

A note on conversion in Dutch and German*

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1. Introduction

Both German and Dutch host quite a number of verbs that are phonologically identical to a noun. (1) contains some examples from both languages.

(1) Dutch:

olie	'oil'	olie-en	'to oil'
domino	'domino'	domino-en	'to play domino'
feest	'party'	feest-en	'to party'
oogst	'harvest'	oogst-en	'to harvest'

German:

Bagger	'excavator'	bagger-n	'to excavate'
Haus	'house'	haus-en	'to live'
Öl	'oil'	öl-en	'to oil'
spaß	'fun'	spaß-en	'to make fun'

Neef (1999) shows that the German verbs can be analyzed as so-called 'conversions' from their nominal bases. Similarly, Don (1993) argues that the Dutch verbs should be analyzed as conversions from nouns, although not just any phonologically identical noun-verb pair should be analyzed as such. Neef and Don both acknowledge the fact that the relation could also be in the opposite direction, viz. that nouns are derived from the verbs through 'conversion' as well.

Interestingly, Neef shows that the verb-forming conversion process in German is restricted by several phonological constraints on the form of the verb in German. Apart from any considerations with respect to conversion, German verbs comply with a set of phonological restrictions on their form. German nouns however choose, so to speak, from a much wider range of phonological possibilities. Neef observes that precisely those nouns that have a phonological form not complying with the restrictions on verbs cannot be converted.

In Neef's declarative theory of word-formation these restrictions are assumed to be restrictions ('design-conditions') on the form of the infinitive. In his theory,

to be a member of a particular morphological category (infinitive, past participle, etc.) a form should conform to a set of ‘design conditions’ determining several phonological properties (ending in a nasal, starting with an unstressed syllable, etc.). So, affixation in this model does not exist as such. Where a more traditional theory would assume an affix *-(e)n* (*e* standing for schwa), Neef assumes that the morphological category in question (e.g. the infinitive) is partly determined by a design-condition ‘should end in a nasal’. We will argue against this particular theory of word-formation by showing that several empirical predictions made by such a theory are not borne out by the relevant data.

Apart from these theoretical considerations, the observations by Neef also raise the question whether a similar set of restrictions holds for Dutch, and if so, whether conversion to verbs from nouns is also limited by such restrictions. The first question is answered in Trommelen (1989) who shows that the phonological form of Dutch verbs is, like in German, much more restricted than the phonological form of nouns. As to the second question, Trommelen’s implicit answer is negative. Contrary to German, Dutch nouns with syllable structures that are not allowed in underived verbs still can be converted to verbs. To give an example: in general, Dutch underived verbs have final syllable rhymes which contain maximally a long vowel followed by a consonant (*spreek* ‘to speak’), or a short vowel followed by two consonants (*zend* ‘to send’). However, as the data in (1) show, conversions from nouns may contain much more material in their rhymes. For example, *oogst* has an extra of two final dental consonants to what is allowed in underived verbs.

This brings us to the final question to be dealt with in this paper: how do we account for the fact that Dutch ‘converted’ verbs do not comply with the constraints on the phonological form of verbs, while in German they do. In this paper we will suggest an answer, making use of a recent version of Distributed Morphology, proposed in Marantz (2001). The paper is organized as follows. First, we will briefly explain and discuss the way Neef sets up his ‘declarative’ grammar and the form of the constraints he proposes (Section 2). We will show that his declarative theory of word-formation makes predictions that cannot be shown to be valid, and furthermore that he is forced to make a distinction between conditions that can be met by changing the forms via implicit ‘repair’ operations while other conditions cannot be complied to through such ‘repair’. We conclude that the same observations and generalizations can be expressed by assuming a more traditional account. We will then go into the constraints that hold for Dutch verbs, following Trommelen (1989), and show that converted verbs are evidently exempt from those constraints. In Section 4 we apply Marantz’ model of morphology to the problem indicated, and suggest a solution which is in accordance with this model. Section 5 briefly summarizes the conclusions.

