Schwa on the border between Dutch and French

Two refutations of assumptions about the histories of Dutch and French

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Abstract

In the prosodic phonology of Southern (Belgian) Dutch there are certain resemblances with French. The phenomena in question concern resyllabification across word boundaries and vowel deletion in order to optimize syllable structure. In earlier articles (Noske 2005, 2007), it was claimed that these resemblances are a direct result of the language contact with French. However, closer inspection of historical data reveals that the phenomena in question are part of the prosodic typology of early West-Germanic in general. Hence it is Northern Dutch, together with many other West-Germanic dialects, that has undergone a prosodic-typological innovation, whereas Southern Dutch has not changed. The change was one from the syllable counting language type to the stress counting type. It was undergone by many centrally located West-Germanic dialects, among which Northern Dutch and High German.

This has important bearings on our understanding of the history of French: it has been claimed by several scholars that vowel reduction in the early history of French was the result of a heavy expiratory (intensity) stress in the Franconian superstrate. I will argue that Franconian was mostly of the syllable counting type and hence cannot have had a strong intensity accent. This means that French schwa cannot have Germanic as its direct source. This point of view will be strengthened by an investigation of the relative chronology of schwa deletion in French and Germanic as well as by a comparison of the parallel Romance and Germanic texts of the Strasbourg Oaths.

1   Resyllabification and vowel deletion in Southern and Northern Dutch

In Southern (Belgian) Dutch we find resyllabification across morpheme boundaries in places where it does not occur in Northern Dutch. In both varieties of the language, a glottal stop is inserted into hiatus position if the second vowel is stressed:

(1)   beamen [bəˈʔaːmən] 'acknowledge'   (/bə+/, verbal prefix, /+ən/, infinitival ending)

Since a phonetic glottal stop[1] can only occur in Dutch in the onset of a syllable, without other elements in this position, it is an indicator for the location of a syllable boundary. Let us now look at the Northern Standard Dutch forms in (2), where we see that a glottal stop is inserted if a consonant final morpheme is combined with a vowel initial one:

(2)		underlying form	Northern Dutch	Southern Dutch	gloss
	a.	uiteindelijk	/œyt+ɛində+lək/	[œyt.ˈʔɛin.də.lək]	[œy.ˈtɛin.də.lək]	'final(ly)'
	b.	verarmen	/vər+ɑrm+ən/	[vər.ˈʔɑr.mən]	[və.ˈrɑr.mən]	'empoverish'
	c.	oneens	/ɔn+eːns/	[ɔn.ˈʔeːns]	[ɔ.ˈneːns]	'in disagreement'
	d.	bergachtig	/bɛrɣ+ɑx.təx/	[bɛrx.ˈʔɑx.təx]	[bɛr.ˈɣɑx.təx]	'mountanous'

As also shown in (2), the corresponding forms in Southern Dutch are not pronounced with a glottal stop. This happens not even in fairly slow speech. Because, as we have seen, glottal stop insertion does occur into an empty onset in both Northern and Southern Dutch, we can conclude that in the Southern Dutch forms, the

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[1] Glottal stop has no phonemic value in Dutch.

final consonant of the initial morpheme is syllabified into the onset of the second syllable.[2]

The second contrast between Northern and Southern Dutch concerns the deletion of vowels in pronouns due to cliticization. The neuter pronoun *het* [ət][3], e.g., can be cliticized and can loose its schwa more easily and in more positions in Southern Dutch than in Northern Dutch. In both Northern and Southern Dutch, schwa can be deleted if it is followed by a vowel initial inflected verb, if the main sentential stress is not located on one of the words.

