Nasal Consonants in Variants of Dutch and Some Related Systems

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SUMMARY

This article presents an overview of known facts of the phonology of nasals consonants in Dutch. Most important among these are /n/, /ŋ / and /m/. It is shown how each of these segments can be placed in the syllable template, how they assimilate and dissimilate in place features with respect to neighbouring segments, and how they are sometimes deleted or epenthesized in order to improve syllable structure. The facts are presented in a systematic way, but without much technical detail — the present article aims to be an empirical touchstone for future theories, rather than presenting such a theory itself. Where this is relevant, facts from Dutch dialects and Frisian, German and Afrikaans are touched upon as well.

SAMENVATTING

Dit artikel geeft een overzicht van de fonologie van nasale medeklinkers in het Nederlands. De belangrijkste zijn /n/, /ŋ/ en /m/. Getoond wordt hoe ieder van deze segmenten in het lettergreeptemplaat geplaatast kan worden, hoe zij aan naburige segmenten assimileren en dissimileren, en hoe ze soms kunnen worden gedeleerd of geëpenthetiseerd om de lettergreepstructuur te verbeteren. De feiten zijn zoveel mogelijk systematisch gerangschikt, maar zonder teveel technisch detail — de bedoeling van dit artikel is eerder om een empirische toetssteen voor toekomstige theorieën te geven dan om zelf een dergelijke analyse te presenteren. Waar dit van toepassing is, worden ook feiten uit Nederlandse dialecten en uit het Fries, het Duits en het Afrikaans besproken.

1. INTRODUCTION

While research in a field progresses, the number of facts that are known and that belong to the theoretical 'canon' increases.[1] It thus should become more and more difficult to replace a well-established theory with a new one. One could discuss the question whether or not linguists keep to this methodological desideratum to a sufficient degree, but in any case it is useful to give an overview of what should be the 'canon' at any given time within the field. For the phonology of Dutch, some monographs presenting parts of the canon already exist: Booij (1995) and Trommelen and Zonneveld (1989). Yet these works necessarily deal with only part of the field, and segmental phonology is not their specific focus. Furthermore, these works concentrate on Standard Dutch; known data from closely related variants are left out of consideration, even though these might shed more light on the theoretical decisions to be made.

This article gives an overview of facts about the phonology of nasal consonants in variants of Dutch. Most of these facts have been taken from the phonological and dialectological literature on Dutch, and some of them are new. It is not the main intention of this article to present a full-blown theory of nasal consonants in Dutch, although some attention has been paid to presenting the facts in a systematic way and this cannot be done without at least some theoretical apparatus. Rather, we want to review the relevant facts in such a way that anybody who has a theory on segmental phonology, in particular on nasal consonants, could use these facts as a touchstone for that theory. Furthermore, this article could also be used as a reference for phonologists working on nasal consonant systems in other languages.

The facts are taken from Standard Dutch and from Dutch dialects, but the related languages Frisian and Afrikaans will also get some attention. This article is intended to help both analysts of the phonology of Dutch and those of nasal systems in general. It is my intention to give an update every few years, whenever new developments would make this necessary.

This article should be seen as an invitation to the study of nasal segments in Dutch. Even if it is true that it becomes more and more difficult to form a new theory once the relevant facts get accumulated, this does not mean that in the present case, there is
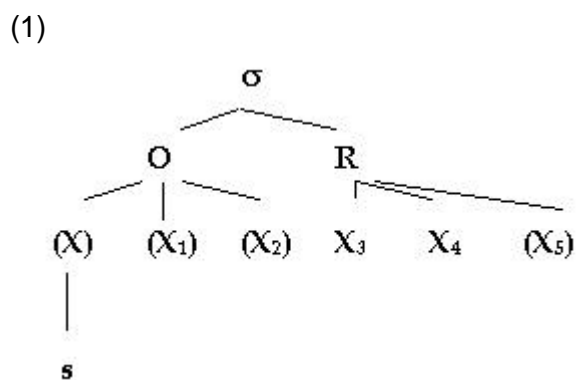
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anything like a good and consistent theory. To my knowledge, no analysis exists at present which can give a plausible and uniform treatment to the facts presented here. Rather, the phonology of nasal consonants in Dutch is full of puzzles that are still waiting to be answered.

2. INVENTORY OF NASAL SEGMENTS IN DUTCH

The number of nasal segments in Dutch is quite restricted, and their phonological behaviour — apart from some types of assimilation, to be discussed in section 2 — has hardly been the object of systematic study in the literature. It seems that all variants of Dutch display a phonemic contrast between at least two consonants, [m] and [n]. Probably, [ŋ] is a third phoneme in most or even all variants of Dutch as well, but its distribution is rather limited and this segment therefore is sometimes seen as a positional variant of [n before a velar obstruent (cf Trommelen 1983, 1984 for arguments against this position).

2.1. Syllabic position

Let us first have a look at the syllabic position of each of these three 'core' nasals. The Dutch syllable is characterized by the following template (Booij 1995:29):

(1)

The syllable consists of an onset and a rhyme constituent. The onset can consist of three segments, but none of these is obligatorily present. That is to say, there can be

syllables without any onset segment at all; this is indicated by the brackets.[2] The first segment of a trisegmental onset is always [s]; since this is not a nasal segment, it will be ignored here. The rhyme can have two or three segments, of which the first two are obligatory (this is based on an assumption about the structure of 'long' vowels in Dutch which we will not call into question here, but on which see Van Oostendorp 2000a). One core fact about the Dutch syllable which is not expressed in (1), is that the onset segments are always consonantal in nature, while the first segment of the rhyme is always a vowel, at least in Standard Dutch.

