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VOICED FRICATIVES IN DUTCH:  
SOURCES AND PRESENT-DAY USAGE

1. Introduction

In Standard Dutch, i.e. Algemeen Nederlands, or AN for short, four voiced fricatives may occur in positions in which also their voiceless counterparts can occur, viz. /v,z,ʒ,ɣ/ in initial and medial positions.<sup>1</sup> Since AN, like Frisian and German, is subject to *Auslautverhärtung* (final devoicing), only the voiceless counterparts /f,s,ʃ,x/ can occur in final position. In particular in areas north of the great rivers, i.e. the Rhine and the Waal, there are widespread tendencies to devoice the voiced fricatives (e.g. Cohen et al. 1972:34ff), which cause their phonemic position to be variable. In this article an impressionistic discussion will be presented of the historical development and the present-day status of voiced fricatives in AN, on the basis of the literature and the speech behaviour of a sample AN speaker. From this description it will appear that voiced fricatives are, for many speakers, phonological variables, with voiced and voiceless variants. Informal observation of the use of these variables by different speakers would seem to warrant the conclusion that, within the Dutch speech community as a whole, there are differences of opinion about whether the voiced or the voiceless variants of these variables are part of the standard language. In this article, the notation ( ) will be used to represent a phonological variable, the notation / / to refer to a phonemic entity, and [ ] either to variants of phonological variables, or to allophones of phonemes.

## 2. AN /v/

AN /v/ derives from West Germanic (WG) /f/, which in the oldest phase of the language became voiced in non-final positions (Middle Dutch (MD) *veld* 'field', MD *vloec* 'curse', MD *neve* 'nephew'). In initial position the voicing rule only applied when /f/ was not immediately preceded by an obstruent: in *het vuur* ('the fire') or *slagveld* ('battle-ground') Modern Dutch /f/ is the direct and unchanged reflex of WG /f/ (cf. Schönfeld 1970:54). The occurrence of /f/ in these contexts is now commonly described as being the result of assimilation, but since, historically speaking, there has never been any process devoicing fricatives after obstruents, we will here use the term SANDHI rather than ASSIMILATION to refer to the rule which is taken to be responsible for the occurrence of voiceless fricatives in this context.

In intervocalic position, the new /v/ coalesced with the /v/ that derived from an earlier WG voiced bilabial fricative [β] (as in MD *avond* 'evening'). Although at first, this [v] stood in allophonic relationship with [f], which only occurred as a geminate after short vowels, the two fricatives soon acquired phonemic status because of the apparent completion of the voicing rule: OFrench loanwords like *fier* 'brave' and *fel* 'fierce' retained /f/ in initial position (Van Helten 1887:149; Goossens 1974:75).

In the earliest extant Dutch text fragment, *vogels* ('birds') is already spelt <vogola>. (See Meijer (1978:2)). The voiceless realisation that is so widely heard today, particularly in initial position, is therefore either the result of a fricative devoicing rule that was introduced at some later stage, or, more probably, to the expansion of /f/ from areas (possibly Amsterdam) in which the voicing rule was never allowed to operate. (The spelling <f> for initial and medial /v/ occurs in 17th c. Amsterdam farces, cf. Weijnen 1966, §78). Although the current descriptions of the phonology of Dutch (Cohen et al. 1972, Hermkens 1971; Trommelen & Zonneveld 1979) do not admit

coalescence of /v/ and /f/ as a feature of Standard Dutch, the pronunciation of [f] for (v) in initial position is the rule rather than the exception in the speech of non-Southern speakers of AN. Significantly, textbooks on the pronunciation of foreign languages aimed at Dutch learners are more realistic in that they do allow [f] for initial (v) in the standard language (e.g. Gussenhoven & Broeders 1976:41; Collins & Mees 1981:159). In a television interview held shortly before her inauguration on April 30, 1980, the ruling Dutch monarch distributed the voiced and voiceless variants of (v) as indicated in Table 1.