2. Design conditions in German infinitives

Neef (1999) proposes several so-called ‘Design Conditions’ on the phonological form of words. Taken together these conditions form a pool from which morphological categories ‘choose’ one or more to determine the phonological form of their members. The verbal infinitive is subject to four of these design conditions, and since this category “has priority in the verbal paradigm” (Neef 1999, p. 217), verbs cannot come into existence without having their infinitives comply with these four conditions. We will first discuss the relevant design conditions, and see what kinds of verbs are ruled out. We will ask whether any empirical gain is involved in formulating these conditions on the infinitive of the verbal paradigm, rather than on the stem, which is traditionally viewed as the base-form of the paradigm.

The first design condition on the infinitive in German is in (2):

- (2) The infinitive should end in a [N].

The fact that this nasal is [n] in the more formal styles of the language is claimed to be the result of the default nature of the coronal articulation place. In more standard pronunciation this may also be [m] or [ŋ] depending on the place of articulation of the final consonant of the stem. This constraint, “does not prohibit conversion of any non-verbal stem into a verb” (Neef 1999, p. 208). So, apparently, he reasons as follows: Forms that do not end in a nasal ‘repair’ this unfortunate condition by simply adding one to their right, thus conforming to the design condition at hand. Words already ending in a nasal can happily come into existence as verbs without any additional repair. A second design condition prevents such effortless change of category.

The second design condition requires a reduced syllable at the right-hand side:

- (3) The infinitive must end in exactly one reduced syllable.

So, a stem like *Baum* ‘tree’ cannot count as an infinitive, despite the fact that it ends in a nasal. It also should end in a reduced syllable. Again, more or less implicit in Neef’s paper is the assumption that words can fulfill this design-condition by simply adding a schwa-syllable to their right-hand side. And since the infinitive should end in a nasal, only the form *baum-en* ‘to tree’ can count as such (and not *baum*, or *baume*).

Note that the conditions (2) and (3) together predict that non-verbal stems ending in a schwa-syllable closed by a nasal, should be ideal infinitives without further addition of phonological material. Put differently, the traditional view of infinitive formation in languages like German and Dutch is that the infinitive consists of the stem + (e)n. By invoking the two design conditions (2) and (3) Neef gets exactly the same result, but with one difference: stems already ending in such a sequence should be able to count as infinitives without adding -(e)n. So, if the theory should have any empirical advantage over the traditional view, it is in such cases.

Let us briefly examine, whether this potential advantage is indeed borne out. Neef's theory could have a real advantage in such cases as *Fohlen* 'foal', *Rücken* 'back', *Riemen* and several others. However, although there is an infinitive *fohlen* 'to foal' Neef himself notes that this cannot be taken as evidence in favor of his theory. The point is that there is evidence (from the diminutive form *fohlchen*) that the stem of the noun is *fohl*, rather than *fohlen*, and thus that this case does not decide between the two views. Consider now the following verbs:

- | | | |
|-----|-------------------|--|
| (4) | Rücken 'back' | berücken 'to provide sth. with a back' |
| | Norden 'north' | einnorden 'to orientate' |
| | Bogen 'bow, arch' | ausbogen 'to cut archedly' |
| | Riemen 'strap' | anriemen 'to tie up with a strap' |

Neef assumes that the prefixes in the verbal forms are not relevant for the discussion. These infinitives then show that the nominal stems ending in -en indeed do not undergo any changes if they are verbs. Here Neef's theory seems superior over a theory that assumes an affix in the infinitive of the verb; such a theory would assume a rule adding -en to the stem and would predict forms like *berücken-en*, etc. Forms ruled out by (3) since it requires a single reduced syllable. However, in our opinion these cases can also be argued to have stems that do not include the final -en, but are *rück*, *nord*, *bog* and *riem*. Evidence for this comes again from diminutive formation (*Rück-chen*, *Bog-lein*, *Riem-chen*) and from the fact that the German adjective corresponding to the noun *Norden* is *Nord*. We conclude that the cases in (4) are in no relevant aspect different from *Fohlen* and therefore that Neef's declarative approach has no empirical advantage over a more traditional approach, which assumes the existence of affixes.