In the following table, we have depicted which syllable position can be filled by each of the nasal consonants in Standard Dutch:

(2)

	m	**n**	**ŋ**
X_1	*maan* [maːn] 'moon'	*naam* [naːm] 'name'	–
X_2	–	*knaap* [knaːp] 'guy'	–
X_3	–	–	–
X_4	*lam* [lam] 'lamb' *lamp* [lamp] 'lamp'	*kan* [kan] 'can' *land* [lant] 'land'	*bang* [baŋ] 'afraid' *dank* [daŋk] 'thank'
X_5	*arm* [arm] 'arm' *raam* [raːm] 'window'	*kern* [kɛrn] 'core' *been* [beːn] 'leg'	–

In position X_1, we can find both [m] and [n], but as a matter of fact only if position X_2 is empty: there are no complex onsets starting with a nasal. [ŋ] is absent from onset positions altogether.

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[2] This story assumes that there are empty onsets; alternatively, we could assume that onsets are obligatorily present, and sometimes filled by a glottal stop.

[n] is the only nasal that can appear in X_2 position; we do find words such as *smaak* 'taste', but in these cases the first consonant is always *s*, hence it can be assumed that [m] is in X_1. A further restriction is that X_1 is either a labial voiceless obstruent (*pneumatisch* 'pneumatic' [pnømatis], *fnuiken* 'to cripple' [fnœykə]) or a velar voiceless obstruent (*knijpen* 'to pinch' [knɛipə], *gnuiven* 'to gloat' [ɣnœyvə]). Words with a labial in X_1 followed by a nasal in X_2 are furthermore relatively rare.

Position X_3 cannot be filled by nasal or other consonants in Dutch at all. Many Eastern Dutch dialects (and also Frisian) do allow syllabic nasals (but not other syllabic consonants). For instance, in Hellendoorn Dutch (Nijen Twilhaar 1992) we find forms such as the following:

(3)

[wetn̩] 'to know' [pɑkŋ̩] 'to take'   [lopm̩] 'to walk'

In other variants of Dutch, we usually find a schwa followed by a coronal nasal ([ən]) in this same context. Such sequences do not occur in the dialects with syllabic nasals; as far as I am aware, there are no variants of Dutch in which schwa-headed syllables with nasal coda and syllabic nasals are in contrast.

X_4 is the only syllabic position that can be filled by all nasal consonants in all variants of Dutch. In the examples in (2), the nasal is followed by a homorganic stop. It is also possible to let the syllable end after the nasal (*kam* 'comb', *kan* 'can', *lang* 'long'). It is possible that the nasal is followed by a heterorganic stop, but only if this stop is a coronal:

(4)

hemd [hɛmt]   'shirt', *hangt* [hɑŋt] 'hangs'

In the latter example, the coronal obstruent is an inflectional suffix; there are no examples of a velar nasal followed by a tautomorphemic coronal stop.

Nasals in X_4 can also be followed by a fricative which is homorganic and/or coronal:

(5)

dans 'dance', *triomf* 'triumph', *soms* 'sometimes', *langs* [lɑŋs] 'past'.

There are no examples of a velar nasal followed by a velar fricative; examples of a labial nasal-fricative pair are very rare. Nasals in X_4 cannot be followed by non-obstruent segments.

All of these observations about restrictions following the nasal consonant hold true in heterosyllabic contexts as well, except that here we can find nasals followed by other nasals or, exceptionally, by liquids

(6)
am.nes.tie 'amnesty', *Kom.rij* (family name)

X_5 can be filled by [n] or [m] if it is preceded by a liquid; there are no examples of [ln] (even though we have *helm* 'helmet' and *kern* 'kernel'). On the other hand [n] can appear after a long (back) vowel followed by [r] in a few words and names: *doorn* [doːrn] 'thorn', *Baarn* [baːrn] 'place name'. In the speech of most speakers, a schwa is heard between the [r] and the [n], yet, as one reviewer of a previous version has pointed out, this schwa is presumably not 'underlying', witness the fact that it does not show up in derived forms such as *Doorner* [doːrnər], *[doːrənər]. The other reviewer does not seem to agree with this.

Concluding, we may observe that the coronal nasal can occupy any syllabic position in the Dutch syllable (at least if we also consider those dialects of Dutch which have syllabic nasals); as a matter of fact, together with /s/ it is the only segment in Dutch which has this property. Liquids, for instance, can occupy both onset positions and X_5, but not X_1 (they cannot be the first segment in a complex onset). Most obstruents can occur in X_1 and X_4, but not in X_2 or X_5. [m] is somewhat more restricted than [n], in that it cannot occur in X_2 position; and [ŋ] is the consonant with the most limited distribution in terms of the syllable positions in which it can occur.

