

# Reanalysis and Restructuring

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## Abstract

Reanalysis is held to be one of the most important mechanisms in language change. In one tradition, reanalysis is defined as a change in the structure of expressions, i.e., as restructuring that is achieved by changes in the boundaries that separate linguistic units like morphemes, words, syntactic constituents, or clauses. Boundaries between these units can be shifted, lost, created, weakened, or strengthened. The New High German word *gleich* 'same, equal', for example, evolved from a bimorphemic word (Middle High German *gelīch*) through the loss of the morpheme boundary, and the place name *Zwieselburg* (a town in Austria) changed to *Wieselburg* as its initial *z* was reanalyzed as a preposition – a case of creation of a word boundary. There are two major triggers for reanalysis: first, structural ambiguities that may arise, for example, when there are differences in the structuring on different linguistic levels like the prosodic or the morpheme structure; second, analogy where reanalysis is motivated by similarity with other existing forms.

## Keywords

Reanalysis, restructuring, boundary shift, loss, creation, weakening, strengthening, structural ambiguity, analogy

## Main text

### 1. Introduction

Language change often involves a change in the internal structure of linguistic expressions. This process can be observed on different levels from morphemes to clauses. For example, the New High German word *gleich* 'same, equal' goes back to Middle High German *gelīch* and Old High German *gilīh* (Kluge 2002, 360). The word originally consisted of two morphemes: the root *līh* which is the same as English *like* and the prefix *gi* whose vowel was first reduced to schwa and eventually vanished completely. This vowel reduction was due to a process called *Nebensilbenabschwächung* 'weakening of secondary syllables' where vowels in unstressed syllables underwent weakening (cf. Braune & Reiffenstein 2004, 60-78). The result of the vowel loss was that the remainder of the prefix lost its status as a morpheme and became part of the stem so the word is now a simplex one. The change from Middle High German *gelīch* to New High German *gleich* therefore involves the loss of a morpheme boundary and the change in the

categorical status from prefix to part of the stem. Comparable changes occur as well on the syntactic level. One can see that in the development of case compounds in German (Demske 1999). Case compounds like *Gotteshaus* 'church' were originally (part of) a DP where the genitive attribute (in our example *Gottes* 'God.GEN') was prenominal, although a determiner was (or could be) present as well. An example is *ditz gotes hus* 'this God.GEN house' (Altdeutsche Predigten (ADP), ch. 31, l. 30) where the genitive attribute was placed between the determiner *ditz* and the noun. In older stages of German, genitive attributes could be pre- or postnominal, but the former possibility was lost in Middle High German times so that the genitive attribute in constructions like *ditz gotes hus* was reanalyzed as part of a compound (Demske 1999). After this reanalysis, the nouns *gotes* and *hus* were written together as in *daz goteshûs* (Altdeutsche Predigten (ADP), ch. 38, l. 5). In this particular case, reanalysis caused a kind of downgrading of the boundary between the two words (from constituent boundary to the word-internal boundary) and of the categorial status of the original genitive attribute (from syntactic phrase to part of a compound). Both cases presented so far consist of structural and categorial changes in the linguistic expressions involved.

This paper is structured as follows: section 2 contains definitions of the basic terms, section 3 presents a refined typology of boundary changes, section 4 discusses possible triggers for and results of reanalysis, and section 5 provides a brief summary.

## 2. Definition of the Basic Terms

Changes like the two presented above fall under the category of reanalysis. The classical definition of reanalysis was proposed by Langacker (1977, 58):

"a change in the structure of an expression or class of expressions that does not involve any immediate or intrinsic modification of its surface manifestation".

However, Langacker (1977) was far from the first to advocate structural reinterpretation as a mechanism for language change. The concept of reanalysis was not introduced in the 1970s (as seems to be often assumed, cf. Fanego 2004, Whitman 2012), but has a much longer history. The process as such was firstly described as a mechanism of syntactic change by Holzmann (1875) and later became known under the term *Gliederungsverschiebung* (i.e., syntactic rebracketing). Syntactic rebracketing (as an explanation for syntactic changes) occurred very regularly in historical German grammars (cf. Ebert 1978, 12) since the Neogrammarians (e.g., in Paul 1919, 1920, Dal 1978, or Stolte 1962) and experienced a kind of renaissance in the 1970s with publications such as Langacker (1977) or Timberlake (1977). Therefore, Langacker's (and Timberlake's) work marks the beginning of a more intensive engagement with reanalysis in historical syntax. For Langacker (1977), reanalysis consists of two parts: resegmentation and (syntactic/semantic) reformulation. Resegmentation comprises the structural part, that is, the change of boundaries between linguistic units of different kinds. Langacker (1977) assumes three types: boundary loss (including "downgrading of a boundary from a clitic to morpheme boundary", Langacker 1977, 65), shift, and creation. Reformulation

“involves aspects of structure more abstract than the occurrence and placement of boundaries” (Langacker 1977, 79). This includes the loss, addition, or change of syntactic or semantic values (for example, grammatical features like case or categorial features).

Another classical definition of reanalysis stems from Harris & Campbell (1995, 61), who define reanalysis as “a mechanism that changes the underlying structure of a syntactic pattern and which does not involve any immediate or intrinsic modification of its surface manifestation. [... It concerns] at least (i) constituency, (ii) hierarchical structure, (iii) category labels, and (iv) grammatical relations”. This definition focuses on syntactic reanalysis where structural reinterpretation goes hand in hand with changes in the four aspects mentioned above. Weiß (2021) reduces Harris & Campbell's definition to the proposal that (syntactic) reanalysis consists of relabeling (i.e., category change) and rebracketing (constituency change), whereas the changes in hierarchical structure and grammatical relations are consequences of the two other changes. Additionally, only these two changes are relevant for changes at the word level where, especially, grammatical relations (e.g., selection) play hardly a role.

Concerning the structural level, Langacker's (1977) definition of reanalysis is still the standard, which is generally accepted (cf. Madariaga 2017 or Detges et al. 2021). What is controversial, however, are other aspects, such as the questions of how, why, and when reanalysis occur in the first place. In usage-based models, it is the adult hearer who reanalyzes, and in formal approaches, it is the child acquiring its native language (Madariaga 2017, Detges et al. 2021, Weiß 2021). Other controversial topics are the relation between reanalysis and grammaticalization (see, among others, Haspelmath 1999 and Weiß 2021 for different views) or the role of ambiguity as trigger of reanalysis (Detges et al. 2021, Weiß 2021). In the following, I will mainly be concerned with the structural level of reanalysis in Langacker's (1977) sense, but also discuss ambiguity and analogy as possible causes for reanalysis and some consequences of reanalysis. However, I will not address other aspects like actualization and diffusion that are often mentioned in connection with reanalysis (cf. Timberlake 1977, Madariaga 2017) because these topics are not specific to reanalysis, but concern language change in general.