(3) het is /ət ɪs/ [tɪs] (Northern and Southern Dutch) 'it is'

But in Northern Dutch this deletion is optional, depending on the speech rate. In many varieties of Southern Dutch, however, it seems to be obligatory. A more marked contrast between the North and the South (in this case West-Flemish) can be found if *het* is in a position following a tensed verb, e.g. in:

(4) a.   was het /ʋas ət/ [ʋasət]~[ʋazət] *[ʋɑst][4] (Northern Dutch) 'was it'
     b.   was het /wɑs ət/ [wɑst]   (West-Flemish) 'was it'

It thus appears that in West-Flemish, also in normal to slow speech, /ət/ usually looses its vowel and is cliticized to tensed verbs both to its left and to its right. Also other unstressed pronouns, like *ik* 'I', *je* 'you', *we* 'we', can loose their vowels much more easily in West-Flemish and other Southern variants than in Standard Northern Dutch, where again allegro speech is required if vowel deletion is to take place at all. Examples of deletion of the vowel in *ik* /ɪk/ are given (6):

(5) a.   dat ik   /dɑ ɛk/ [dɑk]   (West-Flemish) 'that I'
     b.   ik hoor /ɛk oːr/[5] [koːr]   (West-Flemish) 'I hear'

In Noske (2005, 2007), this contrast was analyzed in the framework of optimality theory as being the result of a difference in constraint ranking between a faithfullness constraint (ALIGNMENT, a constraint requiring a morpheme and syllable boundaries to coincide), and a markedness constraint (ONSET, a constraint requiring a onset to be filled). For Southern Dutch (and French), the ranking is ONSET >> ALIGN, whereas for Northern Dutch it is ALIGN >> ONSET. For further details of this analysis, I refer the reader to the articles mentioned, as I have to omit them here for reasons of space.

2   A possible influence of French?

The two properties of Southern Dutch mentioned, syllabification across morpheme boundaries and vowel deletion in order to avoid empty onsets, which can be attributed to a tendency to have filled onsets, can also be found in a nearby language, i.e. French. In Noske (2005, 2007) the hypothesis was presented that Southern Dutch behaves differently from Northern Dutch because of the influence of French. A specific constraint order, i.e. ONSET >> ALIGN (see the preceding section) would have crossed the border between French and Dutch.

The likelihood of syllabification across word boundaries being the result of an influence of Romance on German could be corroborated by data in two other languages, Luxembourgish and Swiss German. Luxembourgish behaves like Southern Dutch and French, with respect to syllabification across morpheme

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[2] In (2d) we see an additional indication for the contrast in syllabification: in Southern Dutch, the final voiced obstruent /ɣ/ of the initial morpheme /bɛrɣ/ has not undergone syllable final devoicing, while in Northern Dutch it comes out as voiceless [x]. This is independently confirms that this segment is in onset position of Southern Dutch.

[3] In stressed position, this pronoun is pronounced [hɛt] in Northern Dutch, [hət] in Southern Dutch (but not West-Flemish, in which the /h/ is realized as zero). The exact nature of the alternation [hɛt]/[hət] ~ [ət] is unclear (i.e. whether it is a result of polymorphy or of rather isolated phonological processes). The existence of [hət] in Southern Dutch and the impossibility of *[hɛt] in that variety are problematic for Van Oostendorp's (1995:197; 2000) assumption and prediction that schwa and [h] cannot be tautosyllabic.

[4] [ʋɑst] (without a schwa) is possible in allegro speech in Northern Dutch, but not in normal speech rate, like [wɑst] in the South.

[5] The underlying form does not contain /h/ because West-Flemish has lost this segment. In turn, [ɣ] in other dialects, shows up as [h] in West-Flemish. Thus historically the following evolution took place in West-Flemish: /h/ ⇒ Ø, /ɣ/ ⇒ /h/. 'Ik' is pronounced [ɛk] in West-Flemish.

boundaries:

(6) Resyllabification of morpheme-final consonants into empty onsets in Luxembourgish (Gilles 2007)

	underlying form	Luxembourgish	Standard German	gloss
dann en auto	/dɑn + ən + ɑʊtoː/	[dɑ.nə.nɑʊ.toː]	[dɑn.ʔɑɪn.ɑʊ.toː]	'then a car'
wann een	/vɑn + eːn/	[vɑ.neːn]	[vɛn.ʔɑɪ.nɐ]	'when a'
wien ass dat	/viən + as + daːt/	[viə.nas.daːt]	[vɛːɐ.ʔɪst.dɑs]	'who is that'
Dir op	/diʀ + op/	[di.ʀop]	[tyʀ.ʔauf]	'door open'

Also in Swiss-German, we find a wide-spread resyllabification across morpheme boundaries (Siebenhaar 2004:428). As we see, with respect to syllabification, Luxembourgish and Swiss-German behave like French and Southern Dutch. With a bit of imagination, we could attribute the difference also to the linguistic contact with French. Romance influence is for these phenomena is indeed invoked by Moulton (1941). However, as we will see, this is in all likelihood a wrong conclusion.