It would thus seem that [ŋ] is the most 'marked' of Dutch consonants. But as a matter of fact, we will see below that there is evidence to consider this segment as unmarked as well. It is known from the literature that [ŋ] functions as an unmarked segment in many languages, especially when it occurs in the coda. For instance, in Japanese, a nasal in coda position assimilates in place to an immediately following consonant. Yet if this nasal occurs prepausally it is realised as "unreleased, either velar, or uvular" (Yip 1991):

(7)

sekke[ŋ] 'soap', *ze*[ŋ] 'goodness', *ho*[ŋ] 'book'

Similarly in some European Portuguese dialects (Barbosa 1965, Trigo 1993), nasal vowels at a certain point became denasalised. The resulting nasal consonant is velar before a pause (and assimilates to a following consonant in other contexts, just as in Japanese):

(8)

b[ɔ̃] → *b*[ɔŋ] 'good'

rw[ĩ] → *rw*[iŋ] 'basis'

Also in Dutch dialects, we sometimes find some evidence that seems to point in the direction of placelessness for velar nasals (at least in those dialects). One such piece of evidence may come from Maasbracht Dutch (Hermans 1994a). In this dialect stressed syllables support a tone contrast (roughly, either a falling tone or a level high tone) if it contains a long vowel, a diphthong or a short vowel followed by a sonorant:

(9)

Maasbracht Dutch

falling tone		dragging tone	
biː	'bee'	biː	'at'
buː	'build'	buː	'construction'
mɪn	'minus'	mɪn	'vile'
mɔl	'to break'	mɔl	'mole'

Yet we do not find this contrast on short vowels followed by a velar nasal:

(10)

falling tone		dragging tone
a. strɑŋ	'severe	-
b. stoŋ	'stood'	-

c. krɪŋ 'bitch'　　　　　　　　-

This is sometimes (Hermans 1994a, Van Oostendorp 2000b) seen as an indication that the velar nasal is empty in these cases: its emptiness could prevent the nasal from projecting a mora, for instance. The same would then hold for word-final r which similarly does not allow for a tone contrast.

Yet in what follows, the following principles will be taken as guidelines:

(11)
  i. Nasal consonants outside the onset prefer not to have independent place (Hufman and Krakow 1993; Boersma 1998)
  ii. Coronal place is the least marked place (McCarthy and Taub 1992)
  iii. Nasal consonants prefer to be velar in the coda (Van Oostendorp 2000b)

The first two observations are quite well-known in the phonological literature, even though it is not yet clear (at least to me) what explains them. In many languages of the world, nasals have a tendency to assimilate in place to adjacent segments; this can be seen as a consequence of (11i). Observation (11ii) is due to McCarthy and Taub (1992), who observed in a review of Paradis and Prunet (1991) that there should be a hierarchy of place features:

(12)
[Coronal] < [Labial], [Velar]

Coronal consonants behave less marked than labials and velars, for instance in the sense that they enjoy more freedom to occupy syllabic positions, they usually allow for more mutual segmental contrasts, etc. Yet they arguably are not *unmarked* for place, according to McCarthy and Taub (1992) (cf. Booij 1993). One argument for this is that, different from [pn] (*pneumatisch* 'pneumatic') and [kn] (*knaap* 'guy'), *[tn] is not allowed as an onset cluster. A plausible analysis for this fact relates it to the Obligatory Contour Principle, but in order for this to work, we need both segments to be specified as [Coronal].

More likely candidates for placeless obstruents in many languages are the glottal stop and/or [h].

This leaves the question whether there are also placeless nasals. As we have just seen, it has been claimed that some languages allow for such nasals (e.g. Japanese), and these may then be realised in a way that is quite similar to velar nasals. If we would be able to transfer this to Dutch, it would help us explain some of the facts above (where the velar nasal really behaves as if it were placeless) and provide us with a perhaps more acceptable version of (11iii) above:

(11)
iii'. Nasal consonants prefer to be placeless in the coda[3]

(11iii') could then be seen as a special case of, or even be unified with (11i). This is certainly attractive, but there are also quite a few reasons to assume that velar nasals sometimes do have the feature [Velar]. One of them is that these segments are often adjacent to a velar obstruent of some sort, but not to a placeless one. Another reason could be that 'real' placeless segments in Dutch cannot be adjacent to schwa. Thus in lexical words there are no structures of the type *[…hə…], *[…ʔə…], *[…əh…], *[…əʔ…] (the situation is somewhat different in function words; the definite terminer *het* is pronounced [ʔət] in Netherlandish Dutch and as [hət] in Flemish Dutch); on the other hand […ŋə…] is encountered quite frequently in Dutch (*engel* [ɛŋəl] 'angel'). As far as I can see, these are the two most important tests for placelessness in Dutch, and [ŋ] does not conform to either of them.

Also, the original (iii), awkward as it may seem, is not without independent empirical justification. Levelt (1994) has argued that in some early stage of language acquisition, segments tend to be realized as [+back] at the end of the word, and as [-back] at the beginning, and she relates this to the fact that the velar nasal occurs only in syllable coda in many adult languages. Furthermore, in Cologne German (Scheer 1999), *all* (coronal) segments tend to be velarised at the end of the word or syllable:[4]

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[3] It is hard to evaluate this constraint within an output-based framework such as OT; on the phonetic surface, these segments certainly have place, so we would need an input constraint.
[4] According to Scheer (1999), "the contextual conditions are weird: Middle High German dentals become velars iff preceded by a M[iddle] H[igh] G[erman] high vowel, i.e. [i,u,y]."

(13)

Standard German	Cologne German
Zeit [tsajt] 'time'	*Zick* [tsik]
Leute [lojtə] 'people'	Lück [lyk]
schneiden [ʃnajdən] 'cut'	*schigge* [ʃnigɛ]
braun [brɑwn] 'brown'	*brung* [bruŋ]
binden [bindən] 'to bind'	*binge* [biŋə]
bunt [bunt] 'colourful'	*bungk* [buŋk]

We will see below that something like this is at work for some Dutch dialects as well. I thus conclude that (11iii) — even though it is not properly understood — is a better approximation of reality than (11iii').

