

SWITCHING BETWEEN ESTONIAN SIGN LANGUAGE AND SPOKEN ESTONIAN IN A SCHOOL ENVIRONMENT

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Abstract. The study focuses on the variables and functions that affect switching (code-switching and code-blending) between Estonian Sign Language and spoken Estonian among bimodal bilinguals in a school environment. It was found that deaf students at Tallinn Helen's School predominantly code-blended (simultaneously spoke and signed), whereas their peers from Tartu Hiie School tended to code-switch (stopped speaking and started signing or vice versa). A deaf student's level of switching was influenced most by the interlocutor's level of switching, which highlights the importance of input provided by teachers. Although the most often used function of switching was to emphasise a constituent in a clause, the students also switched to express themselves in an original way (humour, language play) and to attract attention, while the teachers sometimes used switching for pedagogical reasons or to side-comment. In cases where it appeared problematic to apply a single function to a switch, a sequential turn-by-turn analysis (Auer 1995) was used.*

Keywords: sociolinguistics, unimodal bilingualism, bimodal bilingualism, code-switching, code-blending, Estonian Sign Language

1. Introduction

This paper investigates switching, i.e. code-switching and code-blending between Estonian and Estonian Sign Language in two deaf schools in Estonia: Tallinn Helen's School and Tartu Hiie School, and shares some aspects with research into the contact between two spoken/written languages, such as Estonian-Russian (Verschik 2008, Zabrodskaia 2005), and on the contact between a spoken and a sign language, such as English and American Sign Language (Emmorey et al. 2008,

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Bishop, Hicks 2005). As the majority of the studies on bimodal bilingualism have focused on switching by hearing bilinguals, this paper takes a different perspective, including deaf and hearing teachers, as well as deaf students.

The most noteworthy aspect of the contact between a spoken and a sign language is that elements of the two languages from different modalities (a visual-spatial and an auditory-vocal language) can be combined both sequentially and simultaneously. Following researchers such as Emmorey et al. (2008), it is expected that the deaf students simultaneously produce signs and speech, i.e. they code-blend, and that the Matrix Language of code-blends is mainly Estonian. Also, it is hypothesised that the majority of the word classes in code-blends and code-switches are nouns (Muysken 2004: 153, Van den Bogaerde, Baker 2008).

The analysis of variables and functions that affect switching between spoken Estonian and Estonian Sign Language (ESL) in a school environment constitutes the heart of this paper. The relationship between variables such as hearing status, level of hearing loss, parental hearing status, hearing status of the interlocutor, Estonian language proficiency, interlocutor's switching and the number of switches was investigated. In addition, the functions of switching and speech acts were analysed. In cases where it appeared problematic to determine a single function of a switch, the interactions were investigated turn by turn.

2. Code-switching in unimodal and bimodal bilingualism

In unimodal bilingualism¹, several researchers have focused either on the grammatical (Myers-Scotton 1997) or the sociolinguistic view (Auer 1984, 1995, Li Wei 2002) of code-switching. This paper includes features from each framework with the aim of giving a more objective perspective of the topic studied. According to Myers-Scotton's (1997) Matrix Language Frame (MLF) model for code-switching, one language dominates (Matrix Language, or ML) over the non-dominant language (Embedded Language, or EL) by supplying more words and morphemes to the sentence. The grammatical aspects of switching in bimodal bilingualism, i.e. in the contact between a spoken/written language and a sign language, have primarily been studied by relying on Coda² communication. Emmorey et al. (2008) found that Codas prefer code-blending to code-switching when conversing with other bimodal bilinguals with English being the Matrix Language. For bimodal bilinguals, the most often used word classes in code-blends and code-switches were verbs, as opposed to unimodal bilinguals, who show more code-blending in nouns (Muysken 2004: 153). The results are mixed though, as according to Van den Bogaerde and Baker (2008) nouns dominated over verbs in code-blends produced by bimodal bilinguals. Besides word classes, semantics and frequency of use have to be taken into account (Backus, Verschik 2012). Bishop and Hicks (2005) studied the written language of Codas and found that Coda-talk is characterised by systematic code-blending with some features of American Sign Language.

The sociolinguistic approaches have been concerned with different issues, including the functions of code-switching. Zabrodskaia (2005) compiled the

¹ In the present article, unimodal bilingualism refers to the contact between two spoken/written languages. In principle, the contact between two sign languages is also unimodal (Adam 2013: 21).

² The term Coda is used to refer to a hearing child of deaf adults.

following taxonomy for switches: reported speech; language play; expressive function; side-comment; reiteration; relationship between the participants; and insufficient language skills. Other reasons for code-switching include addressee specification, emphasising a constituent in a sentence, attracting and retaining attention (e.g. McClure 1981), presenting an attitude or opinion (Praakli 2009: 105), participant make-up, activity type, topic shift, and topic-comment structure (Auer 1995: 120).