### 3. Change of Boundaries: A Refined Typology

In this chapter, I will modify and specify Langacker's (1977) typology of boundary changes. In this section, I will consider mainly the processes that fall under resegmentation, whereas reformulation is mostly treated in section 4 because some (if not most) aspects of what Langacker (1977) discussed under reformulation are either causes or effects of reanalysis. I will discuss and justify my own typology mainly (but not exclusively) with a case study on German, that is, with examples from the history and several dialectal varieties of German.

As mentioned above, Langacker (1977) distinguishes three types: boundary loss, shift, and creation. However, this typology has limitations because some types are missing and because it is largely restricted to word-internal reanalysis. For example, it is inconsistent to subsume only certain types of weakening under the category of loss, and not to consider strengthening of boundaries at all. Additionally, it counts as reanalysis when a

clitic develops into an affix (or part of it), that is, downgrading or weakening of a clitic boundary to an affix boundary, but obviously not when a word boundary gets downgraded to a morpheme boundary (as in the case of certain noun-noun compounds in German, see below).

My own typology of reanalysis includes five types: loss, creation, shift, weakening, and strengthening of boundaries. Given that any linguistic expression above the level of phonemes (that is, morphemes, words, phrases, clauses) is complex in the sense that it is structured, it does not make sense to exclude some types of boundaries and consider their changes as not falling under the category of reanalysis. Therefore, I will propose the following definition of reanalysis:

**Reanalysis** is the change of boundaries (above the level of phonemes) that results in the restructuring of complex expressions. Boundaries can be lost, created, shifted, weakened, or strengthened.

This definition is very broad: it neither excludes types of boundary changes nor does it specify the effects that accompany or are caused by reanalysis. The reasons why I do without the latter are that the effects can be very different and belong to Langacker's (1977) (syntactic/semantic) reformulation. These aspects are discussed in section 4 (as well as possible triggers). Section 3 is exclusively devoted to reanalysis at the structural level.

Boundaries separate linguistic units of different kinds from each other. The relevant units affected by reanalysis are morphemes, words, phrases, and sentences. Boundaries separating them can be deleted, created, shifted, weakened, or strengthened. In the following, each of these types will be presented and discussed separately for the individual linguistic units using concrete examples. I will start with morpheme boundaries.

### 3.1. Morpheme Boundaries

An example of the loss of a morpheme boundary was already presented at the beginning: the New High German word *gleich* 'same, equal' goes back to Middle High German *gelīch* and Old High German *gīlih* (Kluge 2002, 360). The older forms are composed of two morphemes (the prefix *gi/ge* and the root *lī(c)h*), the New High German word only one. The boundary originally separating the prefix from the stem has been lost and the prefix (more precisely, the remaining part of it after the vowel has vanished) became part of the stem of the word. Note that the deletion of the morpheme boundary, in this case, is probably not an inevitable consequence of the Schwa-deletion, because in other cases, *g-* retained its morpheme status, for example, in past participles like Bavarian *glaffa* 'run' (German *gelaufen*) or *gstunga* 'stunk' (German *gestunken*) where *g-* is still a separate morpheme. Other examples from German where a prefix became part of the stem are the verb *bleiben* 'stay' which had the form *biliban* in Old High German (Kluge 2002, 131), or the noun *Gnade* 'grace' which goes back to Old High German *gināda* (Kluge 2002, 363). In addition to the prefixes *be-* and *ge-*, the deictic adverb *da* 'there' that appears as the first constituent in so-called *Pronominaladverbien* (i.e., pronominal adverbs) provides

another potential case. Their second constituent is a preposition. Now, pronominal adverbs where the preposition has a vowel onset have an epenthetic *r* between pronoun and preposition (like *darauf* 'thereon, on it' or *darüber* 'thereon, about it'). In colloquial German, these pronominal adverbs are often pronounced without the vowel of the pronoun, that is, *darauf* is pronounced as *drauf* and *darüber* as *drüber*. Since the full forms still exist, the short forms cannot be analyzed as monomorphemic. However, at least with *droben* 'overhead' and *drüben* 'over', German has two adverbs where the full forms do no longer exist so they may count as monomorphemic. Especially for *drüben*, this is a very plausible assumption, since an adverb *üben* alone does not exist anymore (in contrast to *oben*). If this analysis is correct, then *dr-* (the consonantal skeleton of the original pronoun) is to be categorized synchronously as the onset of the monomorphemic word *drüben*.

Boundaries between a stem and a suffix can also disappear. In German, there are many nouns ending in a *-t* like *Brunft* 'rut', *Fahrt* 'drive', *Gunst* 'favor', *Kunst* 'art', or *Pflicht* 'duty' that are deverbal abstract nouns formed with the suffix *-ti* in Indo-European (cf. Henzen 1957, 183-185). However, the suffix was no longer productive in German and the vowel had already disappeared in Old High German times. They belonged to the *i*-stems which all ended in a consonant in the nominative singular (Braune & Reiffenstein 2004, § 219), so it is plausible to assume the former suffix *-t* was already part of the stem in Old High German times. A further example is the NHG noun *Hemd* 'shirt' that goes back to OHG *hemidi* and MHG *hem(e)de* (Kluge 2002, 406). The OHG word contains the suffix *-idi* (cf. Henzen 1957, 139), of which only the *-d-* remains in the NHG word. The word *Hemd* consists of one morpheme in the NHG, i.e., the morpheme boundary has disappeared today.

Loss of morpheme boundaries sometimes occurs when a word is borrowed from another language. A relevant example is the German word *Keks* 'cookie' which is borrowed from English *cakes*, but as a singular form – the German plural form is *Kekse* (Kluge 2002, 483). The morpheme *-s* that marks the plural in the English word is part of the stem in the German word which means that the morpheme boundary between stem and suffix is no longer existent in the German word.