2.2. The position next to schwa

A few observations can be made about the behaviour of nasals before and after schwa. First, it should be observed that this is one of the very few places where /m/ behaves exceptionally. Dutch has an allomorphy between the agentive suffixes [ər] and [ɑːr] (Smith 1976). The latter is chosen after a stem ending in a schwa-headed syllable (*wand*[ə]*l+aar* 'wanderer', *luist*[ə]*r+aar* 'listener'), the former in all other cases (*spr*[e]*k+er* 'speaker', *bez*[ɛ]*t+er* 'occupant'). Strangely, words ending in schwa+m are an exception to this: *modem*[ə]*m+er/*aar* user of a modem'.[5]

Second, let us take a look at nasals in the onset of a schwa syllable. All nasals can occur in such a position. This is true even for [N], which appears in words such as those in (14), even though it cannot appear in the onset headed by 'full' vowels.

(14)
[ɛŋəl] 'angel', [jɔŋən] 'boy'

Kager and Zonneveld (1986) claim that this is evidence for their hypothesis that schwa behaves as if it is not there, from a phonotactic point of view; I have not seen any other

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[5] Thanks to Matthias Hüning for pointing out this real life example (found on several webpages with a search on http://www.google.com/).

analysis of this phenomenon. The other nasals can also freely occur in the onset of a schwa syllable.

After schwa, all nasal consonants display special behaviour. [n] has a very strong tendency to disappear in this position. In many variants of Dutch (e.g. in the standard variant), *jongen* 'boy' , *open* 'open' and *praten* 'to talk' are pronounced as [jɔŋə, opə, pratə] respectively. This deletion of /n/ will be discussed in more detail in section 3. Here we note that /n/ is realised if it is followed by a coronal stop, e.g. in present participles such as *spannend* 'exciting' [spɑnənt, *spɑnət].

In some variants of Dutch (at least in a variant that has probably been developed relatively recently in the neighbourhood of Amsterdam, Van Oostendorp 2001a) the schwa next to a realised /n/ tends to get rounded. The realisation of *spannend* in those variants is approximately [spɑnənt]. This could be seen as an instance of dissimilation (the schwa becomes [+back] before a [-back] nasal).

We can also observe a similar phenomenon for the schwa next to a velar (i.e. [+back]) nasal. In this environment the [-back] vowel [ɪ] and schwa are noncontrastive and indistinguishable: there are no minimal pairs involving a [ɪŋ]/[əŋ].

Afrikaans may provide us with an argument for this. Dutch coronal nasals have been velarised after schwa in this language. The vowel itself is spelled <i> in Afrikaans (even though it is only marginally fronted in many variants). The sequence /ən/ has thus turned into [əŋ] or [ɪŋ]:

(15)
doring (< Du. *doren,* 'thorn'), *koring* (< Du. *koren* 'corn')

The velarisation of the coronal nasal may be seen as an influence of Malay (Den Besten 2000), but similar phenomena are attested in Dutch as well (cf. section 2). The concommitant spelling difference (schwa as <i>) may be seen as an indication that the short non-low front vowel and schwa are indistinguishable in the position before the velar nasal.

There might be an argument for treating the short mid front vowel and schwa as indistinghuishable before [ŋ] from stress as well, even though this has to be taken with some care. According to most analysts (Van der Hulst 1984, Gussenhoven 2000,

Zonneveld 1993, Kager 1989; but see Booij 1995 for a dissident view), the stress system of Dutch is quantity sensitive. The particular nature of the segments in the rhyme does not seem to be very relevant for this. Nasal consonants in the coda of a syllable thus add weight to a syllable, as much as any other consonant. Yet words ending in orthographic *-ing* never seem to have stress (16a), with some exceptions to this generalisation given in (16b-c):

(16)

a. *wóning* 'house'*, háring* 'herring', *kóning* 'king'

b. *ring* 'ring', *ding* 'thing', *zing* 'sing'

c. *seríng* 'lilac'

I use an accent to denote stress in these examples. The stress pattern of Dutch is such that main stress is usually on the prefinal syllable of the word, but there are lots of exceptional stresses on final or antepenultimate syllables as well (Van der Hulst 1984, Kager 1989, Trommelen and Zonneveld 1991, Booij 1995, Gussenhoven 2000, and references cited there). For any given (short) vowel-consonant sequence it seems usually possible to provide bisyllabic words ending in that sequence both with and without a stress. E.g. for words ending in -*on* we have words such as *kanon* [kanɔ̃n] 'cannon' as well as *canon* [kánɔ̃n] 'canon'. Yet this is not the case for the sequence [ɪŋ]. As a matter of fact, we only find word stress on this sequence, if it is the only nucleus in the word (as in b), or if the other syllable contains a schwa (as in [sərɪŋ] in a). It thus seems as if this sequence tries to avoid stress as much as it can, only accepting it when there is no other syllable in the word which could carry it. In this sense, then, we could suppose that the [ɪ] is schwa-like in nature before a velar nasal — an assumption that seems to be confirmed by the fact that [ɪŋ] and [əŋ] are never contrasted.

