relative clauses, neither restrictive nor appositive. They share with restrictive relatives the feature of being an attributive part of a larger host constituent. Nonrestrictives, often equated with appositives, come in several types. There are so-called continuative clauses, which can be argued to be structurally completely independent (Demirdache 1991, Holler 2005). Then there are appositive clauses, which show signs of embeddedness or integration: There are those that bring with them so-called at-issue content (Koev 2013), and there are appositives that appear in the scope of sentence-internal operators (Schlenker 2010). The preposed relative clauses seem to be of yet another interesting category: They clearly do not act as intersecting modifiers, yet they appear to surface as an argument of the determiner that they precede. Further research will have to show of which exact nature this structure is. What is important is that this type of DP-internal preposing

(50) a. *Der kommen darf, jeder (Gast) muss
        the come   may every (guest) must

   ein paar Dollar dabei   haben.
   a   few   dollars with_them have
   Intended: 'Every guest that is allowed to come has to have a few
   dollars with them.'

   b. *Die gekommen war, keine (Besucherin)
       those come   was   no   (visitor)

   hatte ein   paar Dollar dabei.
   had   a   few   dollars with_them
   Intended: 'Of those that had come, no visitors had any dollars
   with them.'

   c. *Der nur   französisch spricht, jemand   kommt
       the only French   speaks   somebody comes

   in Montreal gut   zurecht.
   in Montreal good along
   Intended: 'Somebody that only speaks French is able to get along
   well in Montreal.'

Another observation concerning this structure is that the inversion is only
licit in the sentence-initial position.

(51) a. *Hast du, [der die Karten hat, den Mann] gesehen?
        have you   the the tickets has the man   seen
        Intended: 'Have you seen the man with the tickets?'

   b. *Jeden Moment müsste, [der die Karten hat, der Mann],

---

or inversion is not an idiosyncratic property of relative clauses. It is the same for
PPs (*auf dem Tisch der* 'the one on the table', *im Wasser die* 'those from within
the water') or adverbs (*gestern die* 'the one yesterday', *dort der* 'the one over
there', *oben das* 'the thing above'). These complex "inversed" constituents must
be fronted inside their host clause to the prefield position exactly like Bavarian
topicalization (see below) and *je-desto/umso*-constituents. It seems plausible that
the trigger for the move is more syntactic than semantic.

every moment ought   the the tickets has the man

kommen.
come
Intended: 'The man with the tickets should arrive any minute.'

However, this very pattern can be analyzed in such a way as to again unify relative clause structures and the *je-desto*-construction. For some linguistic structures it can be stated that the observable shape of a constituent is possible only in a derived position, that is, the relevant format is not licit in the original or base position. A very similar case is represented by a construction originally discussed by Bayer (2001) and known as EMPHATIC TOPICALIZATION in Bavarian:

(52) a. [<u>An Mantl</u> daß da Xaver kafft   hot] hot neamad glaubt.
       a   coat   that the Xaver bought has   has nobody believed
       'As for a coat, nobody believed that Xaver bought one.'

    b. [<u>Da Hans</u> ob   kummt] woaß-e ned.
       the Hans whether comes   know-I not
       'As for Hans, I don't know whether he will come.'

In these cases, an object clause has been moved to the prefield. The interesting feature is that within the preposed subordinate clause, the topicalized constituents—*an Mantl* and *da Hans*—have been fronted to the embedded prefield, so to speak. Bavarian is known to tolerate a constituent in Spec, CP while also spelling out the subordinating element, thus there is no doubly filled COMP filter. Crucially now, this type of doubly filled COMP is licit only if the object clause has been fronted. If it appears (or remains) in a right-peripheral (that is, presumably in the base or canonical) position, this order is not possible, as shown in 53.

(53) a. *Neamad hot glaubt,
       nobody   has believed

       [an Mantl daß da Xaver kafft   hot].
       a   coat   that the Xaver bought has

b. *I woaß ned, [da Hans ob   kummt].
   I know not   the Hans whether comes

One must conclude that the object clause internal topicalization triggers an obligatory preposing of the complete object clause. In parallel fashion, those complex NPs where the relative clause has been inverted are likewise good only if they appear initially. NP-internal relative clause preposing thus triggers the obligatory leftward movement of the complex NP to the initial position, as in 48; leaving it behind causes ungrammaticality, as in 51.