Although researchers have studied particular functions for switching in bimodal bilingualism (e.g. Gerner de Garcia 1995), they have been more involved in discussing the effect of different variables on code-switching, such as the hearing status (Van den Bogaerde 2000), hearing status of the parents (Hoffmeister, Moores 1987) and the interlocutor (Lucas, Valli 1995, Grosjean 1996), and language proficiency (Kuntze 2000). This study focuses on the relationship between hearing status, level of hearing loss, parental hearing status, hearing status of the interlocutor, Estonian language proficiency, interlocutor's switching and the amount of switching.

The proponents of the Conversation Analysis (CA) approach have emphasised the need to analyze how meaning emerges in interaction through code-switching (Li Wei 2002: 167), as a general taxonomy of the functions cannot possibly account for all cases of switching. Auer (1995) distinguishes four patterns of code choice in conversation (Table 1): type I switches are discourse-related, type II switching is seen as preference-related, type III switching may be both discourse and participant-related, and type IV is termed *transfer*.

Table 1. The patterns of code-switching (Auer 1995: 125–126)

Name	Pattern
Ia	A1 ³ A2 A1 A2//B1 B2 B1 B2
Ib	A1 A2 A1 A2 A1//B1 B2 B1 B2
IIa	A1 B2 A1 B2 A1 B2 A1 B2
IIb	A1 B2 A1 B2 A1//A2 A1 A2 A1
IIIa	AB1 AB2 AB1 AB2
IIIb	AB1//A2 A1 A2
IV	A1[B1]A1

In bimodal bilingualism, researchers have also stressed the need to consider the context in which the conversation takes place, e.g. Kuntze (2000: 293) filmed classes in a classroom with both a bilingual teacher and bilingual students, which may have triggered more code-switching than in other contexts.

3. Estonian Sign Language

Estonian Sign Language⁴ with the SIL code ESO (Sutrop 1998) is a language used by the members of the Estonian Deaf community (1500–2000 signers). Users of ESL are concentrated around bigger towns in Estonia, such as Tallinn, Tartu and Pärnu. ESL was officially recognised on 1 March 2007 (Language Act 2007).

³ The letters refer to the languages A and B; the numbers indicate the speakers 1 and 2.

⁴ Paabo (2010) gives a thorough overview of ESL.

Estonian Sign Language is a topic-comment language with a relatively flexible sign order (Laipea 1992: 2101). There is a tendency to place interrogative signs at the end of the sentence in ESL. The three main types of questions in ESL are yes/no questions, alternative questions and *wh*-questions. It is also possible to form rhetorical questions, which are technically questions, but do not request an answer. In ESL, there are three different ways to modify nouns (Miljan 2001: 176): the combination of a modifier and a noun; bracketing, in which case the modifier precedes and follows the head noun or the base sign; pre-nominal and post-nominal modifiers.

Systematic teaching of ESL began in 1990 when Regina Toom started teaching it to the students of the Special Education Department at the University of Tartu. Courses have also been taught by the Estonian Association of Parents with Hearing Impaired Children, the Estonian Association of the Deaf, and Tallinn Pedagogical College. ESL interpreter training has been offered at the University of Tartu since 2006.

4. Database

The material was videotaped in two deaf schools in Estonia: Tartu Hiie School and Tallinn Helen's School⁵. Tartu Hiie School mainly uses the oral method in educating deaf students, relying on speaking, lip-reading, fingerspelling and writing. The Estonian language is taught as the mother tongue and English as a foreign language. Tallinn Helen's School provides bilingual education for the deaf students, which means that ESL is taught as the first language and Estonian as the second language. Both hearing and deaf teachers work at the school, instructing mainly in ESL and (written) Estonian⁶. In lessons where the hearing teacher uses Estonian, sign language interpreting service is offered.

The filmed lessons lasted approximately 299 minutes and consisted of 5322 utterances⁷. Seven videotaped lessons were filmed in Tallinn Helen's School (195 minutes), and three in Tartu Hiie School (104 minutes). The lessons filmed in Tallinn Helen's School consisted of interactions between students and teachers in seven lessons: Estonian as a second language (three lessons), mathematics, history, Estonian Sign Language, and biology. Four different classes of 27 deaf students aged 12–21 were videotaped. The lessons were taught by six different teachers, four deaf and two hearing. In Tartu Hiie School, the filmed material consisted of interactions between the students and the teachers in three lessons: Estonian, social studies, and English, which were taught by two hearing teachers. Eight students aged 14–16 participated in all three lessons.

