

Roots, Deverbal Nouns and Denominal Verbs

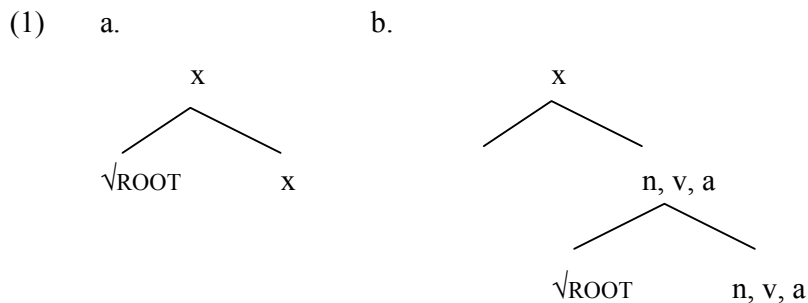
Jan Don
University of Amsterdam

0. Introduction

In this paper I want to show that we must distinguish between nouns derived from verbs and verbs derived from nouns. In a theory proposed by Marantz (1997) the noun *destruction* and the verb *destroy* do not stand in a derivational relationship. Neither the verb is derived from the noun, nor the other way around; but, both are derived from an underlying root $\sqrt{\text{DESTROY}}$. Categories like Verb, Noun and Adjective do not come from the lexicon under this view, but originate in syntax. Marantz' proposal is interesting because it starts from the (minimal) assumption that there is only a single device in the grammar which actually constructs larger units from smaller ones. This assumption has the immediate consequence that words cannot be built in a different place, or by a different set of rules, than sentences. Put differently, word-formation cannot take place in the lexicon but must take place in syntax.

This single-engine model is somewhat counterintuitive to the morphologist who has been happy all these years in knowing that there are two places where words can be constructed. In the lexicon, where complex words often receive an idiosyncratic interpretation and where lexical phonology may change the form of words and syntactic word-formation which is far more regular in nature both with respect to semantic interpretation and with respect to the phonological form of words.

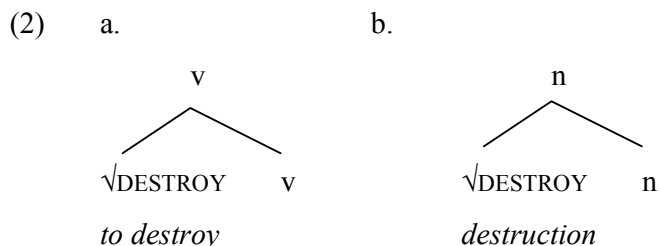
Marantz reconstructs this "two-places" idea as follows. Rather than assuming that there are two separate locations where words are formed, Marantz assumes that words can be built by combining a category-less root with a syntactic head, thus turning the root in an n, v or a, but also by combining a thus constructed word with a new syntactic head. The representations in (1) illustrate this idea:



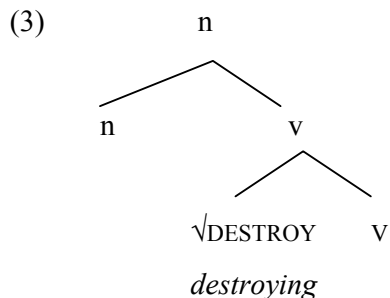
Under this reconstruction (1a) corresponds to what we would call lexical word formation, and (1b) corresponds to syntactic word-formation. But, crucially both (1a) and (1b) are syntactic constructs, but with an important difference. Marantz assumes that the structure in (1a) forms a phase (in the sense of Chomsky 1999) and consequently that the root with its syntactic head is immediately interpreted semantically and phonologically. This interpretation may be different depending on the root. That is, the information contained in the root, influences this interpretation.

However, contrary to this, the word-formation depicted in (1b) is not sensitive to information contained in the root. The outer head cannot access information contained within the root. Moreover, any interpretation given to the root in combination with its first phase head is necessarily carried over to the second. Therefore, we expect that words formed through (1b) receive an interpretation that entails the interpretation given to the root-cum-first head.

Turning now to *destroy* and *destruction*: the idea is that both result from the word-formation process depicted in (1a). That is both are root-derivations. The gerund *destroying* however is the result of a word-formation process like (1b). First, the verb *destroy* is built (through (1a)) and after that this form is combined with a nominal head *-ing*.



We can now see what we mean by saying that categories are not specified in the lexicon but originate in the syntax: *destruction* and *destroy* derive from the same category-less root.



Given such a model it is a small step to assume that conversion, or zero-derivation, is an instantiation of root derivation. Moreover, such a step answers potentially tricky questions about zero-morphemes, since we do not need such morphemes if we derive both the noun *hate* and the verb *hate* from an underlying root $\sqrt{\text{HATE}}$. However, we will demonstrate that the linguistic data point towards a more complex situation.