6.2. Explaining the Adjacency (Differently).

As laid down by Reis (2009), who bases her analysis on Bech 1964, many combinations and versions of *je-desto/umso(-je)*-realizations are attested (see the Appendix). The standard and normatively correct and recommended use is the following: The *je*-clause precedes the other part—whether it is introduced by *umso* or *desto*. Roehrs et al. (2002) provide the example in 54a. If the order is reversed (which for linguists like den Dikken, Reis, and Beck means that a different construction must be assumed), only the *umso*-variant is unobjectionably fine; the *desto*-variant is not, as shown in 54b,c. The same applies to embedded cases, such as 54d.

(54) a. Je müder   Otto ist, umso/desto aggressiver   ist er.
        the more_tired Otto is   the   more_aggressive is he

   b. Otto ist umso/??desto aggressiver, je müder er ist.

   c. Ist Otto umso/??desto aggressiver, je müder er ist?
      'The more tired Otto is, the more aggressive he is.'

   d. Ich glaube, dass Otto umso/??desto aggressiver   ist,
      I   believe that Otto the   more_aggressive is

      je müder   er ist.
      the more_tired he is
      'I believe that Otto is all (the) more aggressive the more tired he is.'

The interpretation of this interesting pattern in the present paper is the following: The *desto* version is not licit in the middle-field internal base

position. It is only acceptable with i) the *je*-clause to its left and ii) the whole unit in the prefield. This explains the observed adjacency requirement. In 54c,d, the head of the AP remains middle-field internal, and the *je*-clause may extrapose—hence no obligatory adjacency for the *je*-clause with its host. However, if the *je*-clause has moved AP-internally to the AP-initial position and the correlative item is *desto*—as in the cases with NP-initial relative clauses or Bavarian emphatic topicalization—the inversion structure must move to the matrix prefield as a compact, coherent chunk. This obligatory move can be attributed to the *wh*-character of the AP. In Meinunger 2011, it has been argued that *je*- can be considered a bound morpheme, much like the *w*- or *wh*-part in question words or relative pronouns. If this element is part of an AP-affiliated A-bar Spec position, the whole expression—containing the item *desto*—is an operator that must be moved to its designated preverbal position. This explains i) the obligatory order (*je* before *desto*) and ii) the mandatory adjacency.

Given all the considerations above, *je-desto*-clauses behave as expected. The structure in 55 reflects the fact that the *je*-clause originates as a relative-clause-like attribute inside the AP. In a first step, it raises to a left-peripheral scope position, turning the whole constituent into a newly created operator, which in turn must be moved to the highest scope position, that is, the matrix prefield. All these dependencies and interconnections explain the adjacency claimed in Roehrs et al. 2002 in a different way.

(55)
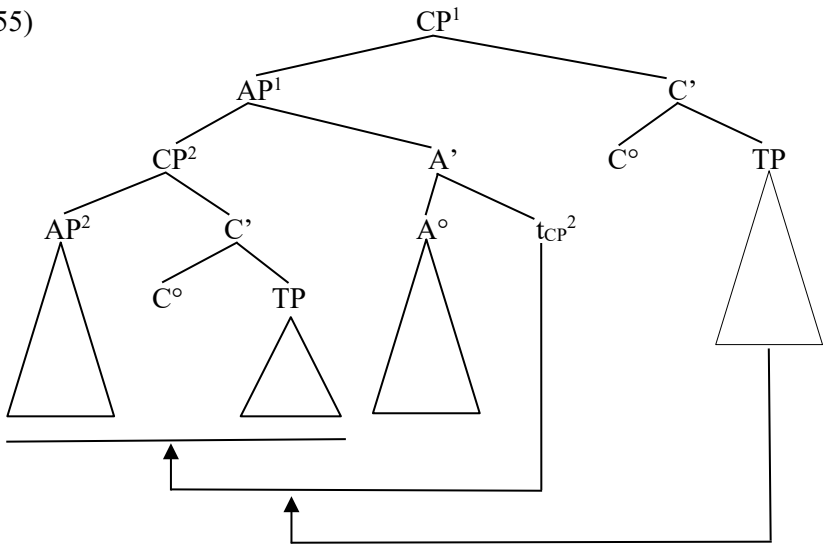
Je schneller   Uli_läuft,   desto früher   kommt   er ans Ziel.

