

# Superfluous *z* in Swiss German

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## 1 Introduction: *zu* marks the right edge

In an important contribution to the syntax of German *zu*-infinitives, Bayer et al. (2005) have pointed out the importance of marking the right edge of infinitival constructions by means of the particle *zu*. When occurring in intraposed position, the function of the particle is to enable status checking with the matrix verb, which is assumed to require adjacency at PF. Evidence for this comes from the observation that once an extraposed constituent intervenes, the result is ungrammatical:

- (1) Ich habe mich {*ok* dafür} *zu* entscheiden {\*dafür} versucht.  
I have me it.for to decide.INF it.for tried  
'I tried to decide on it.'

Further evidence for the importance of marking the right edge can be found in a construction involving so-called displaced *zu*: As a generalization, the particle *zu* always attaches to the last verbal element of the verb cluster. If the order in the verb cluster is descending, we find *zu* in the expected place, namely marking the verb that is immediately dependent on the *zu*-selector (the matrix verb in this case):

- (2) STANDARD GERMAN, 3-2-1  
Er dachte, das Buch [lesen<sub>3</sub> können<sub>2</sub> *zu* müssen<sub>1</sub>].  
he thought the book read.INF can.INF to must.INF  
'He thought he had to be able to read the book.'

Crucially, however, if the order in the cluster is ascending or at least partially ascending such as 1-3-2, as is the norm with Standard German Aux-Mod-Inf clusters, *zu* appears displaced as it occurs before the final verb of the cluster even though this verb is not immediately dependent on the *zu*-selector (in this case the complementizer/preposition *ohne* 'without'):<sup>1</sup>

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1 In what follows, I assume that displacement is a grammatical phenomenon, contra Merkes (1895), Bech (1963), Haider (2011). For arguments that it is grammatical, see e.g. Meurers (2000) and Vogel (2009). Things are particularly clear in varieties such as Swiss German (and others) where verb clusters are usually ascending; displacement is the default in these varieties, and numerous examples can be found both in traditional descriptions as well as in the theoretical literature, cf. Hodler (1969: 560), Weber (1987: 560), Weise (1900: 154), Comrie & Frauenfelder (1992), T. Bader (1995: 22), Cooper (1995: 188f.).

- (3) STANDARD GERMAN, 1-3-2  
 ?ohne es mich [haben<sub>1</sub> prüfen<sub>3</sub> zu lassen<sub>2</sub>]  
 without it me have.INF verify.INF to let.INF  
 ‘without having let me verify it’

Interestingly, the version with *zu* being placed before V1, viz., the hierarchically highest verb of the cluster and thus the element immediately dependent on the *zu*-selector, is strongly ungrammatical:

- (4) STANDARD GERMAN, 1-3-2, V1=non-finite  
 \*ohne es mich [zu haben<sub>1</sub> prüfen<sub>3</sub> lassen<sub>2</sub>]  
 without it me to have.INF verify.INF let.INF  
 ‘without having let me verify it’

Bayer et al. (2005) interpret this as an indication of the strength of the requirement to mark the right edge of the infinitive construction with the relevant status feature. While, as detailed below, my assumptions about displaced *zu* differ in a number of respects from the authors, we will encounter further evidence for the importance of marking the right edge of infinitival XPs.