First, we will demonstrate that in Dutch there are good reasons to believe that the relation between some nominal forms and their verbal counterpart is *directional*. That is, one form is derived from the other. Therefore, these noun-verb pairs cannot be treated as root-derivations, although the nominal members of these pairs are not gerund-like.

Second, we distinguish between root-derivations and word-derivations by looking at the phonological and semantic properties of the derivations involved. The

non-root derivational status of these derivations is confirmed by looking at their semantic and phonological properties.

Third, this predicts that apart from the word-derivations we should also be able to find true root-derivations. We will argue that some data can be better understood by assuming that they are indeed root-derivations. Thus, we conclude that Marantz' model makes the correct predictions with respect to the situation in Dutch.

1. Zero derivation in Dutch

Before turning to a detailed discussion of the Dutch data, let us briefly go into the different ways in which a relation between a root and a word can be conceived in Marantz' model.

As noted above, we can assume that a verb and a noun are derived from a common root (as in the case of *destroy* and *destruction* above). However, we may also assume that a noun is derived from a verb (which in its turn is derived from a root). As an example, Marantz gives the gerund form *destroying* but we may think of other examples in which the relation between the derived noun and the verb is directional. The same holds for verbs that might be derived from nouns (or adjectives) rather than from roots. So, in fact, under Marantz' view we may expect three different types of noun-verb pairs: nouns and verbs directly derived from roots (represented in (4a) on the hand-out), verbs derived from nouns (which are themselves derived from roots) ((4b) on the hand-out) and nouns derived from verbs (which are derived from roots) ((4c) on the hand-out). Arad (2003) shows that for a Semitic language like Hebrew such distinctions make sense and even explain some of the phonological and semantic properties related to root derivations and word-derivations. In this paper I will show that the same distinctions between root derivations and word-derivations can be made in a Germanic language like Dutch, although some of the typological differences between Hebrew and Dutch make the system unfold in a slightly different fashion.

- (4) a. [root] → [x]_n
 [root] → [x]_v
- b. [x]_n → [x]_v
 [x]_v → [x]_n

In Dutch many stems may be used either as verbs or nouns. Examples are in (5):

- (5) a. Jan *val-t* uit de boom Jan's *val*
 'John fall-s from the tree' 'John's fall'
- b. Jan *koop-t* een huis de *koop* werd gesloten
 'John buy-s a house' 'the buy was closed'
- c. Jan *feest-t* de hele nacht Jan's *feest*
 'John party-s all night' 'John's party'
- d. Jan *water-t* in de gracht het *water* in de gracht
 'John water-s in the canal' 'the water in the canal'

We will first argue on the basis of several empirical observations that the relation between the verbs and nouns in (5) is *directional*. That is, while not in every given phonologically identical Dutch noun-verb pair, it can be decided whether the verb is derived from the noun or vice versa, in many such cases it is either the verb or the noun which has to be considered as derived from the other. If we fail to recognize this directional property of the conversion-pairs in question certain generalizations about the grammar of Dutch will be missed. The following arguments are partly taken from Don (1993) and Don (to appear). We have split the arguments in morphological arguments (section 2.1) and in phonological arguments (section 2.2).

2. Directionality of conversion

2.1 Morphology: gender and inflection type

Dutch has a gender distinction between neuter and non-neuter. The latter often called “common” gender. The gender of a noun can be seen from the choice of definite article, which is either *het* for neuter nouns, or *de* for non-neuters:¹

- | | | | | |
|-----|----|------------------------|-------------|----------|
| (6) | a. | het huis | ‘the house’ | *de huis |
| | | art.def.neut. house | | |
| | b. | de weg | ‘the road’ | *het weg |
| | | art.def.non-neut. road | | |

Dutch verbs also fall into two main classes: regular verbs, using the same stem in all tenses; and the so-called “strong” or irregular verbs which have different stems in different tenses and in some cases deviant inflectional endings:²

- | | | | | | |
|-----|--------------|-------------------------|-------------|------------------------|-------------|
| (7) | a. | <i>Regular pattern:</i> | | | |
| | | Pres. Ind. | Past | Past Participle | |
| | sing. | noem (1 person) | noem-de | ge-noem-d | ‘to name’ |
| | | noem-t (2/3 person) | | | |
| | plur. | noem-en | noem-den | | |
| | b. | <i>Irregular verbs:</i> | | | |
| | | Pres. | Past | Past Part. | |
| | | spijjt(-t)(-en) | speet | ge-speet-en | ‘to regret’ |
| | | val(-t)(-en) | viel(-en) | ge-val-en | ‘to fall’ |
| | | bind(-t)(-en) | bond(-en) | ge-bond-en | ‘to bind’ |
| | | sla(-t)(-en) | sloeg(-en) | ge-slag-en | ‘to beat’ |

¹ Only in a very limited number of cases the noun seems to have a double gender status since it can be combined with both the neuter and the non-neuter definite article, e.g. *de / het prospectus* ‘the leaflet’; these cases should not be confused with nouns like *de / het slag* ‘hit’/‘kind’ or *de / het hof* ‘garden’ / ‘court’ which have different meanings in their neuter and non-neuter forms.