Table 1.

Percentages of variants of (v) for an AN speaker in three contexts

	[f]	[v]	total
Initial	95	5	159
Word-internal	7	93	55
Sandhi	96.5	3.5	55

These data suggest that /v/ is regularly maintained in word-internal position, but that in initial position /f/ is the norm. The two instances of 'hypercorrection' after obstruents would seem to indicate that, for this speaker, the postulation of a sandhi rule  $v \rightarrow f$  /[-son] — may be unnecessary.

## 3. AN /z/

AN /z/ derives from non-final WG /s/. Unlike /f/, WG /s/ was retained in initial clusters other than /sw-/ (e.g. MD *slaep* 'sleep', but MD *zwaert* 'sword', *zæcken* 'seek') and, like WG /f/ after obstruents, as in Modern Dutch *het zand* 'the sand' (Schönfeld 1970, §47). Goossens

(1974:75) assumes the allophonic relationship with [s] to have persisted until a later date than that of [v] with [f], because spellings with <z> only appear from the 13th century, and then not consistently (cf. De Witte 1962:81), although consistent spellings with <s> are found for MD loanwords from French (*saisoen*, *saluut*) which have AN /s/ today (Van Helten 1887:150).<sup>2</sup> It is doubtful, however, whether in this case a relationship can be presumed between consistent <s> - <z> spellings and a phonemic opposition. Zwaan (1939:97-100) points out that the inconsistency in the spelling was due to uncertainty over the precise phonetic values of the letter <z> ([ts] or [z]). Interestingly, Kooiman (1913:151) observes that the first texts in which a consistent spelling is maintained (e.g. those by Vondel from 1637) are of Amsterdam provenance, a fact he ascribes to the greater awareness of speakers in that - presumably voiceless - area of the social significance of [z] for (z). Amsterdam may be assumed to have been a voiceless area, although J. le Francq van Berkhey, who in his *Natuurlyke Historie van Holland* (1773) comments on the speech habits of speakers in various regions in the West, only notes the voiceless realisation of /z/ in the speech of the West-Frisians, i.e. the inhabitants of the region around Alkmaar in the province of North-Holland (cf. also Wijnen 1966:246).<sup>3</sup>

Although voiceless realisations of AN /z/ are by no means uncommon even in the speech of educated Western speakers, its position is far stronger than that of /v/. The distribution of [z] and [s] for (z) in the speech of our sample speaker showed far greater correspondence with traditional statements found in handbooks. Table 2 gives the percentages based on the same interview as that for (v) above. (Doubtful pronunciations, such as a very weak devoiced [z], were generally counted as [z], deletions of word-internal (z) were ignored). It will be clear that in initial position this speaker uses predominantly [z], and uses [z] consistently in intervocalic position.

Table 2.  
Percentages of variants of (z) for an AN speaker in three contexts

	[s]	[z]	total
Initial	6.6	93.4	159
Word-internal	0	100	37
Sandhi	93	7	74

Note that for this speaker the postulation of a (variable) sandhi rule devoicing /z/ after obstruents, is clearly called for.

#### 4. AN /z/

AN /z/ exclusively occurs in relatively recent loanwords, like *jury* (id.), *beige* (id.), and therefore has the status of a 'loan phoneme' or 'marginal phoneme', a position it shares with a number of other AN phonemes (Gussenhoven & Broeders 1976:40-42). It would seem to be part of non-Western accents that do not have regular devoicing tendencies, as well as of educated Western accents. It will not be considered further.

#### 5. AN /ɣ/

AN /ɣ/ derives from initial and intervocalic WG /g/ (MD *goet* 'good', *weghe* 'roads') as well as from (intervocalic) geminated /g/ (MD *seeghen* 'to say'), which is assumed to have become a fricative after the MD period.<sup>4</sup> Intervocalically, it is in opposition with /x/ (from earlier geminated /x/), as in *lachen* ('to laugh') and, later, initially with

/x/ in loanwords from Greek and Latin, like *chaos* (id.), *chloor* ('chlorine').