Morpheme boundary loss occurs also between two affixes. In German, there are two suffixes that emerged in this manner, namely *-erei* and *-igkeit*. The German suffix *-ei* forms nouns on the base of verbs (cf. *Nörgelei* 'nagging' < *nörgeln* 'to nag') or other nouns (cf. *Teufelei* 'devilry') that express that an activity is carried out repeatedly or designate a location where this is done (Wellmann 1975, Grammis, *-ei* (Datei)). One of its allomorphs is *-erei*: the sequence *-erei* usually arises from the suffix *-ei* added to a base ending in *-er* (e.g., verbal stems like *kletter* 'climb' (Grammis, *-ei* (Nörgelei)) or nouns like *Metzger* 'butcher' (Wellmann 1975, 461). However, such an analysis is not possible with words like *Tollerei* 'romp', *Flickerei* 'patchwork', or others because there are no words in German like *Toller* or *Flicker* that could serve as the base for a derivation with the suffix *-ei* (Wellmann 1975, 451). In these cases, it is assumed that they are derived from an adjective (*toll* 'great, fantastic') or a verb (*flicken* 'to patch') with the suffix *-erei* (Wellmann 1975). The emergence of the allomorph *-erei* is the result of the loss of the boundary between the two suffixes *-er* and *-ei* that must have occurred in words like *Bäckerei* 'bakery', *Schlachtere* 'butchery', or *Weberei* 'weaving (mill)' that are, according to Wellmann (1975, 451), ambiguous between the analysis as a denominal *ei*-derivation (e.g., *Schlachter* + *ei*) and a deverbal *erei*-derivation (e.g., *schlacht* + *erei*). The same holds for the suffix *-igkeit* that occurs in

nouns like *Kleinigkeit* 'trifle' or *Gerechtigkeit* 'justice'. It is an allomorph of the suffix *-heit/keit* (Wellmann 1975, 30-31) that is used to form deadjectival nouns. When the adjective ends in *-ig*, the sequence *-igkeit* (as in *Flüssigkeit* 'liquid') emerged that was reanalyzed as a suffix of its own in ambiguous cases like *Leichtigkeit* 'ease'. The adjective *leicht* 'easy' originally had a secondary form *leichtig* with the same meaning (DWB), so *Leichtigkeit* could be derived from both forms.

The loss of boundaries between morphemes seems to occur most often. However, the opposite process, i.e., the creation of new boundaries, is also attested although probably not very frequent. In the case of emerging morpheme boundaries, this means that a monomorphemic expression is reanalyzed as bimorphemic. Harnisch (2017a, 34) reports an interesting case of "Präfix-Reanalyse" (prefix reanalysis) from an Upper Franconian variety called "Itzgründisch": there, the adverb *nieden* 'there below' which goes back to the preposition *nid* 'below' (DWB), was apparently reanalyzed as *n-ieden*, that is, as consisting of a prefix *n-* and a stem *ieden* because an adverb of the form *hieden* 'here above' was newly formed. The formation of the new adverb presupposes the existence of a stem *ieden* and this stem can only have emerged in the way described. The remaining part of *nieden*, the nasal onset, was reanalyzed as a prefix (that, however, only occurs in this one word). New suffixes can also be created in this way. Jespersen (1922, 384f.) (see also Harnisch 2017a, 55) describes a case from colloquial English ("in dialectal and vulgar speech", Jespersen 1922, 385), where the possessive pronouns *mine* and *thine* were obviously reanalyzed as consisting of the two morphemes *my/thy* and *ne*. The new morpheme *-n* was then applied to the other possessive pronouns giving rise to forms like *his-n*, *your-n*, *her-n*, or *their-n*. Interestingly, in the latter forms, *-n* replaces the original ending *-s* (e.g., *yours* > *yourn*) demonstrating that the new suffix *-n* "was felt as an ending serving to indicate the function" (Jespersen 1922, 385) as a predicative possessive pronoun. Another relevant case is the English word *cherries* which was borrowed from an Old French singular word *cerise* (Lehmann 2013). Since it ended in a *-s*, the form was understood as a plural form to which a new singular form was formed with *cherry*. In this case, too, a new morpheme boundary was created (i.e., *cherries* > *cherry* plus *s*). Comparable changes are attested in East Franconian where bisyllabic monomorphemic prepositions like *unter* 'under' or *hinter* 'behind' were reanalyzed as bimorphemic, that is, as containing a suffix *-er*. This new suffix *-er* was then applied to replace *-en* in prepositions like *zwischen* 'between' or *gegen* 'against' which have the forms *zwischen* and *geger* (see Harnisch 2017a, 43 where further cases of suffix reanalysis are discussed).

Between morphemes, boundaries cannot only disappear or emerge but they can also be shifted. A relevant case of boundary shift is the emergence of the Latin suffix *-āno* (Lehman, online, s.v. Reanalyse). It goes back to the suffix *-no* which derives adjectives from nouns (e.g., *domu-* 'house' > *domi-no-* 'belonging to the house'). The new suffix *-āno* emerged in words like *rōmāno-* 'roman' (< *Rōma* 'Rome') and *silvāno-* 'forest-dwelling' (< *silva* 'forest') where the vowel *ā* belonged to the respective nouns. In words like *montāno* 'mountain-dwelling', however, the vowel *ā* cannot be part of the nominal stem *mont*, so it must be part of the suffix. In this case, the boundary separating the stem from the suffix was shifted to the left: *rōmā-no* > *rōm-āno*. A German example is the suffix *-ler* that derives nouns (mainly) from other nouns (e.g., *Künstler* 'artist' or *Tischler* 'carpenter'). The suffix emerged as a variant of the suffix *-er* in words like *Fiedler* 'fiddler' or *Sattler* 'saddler' where the *l* belongs to the nominal stem (cf. *Fiedel* or *Sattel*) (Henzen 1957, 159f.). The variant -

*ler* arose when the morpheme boundary was shifted to the left so that *l* was understood as part of the suffix. In contemporary German, *-ler* is no longer a variant of *-er* but counts as a separate suffix (Wellmann 1975, 34).