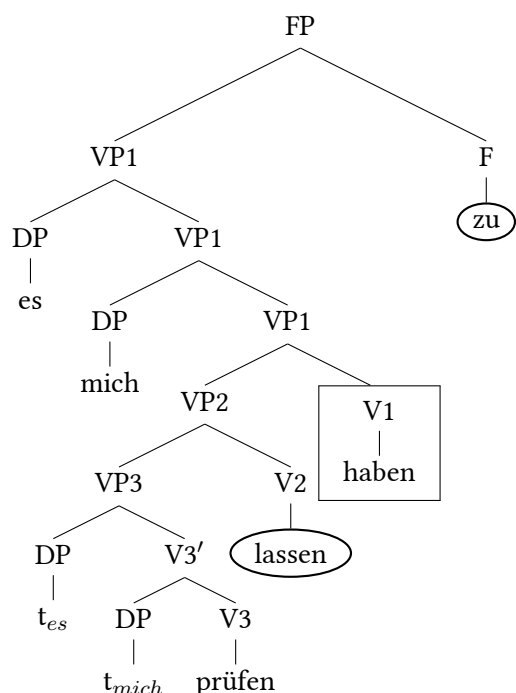
## 2 Deriving displaced *zu*

In previous work, Salzmann (2013a), Salzmann (2013b), I have derived displaced *zu* as follows: The basic idea is that  $z(u)$  is an independent syntactic element that is associated with its host post-syntactically by means of Local Dislocation, an operation that applies to linear structure and is constrained by adjacency (cf. Embick & Noyer, 2001).  $z(u)$  is inserted into a clause-final head and therefore always comes last in the verb cluster. In case there is reordering in the verb cluster, i.e., if we find (partially) ascending clusters, we get the effect of displacement. My assumptions about verb clusters are the following: First, all verbal elements are labeled as V (even though some may be functional). Second, complements of restructuring predicates are VPs while those of non-restructuring predicates are CPs. In other words, the size of the complement determines its transparency, see e.g. Wurmbrand (2007). Third, *zu* occupies a functional head F above VP, see also Den Dikken & Hoekstra (1997: 1062). Fourth, the default linearization is left-branching, which leads to descending verb clusters and a clause-final functional head F. Fifth, ascending cluster orders are derived by means of PF-operations, viz., VP-inversion as in Haegeman & van Riemsdijk (1986) and reordering cluster formation as in Salzmann (2013a) and Salzmann (2013b).<sup>2</sup> The derivation of (3) is illustrated by the following tree diagrams:

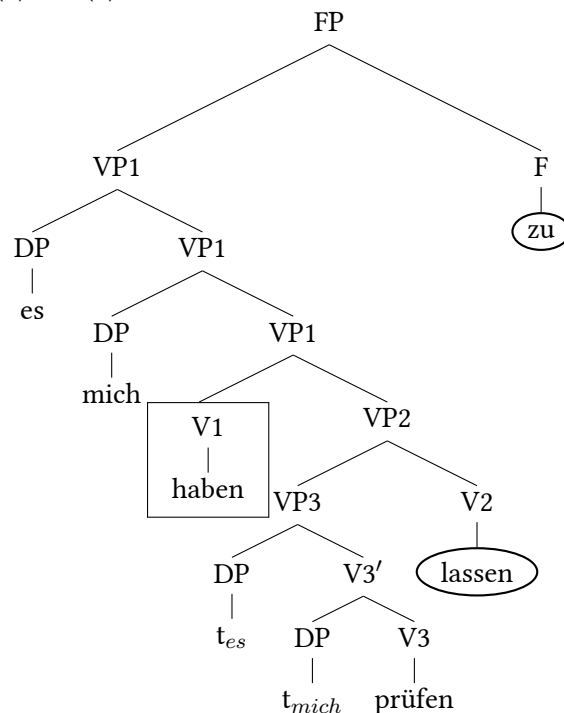
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<sup>2</sup> Importantly, the same results can be obtained if the default linearization is right-branching and left-branching/descending structures are derived by PF-operations as long as the functional head F is clause-final (for a comparison, see Salzmann 2013b, for general arguments in favor of a right-branching base, see Salzmann 2013a).

(5) (3) before VP-inversion:



(6) (3) after VP-inversion:



(5) illustrates the configuration after the default linearization. At this point, we are still dealing with a hierarchical structure. Standard German (like many other German varieties) has the (limited) option of ascending orders, which in this case are derived by means of VP-inversion. Concretely, V1 inverts with its sister VP2, leading to (6). In a next step, after vocabulary insertion, this structure is converted into a linear string. This leads to the order V1-V3-V2-zu. Now the properties of *zu* come into play: Since it is a prefix, it requires a host. As is standardly assumed for such late PF-operations, *zu* affixes onto and inverts with the adjacent verbal element, i.e. undergoes Local Dislocation. This is illustrated in (7) (note that the brackets are only used for purposes of illustration, no hierarchical structure is present at that point):

$$(7) \quad [_{FP} [_{VP1} V1 [_{VP2} [_{VP3} V3] V2]] zu] \Rightarrow [_{FP} [_{VP1} V1 [_{VP2} [_{VP3} V3] \mathbf{zu+V2}]] \quad ]$$

$\uparrow$  LD  $\downarrow$

This implies that displacement is just a side-effect of cluster-reordering. It results when head-finality meets a head-initial verb cluster. There is thus no displacement as such, *zu*-placement simply always targets the last verbal element of the cluster because it is inserted into a clause-final head F.

