

INITIAL AND FINAL SONORANT CLUSTERS IN SLOVENE

The term cluster as used here means a sequence of two or more consonants belonging to the same syllable.¹ They thus have a marginal position in the syllable standing at the beginning of a syllable before a vowel, or at the end of a syllable after a vowel. A "genuine" cluster always belongs to one morpheme only (e.g. *skrinja*, *strast*, *film*). That is why such initial sequences as *sčvekati*, *sfrizirati*, *zdvomiti* are not really clusters in the strict sense of the word, since they are formed with the prefix *s/z-*. This prefix can be added initially to all consonants depending on the meaning of the word. The criterium of its usage is semantic and not phonetic and there is thus a morpheme boundary after it.

In general phonetics vowels and consonants are divided into two large groups: sonorants and nonsonorants or obstruents. Since from the point of sonority sonorant consonants are much nearer to vowels than to the other consonants (=obstruents) they, together with vowels, form the group of sonorants. In Slovene phonetics and phonology, however, we usually speak about a group of vowels, and two groups of consonants, sonorants and nonsonorants. This grouping of consonants is more convenient not only on account of their different sonority but also because of the fact that sonorants are without a voiceless counterpart (unlike nonsonorants) and on account of the different distribution and voice assimilation which applies to nonsonorants but not to sonorants.

In a cluster consisting of nonsonorants and sonorants, sonorants are always nearer to vowels, the formula for the syllable in Slovene being NSVSN (N-nonsonorant, S-sonorant, V-vowel); thus sonority falls off towards the two margins of the syllable, presented graphically < >. A nonsonorant, whether voiceless or voiced, can form a cluster with all sonorants. In a cluster of two nonsonorants, however, both must be either voiceless or voiced (e.g. *klas* – *glas*, *stati* – *zdeti*). There are, moreover, no voiced nonsonorants at the end of a word before a pause (e.g. *gozd* [gost] / *gost* [gost]).

The above stated formula can, naturally, vary though always in agreement with the basic formula. Thus any consonant class can be omitted or repeated. Some possible alternations are thus: NNVNN, SSVSS, NNSVSNN, NSSVSSN or a combination of one of the initial clusters with one of the final ones. All this is well known in Slovene grammar. Clusters on the pattern SNVNS are, however, impossible. In such cases as *vprašati*, *vdreti*, (traditionally interpreted as SNS-) we have to do not with the

¹ I should like to thank Margaret Davis for correcting my English.

phoneme /v/ but with a syllabic or nonsyllabic /u/, which thus cannot form part of a cluster (T. Srebot Rejec, 1985, pp. 240-241).

What then about such sequences as *butelj*, *siten*, *oken*, in a common colloquial pronunciation [ˈbutɨl̩, ˈsitɨŋ, ˈokɨŋ], where with the omission of the shwa sound [ə] we get a final sequence -NS, while in such a word as *tekem* [ˈtekəm] [ə] cannot be omitted? In the first two words we are dealing with a sequence of two homorganic alveolar and dentoalveolar sounds, and in the third sequence /n/ has to be assimilated into velar [ŋ] to get a pronounceable homorganic sequence in which [ə] can be omitted.

Sonagrams show and auditive evaluation confirms that in this case the duration of the sonorants is extended to take up the same time as [ə] + sonorant. As a result all three sonorants become syllabic and we have to deal not with a cluster but with a sequence of two consonants with a syllabic boundary between them since the second consonant, the sonorant, has the value of a syllable. With *tekem* [ˈtekəm] the shwa cannot be omitted because neither of the two sounds can change so that they would have the same place of articulation; assimilation is impossible here.

Although sonority varies with different vowels, all vowels as such, regardless of their degree of sonority, as the most sonorous group of sounds occupy a central position in the syllable. The same holds for nonsonorant consonants: different degrees of sonority do not play any part in their distribution. They all have a small degree of sonority although not all the same. These different sonorities, however, in a cluster containing nonsonorants do not at all affect their distribution. Thus in spite of the fact that /s/ is more sonorous than /p/ there exist such initial clusters as *sp-* (e.g. *spati*) and *ps-* (e.g. *psi*) where the “wrong” cluster has a far bigger functional load.

