Wydano na podstawie maszynopisu gwarantowanego

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On branching onsets in Norwegian

ABSTRACT. Syllable margins and the phonotactic peculiarities of word-edges have always drawn attention of researches working within different theoretical approaches. In the following paper some Norwegian consonantal clusters will be examined, with special reference to the left-margin of the words. Our attention will be focused on establishing the set of possible branching onsets in Norwegian, both word-initially and in the word-internal position.

Keywords: Government Phonology, branching onsets, Norwegian phonotactics.

1. INTRODUCTION

The traditional view on the syllable and its structure recognises every consonant cluster preceding the peak of the syllable (i.e. the nucleus) as an onset and every cluster which follows the nucleus as a coda. No reference to the number of the consonants in the clusters has been made. In other words, an onset can potentially consist of as many consonants as a language permits word-initially and consequently the same applies to the coda and word-final consonant clusters. Evidence from different languages shows that word-initial and word-final clusters can be quite complex (consider for instance the Polish forms *bzdura* [bzdura] (nonsense), *dżdżownica* [džǯɔwɲitsa] (earthworm)) (cf. Gussmann and Cyran 1998 for a discussion of Polish initial consonant sequences within the framework of Government Phonology). The clusters in question violate the so-called Sonority Sequencing Principle (cf. Kenstowicz 1994: 254f.), which is recognised as determining the possibilities of consonant juncture and the syllable structure in general. It is generally agreed that sonority should increase towards the peak of the syllable and decrease from the peak to the right margin. The traditional analyses were not able to consider examples like the Polish ones. Additional complications

emerged, like the problem of consonants that do not fit into the stress pattern or the quantity system. To solve this problem the cross-theoretical marker of extrametricality has been introduced, which is rather unconvincing and makes the phonological machinery more complicated than necessary.

With the development of the so-called Principle and Parameters Phonology or Government Phonology (as proposed by Charette 1991, Harris 1994, Kaye et al. 1985 and 1989), the view on the syllable structure has been modified in a dramatic way. First of all Government Phonology broke with the claim that every word-initial consonant cluster has to be an onset and that every word-final cluster has to be a coda. Furthermore, Government Phonology allows only maximally branching constituents, hence a potential branching onset can only consist of two consonants. No branching codas are permissible, since a branching rhyme has only two skeletal slots. Either both of them are occupied by a branching nucleus (i.e. a long vowel) or the first one is occupied by a vowel and the second one by the coda consonant (if however there is an onset which licenses the coda, according to the coda licensing principle, see Kaye 1990). Consequently, a word-final consonant can never be a coda, since there is no onset to license it. Instead of using the notion of extrametricality, Government Phonology claims that every word-final consonant is an onset of the next syllable, which is licensed by the word-final empty nucleus (cf. Gussmann and Harris 2002, Harris and Gussmann 1998).

In what follows consonant clusters which can be potential branching onsets in Norwegian will be examined. It will be shown that only some of them can be qualified as such. The starting point of our discussion will be the lengthening of stressed vowels in Norwegian, since it will help us to deal with the word-internal onsets. This set of consonants is much more restricted than the one of the word-initial cluster, which we shall have a look at in the next section. The present paper is based on a recent Government Phonology analysis of branching onsets in Icelandic (Gussmann 2003). It is our hope that this study can be of some help in teaching Norwegian phonetics and phonology to Polish students, since some of the generalizations concerning consonant clusters in Norwegian that have been achieved in the paper can be easily compared with the phonotactic system of Polish.

2. GENERAL ABOUT BRANCHING ONSETS

Word-initial consonant clusters in Norwegian are not as complex as the Polish ones and generally they follow the Sonority Sequencing Principle (with the exception of s + C clusters, which I am going to return to later on).