² The different endings are: no past tense affix (*-de* or *-te*) and in some cases the *-en* suffix appears in the past participle rather than the regular *-t* or *-d*: For example: *loop* [1st person, pres. ind.]; *liep* [1st person, past] **liep-te*; *ge-loop-en* [past participle] **ge-loop-t*.

Given these two classes of nouns and two classes of verbs, without further assumptions we expect four types of conversion pairs to occur:

- (8)
- | | | | |
|----|----------------|---|-----------------|
| a. | regular verb | - | non-neuter noun |
| b. | regular verb | - | neuter noun |
| c. | irregular verb | - | non-neuter noun |
| d. | irregular verb | - | neuter noun |

Interestingly, examples of the first three types of conversion pairs can be easily found. See the examples in (9a), (9b) and (9c) respectively. However, no convincing examples of the fourth type can be given.^{3, 4}

- (9)
- | | | | | | | | | | |
|----|---------|---|------------|---------|----|-------|---|-----------|---------|
| a. | fiets | - | de fiets | ‘bike’ | b. | werk | - | het werk | ‘work’ |
| | ren | - | de ren | ‘run’ | | deel | - | het deel | ‘part’ |
| | tel | - | de tel | ‘count’ | | feest | - | het feest | ‘party’ |
| | twijfel | - | de twijfel | ‘doubt’ | | slijm | - | het slijm | ‘slime’ |
| c. | val | - | de val | ‘fall’ | | | | | |
| | wijk | - | de wijk | ‘flee’ | | | | | |
| | loop | - | de loop | ‘walk’ | | | | | |
| | kijk | - | de kijk | ‘look’ | | | | | |

This lack of data of type (8d) can be easily explained under a directional view of conversion. Let us assume that the noun-producing morphological process (call it $V \rightarrow N$ -conversion) renders “common” nouns. We will motivate this specific assumption below. For now, note that in general the idea that morphological processes determine the gender of the output-class is a phenomenon we encounter in many languages. (cf. Beard 1993 for several examples from different languages). Furthermore, we assume that the verb-producing morphological process (call it $N \rightarrow V$ -conversion) renders regular verbs. This again seems a natural assumption, since irregular verbs consist of a closed class of stems. From these two independent assumptions, the systematic gap, i.e. the lack of examples of type (8d), automatically follows. The verbs in (9b) can only result from $N \rightarrow V$ conversion, since conversion in the opposite direction would render the nouns non-neuter. Similarly, the nouns in (9c) can only result from $V \rightarrow N$ -conversion, since conversion in the opposite direction would render the verbs regular. Therefore, if these processes are the only way to make new words from phonological identical forms then pairs of a irregular verbs (which cannot be the product of a conversion process) and neuter-nouns (which cannot be the output of a conversion process either) are expected to be non-existent.

³ There are two marginal examples: *het blijk* – *blijken* and *het spuug* – *spugen*. With respect to the first, we must say that the noun *blijk* only occurs in idiomatic expressions without the definite article and w.r.t. the second, we must note that for most native speakers *spugen* is a regular verb.

⁴ There is a small class of verbs that do have nominalizations with neutral gender: *sluit* - *het slot*, *zuig* - *het zog*, *bied* - *het bod*, *duik* - *het dok*, *spuug* – *het spog*, etc. However, for most speakers of Dutch these forms are not recognized as being morphologically related. Moreover, so far we only have looked at cases in which the verbal stem and the noun are phonologically identical. In these cases the stem vowel is changed (from [i] or [oey] to [o]). We assume that these forms are historically related by a different type of derivation.