In the literature on the phonology of Dutch, confusion reigns supreme both with respect to the phonemic status and the phonetic nature of AN /ɣ/. Cohen et al. (1972:34) claim that /ɣ/ is absent in the speech of many urban speakers in the West, and believe that north of the great rivers the maintenance of an opposition in initial position is always artificially inspired by the spelling. Zwaardemaker & Eijkman (1928:195) and Goossens (1974:27) simply say that for many speakers the opposition does not exist. Collins & Mees (1981:159-62) only recognise the opposition in intervocalic position, and then only for some speakers, noting that Southern speakers are more likely to maintain it. With respect to the phonetic realisation of /ɣ/, Van Wijk (1939:44) says that it cannot always be easily ascertained whether there is a difference of voicing or intensity between /ɣ/ and /x/, adding that there are regional and individual differences. Van den Berg (1972:38) claims that in many parts of the Netherlands, but not in Belgium, utterance-initial /ɣ/, is 'almost' voiceless. Hermkens (1971:47) states that /ɣ/ in any position is voiceless in Northern speakers, but believes that a difference in sharpness is maintained, while Collins & Mees say that (intervocalic) /ɣ/ is weaker and longer than /x/ (1981:162).

In order to throw some light on the status of AN /ɣ/, Van den Broecke & Van Heuven (1979) carried out a production experiment, from which it appeared that none of their four subjects ever produced a voiced /ɣ/ in intervocalic position, but that there was an inconsistent, yet significant difference in duration between /ɣ/ and /x/, the latter tending to be longer (i.e. the reverse of what Collins & Mees claim). An even less consistent durational difference was found for the preceding vowel, which tended to be longer before /ɣ/. In a subsequent perception experiment only one of the four speakers appeared to have produced a difference that was perceptible for a group of first-year

students at the University of Utrecht, their scores for this subject being just better than chance. As the subjects are described as 'speakers of Standard Dutch', it is conceivable that one of them originally came from a /ɣ/-area. From our own experience we would say that /ɣ/ is a full-fledged phoneme south of the rivers, as well as in the North-East, but that elsewhere it is either non-existent, or, as Cohen et al. say, a spelling-inspired pronunciation.<sup>5</sup> Indeed, in spite of the all-voiced history of AN /ɣ/, our sample speaker nowhere pronounced anything other than [x] in positions where /ɣ/ occurs in Southern AN. Whether or not the devoicing of AN /v,z/ is due to a restricted operation of the Old Dutch voicing rule or to a later, and separate, devoicing rule, there has obviously been a devoicing process for AN /ɣ/.

#### 6. AN voiced fricatives as phonological variables

Clearly, AN voiced fricatives are phonological variables in the sense that their occurrence in the speech of many speakers is variable. But so far very little has been said about the prestige-value of their variants. There is one interesting study of the occurrence of the voiceless variants of (v,x,ɣ) whose results can in many ways be taken to be representative of the present situation in the Dutch speech community as a whole. It is the survey that a Nijmegen priest, L. Terpstra C.P., carried out in the city of Nijmegen, a 'voiceless' area, and its immediate surroundings, which form(ed) part of a larger 'voiced' area (Terpstra 1952). After commenting that the occurrence of voiceless variants may be a function of the speaker's age, socio-economic group, and the intensity of his contacts with Nijmegen, he divided his subjects into three groups:

1. Those who use voiceless variants throughout, but with occasional

voiced variants, many of which are hypercorrections. Examples of hypercorrections he mentions are [z] in *mensen* 'people', *sulker* 'sugar'. (His group lived in Nijmegen proper, between the Maas-Waalkanaal, the Scheidingsweg, the German border and the northern limit of Lent).