The study of sonorant clusters has made it clear that this does not apply at all to sonorant clusters. J. Toporišič in his “Slovenska slovnica” 1984, p. 86 says: “Consonant sequences with a marked sonority difference are unpronounceable word initially if the first sound is more sonorous than the second (*jna-*, *lna-*, *lka-* are unpronounceable),” which of course holds. We should, however, distinguish between the two initial sequences *jn-* and *ln-* consisting of two sonorant consonants in which the first is more sonorous than the second, on the one hand, and *lk-* which is impossible initially already on account of the basic syllable formula *NSVSN*, on the other. In clusters consisting of two sonorants – in contrast to nonsonorants – the more sonorous sonorants must be nearer to the vowel. This does not apply to initial clusters only (i. e. before a vowel) but also to final clusters (i. e. after a vowel), with the difference that final sonorant clusters are not compulsory, which means that a final sonorant cluster can split, that /ə/ can be inserted, while there is no such choice in initial position, a sonorant + /ə/ + sonorant sequence being impossible.

Let us enumerate the sonorants according to their scale of sonority, starting with the least sonorous:

$$v < m, n < l < r < j$$

A simple formalisation of the rule would be as follows:

1/ Son + < Son /## _____

2/ Son + (ə) + > Son / _____ ##

i. e. 1/ In initial clusters the less sonorous sonorant is followed by the more sonorous sonorant.

2/ In final clusters the more sonorous sonorant is followed by the less sonorous sonorant. In such sequences /ə/ can be inserted before the five sonorants that can form the second member of the cluster thus splitting the sequence.

Possible sonorant clusters in Slovene:

1/ Initially: [vm-], [vn-], [vl-], [vr-], [vj]; (only in certain dialects)

[mn-], [ml-], [mr-], [mj-], [nr-], [nj-];

[lj-], [rj-];

nonexistent: [nm-], [nl-], [lr-].

2/ Finally: [-jr], [-jl], [-jn], [-jm];

[-rl], [-rm], [-rn], [rf] (only in certain dialects, final [v] is devoiced)

[-mn].

Examples:

1/ 'vnema, vlak, 'vreči, vi'jolica;

'mnogo, mlad, 'mrena, mi'javkati, nrav, nje'gov;

ljub, Rja'vina.

2/ Moir (?), e'majl, vojn, ujm;

vrl, srn, grm, vrv;

go'stiln, palm, želv;

himn (alternative pronunciations [himn, himm, himən]).

According to its sonority [v] is not really a true sonorant, it is placed in this group on account of its distribution as it can stand after voiceless and voiced nonsonorants (Toporišič, 1984, p. 67). In careful standard pronunciation it is a genuine fricative and besides functioning as a sonorant (e.g. tvoj, dva) it can also function as a voiced positional allophone of the phoneme /f/ before voiced nonsonorants (e.g. grof gre [grov gre]), i.e. in a position where the sonorant /v/ cannot appear at all. [v] can thus belong to two phonemes, to the sonorant /v/ and to the nonsonorant /f/. This is contrary to the principles of classical phonology, breaking the biuniqueness principle (T. Srebot Rejec, 1987, p. 51). As a sonorant /v/ cannot stand before another consonant in Standard Slovene since syllabic or nonsyllabic /u/ is pronounced in this position and there is thus no cluster here.

The final /j/ + sonorant sequences are not really clusters, [j] forms a diphthong with the previous vowel, at least phonetically.

This explains why the clusters in *go'stiln*, *grm* are possible in Slovene while in *žanr* [ˈžanər,] ˈkamer, *go'rovij* (ə → i/___j) they are not. By applying this rule long lists of words with permitted and with split final sonorant clusters can be avoided. It also makes possible a computer formalisation with which to set up an algorithm for generating Slovene words containing sonorant clusters.

REFERENCES

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Povzetek

ZAČETNI IN KONČNI ZVOČNIŠKI SKLOPI V SLOVENŠČINI

Začetni in končni sklopi sestojeci iz dveh zvočnikov so možni v slovenščini, če je zvočnik z večjo zvočno polnostjo bliže samoglasniku. Lestvica zvočne polnosti začeni z najmanj zvočnim zvočnikom: [v] < [m], [n] < [l] < [r] < [j]. Na osnovi tega dejstva je možno sestaviti algoritem za generiranje slovenskih besed, ki vsebujejo zvočniške sklope.