So far, we have discussed loss, creation, and shift of morpheme boundaries. Now, there remain weakening and strengthening. Weakening of morpheme boundaries is not possible for principal reasons. Weakening would downgrade a morpheme boundary to a boundary between phonemes, which is the same as the loss of a morpheme boundary according to our definition. Strengthening, however, is possible, but it seldom occurs. Strengthening a morpheme boundary would result in a word boundary, that is, a bimorphemic word is divided into two words. This is discussed under the term debonding which is defined as "a change whereby a bound morpheme in a specific linguistic context becomes a free morpheme" (Norde 2009, 186). Since debonding is a type of degrammaticalization, it occurs rather sporadically and infrequently, but there are clear cases. For instance, the German prefix *ur-* "which only occurs in a few formations in standard German (cf. *uralt* 'very old'), has become an unrestricted intensifying adverb in the dialect of Vienna, where younger speakers say things like *ur viel Geld* 'very much money' or even *das taugt mir ur* 'I enjoy that very much'" (Rainer 2015, 1769). Another example is the German suffix *-zig* (or Dutch *-tig* or Frisian *-tich*) that serves to form tens (e.g., *achtzig* 'eighty') and that is used as a numeral to express a non-specific high quantity (e.g., *zig Kleider* 'umpteen dresses') (see Norde 2009, 213-220).

### 3.2. Word Boundaries

Boundaries that separate words from other words are also affected by reanalysis. Let us start again with the loss of boundaries. Words that are now simple ones can have their origin in multiword expressions. Such words no longer have an internal structure today, however complex their initial structure may have been. The process by which the internal structure disappears is called lexicalization (Lehman, online, s.v. Lexikalisierung) (although there exist other forms of lexicalization that do not involve the loss of word boundaries, cf. Bussmann 2002, 405).

We can distinguish two relevant types of lexicalization. The development of words such as *Messer* 'knife', *nein* 'no', or *nicht* 'not' represents the first type. These words developed from words that originally consisted of two or more words: *Messer* 'knife' goes back to West Germanic *matiz-sahsa* lit. 'food-sword' (Kluge 2002, 615), *nein* 'no' to *ni-ein* lit. 'not-one' (DWB, s.v. *nein*), and *nicht* 'not' to *ni-io-uuht* lit. 'not-ever-thing' (Kluge 2002, 651). Thus, they have always seemed to form a word unit, albeit a complex one, but their internal structure has been destroyed because the original boundaries between words have been lost. This development from a complex internal structure to a simple unstructured unit also occurred with words like *bleiben* 'stay' or *gleich* 'like' (cf. section 3.1) where morpheme boundaries have disappeared. The result, however, is the same in both cases: simple monomorphemic words that have no internal structure. As the above examples show, the loss of word boundaries is accompanied by further, mostly phonological reduction processes (e.g., the loss of the vowel */i/* in *ni* which led to the form *nein* 'no'). These are presumably the trigger for reanalysis and are therefore discussed in section 4.

The second type of lexicalization is represented by the development of words like *bis* 'until', *heute* 'today', *neben* 'next to, beside', *nur* 'only', or *zwar* 'though'. These words have in common that they all go back to phrasal units: *bis* 'until' started in Middle High German as a combination of the two prepositions *bī ze* lit. 'at to' (Kluge 2002, 126), *heute* 'today' goes back to the Germanic nominal phrase *\*hiu tagu* lit. 'this day' (Kluge 2002, 411), *neben* 'next to, beside' developed from Old High German *in ēban* lit. 'in even' (DWB, s.v. *neben*) which originally meant 'in the same way' (Kluge 2002, 647), *nur* 'only' started in Middle High German as *ne wære* lit. 'not were', and *zwar* 'though' in Middle High German as *ze wāre* lit. 'to truth' which originally meant 'in truth' (Kluge 2002, 1020). Although they began their life as phrasal units, they ended up as simple monomorphemic words that have no more internal structure.

The development of phrasal units to simple words is sometimes treated as univerbation (e.g., Rainer 2015, 1772 categorizes the development of *heute* as univerbation; for Joseph 2003, 477, it is a case of morphologization). Univerbation is defined as "the fusion of two or more originally independent words into one lexeme" (Rainer 2015, 1772). The development of *heute* and the other examples above clearly fall under the term univerbation as defined by Rainer (2015) and others (e.g., Bauer, Lieber & Plag 2013, 213, cf. also Brinton and Traugott 2005, 48). However, there is another kind of univerbation that must be distinguished. For example, many complex prepositions in German like *anstatt* 'instead' (< *an Statt* lit. 'on place'), *anhand* 'by means of' (< *an Hand* lit. 'on hand'), or *zugunsten* 'in favor of' (< *zu Gunsten* lit. 'to favor') developed from prepositional phrases that were reanalyzed as one-word expressions and are therefore written together today.

Another example of this type of univerbation is the so-called case compounds (Demske 1999). As mentioned at the beginning, German case compounds like *Gotteshaus* 'church' were originally (part of) a DP where the genitive attribute (in our example *Gottes* 'God.GEN') was prenominal, although a determiner was (or could be) present as well. This is no longer possible in present-day German where either the article or (marginally) only the genitive attribute can be prenominal, but not both at the same time (cf. *das Haus des Vaters* vs. *(des) Vaters Haus* vs. *\*das (des) Vaters Haus* 'father's house'). An example from Middle High German is *ditz gotes hus* 'this God.GEN house' (Altdeutsche Predigten (ADP), ch. 31, l. 30) where the genitive attribute was placed between the determiner *ditz* and the noun. In older stages of German, genitive attributes could be pre- or postnominal, but the former possibility was lost in Middle High German times so that the genitive attribute in constructions like *ditz gotes hus* was reanalyzed as part of a compound (Demske 1999). After this reanalysis, the nouns *gotes* and *hus* were written together as in *daz goteshûs* (Altdeutsche Predigten (ADP), ch. 38, l. 5). Univerbation of this type seems to be a very productive process in language change because, among other things, it also led to the emergence of complex conjunctions in German (e.g., *obgleich/-schon/-wohl* 'although', lit. 'if-immediately/-already/-probably', *solange* 'as long as', lit. 'so-long') and adverbs (e.g., *alsbald* 'as soon as', lit. 'as-soon', *ebenfalls* 'likewise', lit. 'just-in case'). The same holds for Dutch (Wouden & Booij 2020).