Note that this analysis is valid for the standard register. Here it is offered as the genuine structural description of it, assuming that a large majority of native speakers agree that the order in 55 is grammatical in the standard language. However, as mentioned above and in the Appendix, the linguistic reality is much more diverse. Contrary to the quite rigorous evaluation of Roehrs et al. 2002 (in accordance with the standard and normative common practice also adopted here), the largest German grammar (*IDS-Grammatik*, Zifonun et al. 1997) cites the following examples:

(56)   und die Kapitelle sind desto   höher,
       and the capitals   are   the   higher

       je   länger die Säule ist,…
       the longer the pillar is
       'and the longer the column is, the higher the capitals are.'

In the rest of the paper, I would like to discuss some further examples and argue that the analysis remains valid, although there are structures attested that seem to resist it.

6.3. Further Cases of Nonadjacency.

Occasionally, one encounters a different type of example in which the adjacency is not present (see the examples in 57). Here, the *je*-clause appears separately from the *umso-* or *desto*-constituent. The *je*-clause seems to have been shifted (scrambled, topicalized) to the left and is separated from its host by intervening material. In the remainder of this paper, I argue that these and other related examples fall most likely under the phenomenon GRAMMATICAL ILLUSION (prefixed with ↗ to suggest a magic wand).

(57) a.↗ Ferner fällt bei   dieser Tabelle besonders auf,
        also   falls with this   table   particularly PTCL

        dass <u>je öfter</u>   der Patient die Pn. durchgemacht <u>hat</u>,
        that   the more_often the patient the Pn. experienced   has

        die Prognose für ihn <u>desto günstiger</u> ist.[20]
        the prognosis for him the   better   is
        'Also, it becomes especially apparent through the chart that the more often a patient has already experienced the Pn., the better the prognosis is for them.'   (Orzech 1916:47)

  b.↗ Die Entfremdung des   Arbeiters… drückt sich… so aus,
        the estrangement of_the worker   press refl   so PTCL

        daß, <u>je mehr der Arbeiter produziert</u>,
        that the more the worker   produces

        er <u>umso weniger</u> zu konsumieren hat, …
        he the less   to   consume   has
        'The alienation of the worker is revealed in that the more the worker produces, the less he has to consume…'
                                 (Fischer 1970:108)

It becomes apparent that if confronted with the discontinuous version, speakers regularly opt for the adjacent version as the better one (although the distance realizations are not clearly unacceptable; see also den Dikken

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[20] This is an authentic example. It is not clear what *Pn* stands for.

2005:505, 506.) Thus, native speakers always prefer 58a to 58b, and 58c to 58d.

(58) a. Sie ist eine Sängerin, die du, je öfter
         she is   a   singer   the you the more_often

        du   sie hörst, umso schlimmer findest.
        you her hear   the   worse   find
        'She is a singer that you find (all the) worse the more often you listen to her.'

    b.⤴ Sie ist eine Sängerin, die, je öfter   du sie hörst,
        she is   a   singer   the the more_often you her hear

        umso schlimmer findest.
        the   worse   find
        'She is a singer that you find (all the) worse the more often you listen to her.'

    c. Ich glaube, dass fast   jeder,   je wärmer es wird,
        I   believe that almost everybody the warmer it gets

        umso häufiger   ins   Freie geht.
        the   more_often into_the open goes
        'I believe that almost everybody goes outside (all the) more often the warmer it gets.'

    d.⤴ Ich glaube, dass, je wärmer es wird,
        I   believe that the warmer it gets

        fast   jeder   umso häufiger   ins   Freie   geht.
        almost everybody the more_often into_the open   goes
        'I believe that the warmer it gets, almost everybody goes outside (all the) more often.'

So, what speaks for the ungrammaticality of examples 58b,d despite their apparent acceptability? It can be observed that people often—almost systematically—produce or readily accept structures such as 59.