2. Those who have predominantly [z] for (z), but [f] for (v), (ɣ) being sometimes [x] and sometimes [ɣ]. (This group lived in Ooy and Persingen on the East of the city and in Weurt and Beuningen on the West).
3. Those who have predominantly [v, z, ɣ], very occasionally [s, x] and somewhat more frequently [f]. These speakers 'either go to school [in Nijmegen] or are employed there'. (Many of these speakers lived in Huissen to the north, and in Groesbeek to the south of Nijmegen).

In other words, both the voiced and the voiceless variants of (v, z, ɣ) may have prestige-value. On the one hand, many speakers with a 'voiceless' background will typically use hypercorrections as a result of their attempts to split up their phoneme categories /f/ and /s/ into a voiced and voiceless category each. In addition to the speakers mentioned by Terpstra, such speakers are common in the West. On the other hand, many speakers with a 'voiced' background who are exposed to prestigious accents with (predominantly) voiceless variants, may begin to use voiceless variants, in particular [f] for (v). Alongside the Huissen and Groesbeek speakers in Terpstra's study, the majority of these speakers may be expected to have Southern or Eastern Dutch backgrounds and to have been exposed to prestigious Western AN.

Another conclusion to be drawn on the basis of this material and from the discussion in the preceding sections is that where variation occurs, different degrees of prestige would seem to be associated with

the variants of the different variables: [z] appears to be always more frequent than [v], irrespective of the type of speaker. The position of [ɣ] would seem to depend on the direction of modification: when [f, s, x] are prestige variants, [x] is more frequent than [f], but less frequent than [s]; when the voiced variants carry prestige, it is only [z] and [v] that do so, in that order, and modification of [x] to [ɣ], or hypercorrections of [ɣ] for [x] (e.g. \*[ɣa.os] for *chaos* id.) have not, as far as we know, been reported.

A third conclusion which would seem to be warranted is that when speakers, variably or consistently, use either [ɣ] or [v], they will also use [z], and, with the exception of the type of speaker mentioned under 3. above, the presence of [ɣ] implies the presence of [v].

### 7. Assimilations

In addition to the sandhi rule devoicing initial fricatives mentioned in section 2, a number of synchronic voicing rules have been claimed that affect final fricatives. The contexts for these voicing rules can be summarized as follows:

1. Regressive voicing. Occurs before /b, d/, as in *asbak* 'ashtray', *schuifdeur* 'sliding door'. Final fricatives share this rule with final plosives (see Eijkman 1937: 63; Cohen et al. 1972:51; Mey 1968; Hubers & Kooy 1973; Tops 1974; Brink 1975; Trommelen & Zonneveld 1979). However, a subgroup of words beginning with initial /d/ is assumed to invite optional *progressive* devoicing (Pée 1948; Leenen 1954; Van Haeringen 1955). That is, while *schuifdeur* is supposed to have [vd] on account of regressive voicing, *schuifdan* ('Come on, slide') may have [vd] or [ft], *dan* being one of the words in the subgroup (see section 7.1).

2. Intervocalic voicing. Occurs before word-initial vowels, including constituents of compounds, as in *huisarts* 'general practitioner', *hoefijzer* 'horseshoe'. The rule is generally associated with the South, although application to word-final /s/ is very common also in the Randstad, i.e. the Amsterdam-Rotterdam-The Hague conurbation. In non-Standard Dutch also word-final plosives may be voiced in this context. (See e.g. Hermkens 1971:58; Gussenhoven & Broeders 1976:139-140).
3. Regressive sonorant voicing. Occurs before sonorants (i.e. nasals and /l, r, j, w/, as in *boswachter* 'forest-keeper', *schrijf maar op* 'please, write down'. (See e.g. Blancqaert 1950:158; Eijkman 1937:124; Hermkens 1971:56; van den Berg 1971:66). Gussenhoven & Broeders (1976:139) explicitly associate the rule with the West.