Yet, a second class of nouns for which Neef's approach in principal could have an empirical advantage, are nouns ending in a reduced syllable. For those nouns the addition of a nasal would suffice to render well-formed infinitives, and this prediction is borne out by data such as *stapeln* 'to stack' and *baggern* 'to excavate'. However, Noske (1992) gives a purely phonological account for such data. In his analysis the underlying stem is /stapl/ (without the schwa). Rules of the phonology, specifically a rule of schwa insertion, dependent upon syllabification derives the noun-stem [stapel], and the verbal infinitive [stapeln] (from underlying [stapl+n]). So, we may assume that the infinitival suffix in German is always -n, rather than -en, and that the insertion of the final schwa is phonologically conditioned.

Let us now turn to the third design condition proposed by Neef and focus on the difference between German and Dutch.

- (5) The syllable peak of a reduced syllable must not be right-adjacent to the syllable peak of an unstressed syllable.

This condition is assumed to be phonological in nature. This design condition rules out many potential conversions from (vowel-final) nouns in German. Consider the nouns in (6), which cannot be converted into verbs because of the condition in (5) (compare Neef 1998:216):

(6) Noun		Verb (infinitive)
Intermezzo	'intermezzo'	*intermezzoen
Kaffee	'coffee'	*kaffeen
Kanu	'canoe'	*kanuen
Taxi	'taxi'	*taxien
Turbo	'turbo'	*turboen

Note first that, following the same logic that Neef applies to design conditions (2) and (3), we would expect that the German grammar would find a way to obey this design condition as well. The verbs in (6) would be ungrammatical, but via some form of repair the nouns in (6) could still be successfully converted into (phonologically minimally different) verbs. For example, we might have expected that *Intermezzo* could be converted by insertion of a glide between its final stem-vowel and the final reduced syllable. However, this is clearly not the case: the verbs in (6) are simply ungrammatical. This seems to indicate that the constraints in (2) and (3), which are not violated since some form of 'repair' occurs (adding a nasal, and a reduced syllable respectively), are of a different nature (i.e. 'repairable') than the constraint in (6) ('irreparable'). This difference is captured in a most natural way in a theory that makes use of affixes: it is the insertion of an affix which brings the forms in conformity with (2) and (3). However, the addition of an affix cannot make the potential verbs in (6) conform to (5). Therefore, a theory making use of affixes seems to make the correct description here, where Neef's account needs to make a distinction between 'repairable' and 'irreparable' conditions.

A fourth design condition that Neef proposes is in (7):

- (7) Beginning with the last full vowel, the segments in the grammatical word that precede a schwa must form one potential syllable rhyme.

To illustrate the effect of this condition, consider again the word *stapeln*. The segments preceding schwa ([a] and [p]) may form a syllable rhyme, and therefore, the verb *stapeln* is a grammatical form. However, the form *staplen* is ungrammatical since the string [a,p,l] cannot be parsed into one syllable rhyme ([l] being more sonorous than [p]).

German hosts quite a number of nouns that do not conform to this design condition. Apparently, the design condition does not hold for nouns, while it does for infinitives, which explains, according to Neef, the ungrammaticality of the verbal forms in (8) (compare Neef 1999:212):

(8)	Witwe	'widow'	*witwen
	Zwetschge	'plum'	*zwetschgen
	Hymne	'hymn'	*hymnen
	Kampagne	'campaign'	*kampagnen

First note that apparently again no repair of these forms is able to 'save' the verbs from non-existence. Although these cases require more drastic adaptations of the stem (like the deletion of the final consonant) to conform to the condition in (7), still we would like to have a more principled account for the fact that forms violating conditions (2) and (3) may be 'repaired' while those violating (6) and (7) cannot.

