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Normative preaspiration in Skolt Sami in relation to the distribution of duration in the disyllabic stress-group

Recent research has distinguished between normative and non-normative preaspiration (Helgason 1988, 1999a). The term *normative* refers to the fact that ...” the early timing of glottal abduction relative to oral closure in vowels preceding a voiceless stop consonant ... [is] an obligatory feature of the sequence of vowel and fortis stop”. (Helgason 1999a:1851) As a consequence of early voice offset before a stop or an affricate consonant, a noise resembling [h] is produced between the two segments.

duration within the disyllabic stress group will be examined in connection with the data obtained during the course of (i) controlled experiment and (ii) spontaneous speech in Section 3. Discussion of the results and a summary of the findings will be presented in Sections 4 and 5 respectively.

2. Description of the data

This study examines preaspiration occurring in two speaking modes in the speech of two Skolt Sami subjects (both female, one a speaker of the Suonikylä dialect, the other of the Paatsjoki-Petsamo dialect).⁵ First, recordings were made in 1986 during the course of a controlled experiment; 63 target words with preaspiration were placed in a sentence frame and read three times by each speaker. The total number of test words suitable for acoustic analysis was 322. The recording was made with a Scully Full-Track Broadcast Machine tape recorder; the tape speed was 7.5” per second. The Signalyze software (Version 3.11) was used for the acoustic analysis of the data obtained during the

an informal series of conversation). Because of the varied speech tempo, in addition to absolute durations, the ratios between the relevant segment durations were also computed. On the basis of findings stated in my earlier research (McRobbie-Utasi 1999), here it is hypothesized that the durational ratios between the two main stress-group locations (first syllabic vowel, and the consonant following) will remain constant regardless of the presence or absence of preaspiration. Variation in preaspiration durations as observed during the course of spontaneous conversations will thus be directly related to changes in absolute duration for the prevocalic segment and the stop consonant following preaspiration.

Tables 3 and 4 summarize the durational measurements together with the V/C ratio values for each of the two speakers¹³. Consonant duration (without preaspiration duration added) was chosen as the criterion for dividing the data into three groups. As shown in Section 3.1.1, in the two alternating grades the mean durations of the consonants were 193 and 270 msec respectively. The three groups representing variation in speech tempo are: (i) 200 – 240 msec (Grade II), 280-320 msec (Grade III); (ii) 160-199 msec (Grade II), 240-279 msec (Grade III), and (iii) 120-159 (Grade II), 200-239 (Grade III). The data presented thus in these three groups correspond with the measurement values relating to the varying speaking rates of the conversations; the first group representing the lowest, and the last group the fastest rate. The majority of data fall into one of the three groups; those falling outside of the values associated with these groups (a total of nine disyllabics for the two speakers) are disregarded here.

Table 3. Preaspiration durations together with the prevocalic and consonant durations (Grade II disyllabics)

	Speakers	Prevocalic duration		Preaspiration duration		Duration of the following consonant		V/C
		\bar{x}	SD	\bar{x}	SD	\bar{x}	SD	
I	A	188	20	45	9	231	24	0.68
	B	206	24	40	7	238	31	0.74
II	A	147	16	39	10	174	26	0.69
	B	160	21	35	9	186	19	0.72
III	A	127	17	42	11	140	21	0.7
	B	145	18	40	11	158	18	0.73

Table 4. Preaspiration durations together with the prevocalic and consonant durations (Grade III disyllabics)

	Speakers	Prevocalic duration		Preaspiration duration		Duration of the following consonant		V/C
		\bar{x}	SD	\bar{x}	SD	\bar{x}	SD	
I	A	138	22	71	11	292	29	0.38
	B	160	17	62	7	310	34	0.43
II	A	118	10	62	9	258	25	0.37
	B	117	9	70	12	272	27	0.4
III	A	107	12	51	8	211	26	0.41
	B	114	12	60	10	233	31	0.39

¹³ In Tables 3 and 4 “A” represents the speaker of the Suonikylä dialect, and “B” the speaker of the Paatsjoki-Pesamo dialect.

The measurement values presented in *Tables 3* and *4* clearly show the pattern predicted on the basis of the hypothesis spelled out above concerning the interdependence between preaspiration duration and the duration of the two main stress-group locations. The implications of this interdependence point to recognizing the importance of constant V/C durational ratios within the disyllabic stress group. It can be seen that, regardless of the

Figure 1. Preaspiration duration of Grade II and Grade III disyllabics in relation to the duration of the following consonant

Figure 2. Preaspiration duration of Grade II and Grade III disyllabics in relation to

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