As a matter of fact turns out that other vowel+velar nasal sequences do not necessarily avoid stress (most of these other instances are loanwords, in many cases from Indonesian):

(17)

a. *sárong* 'id., Indonesian dress', *kámpong* 'id.', *óblong* 'id.'

b. *zong* 'sang', *tang* 'pair of tongs', *long* 'lung'

c. *senáng* [sənɑŋ] 'happy', *diftóng* 'diphthong', *monoftóng* 'monophthong'[6]

The reason for this stress-avoiding behaviour of [ŋ] remains to be discovered. It would be particularly mysterious to those theories that consider this segment to be the result of an underlying sequence [nɣ] or [ng], since consonant clusters usually make a syllable 'superheavy' rather than just heavy.

It is tempting to try and find explanation in the assumption that [ŋ] is 'empty' or placeless and placeless segments do not count for stress. If we are not allowed to make this assumption (as we have argued above), it is hard to see what the explanation for this phenomenon is.

2.3. Other nasal segments

As stated above, the status of especially [m] and [n], but to a large extent also of [ŋ], in the phonology of Dutch has been uncontested. The language has words such as *oranje* 'orange', *franje* 'fringe' which are often pronounced as [orɑɲə], [frɑɲə], etc. Usually, this segment is seen as the phonetic implementation of a phonological [nj] sequence. It should be noted however that this leaves certain phonotactic observations unexplained, e.g. that there are no similar tautomorphemic [mj] or [ŋj] sequences. If we assume that /ɲ/ is a segment, this can be explained by a general ban on clusters of nasals followed by glides. The distribution of this segment is very restricted, even more so than [ŋ].

Next to these we find a number of sounds which are undoubtedly best seen as variants of the phonemes just mentioned and due to phonetic assimilation and/or dissimilation processes. The best instance of this is the labiodental [ɱ], which occurs in some variants (e.g. in Standard Dutch) next to labiodental fricatives *onvriendelijk* [ɔɱvriːndələk] 'un+friendly'. This segment really never contrasts with any other segment, so there is no reason to assume that it plays a role in the phonology of the language.

Standard Dutch also does not have nasal vowels, even though vowels before nasal consonants are usually somewhat nasalised phonetically. There are certain dialects, e.g. in West Brabant (Stroop 1994) in which nasal consonants have disappeared from X_4

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[6] As a matter of fact, these words are usually pronounced with stress on the first syllable. I am grateful to Anneke Neijt for pointing this out to me.

position (in particular if followed by a fricative), leaving a nasalised (and long) vowel behind. We thus have forms such as [dɑ̃ːs] 'dance' and [kɑ̃ːs] 'chance'. Frisian also has nasal vowels, as we will see in the next section. From a purely synchronic view, one could possibly argue that this introduces nasal vowels into the system, but no analyses along these lines are familiar to me.

3. PLACE FEATURE BEHAVIOUR

The place of articulation of nasals outside the syllable onset is rarely distinctive. In particular, /n/ tends to assimilate in place to adjacent segments, mostly to consonants, but in incidental cases also to vowels; in some cases it also dissimilates, however, and in this case the trigger always seems to be a vowel.

3.1. Assimilation before obstruents

The most well-known example of assimilation is that nasals in a coda assimilate in place to a following obstruent. Just like many other European languages (such as English), Dutch has a nonnative prefix *in-*:

(18)

i[ŋ]consequent, i[m]populair, i[n]transitief

Just like English, Dutch also has a negative native suffix *on-* which shows the same behaviour — even though this is not reflected in the orthography:[7]

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[7] One of the aspects of assimilation which I will ignore here is the domain in which this takes place. Dialects of Dutch also vary in this respect. In many dialects spoken in the southern parts of the Netherlands and in Flanders, nasal assimilation can also cross word boundaries (Taeldeman 1980, 2001):

(i) *groe*[m] *boomke* 'green tree' (diminutive)

Taeldeman (1980) notes that Limburg and Brabant Dutch dialects often show an opaque interaction between this assimilation and optional deletion of inflectional schwa in these cases. This is responsible for the difference between (i) and (ii):

(ii) *groe*[nə]/[n]/*[m]/*[mə] *bomen* 'green trees'

(19)

o[ŋ]*kundig* 'unable', *o*[m]*populair* 'unpopular', *o*[n]*telbaar* 'uncountable'

As far as I know, the system is always restricted to 'underlying' /n/; underlying /m/ or /ŋ/ never alternate in this fashion.

The same process is also seen in Frisian (Tiersma 1985:27):

(20)

yn+bine 'bind into' → [imbinə]

yn+komme 'come in' → [iŋkomə]

In this system, we have a systematic class of exceptions, viz. if the stem starts with a fricative. In those cases, the nasal does not assimilate, but disappears, leaving nasalisation on the preceding vowel (Tiersma 1985:15):

(21)

yn+falle 'fall in' → [ifɑlə]

The reason for this probably is Padgett's Generalisation (Padgett 1994; cf. Van Oostendorp 2000b), which has it that universally nasal consonants tend not to assimilate in place with adjacent fricatives:

(22)

Padgett's Generalisation (Padgett 1994:476)

If [+nas, +cons], then [-cont]

'A nasal consonant cannot be linked [for instance by place assimilation] to the feature [+continuant]'

The idea is that place assimilation creates a 'path' from the nasal to the fricative, hence from the feature [nasal] to the feature [continuant]. According to Padgett, this generalisation is phonetically grounded, and responsible for the fact that nasalised

M a r c   v a n   O o s t e n d o r p   *N a s a l   C o n s o n a n t s   i n   V a r i a n t s   o f   D u t c h   a n d   S o m e   R e l a t e d   S y s t e m s*

15

fricatives are absent or at least rare in languages of the world, and that fricatives often behave as opaque or transparent segments in nasal harmony systems.