Without going into a detailed analysis, let us briefly sketch how a more traditional account, using an inflectional affix *-n* would fare. In order to explain the ungrammaticality of the verbal forms in (8) in such a theory, the forms to exclude would be *witwe* etc. as verbal stems. This requires a constraint that forbids verbal stems to end in schwa. This could even take the form of a more general constraint if we translate (5) also into a constraint on verbal stems, stating that they should not end in a stressless vowel. So, we may propose the following constraint on German verbs:

- (9) Verbal stems should not end in a stressless vowel.

This constraint rules out both conversions from the nouns in (6) and (8). We believe this is a more attractive solution since it generalizes over these cases. Moreover, the constraint in (7) faces some counter-examples, like *atmen* (from *Atem*), which are unproblematic if we adopt Noske's analysis: the underlying form of the verb would be [atm+n]. Given this, the schwa is inserted after the stem-final [m]. In contrast, in [stapl+n], the schwa is inserted before the stem-final [l]. The reason for this difference is that in German [l] and [r] can be the nucleus of a syllable, while [m] cannot.

We have argued that constraint (2) and (3) follow from the fact that infinitives in German are formed through affixation with *-n*. However, it is clear from Neef's paper that conversion to verbs in German is sensitive to phonological restrictions on the form of verbs, such as the constraint in (9). We will see in the next section that also Dutch hosts several restrictions on the phonological form of verbs, but contrary to German, Dutch conversions seem to be able to escape those constraints.

3. Conversion to verbs in Dutch

Trommelen (1989) argues that the phonological form of verbs in Dutch is far more restricted than the phonological form of nouns. A potential methodological problem arises, since if nouns can be converted to verbs, how do we know in studying verbs whether we are looking at verbs, or looking at converted nouns.

Trommelen tackles this problem by looking at those verbs that have irregular inflection, and verbs that lack a phonological identical twin in another lexical category. The natural assumptions being that conversions are always regularly inflected and that having no twin in any other morphological category is a clear indication of being underived. In doing so, she is able to formulate constraints on the verbal category in Dutch. Trommelen notes that Dutch ‘true’ verbs are restricted to a phonological template consisting in a single syllable, of which the rhyme (that part of the syllable following the first consonant(s)) consists of no more than three elements (either a short vowel followed by two consonants, or a long vowel followed by a single consonant). Or, if the verb contains two syllables, the final one contains a schwa as its nucleus. Furthermore, verbs do not end in a stressless vowel.

However, if we take a look at converted verbs in Dutch, all above-mentioned restrictions are violated. Consider the following examples (partly repeated here from (1); the infinitival forms for the verbs is given):

(10)	N		V	
a.	oogst	‘harvest	oogst-en	‘to harvest’
	feest	‘party’	feest-en	‘to party’
	stukadoor	‘plasterer’	stukadoor	‘to plaster’
b.	domino	‘domino’	domino-en	‘to play domino’
	olie	‘oil’	olie-en	‘to oil’
	samba	‘samba’	samba-en	‘to dance a samba’
c.	orde	‘order’	orden-en	‘to order’
	kade	‘quay’	om-kade-en	‘to build a quay around’
	spade	‘spade’	om-spade-en	‘to delve’, ‘to turn over’

From the data in (10a) we may conclude that the restrictions on the type and number of syllables for Dutch underived verbs do not hold for the converted forms. The list of nouns that in one way or another do not conform to the syllabic restrictions on verbs is very long and the list of conversions from these nouns to verbs is hardly any shorter. Similar remarks can be made with respect to (10b). There are no verbs ending in a stressless vowel, but from the nouns that end in such a vowel, a large proportion can easily be converted. Both conversions from nouns with extensive syllable structures and conversions from nouns ending in full vowels are productive.