(59) ↗ Sie ist eine Sängerin, die_, je öfter du sie hörst, umso schlimmer findest.

However, in this type of example, the subject is clearly missing in the relative clause, which is the matrix to the complex *je-umso*-configuration. This is not untypical for center-embedding structures. The same happens with intraposed adjunct clauses, as in 60.

(60) a. ↗ Das ist eine Sängerin, die_, [wenn man sie
        that is a singer that when one she

    engagieren will,] mindestens dreimal fragen muss.
    engage wants at_least three_times ask must
    'This is a singer one needs to ask at least three times if one wants to engage her.'

    b. ↗ Es sollte so sein, dass_, [wenn man
        it should so be that when one

    einen Fehler begangen hat,] ihn dann auch zugibt.
    a mistake made has it then also admits
    'It should be the case that if you make a mistake, you also admit it.'

Such sentences are very inconspicuous but nevertheless ungrammatical.

Consider now *wenn-dann-* and *je-desto*-constructions, which exhibit a similar pattern when it comes to embedding and main clause verb order (for example, Meinunger 2014 arguing against Freywald 2008).

(61) a. ↗ Daraus schlussfolgern wir, dass <u>je größer</u>
        from_that conclude we that the bigger

    <u>die Impedanz der Last ausfällt,</u>
    the impendence of_the load turns_out

    desto geringer ist der Strom, der fließen kann.
    the lower is the electricity that flow can
    'From that we conclude that the bigger the impedance of the load turns out the be, the less electricity can flow.'

                                            (Digital Fernsehen 2013)

b.↗Ich habe ja   schon oft   gesagt, dass <u>wenn man</u>
   I   have PTCL already often said   that if   one

<u>weniger Kalorien isst</u>, als   man verbraucht,
less   calories   eats than one consumes

dann   müsste man ja   eigentlich abnehmen.
then   must   one PTCL actually   lose_weight
'I have already often said that in actual fact, one should lose
weight if one eats fewer calories than they burn.'

                                         (Body Kiss 2016)

In both examples, *dass* is followed by a clause that should be verb final
but is not. It comes along as a sort of verb third: In 61a, the order is [*dass*
+] *je*-clause + *desto*-AP + finite verb …, and in 61b, it is [*dass*+] *wenn*-
clause + *dann* + finite verb… Such a realization is ungrammatical, but the
accumulation of true, potential, or illicit clause beginnings blurs the
regular processing. Only a more careful analysis reveals that these
structures are ill-formed. What is more—and this is crucial and clear in
terms of native speakers' judgments—the *je*-clause cannot be fronted
alone to the prefield leaving its associate *umso (desto)* in the middle field;
29b is repeated here as 62.

(62) *Je weniger Gepäck   wir haben,
     the less   baggage we   have

werden wir umso/desto leichter wandern.
will   we   the   easier   hike

Only the compact fronting of the complex constituent [*je weniger Gepäck
wir haben, umso leichter*] can be fronted. The *wenn*-clause and the
proform or correlate *dann* must appear adjacent, if they appear early, in an
initial position, as in 63a. Only if the *wenn*-clause appears in the
extraposed postfield position is discontinuity possible, as in 63d.

(63) a. <u>Wenn es wieder wärmer wird</u>,   dann geht sicherlich
       when it again   warmer becomes then   goes surely

auch jeder   wieder öfter   raus.
also everybody again   more_often out

'When it gets warmer again, everybody will certainly also go outside more often again.'

b. (Aber nur) dann, <u>wenn es wärmer wird</u>,
(but   only) then   when it warmer gets

geht sicherlich auch jeder   wieder öfter   raus.
goes surely   also everybody again   more_often out

c. Jeder geht, (nur) dann, <u>wenn es wärmer wird</u>, sicherlich auch wieder öfter raus.

d. Jeder geht sicherlich auch dann wieder öfter raus, <u>wenn es wärmer wird</u>.

e. *<u>Wenn es wärmer wird</u>, geht dann sicherlich auch jeder wieder öfter raus.
'But only when it gets warmer again will everybody certainly go outside more often again.'

