

LONG CONSONANT AFTER SHORT VOWEL

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1. In the stressed syllables of most Norwegian and Swedish dialects, postvocalic consonants are considered long or short; long after short vowels, short after long vowels. Examples: /vi:s/ "wise" (short *s*) vs. /vis:/ "certain"; /vi:se/ "song" vs. /vis:e/ "certain" (plural); /se:n/ "late" (short *n*) vs. /sen:/ "send!"; /ma:k/ "ease" vs. /mak:/ "worm". It is also generally assumed, at least in the case of Norwegian, that the consonant following a short vowel retains its phonetic length when followed by another consonant: /vis:t/ "known" (supine) (*s* phonetically long), /sen:t/ "sent" (pret. part), /mak:t/ "power". It is therefore set up as a rule that in this type of dialects, all stressed syllables have either long vowel or long consonant immediately following the (short) vowel, thus, in addition to the above examples, /vis:te/ "knew", /sen:te/ "sent" (pret.), /mak:te/ 'be able to'.¹

Two implications of this view make difficulties. First, the syllable division of a word like /vis:e/ is unanimously taken to be /vis-se/. This means that we must have a long *s* plus a short one (long in a stressed syllable after short vowel), a fact which is confusing from the point of view of morphophonemics. Secondly, the thesis of a long consonant after short vowel is invalidated by the occurrence of a syllable-final flap [ɾ] – "thick l" – after short vowel: /kaɾke/ 'whitewash', /æɾva/ "the river". Flaps are by definition short, inextensible sounds. They never occur alone after a short vowel in Norwegian final stressed syllables.

These two circumstances, the interpretation of *s* in "visse" as long plus short *s*, and the occurrence of syllable-final flap after short vowel, together with the initial stimulus of Haugen's writing double consonant before another consonant in English loanwords as spoken by Norwegians in the U.S.A. (bakks, kenndi),² have led us to undertake experiments on the phonetic length of consonants after short vowel. Oscillographic recordings were made, first of "double consonants" after short vowel in dissyllabics (34 recordings), then of clusters of two consonants after short vowel in dissyllabics (34 recordings). The clusters were:

PS SP PR RP PL LP PN MP, BL LB, TS ST TR RT TL LT TN NT,
DN ND DM MP, KS SK KR RK KL LK KN "NG"K, GR RG GL LG

¹ Borgström, C. Hj., *Innföring i sprogvidenskap* (Oslo, 1958), 34.

² Haugen, E., "Problems of Bilingual Description", *Georgetown University Monograph Series on Languages and Linguistics*, VII (1954), 15.

The speakers were seven persons with university training, held in complete ignorance of the experimenter's intentions. They represent dialects of widely different places in Norway south of Trondheim. The recorded words are listed in Section 9.

2. To take the first cluster as an example of the procedure, the length of the *p* in "knipse" "snap one's fingers, flick" was compared with that of the same consonant when occurring alone (intervocally) after short vowel: "knippe" /knip:e/ "bundle", in order to see how much shorter it is when occurring in cluster. (In 19 cases out of (34 . 7 =) 238, uncertain delimitation of phones did not allow comparison.) The results for each single 'former cluster mate' varied considerably, but averaged for the seven informants 72% of the length of one single intervocalic consonant after short vowel, i.e. of what is considered a "long consonant". The results for the seven subjects were rather even: 65%, 70%, 70%, 71%, 71%, 74%, 78%.

The phonetic reduction of a long consonant after short vowel, before another consonant, can be illustrated in this way:

Ex.: /vis:e/	V	C:	V
		100	
Ex.: /vis:te/	V	C:	C V
		72	

3. Now, this "reduction"³ could be ascribed to the presence of the extra phone ('latter cluster mate'), and one might thus still be inclined to regard the "reduced" postvocalic cluster mate as long. What we need in order to determine whether it should be regarded as "phonetically long", is to know how much shorter a single consonant is when it is preceded by a long vowel than by a short one: /vi:s/ (*s* short) vs. /vis:/; /vi:se/ vs. /vis:e/. The postvocalic *s* for our seven informants is, in six pairs of mono- and dissyllabics, found to be only 18% shorter (82%) when following a long vowel. It is seen then that the "reduction" of the former cluster mate after short vowel (to 72%) is too substantial to permit a ranging of the consonant in this position as phonetically "long".