Under a directional analysis of conversion, the systematic gap follows from independently motivated assumptions about the grammar of Dutch. The fact that there is a deverbal morphological process creating [-neuter]-nouns is independently motivated by the observation that there is a class of nouns with the same semantics as the deverbal conversions, but marked by the affix *-ing*, which also take the [-neuter] gender. Some examples are listed in (11):

- | | | | | |
|------|----------|-----------|----------------|---------------|
| (11) | verwoest | ‘destroy’ | de verwoesting | ‘destruction’ |
| | weiger | ‘refuse’ | de weigering | ‘refusal’ |

These data lend support to the assumption that noun-forming conversion in Dutch renders [-neuter]-nouns. The *-ing*-nominalizations are in complementary distribution with converted forms supporting the idea that both conversions and *ing*-nominals are derived through the same morphological process.

Further support for the idea that V→N-conversion produces non-neuter nouns comes from nouns such as in (12):

- | | | | | | |
|------|-------------|-----------------|-------|-------------|--------|
| (12) | de aan-vang | ‘beginning’ | vang | ‘to catch’ | *vang |
| | de aan-voer | ‘supply’ | voer | ‘to supply’ | *voer |
| | de aan-hef | ‘beginning’ | hef | ‘to lift’ | *hef |
| | de in-breng | ‘participation’ | breng | ‘to bring’ | *breng |

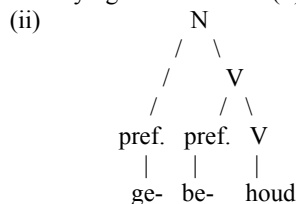
The argument is straightforward and quite simple. These nouns, consisting of a particle and a verbal stem, are converted from the phonologically identical verbs, which consist of a left-hand particle (often a prepositional type element) and a verb as a right-hand member. As can be seen from the right-hand column in (12) the isolated nouns do not exist; so the fact that these nouns are all non-neuter is further evidence for the correctness of our hypothesis.

If we do not assume the directionality of conversion, these data become coincidental. Not only would (8d) present us with a gap that we cannot account for, also the gender of the nouns in (12) would be unaccounted for.⁵

⁵ The proposed directional analysis of conversion in Dutch is at first sight problematic in view of the following data, which all pair a (prefixed) neuter noun with an irregular (prefixed) verb:

- | | | | | |
|-----|----------------------------|----------------|----------------------------|---------------|
| (i) | be-houd _{NEUTER} | ‘preservation’ | be-houd _{STRONG} | ‘to preserve’ |
| | ver-val _{NEUTER} | ‘decay’ | ver-val _{STRONG} | ‘to decay’ |
| | ont-werp _{NEUTER} | ‘design’ | ont-werp _{STRONG} | ‘to design’ |

These data seem to fill the systematic gap of (6d) the existence of which forms one of the main arguments for the assumption that verb- and noun-forming conversion in Dutch is directional. However, in Don (1990) I have shown that the nouns in the left-hand column of (i) can be analyzed as resulting from an underlying structure as in (ii):



The prefix *ge-* derives, contrary to the general Right-hand Headedness of the language (cf. Trommelen & Zonneveld (1986)), neuter nouns from verbs. Furthermore, the prefix *ge-* is also used in the formation of

2.2 Phonology: syllable-structure

The idea that the systematic gap in conversion pairs can be explained by assuming two directional processes of conversion is further supported by several observations that relate the syllable-structure of underived words to their morphological category. Trommelen (1989) demonstrates that Dutch nouns may have far more complex syllable structures than verbs. According to Trommelen, the relation between syllable-structure type and category of the word is such that we might even want to say that the lexical category of an underived word can be derived from its syllable structure.⁶ This is slightly overstated but for at least a subset of underived words, it is certainly true that their syllable structure can be used as a litmus-test for their categorial status.

Let us make a distinction between words having so-called complex syllable structures, and words having simple syllable structures. Complex structures are the ones in (13), having a syllable rhyme, consisting in a long vowel, followed by a consonant, followed by two (coronal) consonants.

- | | | | |
|------|--------|---------|-----------|
| (13) | gierst | [gɪrst] | ‘millet’ |
| | koorts | [kɔrts] | ‘fever’ |
| | oogst | [oxst] | ‘harvest’ |

Another set of words having complex syllable structures is formed by those having final rhymes consisting of either short vowels followed by 3 consonants (of which the last one is always coronal), or long vowels followed by two consonants (again with the final one being restricted to coronals). Examples are in (14):

- | | | | | | | |
|------|---------|----------|------------|-------|--------|----------|
| (14) | worst | [wɔrst] | ‘sausage’ | koord | [kort] | ‘rope’ |
| | schurft | [sxœrft] | ‘scabies’ | reeks | [reks] | ‘series’ |
| | hengst | [hɛŋst] | ‘stallion’ | hoofd | [hoft] | ‘head’ |
| | inkt | [ɪŋkt] | ‘ink’ | | | |

With this division in mind, Trommelen now observes that there are no verbs displaying a complex syllable structure that also lack a nominal counterpart.