Example 63e is as bad as 62. It shows that in the case of leftward movement, *dann* and the associate *wenn*-clause cannot be separated. However, as with the center-embedding examples in 60, intraposition delivers quite an acceptable result, as shown in 64.

(64) ↗Ich bestreite, dass <u>wenn es wärmer wird</u>,
     I   deny   that   when it warmer becomes

jeder   dann auch wieder öfter   rausgeht.
everybody then also again more_often out_goes
'I question whether, when it gets warmer again, everybody then will also go outside more often again.'

The reason for this behavior seems to lie in the parser-unfriendly structure of center embedding. A long tradition in psycholinguistics has shown that center embedding—especially, double center embedding—renders ungrammatical structures acceptable (see Huang & Phillips 2021 for very recent work and the references cited therein). Thus, after closer scrutiny, it can be stated that *je*-clauses cannot appear in isolation (that is, remote from the *umso*-part) apart from being extraposed into the postfield, just like relative clauses.

6.4. Cases of Apparent Deletion: "Short" Je-*Forms.*
In this section, I present another argument against the left dislocation
analysis of *je*-clauses. It has been observed in connection with the
comparative correlative construction that in some cases, the involved parts
can be reduced or realized with less linguistic material than in the form of
fully fledged finite clauses (Culicover & Jackendoff 1999:554 for English
and Fortmann 2016 for German; see section 4 above). The most salient
approach would probably be to assume ellipsis, perhaps as some form of
copula deletion or omission (Borsley 2004:89, den Dikken 2005:497), as
shown in 65. Example 17 is repeated below as 65b.

(65) a. The higher the stakes (are), the lower his expectations (are).

    b. Je fetter der Braten (ist),
       the fatter the roast   (is)

       desto schwerer liegt er im   Magen.
       the   heavier lies it in_the stomach
       'The fatter the roast, the heavier it sits in the stomach.'

    Fortmann (2016) suggests an alternative analysis based on various
considerations. The main reason is that the usual circumstances for verb
deletion—such as gapping, for example—are not present. Furthermore,
there seems to exist the option to realize the *je*-constituent as part of a
prenominal adjectival attribute:

(66) die je längere umso unerträglichere   Wartezeit
      the the longer   the   more_unbearable waiting_time
      'a waiting time that becomes all the more unbearable the longer it
      lasts'

Hence, the conclusion can be drawn that the *je*-phrase does not need to be
clausal in nature but can be of a smaller size. Fortmann (2016:129)
suggests a degree or adjectival phrase: [*je fetter der Braten*]$_{DegP/AP}$. The
following new observations support this analysis.[21] First, copula-free

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[21] I assume that the nonappearance of the copula has different triggers or licensing
conditions in the root clause than in the *je*-constituent. For the argument here, I
only consider the *je*-part.

options for the *je*-constituent are restricted. A copula-free *je*-clause is natural and unproblematic in the canonical initial, that is, left-peripheral position—see 65b or the authentic example found by a reviewer in 67.

(67) Je kleiner das Unternehmen, desto größer sind
     the smaller the company   the   bigger are

     in der Regel   die Risiken.
     in the rule   the risks
     'As a rule, the smaller the company, the greater the risks.'
                                             (AdNet Consulting)

It turns out that short(ened) copula-free versions of *je*-clauses show a clear preference for the initial position, as in 68a. Example 68b, in which the *je*-clause appears in the middle-field internal position, is marked and must be somewhat artificial, whereas the extraposed variant in 68c is impossible: It appears to be incomplete and hence ungrammatical.

(68) a. <u>Je größer die Versuchung</u>,
        the bigger the temptation

        umso mehr hat er widerstehen müssen.
        the   more has he resist   must
        'The greater the temptation, the more he had to resist.'

     b. ?Er hat$_{(,)}$ <u>je größer die Versuchung</u>$_{(,)}$ umso mehr widerstehen müssen.