4. One might ask now if the length is the same in former cluster mates after short and long vowels. In six pairs with cluster ST after long and after short vowel (/vi:st/ ~ /vis:t/, /ma:st/ ~ /mas:t/, ve:st/ ~ /ves:t/, /vi:ste/ ~ /vis:te/, /ma:ste/ ~ /mas:te/,

³ When we speak of "reduction" here and in the following, there is no allusion to diachrony or even to a primacy of a long consonant over a short one. We are only aiming at an easy reference to the relation between "long" and "short".

/ve:ste/ ~ /ves:te/,⁴ the average "reduction", for the seven informants, of *s* in position after long vowel, is 15% (duration 85%).

5. Two factors can be seen to reduce the length of a long consonant: its position (in non-cluster) after a long vowel, and its position as the 'former cluster mate'. This latter reduction – in cases after short vowel – is so great (to 72%) that it exceeds the former one, and there seems so far no reason to assume that the former cluster mate is long after short vowels. A different matter is that there are other factors present which may allow a phonemic interpretation as "length", such as fortisness, and 'close contact' between vowel and following consonant, which speakers of Norwegian are accustomed to find in combination with consonant length in stressed syllables.

6. For Swedish, A. Noreen says that the full length of a consonant has a strong tendency towards half length immediately before another consonant, so that the *s* in "vispa" 'beat (eggs)' is considerably shorter than the one in "vissa" 'certain' (plural).⁵ Phonetically the view of Noreen that long consonants are reduced before a following consonant is confirmed for Norwegian.⁶

The recording of 18 Swedish clusters and 18 "double" consonants (one informant only) gave an average "reduction" for the former cluster mate to 65%, cf. Noreen's expression, "tendency towards half length". The recorded words are listed in Section 9.

7. For Danish (one informant), 18 recordings of single consonant after short vowel and 18 recordings of consonant cluster after short vowel (Section 9) revealed that there was no "reduction" of the former cluster mate; quite on the contrary, the former cluster mate had 106% of the length of the "single" consonant (after short vowel). This confirms the statement never doubted that Danish does not possess phonetically long consonants after short vowels.

8. The examples found in Borgström's *Innföring* (see note 1) were also read by our seven Norwegian informants. Though the material is not very adequate for measurements of this kind – there are both mono- and dissyllabics, clusters and non-clusters after short and long consonant – it may not be without interest to state that the overall ratio in length between consonants after long vowel and consonants after short

⁴ We use the length marking of Borgström in order to bring out clearly the difference in vowel length.

⁵ Noreen, A., *Vårt Språk* II (Lund, 1907), 121.

⁶ The Norwegian orthography does justice to this reduction: "kaste" 'throw', "fylte" 'filled', "vekte" 'waked up', "brente" 'burned' (trans.). In the rare cases where the consonant is written double before another consonant, such as "visste" 'knew', and "fullt" 'full' (neuter adj. and adv.), this is done to keep the words apart from "viste" 'showed' and "fult" 'sly' (neuter), 'slyly', in which cases the vowel followed by cluster is long.

vowel is 85/100. This ratio coincides with that found in Section 4, for former cluster mate *s* after long and after short vowel.

9. MATERIAL, standard orthography. The 68 Norwegian words in the order in which they were read:

knippe tappe droppet klippe rabbe etter klatte fatte hvitte
lodde blødde lakken lekke rakke sokker flagge egge

knipse tapre droplet pripne rable etser klatre fatle hvitne
lodne blødme laksen lekke rakle sokner flagge egle

risse karre gjelde kammen kolle kasse karret velle vende
onner lemmer disse virre skulle synge borre alle

rispe karpe hjelpe kampen kolbe kaste kartet velte vente
änder lemper diske virke skulke synke borge alge

Borgström's examples (Norwegian):

bake bakke bok bukk våt vått vis viss viste visste ly(:)st lyst kule kulde ma(:)lt
malt lete lette

The 36 Swedish words:

tappa lacken läcka spetten skalla slinga gälla kammen kassa
välla vinna lämmar kalla hämma pressen skålla sjunga svalla

tappa laxen läckra spetsen skallra slingra hjälpa kampen kasta
välta vinda lämpar kalka hämta prästen skolka sjunka svalka

The 36 Danish words:

kasse glemme tappe volde helle bange luffe pressen skaller
bukker hækken pakken skaffer lykken henne bolle pøller vinder

kaste glemte (pret.) tapre voldte helse banke luffe præsten skalter
bukser hægten pagten skafter lygten hente bolde pølse vinter

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