With respect to (10c) the situation is a little different. It seems that conversions from nouns ending in schwa are more difficult to obtain. We have listed some examples in (10c). It is important to note that the resulting verbs do not contain a string of two consecutive schwa’s in the infinitival forms. Such strings are phonologically ill-formed. However, despite this fact some nouns do convert to verbs, and the resulting forms conform to the general phonological constraint of the language either by dropping one of the schwa’s, or by inserting [n]. It is crucial that the

difference between (10a and b) on the one hand and the forms that we would obtain without further changes from the phonology under (10c) on the other. The latter forms are completely ungrammatical with respect to the phonology of Dutch. Those in (10a) and (10b) on the other hand are perfectly fine. The noteworthy thing about the forms in (10a and b) is that they are well-formed verbs, even though the corresponding underived forms of the same phonological make-up are completely lacking. Therefore, it does not surprise us that the number of examples in (10c) is very limited and the process is unproductive.

Summarizing the situation in Dutch, we may give the following description. Dutch underived verbs conform to a very limited phonological template, which describes a subset of the possibilities for nouns. However, for denominal (and adjectival) converted verbs, these templatic restrictions are completely absent. The only exception being nouns ending in schwa's. The reason for this exception, however, seems to originate from a far more general phonological constraint against two adjacent schwa's in Dutch.

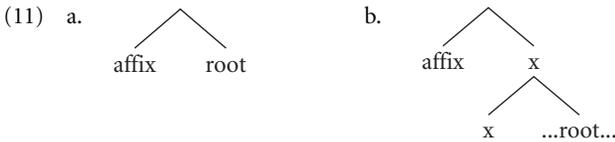
4. German below and Dutch above 'little x'

From the exposition in Sections 1 and 2 it will be clear that German and Dutch converted verbs behave differently with respect to the phonological constraints on verbs that exist in both languages. Where German converted verbs behave just as underived verbs and obey all phonological restrictions on the form of verbs, Dutch converted verbs obey no restrictions whatsoever on the form of (underived) verbs. This suggests that the morphology of conversion in German operates on a level where the phonological constraints on morphological categories still have access, while in Dutch similar constraints cannot 'look into' the relevant structures. So, in a model of level-ordered morphology, we might have claimed that in German the constraints looking at the form of verbs operate after, or at the same level where conversion takes place, where in Dutch conversion takes place only after the constraints on the form of verbs have operated. However, since this model of morphology has received substantial and unrefuted criticism (Fabb 1988, Plag 1999) another implementation is called for.

Without going into much detail, we would like to suggest that the model proposed by Marantz (2001) may be able to make the proper distinction between the way the two languages deal with conversion to verbs and the relation with phonological constraints on morphological categories.

Marantz (2001) argues for a theory of morphology in which there are exactly two places in the grammar to build words: below "little x" and above "little x". In this

way Marantz captures the more traditional distinction between word-formation in syntax and word-formation in the lexicon, without accepting the view of two separate modules of the grammar that are both capable of building linguistic structure. In his view, word-formation below “little x” is more or less equivalent to lexical word-formation: it gives rise to idiosyncratic interpretations, and may trigger stem-allomorphy. Word-formation above “little x” is traditionally considered syntactic word-formation: it is semantically transparent and fully productive. However, rather than accepting this distinction between the lexicon and syntax as two different places where words can be built, Marantz proposes a theory of two structurally different positions which both correspond to two different phases (Chomsky 2001) in the derivation. The structures in (11) exemplifies this:

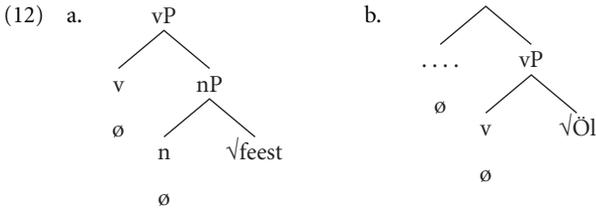


In (11a), the head, an affix, attaches directly to the root. This structure is interpreted at PF and LF as a whole, and because of that, idiosyncratic interpretations are possible. In (11b) the root first incorporates into “little x”, giving the root a lexical category (N, V, A) after which the affix is attached. The structure [x, root] is being interpreted at PF and LF before the affix attaches. Therefore, any idiosyncratic interpretation of the larger structure [affix [x, root]] is ruled out.