     c. *Er hat umso mehr widerstehen müssen$_{(,)}$ <u>je größer die Versuchung</u>.
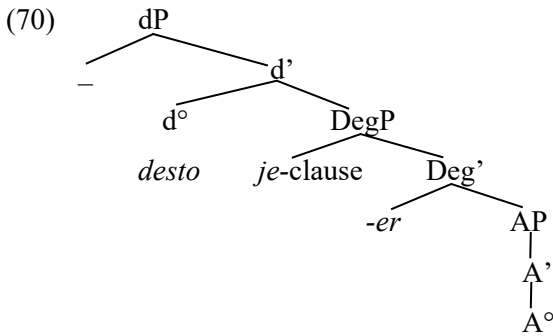
The explanation can be as simple as this: Clausal constituents can extrapose and do so preferably; smaller ones (nominal and adjectival) can never extrapose and hence must not undergo extraposition. As soon as the *je*-constituent is obviously clausal, exhibiting a (finite) verb, such a minimally different version is completely fine:

(69) Er hat umso mehr widerstehen müssen, <u>je größer die Versuchung **war**</u>.
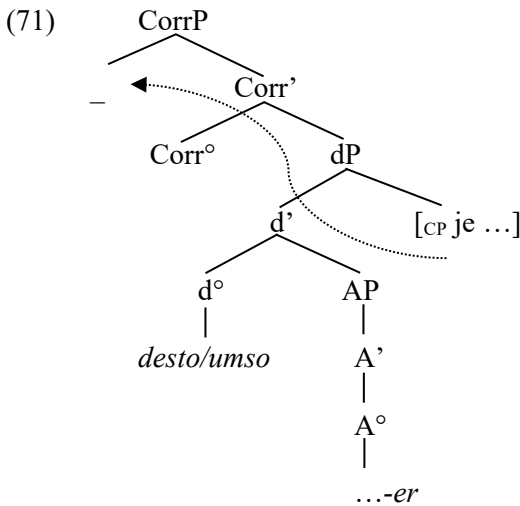
The grammatically well-formed prefield and middle-field versions are unproblematic. Both *je*-constituents appear inside their host as the fronted but not removed attributive subpart projection. None of the classic left dislocation approaches have a straightforward explanation for this pattern. Under these approaches, one might expect a difference between sentences with initial versus noninitial *je*-constituents, but not a similar behavior of initial and medial *je*-constituents in contrast to right-peripheral realizations.

7. A Structural Proposal.

In this section, a formal structural proposal is suggested. The main claim of the present paper is that *je-desto/umso*-constructions are regular verb-second structures. The apparent verb-third shape is an illusion. It emerges because a complex constituent, which necessarily consists of two subcon-stituents, is moved to the sentence-initial position. This complex unit is the extended *je-desto/umso*-AP, which is base generated inside the lower part of the clause, that is, inside the domain of the predicate. For this adjectival constituent several structural analyses are possible. The one given in 70 is along the lines of the analysis offered by proponents of restricted structure building (à la Kayne's 1994 anti-symmetry and Linear Correspondence Axiom, or Haider's 1992, 1997, 2010 rigorous right branching). In the tree in 70, the uppermost head is *umso* or *desto*—here assigned the label *d*. This head takes as its complement a DegP, which is supposed to capture the fact that the complement AP must surface in its comparative form. The head of DegP is the relevant comparative morpheme: For example, if, as in most cases, the comparative is synthetic, the adjective moves to the head position and fuses with the *-er* morpheme. What is more, the comparative head supplies a specifier position that hosts the *je*-clause (or a smaller *je*-constituent). Under the specifier-head agreement, the *je*-constituent aligns with the comparative head in that it, too, must contain comparative morphology.

(70)

```
            dP
          /    \
         /      d'
        _      /   \
             d°      DegP
           desto    /    \
               je-clause   Deg'
                         /     \
                       -er      AP
                                |
                                A'
                                |
                                A°
```

Another option is given in 71, where CorrP stands for Correlative Phrase.

(71)

```
            CorrP
          /      \
         /        Corr'
        _ ◄·····  /     \
               Corr°      dP
                        /    \
                      d'      [CP je …]
                     /  \
                   d°    AP
                   |     |
              desto/umso A'
                         |
                         A°
                         |
                       …-er
```

This at first glance perhaps less attractive option has a few advantages compared to 70. The first one is that it can capture very well the similarities between *je*-clauses and relative clauses worked out in the previous sections. One proposal that has had occasional impact comes from Sternefeld 2006:376. Sternefeld agrees with the new and very influential approaches that assume that the relative clause is an argument of the determiner. He proposes a structure where the determiner is transitive and may (first) combine with the NP and (then) the CP, as shown in 72 (Sternefeld's example 42c).