3   Typology and history

The hypothesis of a Romance influence on Germanic dialects which do not respect morpheme boundaries in syllabification may seem a plausible one, but some other Germanic languages and/or dialects for which Romance influence seems unlikely, also display this type of behaviour. This is the case for, e.g., dialects of the province of Noord-Brabant in the Southern part of the Netherlands proper (Johan Taeldeman, p.c.), as well as for Afrikaans (Nübling & Schrambke 2004:286). Therefore, the question should be asked whether the difference in behaviour of Southern and Northern Dutch is really merely due to the influence of French and whether the morpheme boundary respecting behaviour of Northern Dutch does not represent an innovation instead of the morpheme boundary ignoring behaviour of Southern Dutch. For this, we should first consider linguistic typology as well as the history of Germanic.

3.1   Syllable and word languages: a typology

Auer (1993, 1994, 2001) and Auer & Uhmann (1988) propose a multifactorial scalar typology the extremes of which are *syllable counting languages* (or simply *syllable languages*) and *stress counting languages* (or *word languages*). This typology has been inspired by, but differs from, the purely phonetic typology of syllable vs. stress timed languages as proposes by Pike (1945) and Abercrombie (1967). This latter typology, in which it was assumed that a language like French is isochronic with respect to the temporal organization of syllable was refuted by many scholars, among others by Wenk & Wioland (1982).

Auer's and Uhmann's typology is partially based on perceptual criteria (inspired by Dauer 1983, 1987). The most important features of the language types are shown in table 1:

Table 1: prototypical properties of syllable (syllable counting) versus word (stress counting) languages[6]

nr.	criterion	syllable languages → syllable counting syllable as basic prosodic unit (foot length variable)	word / accent languages → stress counting phonological word as basic prosodic unit (syllable length variable)
1	syllable structure	CV syllables (rarely closed syllables); all syllables equally long	variable syllables type of different complexity, dependent on the stress position; often differences between medial and peripheral syllables

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[6] This table is based on Auer (1993, 2001) and Auer & Uhmann (1988) and has been adapted from Nübling & Schrambke (2004: 284-285). OHG = Old High German, NHG = Middle High German.

2	syllable boundaries	well defined, constant syllable boundaries	ill-defined, variable, speech-rate dependent syllable boundaries
3	sonority hierarchy	sonority hierarchy is obeyed, i.e. maximal sonority difference between C and V	sonority hierarchy is less obeyed, e.g. voicing of intervocalic plosives, assimilations (word internally).
4	geminates	geminates possible	geminate reduction, except in places where they are morphologically relevant, e.g. in internal compound boundaries e.g. German *Schifffahrt* [f:]
5	stress effects	no / few differences in structure of stressed vs. unstressed syllables	stressed syllables are heavy, unstressed syllables are light
6	stress assignment	mostly syllable based; absence of fixed word stress possible	stress assignment (often complex) is morphologically / lexically / semantically determined
7	tonality	can be present, also on unstressed syllables	if present (which is rarely the case), then only on stressed syllables
8	phonotactics	regular, stable phonotactics, no positionally determined allophones	word boundary (delimitative) signals positionally determined allophone (initial, medial, final) phonotactic restrictions
9	vocalism	little discrepancy between strongly and weakly stressed syllables, relatively equal tenseness.	strong discrepancy between en weakly stressed vowel (German, Danish, English). Heavy stress: often difference in length, centralizations (reductions)
10	vowel harmony / umlaut	possible	rare
11	vowel deletion	because of reasons of syllable optimization	because of stress
12	epenthesis (vowels, glides)	for reasons of syllable optimization, compare epenthetic *e* in Luxemb. *Arem, hëllefen, Vollek,* intrusive *n* in Allemanic	if there is, then in order to let stand out morphemic structures like in German *eigen-t-lich*, *namen-t-lich*, etc, bonding phoneme *s* in German and Dutch
13	liaison	yes (across morpheme boundaries)	no (border signals / junctures, e.g. glottal stop)
14	sandhi	external	internal
15	consequences for morphology	morphs that promote optimization of syllable structure	morphs that promote the information structure of words
16	reanalyses	re-analyses follow syllabic principles (Swed. *ni*, lux. *mir, dir nis*)	reanalyses are not syllabically motivated (OHG *ni.mis.du* > *ni.mist* > NHD *nimmst*)