The maximal number of consonants in the clusters is three; however, in every three-member cluster the voiceless sonorant /s/ is the first of them. For an extensive overview over consonant combinations in Norwegian see Awedykowa (1972: 43ff.) and (1975: 84ff.) and Kristoffersen (2000: 46ff.). Before I proceed with analysing particular consonant sequences, I would like to explain the requirements that a given consonant cluster has to fulfil to be classified as a branching onset. First of all one has to bear in mind that a branching onset (and every branching structure, in fact) is a governing domain. Hence, a well-formed branching onset must contain a governor (which is the head of the onset) and a governee, which is the dependent in the structure (cf. Harris 1994: 168). Let us consider the following representation:

(1) O

x_1 x_2

governing direction

In (1) I show a graphic representation of a branching onset. x_1 is the head of it, being the governor of x_2, which act as a governee. To be able to govern x_2, x_1 has to be a consonant of greater complexity (note that the governing direction goes from left to right and can't be reversed). It is generally agreed that a typical branching onset consist of an obstruent as a head and a sonorant as a governee. However, whether a sequence of two consonants conforms to the conditions of a branching onset or not is a question which can only be answered on the basis of language-specific data (Gussmann 2003: 322).

It is also assumed that the word-internal position is similar to the word-initial one, which means that a given consonant cluster should be analysed in the same way both word-initially and word-internally ("once an onset, always an onset").

3. OPEN SYLLABLE LENGTHENING AND WORD-INTERNAL CONSONANT CLUSTERS IN NORWEGIAN

In this paper it is assumed that vowel length in Modern Norwegian is neither phonemic nor contrastive. In other words, Modern Norwegian has only lexically short vowels, which lengthen under stress in open syllables. We find the following environments of vowel lengthening in Norwegian:

(2) a. when the vowel is word-final (no consonant follows)
bo [buː] (live), sjø [øøː] (sea), tå [tɔː] (toe)
b. when the vowel is followed by one consonant
bok [buːk] (book), mat [maːt] (food), bil [biːl] (car)

In all other cases, i.e. when the stressed vowel is followed by two or more consonants, it is short:

(3) plante [plantə] (to plant)
laste [lastə] (to load)
sand [san] (sand)
mett [met] (full)

In (2)a. we see that a stressed vowel is long if it is word-final, i.e. when no consonant follows it. This is what one calls the open syllable lengthening. In (2)b. however, a traditional analysis is confronted with a serious problem, namely that a stressed vowel is long despite the fact that the syllable is closed by a consonant. As I said in the introduction, different solutions have been proposed to account for this fact, one of them being the idea of extrametricality, where the word-final consonant is "somehow outside of the final syllable" (cf. Lorentz 1996: 115). In Government Phonology the examples in (2)b. are not problematic, because every word-final consonant is invariably projected as an onset, licensed by an empty nucleus. Hence, the preceding syllable is open and the stressed vowel lengthens. Consider the following representations for the forms *bu* [buː] and *bok* [buːk]:

(4)
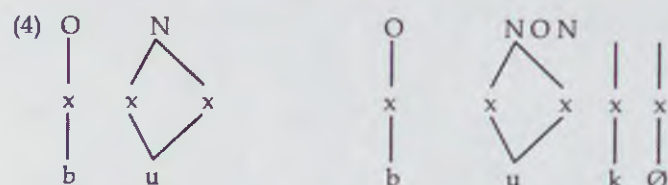
Hence, both in (2)a. and (2)b. we deal with the same environment, namely with the lengthening of the stressed vowel in an open syllable.

The examples in (3) on the other hand show forms where the stressed vowel is invariably short. Looking at the consonant clusters which follow the stressed nucleus we can see that they all conform to the requirements for a well-formed coda-onset juncture. As I said before Government Phonology claims that a coda consonant (also called the rhymal complement) can be present in the syllabic structure only if there is an onset to license it (in accordance to the Coda Licensing Principle, cf. Kaye 1990). In government terms, a coda-onset juncture constitutes a transconsituental government relation where the onset governs the coda. It means that the onset must be equal

to or more complex than the rhymal complement to be able to act as its governor. The fact that the stressed vowel followed by a coda consonant can never be long is an immediate consequence of the binarity of the constituents. Since in the branching rhyme one x-slot is already occupied by the coda, there is only one slot left for the nucleus. Hence, it can only be short. Consider the following representation for *laste* [lastə]:

(5) O   R   O   N
      | /| | |
      | N | | |
      | | | | |
      x   x x   x   x
      | | | | |
      | | | | |
      l   a s   t   ə
          ▲_____| Interconstituent Government direction
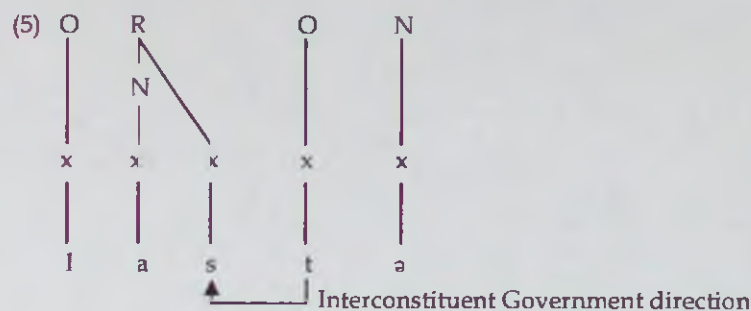
In the analysis so far we have established the structure of the stressed rhyme in Norwegian. As one has seen, a stressed rhyme branches, i.e. it can either contain a long vowel or a diphthong (which occupies two skeletal slots) or a short vowel and the coda consonant.

The examples in (2), however, do not exhaust the environments where a stressed vowel in Norwegian lengthens. Consider the following intriguing list of examples (cf. also Popperwell 1963: 110f. for more data):

(6) adle [aːdlə] (to ennoble)
sabla [saːbla] (intensifying adverb)
bedre [beːdrə] (to improve)
fagre [faːgrə] (fair)
kapre [kaːprə] (to capture)
kalfatre [kalfaːtrə] (to caulk)
Abraham [aːbraham]
ivre [iːvrə] (to enthuse)
høkre [høːkrə] (to trade)
Afrika [aːfrika] (Africa)

Contrary to what was said above, the stressed vowel in all these examples is long, despite the fact that it is followed by a consonant cluster, which should block lengthening of the vowel. However, if we look more closely at the consonant clusters in (6) we will see that they are different from the clusters in (3), which were all classified as well-formed coda-onset junctures. We see that the second member of the clusters in (6) is the sonorant /r/ or /l/, which are generally assumed to be the weakest of the Norwegian conso-

nants. The set of the consonants being the first member of the clusters is definitely greater and contains both voiced and voiceless stops and the voiced and the voiceless fricative: /t, k, b, d, g, f, v/. At first sight each of the clusters could be a potential branching onset. This would also explain the fact that the stressed vowel preceding the clusters is long: if they are projected as onsets, the syllable is open and the vowel lengthens. As we will see in the following section, however, this straightforward conclusion has to be verified on the basis of additional observations.

4. BRANCHING ONSETS OR A SEQUENCE OF SIMPLEX ONSETS?

Let us recall the clusters that cause the lengthening of the stressed vowel:

(7) /pr/, /tr/, /kr/, /bl/, /br/, /dl/, /dr/, /gr/, /vr/, /fr/

Bearing in mind what was said abut the governing relations within a branching onset we see that each of the clusters could meet the requirements for being a branching onset. The consonants in the first set are more complex than the sonorants, hence they are able to govern them. It was also said that if a cluster is to be classified as a branching onset word-internally, it should appear word-initially. We see that the cluster /tl/ does not appear among the clusters that cause the vowel to lengthen (nor in the word-initial position). This hardly seems to be accidental and follows the Obligatory Contour Principle (cf. Kenstowicz 1994: 323ff.). Hence, the sequence /tl/ has to be excluded from potential branching onsets in Norwegian. Similarly, the cluster /dl/ never appears word-initially, although we saw that the vowel in the form *adle* is long. In fact, the consonants in the cluster /dl/ are not adjacent on the skeletal level, since there is an empty nucleus which separates them. In *adle* the nucleus is silent, but it is phonetically realised in the noun *adel* and the adjectival form *adelig*. Hence, we have to conclude that we are dealing with a bogus cluster. Consider the following representation:

(8)
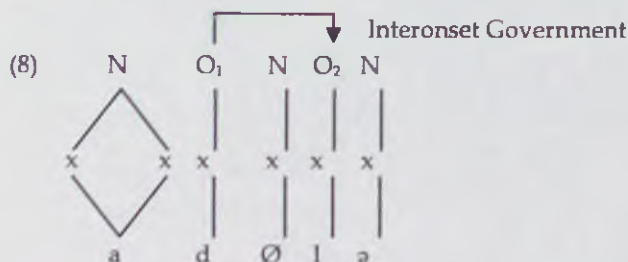
The structure proposed in (8) requires further explanation. We introduce in this structure the so-called Interonset Government. Syllabification of the obstruent /d/ in the onset (O_1) is a natural consequence of the fact that the preceding vowel is long. As was shown on the basis of the related forms (the noun and the adjective), the sonorant /l/ is not adjacent to the obstruent, so it has to be assigned to another onset (O_2). O_1 and O_2 create a governing relation, where the first of the onsets governs the second one. This type of relation is called Interonset Government and is generally assumed to be left-headed (e.g. Gussmann and Cyran 1998). In fact, the clusters /vr/ in the form *ivre* and /bl/ in *sable* are also bogus clusters, since they have related forms *iver* and *sabel*, which show that there is a vowel separating the two consonants. Hence a similar structure could be proposed for these two particular cases. Generally a sequence /vr/ is syllabified as a coda-onset juncture in Norwegian (eg. *havre* [havrə] (oats)).

In the course of the analysis we have excluded all the clusters where the second member is the sonorant /l/ and the ones where the second member is /r/ (/vr/) from possible branching onsets in Norwegian. Although we concentrated on the word-internal clusters, our assumption is that the clusters should be analysed in the same way also in the word-initial position. Among the clusters that are not branching onsets word-internally, only three appear word-initially: /pl/, /bl/ and /vr/, eg. *plante* [plantə] (plant), *blande* [blan:ə] (to mix), *vrake* [vra:kə] (to discard). We would like to suggest that also in this position these consonants do not constitute a single branching structure, but rather a sequence of two onsets split by an empty nucleus. Consider the following representation of the forms *sable* and *blande*:
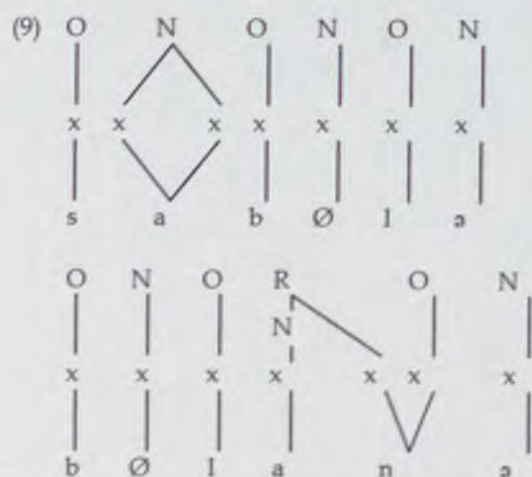
The clusters we are left with all have /r/ as a second member: /pr/, /tr/, /kr/, /br/, /dr/, /gr/, /fr/. They appear word-initially (eg. *pris* [pri:s] (price), *tre* [trɛ:], *krangle* [kraŋglə] (to pick a quarrel), *bror* [bru:r] (brother), *dra* [dra:] (to pull), *granske* [granskə] (to investigate), *fred* [frɛ:d] (peace)) and as the data reveals they do not have any cognate alternating forms which would suggest that there is an empty nucleus separating the consonants. It seems, therefore, that they are the genuine branching onsets in Norwegian.

Let us now summarise these discussion so far. The examples in (6), which all contain consonant sequences that cause the lengthening of the stressed vowel can actually be divided into two groups: forms with bogus consonant clusters (where the consonants are not adjacent at the skeletal level, an empty nucleus separates them) and forms with genuine, well-formed branching onsets. The following inspection of word-initial consonant sequences seems to support these conclusions.

5. WORD-INITIAL CONSONANT CLUSTERS

Word-initial consonant clusters in Modern Norwegian can be made up of at most three consonants. However, in every three-consonant cluster, the first consonant is invariably the spirant /s/ followed by what could potentially be a branching onset: *skrive* [skri:və] (to write), *språk* [sprɔ:k] (language), *strid* [stri:] (conflict), *sklave* [skla:və] (slave). Government Phonology claims that the spirant /s/ can never constitute a branching onset with another consonant (see Kaye 1996 for an exhaustive discussion). In other words, the spirant can never act as a governor in a branching structure. Hence, every sequence of s + C is automatically excluded from the set of branching onsets. Instead, the spirant is projected rather as a rhymal complement to an empty nucleus or as a separate single onset. Bearing this in mind and also considering the Binarity Theorem, one must conclude that three-consonant clusters cannot be branching onsets. Nor can the two-consonant sequences starting with the /s/. In such cases the spirant is assigned to a single onset separated from the following consonant by an empty nucleus. It then acts as a governee in an Interonset Government.