These rules are less likely to apply when the fricative forms part of a word-final obstruent cluster, as in *fietsband* ('bicycle tyre') (see also Brink 1975).

The total number of contexts and the percentage of application for each of these rules in our sample corpus are given in Table 3. It will be clear that, first, /s/ is more likely to be affected than /f/ (no instances of assimilation of /x/ were observed). Second, that intervocalic voicing and regressive sonorant voicing are more frequently applied than either regressive voicing (note, however, the small number of contexts for this rule) or the subgroup rule, a finding which contrasts with the fact that the latter two rules are much more frequently discussed in the literature. Third, there would seem to be only a small bias in favour of the special status of the subgroup rule, and then only for /s/.<sup>6</sup> It should be observed, however, that the 12 per cent of the cases given in the table exclude both cases of *no assimilation* and cases of *progressive devoicing*.

That is, a larger discrepancy might have been found between the

behaviour of the subgroup and other /d/-initial words if we had counted cases of *progressive devoicing*: There might have been total absence of assimilation in the words not belonging to the subgroup, and considerable assimilation in the subgroup. Finally, note that assimilations of word-final plosives have been left out of account.

Table 3.  
Frequency of application (%) of four assimilation rules  
affecting final fricatives for an AN speaker

	[v]	total	[z]	total
Regressive voicing	0	0	17	6
Subgroup	2.5	21	12	9
Intervocalic voicing	50	16	46.3	67
Reg. sonorant voicing	17	12	28.5	28
Overall	20	49	37	110

#### 7.1 Excursus: on the subgroup of d-initial words

The group of words that may undergo progressive devoicing that we referred to in section 7 (under regressive voicing) comprises the following items: *daar* ('there'), *de* ('the'), *dat* ('that'), *die*, *deze* ('these', 'those'), *dit* ('this'), *d'r* (/dər/, 'there', weak form), *dus* ('thus'), *dan* ('then') *doch* ('though'). The glosses are primarily etymological. The last two items have semantically specialised etymological cognates with initial /t/: *toen* (subordinating conjunction 'when' for past-time reference, or adverb 'at that moment') and *toch* ('yet'), which suggest that progressive devoicing is not a recent innovation. Indeed, Dutch is not alone in treating the subgroup of /d/-initial words differently from other words beginning with /d/. In Frisian, too, preceding fricatives

are either voiceless or voiced when they occur before a subgroup /d/(e.g. *ik mis dij sa* [zd] or [st] 'I miss you so'), while before other voiced plosives, the obstruent assimilation is generally regressive (Van der Meer 1979), parallel to the situation in Dutch. This would appear to point to a common heritage. It is Van Haeringen (1955) who first observed that the subgroup is 'special' in a number of Germanic languages. Dutch initial /d/ has two sources: WG /d/ and WG /θ/. WG /θ/ has two reflexes in English, Frisian and Swedish/Danish. The interesting thing is that the /θ/-split in these languages precisely follows the boundary between the Dutch/Frisian subgroup and other /θ/-words: in English, the split is between /ð/ and /θ/, in Frisian and Swedish/Danish between /d/ and /t/ (see Table 4).

Table 4.  
Reflexes of WG /d/ and /θ/ in English, Danish/Swedish,  
Frisian and Dutch

Gmc	Eng	Sw/D	Fr	Du
d	d <i>deal</i>	<i>del</i>	<i>diel</i>	<i>deel</i>
θ	ð <i>that</i>	d <i>det</i>	d <i>dat</i>	subgroup <i>dat</i>
	θ <i>thatch</i>	t <i>tak</i>	t <i>tek</i>	<i>dak</i>

Van Haeringen comments: 'the reader (. . .) will have to admit that the separate status of these words (. . .) is very striking indeed, so striking in fact that it cannot be coincidental, but must have a common cause in the properties of precisely these words'. His conclusion is that these common properties are 'special conditions of sentential accentuation and the semantic weight of these words', mentioning frequency of occurrence as an additional potential factor. It should be emphasized that the etymological connection is absolute: a frequent preposition like *door*, which is definitely not a member of the subgroup (*ik loop*

*door* [bd], \*[pt]) corresponds to English *th(o)rough* (/θru:, θʌrə/) and to Frisian *troch*, while *dus*, which is a member, corresponds to English *thus* /ðs/ infrequent also in Old English) and Frisian *dus*.