It should be remembered that this typology is scalar, which means among other things that not all the criteria on the left or right side will be fulfilled by a given language or dialect. However, it will be clear that for instance e.g. Modern High German should be catalogued as a word language, while Modern French is mostly a syllable language.

It can also be concluded that given the contrasts between Northern and Southern Dutch as sketched in section 1, Southern Dutch must be located more towards the syllable language end of the scale than Northern Dutch, which is more like the word language prototype. This is because of the criteria 11 and 13 in table 1. Southern Dutch has vowel deletion and liaison effects, in places where Northern Dutch has vowel retention and glottal stop insertion.[7] It can also be concluded that, given the facts mentioned in section 2.1,

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[7] Southern Dutch also has vowel reduction under the influence of stress, showing that the opposition is indeed scalar and that languages can have features of both prototypes.

Luxembourgish and Swiss German are situated more into the direction of syllable languages than Standard High German, which is much to the side of a word language.

3.2 The history of Dutch

In this section, we will first look at the history of Dutch, and then of Germanic in general. We will then see that early West Germanic dialects were not as much word languages as German and Dutch are today.

Let us now first look at the history of Dutch, in order to know whether the relative behaviour as a syllable language of Southern Dutch is an innovation or whether the behaviour of Northern Dutch as a word language is more recent. For this, the spelling of Middle Dutch can be revealing. Van der Wal (1992:131) notes that there are many examples of proclitic and enclitic forms in Middle Dutch (MD) texts:

(7)   *MD cliticized forms*   *MD non-cliticized equivalents*   *gloss*
    a.   tien tiden   te dien tiden   'at that time'
    b.   darme man   die arme man   'the poor man'
    c.   hi leidene   hi leide ene   'he lead him'

These cliticized forms show in MD, that we find many instances of criterion 11 regarding syllable languages (vowel deletion because of syllable optimization). We can conclude that at least in the period of Middle Ages, Dutch had features of a syllable language.

Let us now look at vowel deletion under the influence of stress, a feature listed in table 1 as characterizing word languages. Concerning schwa-apocope, Van der Wal (1992:212-213) notes that in the grammar by Van Heule (1626) (one of the first grammars of Dutch), it is noticed that e-apocope (e.g. *steene > steen*) happens in Hollandic Dutch (i.e. the Dutch spoken in the historic province of Holland), but not in Southern dialects like Flemish. This shows that in the 17th century, this type of vowel deletion happened in Northern Dutch, but not in Southern Dutch. This nicely fits into our picture of Southern Dutch as a language of the more syllabic type and Northern Dutch as one belonging more to the word type. Still today in Southern dialects, there are more words in Southern Dutch ending in a schwa and thus not having undergone apocope than in Northern Dutch (Johan Taeldeman, personal communication). We can conclude that it is the situation in Northern Dutch that represents an innovation.

3.3 The history of Germanic in general

In a article on the development of Germanic and more specifially the Alemannic dialects, Nübling & Schrambke (2004) observe that, using the Auer's typology of syllable vs. stress counting languages sketched above (see table 1), one can find that there is a scalar difference between the Germanic languages. While Swedish, Norwegian and Afrikaans, 'peripheral Germanic languages', can be catalogued as relative syllable languages, Danish, German and English, 'central Germanic languages', are clearly stress languages, with Luxembourgish in the middle. Apart from Afrikaans, which, probably because of language contact, has shifted towards the syllable language type coming from Dutch which is more like a word language, it is clear that for instance in High German, the development has been clearly from a syllable type language to a stress type language.