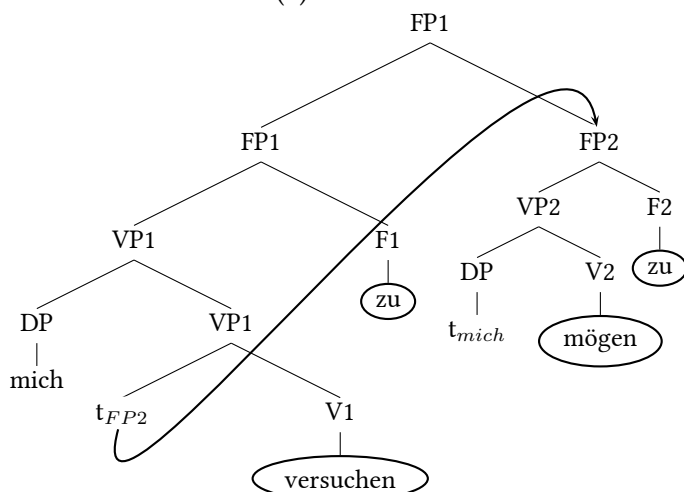
### 3 Adjunction vs. complementation

Importantly, displacement is only found in verb clusters and Verb Projection Raising (VPR), but crucially not in the 3rd Construction: As the following example shows, *zu* ends up on V1 (there is a second *zu* on V2 because V1 selects a *zu*-infinitive as well).

- (8) ohne mich [<sub>VP1</sub> \*(zu) versuchen<sub>1</sub> [<sub>VP2</sub> t<sub>mich</sub> zu mögen<sub>2</sub>]]  
 without me to try.INF to like.INF  
 ‘without trying to like me’

Crucially, this pattern can be derived if the non-finite clause is not a complement of the matrix verb at surface structure. A way of achieving this is extraposition (as in the traditional remnant extraposition analysis of the 3rd Construction, but the same result can also be obtained by means of leftward movement of the non-finite clause followed by leftward remnant movement):<sup>3</sup>

- (9) 3rd Construction: (8)



After linearization, *zu*-placement then derives the correct result:

- (10) without [<sub>FP1</sub> [<sub>FP1</sub> [<sub>VP1</sub> me [<sub>VP1</sub> t<sub>FP2</sub> zu<sub>1</sub>+try<sub>1</sub>]] ] [<sub>FP2</sub> [<sub>VP2</sub> zu<sub>2</sub>+like<sub>2</sub> ] ]]  
 ↖ LD ↗ ↖ LD ↗

This shows that displacement diagnoses a fundamental structural property, viz., complementation, while the absence of displacement is a signature of adjunction/non-complementation:

displacement → complementation  
 non-displacement → adjunction/non-complementation

#### 4 Superfluous *z* in Swiss German

We are now ready to turn to a phenomenon that strikingly shows the relevance of marking infinitival clauses with *zu*. It surfaced during a study on *zu*-placement in clusters displaying a 2-1-3 order. Unlike the other five logically possible orders (1-2-3, 1-3-2, 3-1-2, 3-2-1, 2-3-1), this order is unattested with most types of verb clusters (such as Aux-Mod-Inf, Mod-Mod-Inf or Mod-Aux-Part) and has often been argued not to exist (cf. Seiler, 2004; Wurmbrand, 2004;

<sup>3</sup> As shown in Salzmann (2013b), deriving the 3rd Construction by means of PF-inversion fails as both *zus* would end up on V2.

Barbiers, 2005; Abels, 2011). Crucially, however, it is completely unmarked in certain Swiss German clusters involving perception verbs, benefactives, and inchoatives as V2 taking a bare infinitive as V3 (cf. also Lötscher, 1978: 3, 9):

- (11) SWISS GERMAN  
 wenn me mol agfange<sub>2</sub> het<sub>1</sub> richtig rauche<sub>3</sub> ...  
 when one once started has really smoke.INF  
 ‘once one has started to smoke regularly ...’ [www.festzeit.ch/viewpic.php?id=2407951&showall=true](http://www.festzeit.ch/viewpic.php?id=2407951&showall=true)

Before concluding that 2-1-3 clusters exist after all, an alternative explanation needs to be considered: The 2-1-3 order is just as unmarked in the 3rd Construction (which is similar in other respects: V2 is a participle and more or less lexical; furthermore, there can be non-verbal material between V1 and V3):

- (12) STANDARD GERMAN, 3rd Construction  
 dass er dem Hans versucht<sub>2</sub> hat<sub>1</sub> t<sub>dem Hans</sub> die Uhr zu stehlen<sub>3</sub>  
 that he the.DAT John tried has the watch to steal.INF  
 ‘that he tried to steal John’s watch’

Crucially, displaced *zu* can now be used as a diagnostic to determine whether the two constructions are structurally similar or not. If the Swiss German 2-1-3 clusters are proper verb clusters, they should show displacement; if, instead, they are an instance of the 3rd Construction, we should find no displacement. The result is clear: while there is no displacement in (12), the Swiss German 2-1-3 clusters show displacement:

- (13) a. STANDARD GERMAN  
 ohne dem Hans versucht<sub>2</sub> \*(zu) haben<sub>1</sub>, die Uhr zu stehlen<sub>3</sub>  
 without the.DAT John tried to have.INF the watch to steal.INF  
 ‘without having tried to steal John’s watch’  
 b. SWISS GERMAN  
 ... zum glücklich drüber sii, niä agfange<sub>2</sub> ha<sub>1</sub> z rauche<sub>3</sub>!  
 to happy about.it be.INF never begin.PRT have.INF to smoke.INF  
 ‘to be happy to have never started smoking’ <https://www.facebook.com/Radio24/posts/10151574652070814>

This implies that the 2-1-3 clusters bear the hallmarks of complementation and thus behave like regular verb clusters. As a consequence, theories of verb clusters must be more powerful than claimed in some of the previous literature, i.e., they must be able to generate all six logically possible orders, like e.g. the mechanisms proposed in M. Bader & Schmid (2009) or Salzmann (2013b).

Interestingly, while the version without displacement is unacceptable for all speakers, cf. (14a), some speakers accept a version where there are two *zus* even though only one *zu* is selected (by the preposition *ohni*), cf. (14b):

- (14) SWISS GERMAN  
 a. ?\*ohni en ghört<sub>2</sub> z ha<sub>1</sub> singe<sub>3</sub> adjunction

- b. ?ohni en ghört<sub>2</sub> z ha<sub>1</sub> z singe<sub>3</sub>  
 without him heard to have.INF to sing.INF  
 ‘without having heard him sing’

The positioning of *z* seems contradictory at first sight: Given that there is a *z* before V1, one seems to be dealing with non-complementation/adjunction of VP3; on the other hand, given that there is a *z* before the last verb of the cluster, there seems to be displacement and thus complementation of VP3. Since these are incompatible structure assignments, this cannot be correct. I would instead like to propose that we are dealing with adjunction/extrapolation of VP3 (which given (13b) thus seems to be optional). This motivates *z* on V1. The second *z* can then be understood as a last resort device to rescue an adjoined/extrapolated bare infinitive. To derive the pattern, I will make the following assumptions: Extrapolation as such is in principle optional; it is not triggered by a designated feature but rather by an optional generic edge-feature, cf. Assmann & Heck (2013). Whether the output of extrapolation is grammatical or not is governed by surface constraints. Descriptively, extrapolation is barred with bare infinitives and obligatory with *zu*-infinitives and finite CP-complements. Note that I thus follow Bayer et al. (2005) in assuming that what look like intraposed *zu*-infinitives/finite CPs are actually displaced/scrambled XPs which thus occupy a derived position. Accounting for this generalization is non-trivial. I would like to propose that this pattern is a reflex of the Williams Cycle (Williams, 1974) when applied to selection. The Williams Cycle in its original formulation refers to movement operations: once a movement operation has targeted a high position, the displaced constituent cannot move on and land in a position that is lower on the functional sequence. This bars e.g. long scrambling, viz. movement to SpecvP via SpecCP. I would like to argue that the German extrapolation pattern can be understood along similar lines if the Williams Cycle is adapted to phrase structure composition (at least in the verbal domain) and applies at surface structure: it prevents a verb from selecting a complement that is higher on the functional sequence. Complements involving an FP or CP layer are thus not licensed as surface complements of V. By extrapolating those to a higher functional position, e.g. vP or CP, the clash in the functional hierarchy can be avoided. Bare infinitives, however, are licensed in their base position because they are of the same type as their selector (viz. V, I am assuming that the complement does not contain any functional projections above V). They are not licensed, however, in adjoined position because there, a clash in the functional sequence obtains as well: They would be structurally higher than an element higher on the functional sequence, thereby leading to a clash.<sup>4</sup> Crucially, superfluous *z* in Swiss German can now be considered a repair strategy: by adding a functional layer, the extrapolated constituent is of the same type as its host, thereby avoiding a clash on the functional sequence.<sup>5</sup>

4 The constraint is to be interpreted as requiring that the extension of the tree by means of adjuncts must involve categories at least as high on the functional sequence as the host. It remains to be determined how fine-grained the constraint actually is. Perhaps, CPs have to be extrapolated to CP while it is sufficient to extrapolate FPs to vP; perhaps it is sufficient to extrapolate both to vP; this would imply that there is just a broad functional/lexical dichotomy at work. I leave this for future research. Another question I will have nothing to say about is why the constraint should only be operative in languages like German but not in other languages.

5 Clearly, this repair operation is very limited; one normally does not find an extra *zu* with bare infinitival complements, e.g. after modals: *\*weil er wollte [ein Buch zu lesen]* ‘because he wanted to read a book’

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Perhaps, the repair operation in Swiss German is parasitic on the z that is already present in the structure. I will leave this for future research.

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