In the preceding sections we have already excluded some consonant clusters where the second member is the sonorant /l/ on the basis of their word-internal behaviour: /bl/, /tl/, /dl/. Word-internally one can also find /l/ following /k/, /g/ or /f/ (cf. Kristoffersen 2000: 50): *klage* [kla:gə] (to complain), *glede* [glɛ:də] (joy), *flaske* [flaskə] (bottle). If they should be treated as branching onsets word-initially, one would expect them to behave in the same way word-internally. However, each of the sequences is syllabified as

a coda-onset when appearing word-internally, as the short stressed vowel in the following forms shows: *takle* [taklə] (to tackle), *bagler* [baglər] (member of the Bishop's party in the Norwegian civil wars), *gafle* [gaflə] (to fork). This means that in the word-initial position they should be rather assigned to separated onsets with an intervening empty nucleus, instead of being projected as one branching structure. It seems that no consonant cluster with the lateral /l/ as a second member can create a branching onset in Norwegian.

A rather marginal position among word-initial clusters have clusters consisting of /k/, /g/, /f/, /s/ followed by /n/, represented by relatively few forms in the modern language: *knall* [knal] (crack), *gnistre* [gnistrə] (to sparkle), *fnis* [fni:s] (giggle), *snakke* [snak:ə] (to speak). The last example is excluded outright from possible onsets because, as was said, the sonorant /s/ can never create a branching structure. The three remaining consonant sequences seem not to meet the criteria for a branching onset because the nasal is too complex to act as a governee in a branching onset (cf. Gussmann 2003: 332 for a similar conclusion for Icelandic and Cyran 2003: 311f. for Polish). This leads us to a straightforward conclusion that since /kn/, /gn/, /fn/ cannot form a branching onset, the consonants have to be projected as two simplex onsets with an intervening empty nucleus.

A very limited number of words in Norwegian start with the combination of two sonorants: /mj/ and /nj/. As observed in Kristoffersen (2000: 52), the sequence /nj/ only occurs in a few personal and place names, while the sequence /mj/ is more common. The evidence from Norwegian tells us rather little about these clusters (note that they are absent from the word-internal position, cf. Kristoffersen 2000: 60), but the data drawn independently from other languages let us assume that the /j/ cannot be a dependent in a branching onset and hence must be alone in the onset (cf. Gussmann 2003: 324, Ploch 1999: 216). If we follow this constraint on /j/, not only the two word-initial sequences of sonorants in question should be excluded from well-formed branching onsets, but also sequences of /j/ preceded by /p/, /b/, /t/ and /d/, which also occur in Norwegian. Once again, we would like to suggest the syllabification of the consonants as two consecutive onsets instead.

The last set of word-initial consonant sequences are the three clusters /tv/, /dv/ and /kv/, all having the approximant /v/ as a second member: *tvile* [tvi:lə] (to doubt), *dverg* [dværg] (dwarf), *kval* [kva:l] (torment). From the point of view of the segmental complexity the clusters in question qualify as well-formed branching onsets. Though no words can be found containing those clusters word-internally, we would like to suggest that the clusters should be classified as genuine branching onsets.

6. CONCLUSIONS

In the preceding sections some Norwegian consonant sequences in word-internal and word-initial position have been examined. The aim has been to establish a comprehensive set of branching onsets in Modern Norwegian. Starting with word-internal consonant sequences which cause the lengthening of the stressed vowel the analysis showed that only some of them qualify as branching onsets (in fact, only the plosives and the /f/ followed by /r/). The next step was to supply our analysis with word-initial consonant clusters. We saw that among the considerable number of clusters allowed in the word-initial position, only the three sequences /tv/, /dv/ and /kv/ meet the criteria for branching onsets. Hence, the set of well-formed branching onsets in Modern Norwegian consists of the plosives and the voiceless fricative /f/ followed by /r/ and of the three clusters /tv/, /dv/ and /kv/.

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