Nübling & Schrambke (2004) mention a number of diachronic processes supporting this view:

i.   An ever increasing marking of word beginnings in the course of the history of High German, like the insertion of glottal stops instead of resyllabification, i.e. criterion 13 of table 1 and exactly the point that distinguishes Northern Dutch from Southern Dutch, see (2).
ii.   Various syncope processes taking place in the history High German, making it increasingly a language of syllabic complexity (criterion 1), for which Nübling & Schrambke (2004:292-293) cite Werner (1978). Werner shows that these processes are part of a systematic movement towards syllabic complexity in coda position (traditionally called 'Konsonantenhäufung').
iii. The presence in Old High German (OHG) of vowel harmony/metaphony (criterion 10) and the loss of its productivity in later stages of High German.
iv.   The frequent cliticizations and concatenations of small words OHG (referring to criterion 13 for syllable languages), much like the forms in (7) in Southern Dutch.

v.   The degemination of OHG geminates (criterion 4) in Middle High German (MHG).
vi. The appearance of linking elements 'Fugenelemente' between morphemes in Early New High German (nowadays highly productive), like in *Qualitätskontrolle*, a feature NHG shares with Modern Dutch (*kwaliteitscontrole*). This is manifestation of a boundary signal for words (hence criterion 13).

To this list, one can add two more diachronic processes, one of which is of particular importance for us here:

vii. The reduction of full unstressed vowels to schwa (criteria 9 and 11) in the transition from OHG to MHG.[8] (and between Old Dutch and Middle Dutch).
viii. The advent of devoicing of finals stop in MHG, where the devoicing is absent in OHG. Its function can be seen as the introduction of yet another boundary signal (criterion 13).

These processes show that German has indeed moved into the direction of a clear word language.[9] Indeed, Nübling & Schrambke (2004:290) mention that OHG must be catalogued "as being strongly of the syllable type".

4   Consequences for the history of French

The history of Germanic outlined above, basically an evolution from languages of the syllable type to languages belonging more to the word type, is of vital interest for the analysis of the history of French. As mentioned in many descriptions on the history of French, Germanic, especially Franconian, must have influenced the history of French. For instance, the border between the Langue d'oïl and the Langue d'oc is generally attributed to the invasion of the Francs. But many language histories go a step further.

For instance, Pope (1952), perhaps the most authoritative handbook on the history of French, establishes a direct link between the Franconian superstrate and the reductions of full unstressed vowels to schwa and the subsequent deletion of some of these schwas, depending on there position. Pope writes (1952:13):

> "The Frankish system of accentuation was a strong expiratory one and it was in the intensifying of the weak Latin tonic stress that the Germanic speech-habits, and in particular the Frankish, exercised their strongest influence in pronunciation. Directly resultant were: <...> (b) The reduction, or effacement of the unstressed vowels <...>." Ibidem, p.112: "Under the influence of the intensified tonic (= expiratory R.N.) stress of The Gallo-Roman period, atonic vowels in every type were ordinarily either effaced or reduced to ȩ (= ə, R.N.), <...>."

This point of view is repeated by several handbooks, e.g. by Zink (1986:37):

> "... c'est au cours des IIIe et IVe siècles que la prosodie devient accentuelle. Les Francs, au Ve siècle, lui communiquent un surcroît de vigueur. <...> [l'intensité de l'accent] tend, en syllabe ouverte, <...> à affaiblir les voyelles atones jusqu'à les faire disparaître."

However, as we have seen in section 3, the Germanic of that linguistically prehistoric period must have been much more oriented towards the syllable type than towards the word type. As illustrated in table 1, in a syllable type language, there is little of no difference in structure and vocalic quality between stressed and unstressed syllables (table 1, criteria 5 and 9). It is indeed very questionable whether 5th century Franconian really had a strong intensity accent. The present day dialects of Germanic that are clearly of syllable type have precisely less difference in intensity between stressed an unstressed syllables (like the Wallis (Valais) dialect in Switzerland as noted by Moulton (1941:39-40)). Also, if Old Franconian had a strong intensity accent, one would expect many instances vowel reductions and syncope in the language. But, as we have just seen, these occurred only in the transition towards Middle High and Low German, i.e. not earlier than the 11th century.