past participles. Interestingly, it is absent from these participles, if the verbal stem contains a (stressless) prefix:

- | | | | | |
|-------|----------|-------------|------------|----------------|
| (iii) | maak | maak-te | ge-maak-t | |
| | haal | haal-de | ge-haal-d | |
| | ver-maak | ver-maak-te | ver-maak-t | *ge-ver-maak-t |
| | be-haal | be-haal-de | be-haal-d | *ge-be-haal-d |

This property of *ge-* was already observed and analysed by Schultink (1973), following Kiparsky’s (1966) analysis of a similar phenomenon in German. By assuming that *ge-* is deleted under exactly the same conditions (before a stressless prefix) as in the participles, the nouns in (i) can be given the structure in (ii). In doing so, they are no longer filling the systematic gap in (6d) since they are not cases of conversion, but derivations with the prefix *ge-*.

⁶ Trommelen (1989,65): “[...] [this paper] wants to give arguments for the position that in Dutch for a large part by the sound form [Du: klankvorm] of an underived word its category can be deduced, and more specifically: the degree of complexity of the syllable structure can be indicative for the morphological category of the word.” (my translation, JD)

Following Trommelen, these examples, and many more could be given, suggest that the situation in Dutch can be characterized as follows: verbs have a very limited phonological make-up: they are restricted to monosyllables, with a heavily constrained rhyme structure, or to bi-syllabic forms with the same restrictions on the rhyme of the first, and of which the last syllable contains a schwa.⁷ Nouns have far greater possibilities with respect to syllable structure and the number of syllables per stem. All verbs with a complex syllable structure and truly multi-syllabic verbs (i.e. containing at least two full vowels) have a nominal counterpart while only verbs with simple syllable structure have no nominal counterparts. So, as in the case of gender and irregular inflection, here again we are confronted with a systematic gap in the set of lexical items, as illustrated in the diagram in (15):

(15)

	Simple syllable structure	Complex Syllable Structure
with identical noun	numerous examples: <i>bal, lepel, kat, etc.</i>	some examples: <i>oogst, feest, hoofd</i>
no identical noun	numerous examples: <i>win, kom, vang, etc.</i>	No examples

This situation seems to call for an analysis along the following lines: Dutch, as many other languages, has phonological restrictions on the type of syllables allowed. However, in Dutch these restrictions seem to be specific for categories: the syllabic restrictions on a potential (underived) verb are far more restrictive than similar constraints on nouns.⁸ The gap in the diagram in (15) can then be easily explained if we assume that there is a lexical restriction that forbids verbs with complex syllable structures of the above-mentioned type.

These phonological generalizations concerning the syllable structure in relation to category distinctions cannot be accounted for without the assumption of categories in the lexicon. Or, to put it differently, if we suppose that in the pairs *oogst_V - oogst_N* and *hengst_N - hengst_V* the noun nor the verb are to be considered as “basic”, but that both the noun and the verb are instantiations of the same root, we cannot uphold the generalization that verbs only have rhymes consisting of lax vowels followed by two consonants, or tense vowels followed by a single consonant, since both *oogst* and *hengst* (and many more) would be counterexamples. If, as proposed, we assume that the noun is basic in these pair and the verb is derived the generalization does not face any counterexamples. So, it is impossible to account for these generalizations in a theory that does not make a distinction between nouns and verbs in the lexicon.

In order to rule out a potential diachronic explanation for these generalizations, and to establish that these generalizations belong to the knowledge of native speakers, we ran a small test. This test contained nonsense words of two types: words with complex syllable structures and multi-syllabic forms on the one hand, and words with

⁷ Kager & Zonneveld (1985) argue that Dutch bisyllabic words ending in a schwa-syllable should be considered as phonologically monosyllabic. That may allow for a more generalizing formulation of the constraint under scrutiny.

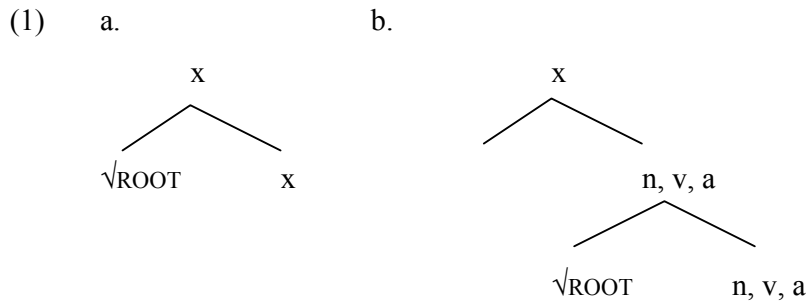
⁸ Adjectives seem to occupy a position between verbs and nouns with respect to their potential syllable structure. However, we focus the discussion here on the distinction between verbs and nouns.