Yet Padgett's Generalisation does not hold across the board for variants of Dutch. In Standard Dutch, for instance, it is generally assumed that we have assimilations of the following type (cf. Booij 1995: 64):

(23)

kamfer [kɑɱfər] 'camphor'

on+verstandig [ɔɱvərstɑndəx] 'unwise'

infaam [ɪɱfɑːm] 'infamous'

In these cases, it is customary to transcribe a labio-dental [ɱ]; this place of articulation is best seen as the result of assimilation to the following (equally labio-dental) fricative. Perhaps Padgett's Generalisation functions as a parameter (which can be switched on and off in different dialects), but it is also possible to see it as a violable constraint. Trommelen (1984) holds (cf. also Gussenhoven and Broeders 1976, Booij 1995:148) that /n/ is frequently deleted before a fricative also in this variant. Booij (1995) observes that tautomorphemically nasal+fricatives sequences are quite rare too.[8]

Padgett's Generalisation has an interesting consequence in some variants of Frisian, notably in Clay Frisian (Visser 1997, Van Oostendorp 2000c). In this dialect nasals (and other sonorant consonants) can be syllabic, as is illustrated in (24):

(24)

passer 'pair of compasses' [pɔsr̩]

biezem 'broom' [biəzm̩]

iepen 'open' [iəpm̩]

Yet in one context nasal consonants are not allowed: we do not find syllabic nasals preceded by a homorganic (tautosyllabic) fricative. In stead of these, we find a schwa:

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[8] Nasal assimilation seems to be restricted to following stops in other Germanic languages, such as Norwegian (Kristoffersen 2000:319) and German (Wiese 2000:219) as well.

(25)

even 'just a while' [*eːvm̩ ,   evən]

There is an exception to the exception, viz. coronal nasals are allowed after coronal fricatives:

(26)

tassen 'bags' [tɔsn̩]

Descriptively, it seems to be the case that a nasal and a fricative are not allowed next to one another, if this would enforce place assimilation between the two. A coronal nasal can stay next to a coronal fricative; assimilation (in the sense of feature spreading) is not necessary to enforce place feature harmony between the two (cf. De Haan 1999, Visser 1997 and Van Oostendorp 2000b).

In most of the cases discussed so far, the place assimilation was regressive: a nasal assimilates in place to a *following* obstruent. It can be shown that this is actually an artefact of the fact that the nasal that has to be assimilated is outside of the onset and therefore can only be *followed* by an obstruent. In those dialects that allow for syllabic nasals (such as Clay Frisian), we actually also find assimilation to preceding obstruents.

3.2. Eastern Dutch dialects

Eastern Dutch dialects are like Frisian in displaying assimilation of syllabic nasals. One dialect that has been studied quite carefully is Hellendoorn Dutch (Nijen Twilhaar 1990). Coda nasals in this dialect do not assimilate at all, since they are usually deleted (cf. section 3). Yet syllabic nasals assimilate. I have already given a few examples in (3), repeated here for convenience:

(27)

[wetn̩] 'to know'   [pɑkŋ̩] 'to take'   [lopm̩] 'to walk'

The examples in (27) all involve an inflectional suffix (but examples with function words do exist as well). The indefinite determiner has the shape of a syllabic nasal (only).

It can therefore be used as a good test to study the interaction between progressive and regressive assimilation. It turns out that assimilation is to the segment which is at the shortest distance in the morphosyntactic structure (cf. Nijen Twilhaar and Van Oostendorp 2000). For the inflectional suffix this 'most nearby element' is the stem, for the definite determiner this is the noun following it:

(28)
[n̩] doeve   'a pidgeon'
[m̩] fietse   'a bike'
[ɲ̩] jässe   'a coat'
[m̩] bal   'a ball'

This holds true also in those cases where the article is preceded by another consonant it could be assimilated to potentially:

(29)
loop [ŋ̩] keer   'walk once'
wärk [n̩] dag   'work a day'
gooi [m̩] bal   'throw a ball'

Hellendoorn Dutch nasal assimilation has some further complications; I refer to Nijen Twilhaar (1990) for more details. Two aspects seem worth noting here. In the first place, the phenomenon appears to be subject to a form of opacity. In the past tense, the nasal assimilates to an underlying /t/ segment (denoting the past tense), which however is no longer present on the surface. In this way a contrast is created between past and present tense:

(30)
pa[kn̩]   'took'
la[xn̩]   'laughed'
sto[pn̩] 'stopped'
stra[fn̩] 'punished'

(31)
pa[kŋ̩`]   'take'
la[xŋ̩]   'laugh'
sto[pm̩]   'stop'
stra[fŋ̩] 'punish'

Nijen Twilhaar and Van Oostendorp (2000) propose that the /t/ is not completely deleted from the underlying representation, but leaves a trace in the form of the feature [coronal]. Putatively, the reason for this is that in this way the past tense morpheme stays minimally visible in the output structure.