As said above, the emergence of complex words like prepositions or case compounds and of monomorphemic words like *heute* out of multi-word expressions both count as univerbation (see, e.g., Rainer 2015 or Wouden & Booij 2020). However, there is a fundamental difference between both types concerning the kind of reanalysis that



applies. Whereas univerbations of the type *heute* 'today' lead to a complete loss of any kind of boundary, univerbations of the type *anstatt* 'instead' remain internally structured word units where the original words are still visible. The change of boundaries that we observe with this type of univerbation is thus only weakening, but not loss. In this particular case, reanalysis causes a kind of downgrading of the boundary between two or more words (from a boundary separating words to a word-internal boundary). As a consequence, the categorial status of the respective words changes (e.g., the original genitive attribute became part of a compound) but no complete decategorization occurs. With univerbation of the type *heute* 'today', on the other hand, the former words not only change their categorial status, but they also lose it completely, since they are no longer a segmentable part at the morphosyntactic level to which a category could be attributed. With univerbation of the type *anstatt* 'instead', the individual words do not otherwise suffer any reduction in their form. However, this is not necessarily so. There are univerbations in which a word is weakened to a suffix. This is usually the case when the univerbation is accompanied by a grammaticalization. This is the case, for example, with the development of the weak preterite in Germanic languages, that is, the development of the past tense dental suffix *-t* from a past tense form of the light verb *\*dō-/dē-* 'to do' (see, among others, Kiparsky 2009). The source structure was a periphrastic form where the light verb was added to a deverbal noun base. The further development "likely included an intermediate stage where it was loosely attached as a clitic" (Kiparsky 2009, 109) before the verb ended up as a bound suffix (for details, see Kiparsky 2009). This is characteristic of grammaticalization where a content word assumes a grammatical function (see, among many others, Hopper & Traugott 2003, Lehmann 2015). In this particular case, a word boundary was weakened to a morpheme boundary. The same type of weakening can be observed when a constituent of a compound develops into an affix. In German, for example, there is a class of verbal prefixes like *be-* (as in *bekommen* 'get' or *bewerfen* 'throw at') or *er-* (as in *erreichen* 'reach' or *erlernen* 'learn') that developed from prepositions (or adverbs): Old High German *bi-* (> New High German *be-*) was the unstressed form of the preposition *bī* (DWDS, s.v. *be-*) and *er-* developed from the Old High German preposition *ur* 'out' (DWDS, s.v. *er-*). This means that prefixed verbs were initially compounds (Henzen 1957, 103) with a preposition as the first constituent that was grammaticalized into a prefix. The development from preposition to prefix, thus, involved the downgrading of a word boundary to a morpheme boundary.

Grammaticalization can also occur to the second (or last) constituent of a compound. In German, derivational suffixes like *-bar* (as in *trinkbar* 'drinkable') or *-lich* (as in *kindlich* 'childlike') developed from independent words: *-bar* goes back to the Old High German verb *beran* 'bear' (Flury 1964) and *-lich* to the noun *lih* 'shape, form' (Splett 2000, 1219). Therefore, word formations with these lexemes as second constituent were originally compound words. Their development into a derivational suffix is, again, a case of grammaticalization and the boundary change that we can observe in this process is weakening of a word boundary to a morpheme boundary. In these cases, the weakening of the word boundary is accompanied by erosion or phonological reduction of the respective word that underwent grammaticalization (see, among others, Kuteva et al. 2019, 3 on the role of erosion within grammaticalization). Note that in German compounds, the first constituent is stressed (Raffelsiefen 2022, 246), so it is the second constituent that qualifies for erosion.

The cases of strengthening a morpheme to a word boundary (presented above at the end of section 3.1) were examples of debonding, that is, developments of bound morphemes into independent words. The emergence of the German preposition *während* 'while' involves also strengthening of a morpheme boundary to word boundary, but in this case, it is not only the bound morpheme that was affected by a change of its morphosyntactic status, but the content word, too. The preposition goes back to the present participle *während* 'lasting' in expressions like *in Zeit während der Kriege* 'the time of ongoing wars' (DWDS, s.v. *während*). In a first step, the inflected participle *während* was reanalyzed as consisting of the two words *während* and *der*. This missegmentation was obviously triggered by the assumption that *während* 'during' is a preposition and by the fact that the surface string *der* is homophonous with the Genitive plural form of the definite article. As a consequence, the morpheme boundary separating the participle from the inflectional suffix was upgraded to a word boundary. Additionally, the reanalysis involved a second step because the stem-closing dental of the participle was reanalyzed as also belonging to the onset of the following syllable (*während* > *während der*). So, there is also a boundary shift here (see below). Note that this developmental scenario is also plausible from a prosodic point of view: In spoken (and especially dialectal) German, the article leans enclitically to the preposition and not proclitically to the following noun (Weiß 1998, 75; Kabak & Schiering 2006). Kabak & Schiering (2006, 93) explicitly mention such a fused form of *während*, namely "während-m 'during-masc.acc.'".

At the end of section 3.1, I presented examples where a morpheme boundary was strengthened to a word boundary. Upgrading a morpheme boundary to a word boundary is obviously the main possibility of creating new word boundaries. However, creation ex nihilo seems also to occur. This could happen, for example, when a loan word whose structure is opaque for speakers of the borrowing language is modified on analogy to words known to these speakers. This process is called *Volksetymologie* (folk etymology) and means "that unfamiliar shapes are replaced by more familiar ones" (Anttila 1989, 92). An example is the German word *Hängematte* 'hammock' which comes from the Spanish word *hamaca* and appeared first in German as *Hamacos*, *Amakken* (plur.), *Hamacca*, or *Hamach* (sing.). These word forms were reanalyzed as consisting of the two words *Hänge* 'hang' plus *Matte* 'mat' (DWDS, s.v. *Hängematte*). The original forms were unanalyzable for German speakers and were thus reanalyzed as consisting of two similar-sounding German words that also make sense semantically. However, folk etymology is sometimes also applied in cases where the original word was no unanalyzable unit. This could have been the case with *Hamburger* which originally meant 'native or inhabitant of Hamburg' (OED) and is now used with the meaning 'chopped beef, spiced and flavored, formed into a cake and fried, often served between two halves of a toasted bun' (OED). The change of the meaning was certainly less due to a possible morphological opacity of the word than to the coincidental similarity of the first syllable with the English word *ham* that triggered the reanalysis from *Hamburg-er* to *ham-burger*. The newly created word *burger* is now part of the English lexicon (see OED) and occurs in other compounds like *beefburger* or *porkburger* (OED).