(72)

```
                        DP
                   ╱          ╲
               D'              CP
             ╱    ╲
          D°        NP
```
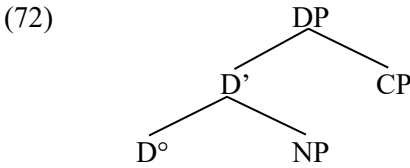
There are many advantages to this analysis, despite one (apparent) disadvantage, that is, the unpopular right-hand specifier (of the dP). The structure in 71 captures the parallelism between *je*-clauses and relative clauses perfectly. The *desto*-element, which, formally, also very much reminds one of a determiner-like element (see den Dikken 2005:501), takes an AP as the first argument and the *je*-clause as the second one. Additionally, just like the head Deg in 70 (the *-er* morpheme), it may impose the requirement of comparative morphology on its specifier (or on its two arguments).

Another reason that the structure in 71 is possibly superior to the one in 70 is the position of the *je*-clause: The structure in 71 has the right position for it, under the syntax-and-semantics approach by Sternefeld. Except for the "comparative agreement", there is not much evidence for its position in 70, that is, as the specifier of DegP. The *je*-clause can never surface in this hypothetical position overtly. It is impossible for it to appear between *desto* and its associated adjectival expression. This means that the relevant surface orders would have to be achieved by a cascade of movement operations, which are not motivated straightforwardly. In contrast, the rare intraposed order, where the *je*-clause might be assumed to occur in its base position, follows directly from the structure in 71:

(73) Ich bin sicher, dass er sich umso mehr,
     I   am   sure   that he self the   more

     je   öfter   er zitiert wurde,
     the more_often he quoted was

     über seine wachsende Berühmtheit gefreut hat.
     over his   growing   popularity   rejoiced has
     'I am sure that he was (all the) gladder about his growing popularity the more often he was quoted.'

Be that as it may, whichever analysis is adopted as the final internal microstructure, the proposal of the present paper is that the macrostructure of the *je-desto/umso*-correlative is the verb-second analysis in 37b, repeated below as 74.

(74) [$_{CP}$ [$_{AP}$[$_{CP}$ je ...]$_i$ [desto / umso ... t$_i$ ...]]$_j$ [$_{C'}$ C° ... t$_j$ ...]]

The adjectival phrase, which embeds the internally proposed *je*-clause, occupies the prefield as a single but internally complex constituent.

8. Conclusion.

It has been shown that German *je-desto/umso*-sentences are regular verb-second structures. The hitherto influential analyses assume a left dislocation structure, which can be considered a verb-third structure. It has been shown that such an approach cannot capture many features of *je-desto-(/umso)*-structures, such as i) middle-field internal occurrence, ii) clause-initial obligatory adjacency, iii) short (verb-less) variants in nonextraposed positions and the impossibility thereof in the postfield position, and iv) the semantically equivalent contribution of initial, medial, and postposed *je*-clauses to the compositional meaning of the whole complex structure. In the present article, the proposal has been put forward and developed, according to which *je*-clauses are similar to relative clauses: In their base structure, both types of clauses are attributes that belong to a clausal constituent in which they are embedded.

The specific structure of *je*-initial complex sentences invites a new perspective on inverted NPs, that is, on nominal groups where an attribute precedes the determiner (and the head noun). This leads to some speculative, but promising proposals such as the existence of a class of prenominal relative clauses in German.

Furthermore, the paper discusses middle-field realizations of *je*-clauses where the host, that is, the matrix clause, seems to license an empty subject. It has been argued that this type of structure should be considered a case of grammatical illusion, much like cases of embedded verb fronting *je*-structures. The paper concludes with the proposal of two (noncommittal) potential formal options for how the given analysis of *je*-clauses as attributes can be worked out in a syntactically more elaborated way using very specific types of NP- or AP-internal functional projections.