Another interesting aspect of Hellendoorn nasal assimilation is that it triggers *total assimilation.* If a nasal assimilates in place to a preceding voiced obstruent, this obstruent in turn becomes nasalized, according to Nijen Twilhaar (1990). This does not happen to underlyingly voiceless obstruents:

(32)	(33)
ze[tn̩] 'to put' (< /zɛt/)	bi[nn̩] 'to pray' (< /bɪd/)
klo[pm̩]'to knock' (< /klɔp/)	schro[mm̩] 'to scrub' (< /sxrob/)
slo[fm̩] 'to shuffle' (< /slof/)	loo[ɱm̩] 'to praise' (< /löv/)
la[xŋ] 'to laugh' (< /lɑx/)	ze [ŋŋ] 'to say' (from /zɛɣ/)

It is not clear to me why this happens, and why it happens specifically to voiced obstruents. Furthermore, /z/ seems to form an exception to this generalisation:

(34)
bloa[zn̩] 'to blow'   deu[zn̩] 'boxes'
lèè[zn] 'to read'   loo[zn̩] 'sheds'

Some linguists (e.g. Den Ouden p.c., Anneke Neijt p.c.) have suggested to me that other Eastern Dutch dialects, such as Groningen Dutch have onset glottal stops in cases such as those in (33) (bi[ʔn̩], schro[ʔm̩], etc.). Unfortunately, I have not been able to trace reliable phonetic and/or phonological sources on this.

Furthermore, Eastern Dutch dialects are often characterised by the following property: the velar nasal cannot appear at the end of a word. Where we find a word-final velar nasal in other dialects, we find [ŋk] in these dialects: thus, we find [dɪŋk] rather than [dɪŋ]. It is known that a similar state of affairs seemed to hold in Middle Dutch more generally.

This [k] can be seen as the result of devoicing an underlying /g/ (even though the voiced velar stop does not otherwise play a role in these or other variants of Dutch; cf. Itô and Mester 1999, Van Oostendorp 2001b). In any case, I suppose that synchronically these facts can be explained as an instance of (11i): nasals of a certain place are not allowed without support of an adjacent stop with the same place. The mystery then remains why this only holds true of the velar nasal, and why there are no dialects which pronounce [lɑmp] for /lɑm/ 'lam' or [mɑnt] for /mɑn/ 'man'.

3.3. Assimilation and dissimilation to vowels

Somewhat surprisingly, some variants of Dutch seem to allow for assimilation and dissimilation of coda nasal consonants to the preceding vowels. We have already seen instances of this above: in some variants schwa tends to be backed and rounded before a coronal nasal (yielding [spɑnənt] for [spanənt] 'exciting'), and in some (other) variants, schwa tends to be fronted before a velar nasal (yielding [wonɪŋ] for [wonəŋ] 'house').

Furthermore, in the 17th century an interesting process of nasal velarisation was present in probably a wide range of Dutch dialects in the provinces of Holland and Utrecht (Van den Berg 1943, Daan 1985, 1997, Van Ginneken 1935, Heeroma 1954, Hoeksema 1999, Kieft 1945, Scholtmeijer 1996, Taeldeman 2001, Verstegen 1953, Weijnen 1939). Also quite interestingly, it seems to be completely on the retreat. Traces of it have been found in the late 20th century in small towns such as Bunschoten-Spakenburg (Scholtmeijer 1996) and Wieringen (Daan 1951, Van Oostendorp 2000b), but it seems safe to say that the phenomenon will not survive the 21st century.

Nasal velarisation is sensitive both to a left-hand context and to a right-hand context. On the lefthand side, we have to find a short back vowel, i.e. usually [ɑ] or [ɔ]. The restriction to back vowels is a reason to suppose that assimilation is at stake here; the restriction to short vowels is probably due to the general requirement on velar nasals that they can only appear in this environment. On the righthand side, on the other hand, we obligatorily have a coronal consonant. We thus have velarisation in examples such as those in (35a), but not in (35b) or (35c) (the onset segments in these examples have been given the Standard Dutch form, but they may vary across dialects):

(35)

a. *dans* 'dance' [dɑ̃s], *hond* 'dog' [hɔŋt]

b. *eend* 'duck' [eːnt]

c. *man* 'man' [mɑn], *ramp* 'disaster' [rɑmp]

In Van Oostendorp (2000b) I proposed that this phenomenon should be seen as an instance of (11iii): nasals in the coda tend to be velar. In cases such as this, they can only be so if on the one hand this feature 'velar' is supported by the vowel on the lefthand side, and furthermore if they are not absolutely word-final (they are protected from this by the coronal obstruent).

Other examples of apparent assimilation to vowel place we can find in the southern parts of the Dutch language area, e.g. in the area surrounding Brussels (Van Ginneken 1935:312). Here a coronal nasal gets palatalised after a front (or maybe a high) vowel:

(36)

[kinʲtʲ] 'child' (< /kint/), [winʲtʲər] 'winter' (< /wintər/),

Also in these cases the condition applies that the nasal in question has to be followed by a coronal stop, but this stop palatalises itself as well, so that neither the hypothesis that the nasal has to be dissimilated from the stop nor the hypothesis that the obstruent protects the integrity of the word edge can hold true.

Incidentally, both velarisation and palatalisation can be found in some (other) dialects without the restriction on the lefthand context. Thus, we have North- and South Limburg dialects (according to Van Ginneken 1935:313) in which people say [eŋt] for /end/ 'duck' next to [hɔŋt] (notice that this area is not very far from Cologne, of which we have seen similar examples in (13)). In Central Limburg (Hermans 1994b), on the other hand, we find [hɔnʲtʲ] next to [kiːnʲtʲ]. An attempt towards giving a typology of Dutch dialects in this respect is provided in Van Oostendorp (2000b).