The last kind of how word boundaries can be affected by reanalysis is boundary shift. Famous and often mentioned examples from English are *apron* (< Old English *napron*) and *adder* (< Middle English *nadder*) which both lost their initial nasal in combination with the indefinite article (or a possessive pronoun), that is, the sequence *a napron/nadder* was

missegmented as *an apron/adder* (Anttila 1989, 93f.). The reanalysis we observe here is a shift of a word boundary to the right. The emergence of the Bavarian word *Nost* 'branch' (German *Ast*), on the other hand, is the result of a shift to the left: the sequence *an Ost* 'the/a branch' was reanalyzed as *an Nost* (note that *an* is the accusative form of the definite as well as the indefinite article, cf. Weiß 1998, 47). That the noun now has a nasal onset can be seen on denominal verbs like *ausnostn* 'prune' (German *ausästen*) where the nasal onset also appears (Schmeller 1985, vol. I, 1766). In the Bavarian case, the reanalysis made the nasal *n* ambisyllabic, as it is still also part of the article. The word boundary thus lies within the nasal, so to speak.

This kind of boundary shift seems to happen more often. There even appear to be cases where a shift to the right and left occurs simultaneously. In Bavarian, for example, sequences consisting of a verb inflected for the 2<sup>nd</sup> plural and the clitic subject pronoun *s* (< *es* 'you-pl') (see, e.g., Weiß 2005, 2018 for the morpho-syntactic aspects) gave rise to a new inflectional marker on the one hand and to a new pronominal form on the other hand. In a question like (1) the clitic pronoun *s* 'you-pl' attaches to the finite verb *mocht* 'make-2PL' (followed by the clitic question particle *n* (< *denn* lit. 'then'), cf. Weiß 2002).

- (1)            *Wos mochtsn?*  
               What make-2PL-you-prtcl  
               'What do you do?'

In such a syntactic constellation, a double reanalysis could occur. First, the clitic pronoun gets reanalyzed as part of the inflection, so that the verb inflected for the 2<sup>nd</sup> plural is *mochts* instead of *mocht* in Central Bavarian (such forms are attested since about 1280, cf. Renn & König 2006, 87). Second, the inflection marker *-t* is reanalyzed as part of the pronoun giving rise to clitic forms such as *ds*, the full form of which is attested as *äds* in North Bavarian (Renn & König 2006, 87). This second reanalysis could also happen twice as forms like *diats/deeds/diids* suggest where the initial *d* is the result of a repeated reanalysis (Renn & König 2006, 87). Reanalyses of this kind have also led to the fact that in German today, the verbal ending of the 2<sup>nd</sup> singular is *-st* (instead of *-s*) (cf., among others, Weiß 2018) and in some dialects, the pronoun of the 2<sup>nd</sup> plural is *dihr* instead of *ihr* (cf. Bohn & Weiß 2016, 2017).

### 3.3. Phrase Boundaries

Reanalyses of phrase boundaries have always been the focus of research. Timberlake's (1997) analysis of object-to-subject raising in Finnish is a case in point (cf. also Madariaga 2017), as are the numerous syntactic changes in German analyzed as *Gliederungsverschiebung* (rebracketing) (see Ebert 1978). The cases discussed in the research are mostly concerned with the loss or shift of boundaries associated with the restructuring of internal grammatical relations in the sense of Harris & Campbell (1995). That means that most cases discussed in the literature are more complex and involve more than just reanalysis and restructuring as defined here.

A case where reportedly only the loss of a phrase boundary is involved is the emergence of the so-called possessive dative. The term possessive dative refers to constructions like

*dem Bürgermeister sein Haus* 'the mayor-Dat his house' where the possessor (*dem Bürgermeister*) is marked with dative and where there is an additional possessive pronoun (*sein*). It is one of the classic examples of *Gliederungsverschiebung* (rebracketing) as Paul (1919, 326) has postulated:

Anderen Ursprungs ist der Ersatz des Gen. durch den Dat. mit Possessiv-Pron. Er beruht auf einer Gliederungsverschiebung. Der Dat. stand ursprünglich in keiner direkten Beziehung zum Possessivpron., sondern war von einem Verbum abhängig. Der Übergang lässt sich veranschaulichen an einem Satze wie *er hat dem Bürgermeister sein Haus angezündet*. Hier könnte man *dem Bürgermeister* noch von *hat angezündet* abhängig machen, ebenso aber mit *sein* verbinden. Wann sich zuerst die Auffassung verschoben hat, lässt sich nicht sicher feststellen.

[The substitution of the genitive case by the dative case with possessive pronoun is of a different origin. It is based on a shifting of a constituent boundary. Originally, the dative case was not directly connected with the possessive pronoun but was dependent on a verb. The change can be demonstrated by a sentence such as *He set fire to the mayor his house*. Here one could make *the mayor* dependent on *set fire*, but also connect him with *his*. It cannot be ascertained when the notion has changed first. (my translation, quoted after Weiß 2021, 17)]

The dative-marked possessor-NP *dem Bürgermeister* 'the mayor' was originally an indirect object, but it did not constitute a phrase together with the direct object *sein Haus* 'his house' (cf. 2a). According to Paul's (1919) analysis, both were eventually reanalyzed as a phrasal unit as indicated in (2b):

- (2) a. *er hat [dem Bürgermeister] [sein Haus] angezündet*  
 he has the.DAT mayor his house lighted  
 'he lit the house of the mayor'
- b. *er hat [dem Bürgermeister sein Haus] angezündet*

If this explanation were correct, the only structural change induced by reanalysis would have been the loss of the phrase boundary between the two NPs. However, as shown in Weiß (2012), the emergence of this construction is primarily due to the development of possessive pronouns from genitive attributes (note that they were originally genitive forms of personal pronouns) via adjectives to determiners. In this developmental scenario, no reanalysis is required (for further details, cf. Weiß 2012, 2021).

An example of the shift of phrase boundaries is the emergence of the German complementizer *um* 'for' from the preposition *um*. Since Paul (1920, 121), it is standard to explain its emergence with rebracketing, and most researchers followed him (e.g., Ebert 1978, 30, Lehmann 2013 and many others, cf. Weiß 2021). In a sentence like (3a), the PP *um Wasser* 'for water' is a prepositional object of the verb *ging* 'went' to which the infinitive *zu holen* 'to fetch' can be added optionally as a further determination ("nähere Bestimmung", Ebert 1978, 30) (3b). In this structure, an ambiguity arose because the noun *Wasser*, though syntactically dependent from the preposition *um*, forms the logical object

("logische Objekt") of the infinitive at the same time. This ambiguity gave rise to a reanalysis of the structure as given in (3c):

- (3) a. *Er ging [um Wasser]*  
He went [for water]
- b. *Er ging [um Wasser] [zu holen]*  
He went [for water] [to fetch]
- c. *Er ging [um Wasser zu holen]*  
He went [for water to fetch]

The boundary between the PP and the infinitive vanished through reanalysis. However, Middle High German and Early New High German examples like (4a, b) – (4a) quoted after Greisinger (2014, 24), (4b) after DWB 23, 793 – raise doubts about the traditional explanation.