simple syllable structures and monosyllabic forms, or bi-syllabic forms with schwa on the other. The nonsense words were read to the subjects, and the subjects were asked to choose whether these nonsense words were (stems of) verbs or nouns. All subjects without hesitation classified the words with complex syllable structures as nouns. Similarly all multi-syllabic forms were without exception classified as nouns. While mostly they hesitated for the stems with simplex syllable structures and often categorized these as verbs. For example, the test contained the nonsense word *dónkam*. This word was categorized a noun by all subjects without hesitation. A word like *dreup* on the other hand was categorized a verb by some subjects, while others reported that they could not choose. This small test with nonsense words indicates that native speakers have clear knowledge of the relation between the form of words and their category and that speakers are able to use this knowledge once they are asked to, thus ruling out any potential diachronic explanation.

Combining the above generalization with respect to syllable-structure with the discussion of morphological arguments for directionality of conversion, we also predict that verbs with complex syllable-structures and multi-syllabic verbs are regularly inflected. This is indeed the case: there are no irregular verbs that have syllable structures with these types of syllable structure.

3. Root-derivation versus word-derivation

At first sight we might be inclined to think that the above arguments for directionality go against a view in which categories arise only in the syntax. The relevant derived nouns and verbs cannot be the result of root derivation. Let us briefly turn back to the representations in (1): (repeated here for convenience)



Now, Marantz seems to claim that only so-called gerunds are formed through (1b). Only those nominalizations, contrary to derived nominals (to borrow terminology originally due to Chomsky 1972), display the syntactic behavior which we may expect from nominalizations that are created post-lexically.

If derived nominals are formed through word formation of the type represented in (1a), and if Dutch noun-forming conversion are derived nominals then there is no way to make a distinction between nouns derived from verbs and verbs derived from nouns, and thus we would have to reject this theory. To this, we would have to show that Dutch deverbal conversions are derived nominals rather than gerunds.

However, assuming for the moment that gerund-like behavior surely indicates a word-derivation, but that *vice versa* not every word-derivation necessarily displays

gerund-like behaviour, we may analyse the zero-derived forms in Dutch as word-derivations in Marantz' framework. Similarly, in a recent paper Arad (2003), building on observations by Kiparsky (1982), Myers (1984) and others, shows that there is a clear distinction between the denominal verbs such as *to tape* and root derived verbs such as *to hammer*. The first class of verbs necessarily implies the use of tape (and hence the ungrammaticality of (16a)), while *to hammer* does not necessarily imply the use of a hammer (and hence the grammaticality of (16b)): (Examples from Kiparsky 1997)

- (16) a. * She taped the picture to the wall with pushpins.
 b. She hammered the nail with a rock.

So, according to Arad we can make a clear distinction between root-derived verbs (with the structure (1a)) and noun derived verbs (which have the structure (1b)).

Applying the same argument to derived nouns, Arad claims that nouns like *kiss*, *roast*, *walk* and *slap* to give just several examples, are verb-derived nouns, since their semantics necessarily implies a kissing, roasting, walking and slapping event respectively, while nouns such as *tape* and *hammer* do not necessarily involve a taping or hammering event. Note that *kiss*, *roast* etc. are not gerunds or gerund like constructions.

Interestingly, Arad shows that also phonological properties of the nouns support the analysis. The generalization is that when the noun and the verb have strictly identical phonological properties (like e.g. stress), this goes hand-in-hand with a semantics that suggests a derivational relationship with the word rather than with the root. So, e.g. the noun *defeat* necessarily implies an act of defeating, and the stress is the same in both the noun and the verb. However, in the pair *pérmít* – *perμίt* the noun and the verb have a more distant semantics, suggesting a root derivation, corresponding to different stress properties.

Turning to Dutch again, this would predict that the noun-verb pairs that we have argued to stand in a directional relationship should also have the same phonology (which is the case), and the semantic directionality. Moreover, we should be able to find examples of root derivations, i.e. of related pairs, not necessarily having strictly identical phonology that stand in a looser semantic relationship to each other.

With respect to the first prediction, we should note that the phonology is identical in all data discussed so far since that was a criterion for selecting them as potential instantiations of zero-derivation. Considering the semantic relationship, let us look at the examples in (17):

(17) [regular verb; denominal interpretation of V; neuter gender]

	N		V
a.	krijt	'chalk'	krijten 'to use a piece of chalk'
b.	kwijl	'drewl'	kwijlen 'to drewl'
c.	prijz	'price'	prijzen 'to put a price on'
d.	ring	'ring'	ringen 'to put a ring on (of a bird)'

The examples in (16) are regular verbs with a phonological make-up that we often find among the irregulars. Therefore, these verbs are claimed by us to be denominal for phonological reasons (if they were root derivations, the verb would have been an

irregular verb). Interestingly, this correlates exactly with the denominal interpretation of the verbs involved. All these verbs entail the use or presence of the noun.