Are we to assume that in four different speech communities parallel innovations took place independently at around the same time? We feel that Van Haeringen may well be right in attributing the cause of the /θ/-voicing to factors like the ones he mentions, but the hypothesis that these factors were operative before these languages split up should be seriously entertained. This need not mean that voiceless pronunciations of, say, Old English *þus*, *þonne*, etc., cannot have existed. It could also be the case that voicing in the subgroup was variable already in Germanic: whatever phonological processes later affected the /θ/-initial words in the various languages (English: none, Frisian and Scandinavian → t, Dutch → d) must then have bypassed the subgroup. (Variability in the subgroup is possibly still attested in Old English, witness forms like *þættā* < *þæt þā* ('that then') and *hīlpistū* < *hīlpis þū* ('helpst thou') (Brunner 1965, §201,4,6), if the assumption is made that *þā*, *þū*, but not *tā*, *tū*, could stand for either /θa:;, θu:/ or /ða:;, ðu:/. That this variability in voicing should have persisted up to this day after obstruents in Dutch and after fricatives in Frisian, but been discarded in favour of consistent voicing in English and Scandinavian seems a less puzzling proposition than the postulation of four independent origins for the separate status of the subgroup words.

### 9. Summary

Voiced variants of the Dutch phonological variables (z), (v) and (γ) are most likely to occur for (z), next for (v) and finally for (x). The prestige associated with the voiced as well as with the voiceless variables (the latter in sandhi position for all speakers, and in all positions for speakers with a voiced background modifying towards a

'voiceless' accent) is assumed to reflect this pattern. Assimilation of voiceless fricatives in final position appears to have the order of preference /s, f, x/. There are no indications that the application of assimilation rules is more prestigious than their non-application. It is the intention of one of the authors to put these impressionistic conclusions to the test in listening experiments that aim to elicit acceptability judgements from different groups of listeners. The results of such experimentation may yield information that is useful to those who are engaged with the development of speech synthesizers for Dutch. For a first report, see Gussenhoven (1981).

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#### Notes

1. The fricative /h/, which does not enter into a voiced-voiceless opposition, is left out of account.
2. Exceptions are rare: *zot* < *sot* ('foolish'), *zalm* < *salmon* (id.).
3. 'Zoo vallen ze by voorbeeld sterk op de letter S; in plaats van *Zomerhuis* met een zagte Z, zeggen zy met een scherpe S *Somerhuis*, of eigentlyk, *Seumerhuus*'. In translation: 'Thus, they emphasise for instance the letter S; instead of *Zomerhuis*, with a soft Z, they say *Somerhuis*, with a sharp S, or more correctly, *Seumerhuus*'. (1773, part 3:998).
4. In a few cases it goes back to earlier initial /j/, as in *ginder* 'yonder', cf. Goth *jains* (Schönfeld 1970, §84; De Witte 1962:81).

5. The fact that the opposition exists in the speech of Southern speakers is not normally noticed by Western speakers, nor is the absence of the opposition in the speech of Western speakers noticed by Southern speakers. This is because a more conspicuous difference in place of articulation exists between the South and the West: uvular articulation is heard in the latter type of speaker, while a velar, or, for non-standard speakers, a palatal articulation, prevails in the South. The varieties are popularly known as 'hard' and 'soft g' respectively (*harde en zachte g*).
6. The strong bias in the frequency of subgroup contexts for /f/ is due to the frequent occurrence of the 'filler' *Ik geloof dat* 'I think'.

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