- (4) a. *umbe daz einiu ir lônnes vergaz*  
for that one her wages.GEN forgot  
'because one denied her wages'
- b. *umb vrid und genadeze behalden*  
for peace and grace to keep  
'to keep peace and grace'

As shown in Weiß (2021), *um* 'for' belongs to the few prepositions that could take a finite or a non-finite clause as a complement. This means, the NPs following *um* in (3b) and (4b) were never selected by the preposition, but by the infinitive from the beginning. Therefore, it is not necessary to assume reanalysis to explain the emergence of the complementizer *um* (which, probably, still is a preposition, but a special one).

Many examples discussed in the literature are of this kind (see, especially, Whitman 2012, Weiß 2019, 2021). A case where probably reanalysis was at work is the development of personal constructions out of impersonal ones in German (see, among others, Dal 1978, 168f.; Demske-Neumann 1994, 24f.; Ebert 1978, 55; Lockwood 1968, 171-173). Verbs like *hungern* 'starve', *dürsten* 'thirst', or *frieren* 'freeze' originally took an object as a complement without requiring a subject (for example, *mich hungert* lit. 'me starves'). In cases like (5a), where the accusative is syncretic with the nominative, the object of the verb was reanalyzed as the subject as in (5b) (Demske-Neumann 1994, 24f.). After reanalysis, nominative subjects were possible even in cases without syncretism (cf. 5c) – a possibility that has been attested since Old High German (Dal 1978, 168).

- (5) a. [IP [VP [*daz kind*]Acc *hungert*]]  
the child starves
- b. [IP [*daz kind*]Nom [VP *hungert*]]  
the child starves  
'The child starves.'
- c. [IP [*Ich*]Nom [VP *hungere*]]  
I starve  
'I starve.'

The traditional explanation of this development is to assume that the VP boundary shifted to the right, cf. (5a) vs. (5b) (Demske-Neumann 1994, 24). A possible case of boundary loss is the emergence of the perfect tense in Old High German (Demske-Neumann 1994, 24; Ebert 1978, 58f.). The perfect tense is formed by the auxiliary *haben* 'have' and the past participle of the lexical verb, e.g., *gepflanzt haben* 'have planted'. In the source structure in Old High German, however, the auxiliary *haben* was a lexical verb meaning 'possess' that takes a direct object (e.g., *einen Feigenbaum* 'a fig tree') and the past participle was an attribute in postposition that modified the object noun (cf. 6a). The boundary between the past participle and the verb was lost in the process of reanalysis (cf. 6b) and the two were 'reanalyzed' as a complex verbal form consisting of an auxiliary and a past participle (6a, b is a somewhat simplified version of the analysis given in Demske-Neumann 1994, 24). Further changes were associated with this reanalysis: e.g., the original object (in our example *Feigenbaum* 'fig tree') of *haben* became the object of the lexical verb (in our example *pflanzen* 'plant') and, as a result, a new phrase boundary was created between the object and its former participial attribute.

- (6) a. [[*einen Feigenbaum (als) gepflanzten*] *haben*]  
           a   fig tree                                  (as)   planted       have  
       b. [*einen Feigenbaum*] [*gepflanzt haben*]  
           a   fig tree                                  planted       have  
           ' [They] have planted a fig tree.'

According to Demske-Neumann (1994, 25), there are no cases known where phrase boundaries are newly created.

### 3.4. Clause Boundaries

Reanalysis may also involve clause boundaries. In the vast majority of cases, this involves boundary shift, albeit not between two independent sentences, but between a main clause and a subordinate clause (see contribution 107 and, among others, Weiß 2019, 2020 for the rejection of the assumption that hypotactic structures arose from paratactic ones). In the typical case, the clause boundary shifts to the left, so that, for example, a word becomes part of a clause to which it did not belong before, at the same time being grammaticalized as a complementizer that introduces the clause. This development can be illustrated by the emergence of the German adverbial complementizer *seit* 'since' from the respective preposition (see Weiß 2019, 2020, 2021 for more details). In Middle High German, the preposition could take as complement a DP consisting of a demonstrative pronoun whose content is explicated by a relative clause introduced by *dass* 'that' (7a), but the demonstrative pronoun could be omitted as in (7b) as well as both the demonstrative and the complementizer (7c) (7a-c quoted after Weiß 2021, 9f.).

- (7) a. *sît des, daz ich von lande schiet* (Tristan  
 4119)  
           since the.GEN that I from country departed

- b. *sît daz ich von lande schiet* (Tristan 4119, mss. W, N, O)  
 since that I from country departed
- c. *sît ich von lande schiet* (Albrecht von Johansdorf, MF 92, 10)  
 since I from country departed  
 'since I departed from the country'

In utterances like (7c), the impression is that the clause is introduced by *seit* 'since' and this led to a reanalysis as indicated in (8).

(8) [PP *seit* [DP *des* [CP *daz* ...]]] → [PP *seit* [CP *daz* ...]] → [CP [C° *seit*] ...]

The boundary of the clause that was a relative clause in the source structure shifted to the left so that the preposition *seit* became part of the clause (now a temporal clause) and was reanalyzed as its complementizer (see Weiß 2019, 2021 for more details on how and why of these reanalysis processes). Similar boundary shifts were involved in the development of other complementizers like *weil* 'because' (from the noun *Weile* 'while') or *bis* 'until' (from the preposition *bis*) (see Weiß 2019, 2020, 2021 for more examples).