- (18) [irregular verb; deverbal interpretation of N; non-neuter gender]
- a. kijk ‘watch’
 - b. wijk ‘flee’
 - c. strijk ‘clothes for ironing’

Conversely, in those cases where the verb is irregularly inflected (examples in (18)) we find a deverbal interpretation on the noun.

Also, those verbs that show a complex syllable structure (and thus are denominal according to the above given arguments for directionality) also seem to have a denominal semantics. Although it is not easy to find the relevant examples, some are in (19):

- (19) a. olie ‘oil’ olieën ‘to smear with oil’
 *Hij olie-de de pan met boter
 ‘He oil-ed the pan with butter’
- b. blinddoek ‘blindfold’ blinddoeken ‘to blindfold’
 blinddoeken implies the use of a *blinddoek*

Let us briefly summarize the argument so far. We have shown that Dutch has at least two types of noun-verb pairs: nouns derived from verbs and verbs derived from nouns. At first sight, it seems as if Marantz’ theory cannot account for these two types since categorial distinctions are not made within the lexicon and by some criterion for root-level derivation the data involved seem to be requiring a lexical analysis, i.e. they are derived nominals rather than gerunds. However, putting aside this criterion and accepting that not only gerunds but also at least some classes of derived nominals may be derived from verbs (rather than from roots), a different picture emerges. Under such a view, we expect three types of noun-verb pairs: nouns derived from verbs, verbs derived from nouns and derivations of nouns and verbs form a single root. So far, we have given examples from Dutch for the first two types but not for the latter, i.e. the root derivations. What properties are they supposed to have? Arad shows that in Hebrew roots can receive quite different interpretations depending on whether they are verbal or nominal. English seems to differ in this respect that roots are semantically related whether they turn up in verbal or nominal contexts. Dutch not surprisingly mirrors the situation in English in the sense that no widely different interpretations are given to roots in nominal and verbal environments. Apart from the semantic difference between root derivations and word-derivations, we may also expect a difference in phonology. Where the word-derivations are characterized by the fact that they so to speak “inherit” the semantic and phonology of the first phase, the root derivations are characterized by the fact that information contained in the root is available in the first phase. Therefore, different root derivations may alter the exact contents of the root. So, more or less deviant semantic interpretations for root derivations should go hand-in-hand with deviant root-phonology.

We believe that Dutch, like English and Hebrew provides some interesting examples of root derivations. Consider for example the pair *slot-sluit*. They are evidently related, although exhibiting a different phonology; their semantics is also

clearly related but far less predictable than in the derivational cases. For example, *sluiten* not necessarily involves a *slot* (see (20)).

(20) Jan sluit het raam **is not** Jan doet het raam op slot

Also, the use of a slot not always can be described by the verb *sluiten*:

(21) Jan zet zijn fiets op slot **is not** *Jan sluit zijn fiets

A further piece of evidence for the different status of *slot* comes from the fact that also the nominal *sluiting* exists. *Sluiting* can be argued to be a truly deverbal noun since in all uses of the verb *sluit*, we can make the nominalization *sluiting*:

(22) a. Jan sluit het raam ‘John closes the window’
 =>There is something as ‘een sluiting’ op het raam
 b. Jan sluit zijn broek ‘John closes his trousers’
 =>There is something as ‘een sluiting aan zijn broek’

Similar considerations hold for the pairs in (23).

(23) a. stof ‘dust’ stuiv ‘to fly (of dust)’
 b. dok ‘dock’ duik ‘to dive’
 c. zog ‘mother-milk’ zuig ‘to suck’

Conclusion

In this paper I have argued that there is a distinction between verbs derived from nouns and nouns derived from verbs. Several morphological and phonological generalizations in Dutch cannot be understood in case we fail to acknowledge directionality of derivation. At first sight this seems to be problematic for Marantz’ single engine hypothesis, since this theory does not allow for categorial distinctions in the lexicon, which seem required if we want to uphold a directional analysis. However, we may also interpret the derived nominals in Dutch in a similar way as Arad (2003) analyzes derived nominals in Hebrew. That is, the derived nominals are formed on the basis of verbal constructions that are made by merging a category-less root with a category-bearing syntactic head.