By contrast, studies of history of French phonology like Richter (1934:202) situate the reduction and subsequent deletion much earlier (between the end of the 4th and the end of the 6th centuries) (see also

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[8] Vowel reduction from full vowels to schwa also marks the transition form Old to Middle Dutch. In both languages, the change took place around 1050/1100.
[9] Some of these processes, like final devoicing and vowel reduction are absent in certain Bavarian and Alemannic dialects, showing that these much less syllable type languages),

Jacobs 1989:18-19). Hence, it must be concluded that schwa reduction in French has an independent source. In fact, the development toward a language with more closed syllable structure that had started in the 3rd century if not even earlier, see Richter 1934:34.

Also, it must be noted that Old French had final devoicing at a period in which it did not yet occur in Germanic, i.e. in later Gallo-Roman (Pope 1952:98), hence around 800. As we have seen in section 3, final devoicing can be seen as the introduction of a word boundary marker, i.e. a feature of the word language prototype.

For a final argument against a direct Germanic influence on the development of French prosodic structure we should take a look at the first Old French text, i.e. the Strasbourg Oaths from 842. It is in fact a parallel Old French/Franconian text. If we compare the syllable structure of the Old French text with that the Old Franconian text, we find a striking result. The first parts of the Old French and Franconian texts are:[10]

> Pro deo amur et pro christian poblo et nostro commun salvament, d'ist di in avant, in quant deus savir et podir me dunat, si salvarai eo cist meon fradre Karlo et in aiudha et in cadhuna cosa, si cum om per dreit son fradra salvar dist, in o quid il mi altresi fazet, et ab Ludher nul plaid nunquam prindrai, qui meon vol cist meon fradre Karle in damno sit.

> In godes minna ind in thes christiânes folches ind unsêr bêdhero gehaltnissî, fon thesemo dage frammordes, sô fram sô mir got gewizci indi mahd furgibit, sô haldih thesan mînan bruodher, sôso man mit rehtu sînan bruodher scal, in thiu thaz er mig sô sama duo, indi mit Ludheren in nohheiniu thing ne gegango, the mînan willon imo ce scadhen werdhên.

If we count the syllables (leaving out the names), one comes to the following results:

	number of syllables	open syllables	closed syllables	closed syllables ending in an obstruent
Old French	103	39 (38%)	64 (62%)	20 (19%)
Franconian	103	45 (44%)	58 (56%)	19 (18%)

It must be concluded that in 842, French was more consonantal than Franconian. This fits precisely in our picture that Old French was more of the word language type than Franconian, and that the word type character of Old French has independently given rise to vowel reduction, thus creating schwa. The subsequent reversal of the perpendicular motion in French (Jacobs 1989) has eliminated the existence of vowel reduction (criterion 11), leaving it as a separate phoneme. However, the deletability of schwa remained, because it fits nicely in the strategies for syllable optimization employed by syllable languages.

5   Conclusion

In this paper, we have refuted two assumptions in the literature concerning the influence of superstrates, viz. the idea of a French source of the behaviour of Southern Dutch with respect to resyllabification across word boundaries and vowel deletion (proposed by Noske 2005, 2007), and the widespread assumption that the prosodic structure of Franconian is the cause of vowel reduction and deletion in French (Pope 1952). In both cases, the refutations were given on the basis of the investigation of facts in West-Germanic in conjunction with Auer's (1993, 1994, 2001) typology of syllable vs. word type languages.

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[10] Translation: "For the love of God and for Christendom and our common salvation, from this day onwards, as God will give me the wisdom and power, I shall protect this brother of mine (Charles), with aid or anything else, as one ought to protect one's brother, so that he may do the same for me, and I shall never knowingly make any covenant with Lothair that would harm this brother of mine {Charles, Louis}."

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