The semantic interpretation of these structures involves LF as well as what Marantz calls the ‘Encyclopedia’ containing all sorts of information with respect to linguistic structures such as idiosyncratic interpretations of morphological structures, phrasal idioms, in short all the information that needs to be listed because it is non-compositional in some way.

Now, we may propose that PF and the structural types in (11a) and (11b) interact in the same way as Marantz proposes that these structures interact with LF and the Encyclopedia. Suppose that the constraints on the form of a particular morphological category are checked at PF. Structures which result from affixation at the root (11a) are sent to PF immediately after affixation and such constraints can be checked since the whole structure is transparent. However, this is different for those structures that result from affixation to a [x, root]-complex (11b). For those structures, the partial structure [x, root] has already been sent to PF in a previous phase, and received a phonological interpretation. Therefore, at PF only material belonging to the outer phase can be checked. Put differently, the constraints cannot look into the material which has been received an interpretation at an earlier phase.

Let us first focus on the derivation in Dutch of a converted verb like *feest*. We would like to propose the structure, as in (12a):



The root $\sqrt{\text{FEEST}}$ is first incorporated into the nominal head. The nP of which the zero-affix is the head forms a phase, which receives a phonological interpretation, after which the internal phonological structure, as well as the semantic information becomes opaque. Only then the whole $[\text{feest-}\emptyset]_{\text{N}}$ is affixed (by a zero-affix). Since the phonological constraint which checks whether this structure forms a potential verb cannot look into the phonological material of this, already interpreted phase, the verb is well-formed.

In contrast, in German the conversion takes place at a ‘lower level’ in the syntactic structure (12b). Here, the root $\sqrt{\text{ÖL}}$ is directly incorporated into ‘little v’. Now, the phonology has access to the internal structure of the root and constraints checking the (phonological) well-formedness of the verb come into play, dismissing forms that do not obey such constraints on the form of verbs.

This analysis of the difference between the two languages would have to be further corroborated by data concerning the productivity of conversion in the two languages. We would expect that conversion in Dutch would be much more productive than in German, since affixation above ‘little x’ are in general more productive than those below ‘little x’. Also, note that the analysis makes an interesting prediction with respect to the lexical meanings of the converted forms in German and Dutch. In Dutch converted verbs are derived through a nominal stage where this is not the case in German. This predicts that the meanings of Dutch converted verbs should be directly relatable to the meanings of the identical nouns where a more loose connection between the meanings of such forms should be possible in German. Furthermore, we would expect that in German more idiosyncratic meanings are involved with conversion than in Dutch. Thus far, we have been unable to investigate whether these predictions are indeed borne out. We leave them for future research.

5. Conclusion

We have shown that Neef's approach to conversion in German does not have any empirical advantage over a more traditional approach that assumes the existence of affixes that attach to stems, rather than design conditions on morphological categories. We have seen that both German and Dutch have conditions on the phonological form of the verb; not just any phonological word in the language may count as a verb; there are additional constraints that limit the phonological possibilities for verbs.

A crucial difference between the two languages considered however is that in German we never find verbs that violate these phonological conditions, where in Dutch verbs which are derived through conversion (zero-affixation) are well-formed, despite their violation of these constraints. We have proposed that this difference between the two languages can be accounted for in a model of the grammar proposed by Marantz (2001). In this model, morphology is either taking place below 'little x', and then it is often idiosyncratic in form and meaning, or above 'little x', where it is transparent. In assuming that conversion is a case of morphology below little x in German and above little x in Dutch, we can account for the different behaviour with respect to the phonological constraint.

Note

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