An interesting twist on this is provided by facts from Antwerp Dutch (Taeldeman 2001). In this dialect a coronal nasal velarises after an underlyingly long vowel, but the vowel is shortened at the same time:

(37)

grune [ɣryːnə] 'green'   *gruun* [ɣryŋ] 'green'

schoenen [sχuːnə] 'shoes'   *schoen* [sχuŋ] 'shoe'

Strangely, the nasal does not velarise after vowels which are short already underlyingly:

(38)

kin [kin] 'chin'   *tien* [tiŋ] 'ten'

zon [zon] 'sun'   *zeun* [zøŋ] 'son'

4. EPENTHESIS AND DELETION

In the previous section we have seen that the nasals consonants in Dutch tend to alternate with one another. This mainly involves underlying /n/. Underlying /m/ and /ŋ/ hardly assimilate at all. The reason for this may be that [Coronal] is the least marked place feature (cf. Booij 1993).

This may also account for the fact that it is the coronal nasal that can be deleted quite freely. In many variants of Dutch (including the standard language), /n/ is deleted regularly (but still optionally, in the sense that it does not happen in very formal registers) after schwa (Van Hout and Van der Velde 2000). We thus find forms such as the following:

(40)

lopen [loːpə] 'to walk', *werken* 'work' [wɛrkə]

mannen [mɑnə] 'men'

Notice that we find syllabic nasals in the same contexts in Eastern Dutch dialects and in Frisian. The tendency to delete /n/ after schwa is quite strong; it is one of the features by which one can recognize a native speaker of Dutch when speaking e.g. English (pronouncing *Boston* as [bɔstə]) or German. The process also interacts with vowel reduction. If an unstressed vowel is reduced to schwa (which can happen quite regularly,

even though it is not as compulsory in Dutch as it is in English), we find forms such as [bəzinə] for *benzine* /bɛnzinə/ 'petroil' (cf. Booij 1981, Kager 1989).

Deletion of the coronal nasal is subject to various external factors (Van de Velde and Van Hout 2000) such as region (speakers in the Norths realise the /n/ more often than those in other parts of the language area), and age and sex (young women delete the most, young men realise the most).

There are two systematic exceptions to this general process. In the first place, deletion is blocked, or at least marked, in the indefinite determiner *een* and those cases in which it ends a verbal stem, for instance in the first person singular. Thus [opə] is perfectly acceptable as a realisation of the adjective *open*, but much less so for the first person singular of the deadjectival verb; the latter one is preferably realised as [opən]. Zonneveld (1982) proposes that this is a consequence of the fact that in these verbal forms there is a 'theme vowel', which is not visible at the surface, but serves to protect the /n/ from deletion in these cases (cf. Ernestus 2000 and Van de Velde and Van Hout 2000 for a critical review). The second exception is that the /n/ is not deleted when it is followed by a tautomorphemic coronal obstruent. Thus it seems much harder to delete the segment in a form such as *spannend* ('exciting', *span* is the verb and *end* the participial ending) than e.g. in *wapens* ('arms', *wapen* is the noun, and -*s* the plural ending).

In various dialects, /n/ can also be deleted after full vowels. We have seen above, for instance, that both in Frisian and in Standard Dutch, the /n/ tends to get deleted before a fricative. In this way, a violation of Padgett's Generalisation that nasals cannot be linked to [+continuant] segments, is avoided. Usually, this deletion of /n/ results in compensatory lengthening of the preceding vowel and there is always a trace of nasalisation on that vowel. A much more general deletion of /n/ in syllable coda can be found in West Brabant Dutch (Stroop 1994), where basically any /n/ in the coda is deleted, especially if the preceding vowel is low. This vowel always lengthens, a fact which is explained by Stroop in terms of autosegmental phonology: the deleted nasal leaves a syllabic position which is subsequently filled by the vowel, which therefore becomes long.

General deletion of coda /n/ we find in many dialects, across the whole language area, Hellendoorn Dutch (Nijen Twilhaar 1990). Observe that nasal deletion does not occur in hiatus position, in which the nasal is resyllabified into the onset:

(41)

[ĩ]jectie 'injection'

[ɔ̃]benul 'dimwit' (on+benul, 'un+inkling')

[ã]geven 'to hand' (an+geven, 'on+give')

in april: [ɪn] april 'in april'

oneerlijk: [ɔn] eerlijk 'unfair' (eerlijk = 'fair')

an alles: [ɑn] alles   'to everything'

These examples show that it is really the coda position in which these nasals are not allowed. This fact may be related to (11i): deletion of nasal consonants may be seen as an (admittedly quite drastic) way of satisfying the constraint that coda nasals should not have an independent place. If there are no coda consonants at all, this constraint is vacuously satisfied.

It has to be mentioned that in some varieties next to deletion after a vowel (usually schwa), we also find insertion after schwa, especially in the context of a clitic. In some variants (the regional distribution of the phenomenon is not exactly clear to me) we find forms such as *beurde*-[n]-*ik*. For the properties of one such system, cf. Booij 1996.

5 . C O N C L U S I O N

In this article, I have tried to give an overview of facts from nasal consonants in Dutch and closely related systems, in as far as these are known from the phonological and dialectological literature. It is clear at least that /m/ is the most 'well-behaved', the least mysterious of the three most common nasal consonants in Dutch. The other two interestingly seem to suffer from the same paradox. Both behave in some ways as if they are unmarked and in other ways as if they are marked, especially with respect to place. A better theory of segmental marking than is currently available in the literature is probably needed to describe all of the relevant facts. Studying these facts carefully may hopefully help to reach such a theory.

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