#### 4. Possible Triggers and Results

Reanalysis, as defined above (i.e., as restructuring), needs a trigger to start. A major trigger seems to be structural ambiguities (see Langacker 1977, Timberlake 1977, or Harris & Campbell 1995). Structural ambiguity can have various sources. For example, it can be the result of a surface change caused by phonological reductions or contractions (Roberts 2007, 129ff.), i.e., preceding phonological or morphological changes may render the original structure unrecognizable. This explains, for example, how and why morphemes lost their morpheme status and became part of the stem (as in German *gleich* 'same, equal' which goes back to Middle High German *gelih*). Another source of structural ambiguity is the fact that the structuring at different linguistic levels can differ. Such mismatches can then trigger reanalysis, especially boundary shift. This becomes especially evident in reanalyses at 'lower' levels, i.e., when morpheme and word boundaries are affected. In these cases, the structuring on the prosodic level (i.e., syllabification) may be distinct from that on the morphological level. A case in question is Bavarian *Nost* 'branch' (< *Ast*, see section 3.2) which received its initial nasal in sequences like *an Ost* 'a/the.ACC branch' where the final nasal of the article is prosodically ambisyllabic, so it could be interpreted as the onset of the noun, too. Comparable mismatches between prosodic and morphosyntactic structure led to the reanalyzing of clitic pronouns as (part of the) inflection or, conversely, of parts of the inflection as part of the pronoun (see section 3.2 for examples). However, syntactic and prosodic boundaries also do not always converge and this can set off boundary shifts as well. A relevant case is the emergence of German *als* 'as' that emerged through the contraction of *al so* 'all, fully as' (Jäger 2018, 138). Note that in this case, it is a clause boundary that shifted to the left because *so* 'so' was a complementizer that introduced, for example,

relative or comparative clauses, whereas *al* 'all, fully' belonged to the matrix clause in the source structure (Weiß 2021). Reanalysis in these cases brings about a kind of harmonization of the diverging structuring at the various linguistic levels.

Structural ambiguity can also have syntactic causes. In section 3.4, I presented the development of the German complementizer *seit* 'since' from the corresponding preposition. Remember that the preposition took a demonstrative pronoun as its complement and the demonstrative pronoun, in turn, embedded a relative clause introduced by a complementizer (see 7a above). Now, a particularity of the German syntax is that pronouns encliticize onto the complementizer or, if there is none, to the word preceding the complementizer position (Weiß 2021). In the case that the demonstrative pronoun and complementizer were both absent, the surface order was ambiguous and the ambiguity was increased by the fact that the preposition could serve as a clitic host (as in 9a-c) because hosting clitics is a behavior that complementizers normally show (and finite verbs in main clauses) (9a-c quoted after Weiß 2021, 9).

- (9) a. *seidu mich chenst so wol* (Der Münchner Oswald, l. 1240)  
 since-you me know so well  
 'since you know me so well'
- b. *sitt sô grôze gâbe gîst* (Ortnit, Stanza 118, l. 1)  
 since-you so big gift give  
 'since you give such a big gift'
- c. *sîts ir sô smerzent* (Friedrich der Knecht, Lied 20, Stanza 6, l. 8)  
 since-it her so hurt  
 'since it hurts her so'

This may certainly have favored the reanalysis of the preposition as complementizer, see (10):

- (10) [PP *sît* [CP ...]] → [CP [C° *sît*] ...]

In Weiß (2019), I argue that reanalyses triggered by structural ambiguity are prompted by a principle called simplicity preference (Roberts 2007) that guides language acquisition and makes first language acquirers assign a simpler structure to a string if there is no clue that prevents them from doing so.

The second major trigger of reanalysis is analogy. Analogy is repeatedly mentioned in research as an important prerequisite for the initiation of reanalysis. According to Lehmann (2013), every reanalysis requires an analogy: as an example, he mentions, among others, Old English *cherries* (< Old French *cerise* 'cherry') which could be reanalyzed as a plural form only because there was already an *s*-plural in English. Due to the lack of a productive *s*-plural in German at that time, *Keks* (< English *cakes*), on the other hand, was reanalyzed as a singular form. In the case of Old English *cherries*, analogy led to reanalysis in the form of boundary creation separating the plural morpheme *-s* from the stem *cherry*. Analogy also plays a role in the cases studied by Harnisch (2017a, b, 2019)



(see section 3.1). These morphological restructurings presuppose a corresponding paradigmatic (in the case of prefix or suffix reanalyses) or syntagmatic context. For example, an appropriate syntactic context is required for the change of the place name *Zwieselburg* to *Wieselburg* (a town in Austria) because the initial *z* was reanalyzed as the preposition *zu* in analogy to existing syntagms in Bavarian like *z'Wien* 'in Vienna' (Harnisch 2019, 222f.).

Reanalysis triggered by analogy results in a kind of semantic or functional remotivation (see Harnisch 2019 on the term), that is, the new items created by restructuring acquire a new function or meaning (mostly associated with or accompanied by categorical change and the like). Detges et al. (2021, 13) see therein a parallel to folk-etymological processes and suppose that "the new segmentation establishes new links to other expressions of the linguistic system so that the reanalyzed expression becomes more motivated." On the other hand, remotivation is mostly the same as Langacker's (1977) semantic addition "where elements that do not have or have lost their meaning or syntactic function are reinterpreted and assigned a new function" (Detges et al. 2021, 14). Langacker (1977) also assumes semantic loss as a consequence of reanalysis, but loss is more characteristic for cases of boundary loss or shift, whereas boundary creation more often comes with semantic addition.

The other two types of reanalysis, weakening (downgrading) and strengthening (upgrading), are associated simultaneously with semantic loss and addition. Downgrading a word boundary to a morpheme boundary, as is the case with the development of derivational suffixes out of nouns (e.g., German *-bar* or *-lich*, see section 3.2), is associated with grammaticalization which involves, among others, semantic bleaching, and phonological reduction, but also with the acquisition of grammatical content. Upgrading a morpheme to a word boundary (i.e., debonding), on the other hand, involves semantic addition. An example presented above (in section 3.1) was German *-zig* which expresses a non-specific high quantity when used as a numeral (e.g., *zig Kleider* 'umpteen dresses'). What gets lost in these cases, are grammatical functions (as, for example, the derivational function of *-zig*).

## 5. Summary

Reanalysis is one of the most fundamental and important mechanisms of language change. Defined as a change of boundaries above the level of phonemes, reanalysis causes a restructuring of complex linguistic expressions by losing, creating, shifting, weakening, or strengthening boundaries between morphemes, words, phrases, and clauses. As a consequence, linguistic units created by reanalysis acquire new functions and categories (or lose them). There are two major triggers for reanalysis: structural ambiguity and analogy. Structural ambiguity makes first language acquirers assign a simpler structure to a string by a principle called simplicity preference. Analogy triggers and guides reanalysis by establishing links to existing expressions for the units created by reanalysis. Whereas structural ambiguity mostly triggers boundary loss and shift, analogy can also lead to the creation of boundaries.

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