This view of things predicts that there are three types of derivations to be distinguished: verbs and nouns derived from roots, which do not show evidence for directionality, and verbs derived from nouns and nouns derived from verbs, which do show evidence for directionality.

References

- Anderson, Steven R. (1982) "Where's Morphology?" Linguistic Inquiry 13, p. 571-612.
- Arad, Maya (2003) "Locality Constraints on the Interpretation of Roots: the Case of Hebrew Denominal Verbs", Natural Language and Linguistic Theory 21, p. 737-778.
- Beard, Robert (1993) Lexeme-Morpheme Base Morphology, Albany: SUNY Albany Press.
- Booij, Geert (1995) The Phonology of Dutch, Clarendon Press, Oxford.
- Chomsky, N. (1972) "Remarks on Nominalization", in: Studies on Semantics in Generative Grammar, Mouton, The Hague. p. 11-61.
- Chomsky, N. (1995) "Bare Phrase Structure", in: G. Weibelhuth (ed.) Government and Binding Theory and the Minimalist Program, Oxford: Blackwell, p. 385-439.
- Don, Jan (1990) "Prefixed nouns in Dutch", in: Bok-Bennema, R. and P. Coopmans (eds.) Linguistics in the Netherlands 1990, p. 33-42.
- Don, Jan (1993) Morphological Conversion, diss. Utrecht University.
- Don, Jan (to appear) "Categories in the Lexicon", Linguistics.
- Haaften, Ton van, et al. (1985) "Nominalisaties in het Nederlands", Glott 8, p. 67-104.
- Hale, Ken and Jay Keyser (1993) "On the Argument Structure and the Lexical Expression of Syntactic Relations", in: Hale & Keyser (eds.) The View from Building 20, Essays in Linguistics in honor of Sylvain Bromberger, MIT Press, Cambridge, Massachusetts. p. 53-109.
- Halle, Morris and K.P. Mohanan (1985) "Segmental Phonology of Modern English", Linguistic Inquiry 16, p. 57-116.
- Kager, René & Wim Zonneveld (1985) "Schwa, Syllables, and Extrametricality in Dutch", Linguistic Review 5, p. 197-221.
- Kiparsky, Paul (1966) "Über den Deutschen Akzent", Studia Grammatica 7, p. 69-97, Berlin: Akademie-Verlag.
- Kiparsky, Paul (1982) "From Cyclic Phonology to Lexical Phonology", In: Hulst, H. van der and Norval Smith (eds.), The Structure of Phonological Representations, Foris: Dordrecht. p.
- Kiparsky, Paul (1997) "Remarks on Denominal Verbs", in: Alex Alsina, J. Bresnan and P. Sells (eds.), Argument Structure. Stanford: CSLI, 1997, p. 473-499.
- Lieber, Rochelle (1981) On the Organization of the Lexicon, Bloomington, IULC.
- Marantz, Alec (1997) "No Escape from Syntax: Don't try morphological analysis in the privacy of your own lexicon", in: Dimitriadis, A. et al. (eds.) Proceedings of the 21st Annual Penn Linguistics Colloquium: Penn Working Papers in Linguistics 4, p. 201-225.
- Marantz, Alec (2001) "Words", handout of a paper presented at West Coast Conference on Formal Linguistics, 23-25 February, University of Southern California. [<http://web.mit.edu/~marantz/Public/WCCFL.doc>]
- Schultink, Henk (1973) "Het prefix *ge-* in Nederlandse (en Duits) verleden deelwoorden", De Nieuwe Taalgids 66, p. 101-111.
- Trommelen, Mieke (1983) The syllable in Dutch with special reference to diminutive formation, Foris, Dordrecht.
- Trommelen, Mieke (1989) "Lettergreepstructuur en woordcategorie", De Nieuwe Taalgids 82, p.64-77.

- Trommelen, Mieke en Wim Zonneveld (1986) "Dutch Morphology: Evidence for the Right-hand head Rule", Linguistic Inquiry 17, p. 147-169.
- Williams, Edwin (1981) "On the notions 'lexically related' and 'head of a word' ", Linguistic Inquiry 12, p. 245-274.
- Wunderlich, Dieter (1997) Cause and the Structure of Verbs, Linguistic Inquiry 28, p. 27-68.
- Verkuyl, Henk (1972) On the compositional nature of aspects, Kluwer, Dordrecht.
- Zubizarreta, Maria Luisa and Ton van Haften (1988) "English *-ing* and Dutch *-en* Nominal Constructions: a Case of Simultaneous Nominal and Verbal Projections", in: Everaert, Martin et al. (eds.) *Morphology and Modularity, in honour of Henk Schultink*, Foris, Dordrecht. p. 361-393.