APPENDIX

The correlative construction is subject to much variation. Regarding the regular 'subordinate clause > matrix clause' order, the following options are attested. Reis (2009), citing Bech (1964)—who collected authentic findings—provides examples of *je-desto* shown in i and *je-umso* shown in ii. The example of *je-so* in iii is characterized as obsolete or old-fashioned. The use of *je-je* in iv is considered somewhat colloquial. Reis also provides an *umso-umso* example originating from a popular normative grammarian, as shown in v. Examples vi and vii complete the picture in that one can now conclude that a pure and "blind" doubling of the "heads" seems to be a possible pattern for this structure (see also the discussion on the quoted webpage, *gutefrage*). However, the order '*desto/umso > je*' under the 'protasis > matrix' reading, as in viii, is unacceptable.

(i)   Je   weniger Gepäck   wir haben, desto leichter wandern wir.
       the less   baggage   we have   the   easier hike   we
       'The less baggage we have, the more easily we hike.'

(ii)   Je   höher   man in   die Berge   kommt,
       the higher one into the mountains comes

       umso mühsamer wird   das Vorrücken.
       the harder   becomes   the advance.
       'The higher one gets into the mountains, the more difficult the advance becomes.'

(iii) Je   näher er kam, so mehr stieg   sein Haß.
       the closer he came the more increased his   hatred
       'The closer he came, the more his hatred increased.'

(iv)   Je   eigensinniger   er   sich… beweisen wollte,
       the more_stubborn   he   self… prove   wanted

       je   mehr wurde er   ihm zur bloßen Phantasmagorie.
       the more became he   him to_a simple phantasmagoria
       'The more stubbornly he tried to prove himself, the more he became to him a mere phantasmagoria.'

(v)   Umso mehr Leute kommen, umso enger wird   es.
       the more people come   the tighter becomes it
       'The more people come, the more cramped it gets.'

(vi)   Desto mehr wir darüber   verstehen, was   das Weltraumwetter
       the   more we about_it understand what the space_weather

       und seine Interaktion mit der Erde und dem Mond antreibt,
       and its   interaction with the earth and the   moon drives

       desto besser können wir seine Effekte lindern.
       the   better can   we   its   effects alleviate
       'The more we learn about what drives the space weather and its interaction
       with the earth and moon, the better we can alleviate its effects.'
                                                              (WinFuture 2019)

(vii) Desto mehr ich laufe, desto schlanker werde   ich.
       the   more I   run,   the   slimmer   become I
       'The more I run, the slimmer I get.'   (gutefrage 2019)

(viii) *#Desto/umso weniger Gepäck wir haben, je   leichter wandern wir.
       the   less   baggage we have   the easier   hike   we
       Intended: The less baggage we have, the more easily we hike.

For the reverse realization, the order '*umso > je*' in ix is the most common variant;
the order '*desto > je*' in x is considered to be degraded.

(ix)   Du   wirst   umso dicker, je   mehr du   isst.
       you become the   fatter the more you   eat
       'You become all the fatter the more you eat'

(x) ??Otto ist desto aggressiver,   je   müder   er ist.
       Otto is   the   more_aggressive   the more_tired he is
       'Otto is (all the) more aggressive the more tired he is.'

      However, some grammars do not share this evaluation and consider both
almost equally fine (*IDS-Grammatik*, Zifonun et al. 1997, example 56 above). In
contrast, some very categoric speakers find i perfect and ii degraded (??), thus
having internalized a mirror acceptability for *je-desto -:- umso-je*. Here, the
evaluations start to become quite diverse. There is even less agreement about the
middle-field option in xi.

(xi)   Wir schlussfolgern, dass je   größer der Wille war,
       we   conclude   that the bigger the will   was

       umso/??desto härter gerungen wurde.
       the   harder wrangled was

'We conclude that the bigger the will was, the harder the wrangling was.'

With such examples, one encounters a complexity that gives rise to so many illusions and shaky intuitions that it seems impossible to get a clear picture.

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Leibniz-Zentrum Allgemeine Sprachwissenschaft (ZAS)
Schuetzenstrasse 18
D-10117 Berlin, Germany
[meinunger@leibniz-zas.de]