5. Transcription and analysis

Three aspects were analysed in depth by using the ELAN software (Language Archiving Technology 2008): ESL, Estonian, and word classes⁸. Pauses and latching were separately marked (Table 2).

⁵ Loit (2013) provides more information about teaching deaf children in Estonia.

⁶ The situation is changing, as more hearing impaired students enter Tallinn Helen's School – their speaking skills need to be developed.

⁷ An utterance was usually surrounded by longer pauses.

⁸ The distinction of word classes in the current study was mainly made considering semantics and pragmatics.

Table 2. Transcription conventions

[start of simultaneous talk
]	end of simultaneous talk
=	latching (no interval between turns)
(.)	micro-pause (max. 0.2 seconds)
(2.0)	length of silence in seconds
h h h	laughter
{---}	incomprehensible or inaudible utterance

The names of students were replaced by codes, including S for student, T for teacher, a number, and D or H, referring to the hearing status of the informant's parents. The students' names in the excerpts were replaced with common names in Estonia. The analysis of each guided discussion started quantitatively followed by the functional analysis of excerpts. ML and EL in code-blends were determined by considering features of ESL and Estonian, as EL and ML in code-blends of Estonian and Estonian Sign Language cannot be determined by counting the number of morphemes, because the modalities and morphologies differ significantly. ESL was considered to be the ML if role-shift⁹ and classifiers¹⁰ were used. Estonian was the ML if a word was fingerspelled¹¹ instead of signing. Some aspects were analysed in more detail: word order,¹² expressing time, question formation, the category of number, adjectival modification, and agent nouns, due to differences in the two languages.

Pearson's product-moment correlation coefficient or Pearson's *r* was employed to investigate the relationship between the number of switches and the following variables: level of hearing loss, parental hearing status, hearing status of the deaf person's interlocutor, scores on an Estonian language proficiency test, and the interlocutor's switches.

The functions of code-switching were determined by combining the taxonomies of Zabrodska (2005) and McClure (1981), to which the category of pedagogical reasons was added. Speech acts were determined according to Searle's (1976) typology (statement, question, correction, request, doubt, order, refusal, explanation, recommendation, and thanking). Sometimes Austin's (1962) classification of speech acts into locutionary, illocutionary, and perlocutionary acts was also used.

The language background of the students was investigated by using a questionnaire, and the Estonian Language level was measured with a test designed on the basis of an exit exam for year 9¹³ students in Tallinn Helen's School¹⁴. The sign language levels of the deaf and hearing participants were determined by a deaf expert (Maret Õun) according to the Estonian Sign Language Proficiency Scale (compiled by Regina Toom). The deaf students from Tartu Hiie School with slight hearing loss received the best results in the Estonian language proficiency test ($M = 57$, $SD = 22.7$), followed by the deaf students from Tartu Hiie School with profound hearing loss ($M = 44.8$, $SD = 25.0$), and deaf students from Tallinn Helen's School

⁹ Role-shift is the possibility of shifting between the characters in a narration (Laipea 2007: 59).

¹⁰ Classifiers are morphemes used for indicating spatial relations, movement, and the shape and size of the objects (Sandler, Lillo-Martin 2006).

¹¹ Fingerspelled words were not considered as code-switches in this study. Fingerspelling is an outcome of language contact between a sign language and a spoken language and should be treated separately.

¹² The word order of an affirmative sentence in Estonian is usually SVO. ESL is a topic-comment language (Laipea 1992: 2101).

¹³ Year 9 corresponds to year 8 in regular schools.

¹⁴ The questionnaire and the language test can be found in Hein (2012: 329–350).

($M = 44.5$, $SD = 24.8$). The deaf students from Tallinn Helen's School had better results (B1-B2) in ESL than the ones from Tartu Hiie School (A1-A2) and the hearing students from Tallinn Helen's School (A1-A2).

6. Quantitative aspects of switching

The percentages of code-switches, code-blends and switches in Table 3 show that the students from Tallinn Helen's School mainly code-blended (23.0%), whereas the students from Tartu Hiie School produced more code-switches (43.2%). Altogether, the percentage of switches was 28.5 in Tallinn Helen's School and 60.2 in Tartu Hiie School.

Table 3. Students' mean percentages of utterances containing code-blends, code-switches and switches

Students	Code-blends	Code-switches	Switches
Tallinn Helen's School lessons	23.0	8.1	28.5
Tartu Hiie School lessons	27.2	43.2	60.2
Mean	25.1	25.7	44.4

As seen from the table, interlocutor's switches influenced the interaction most: in Tallinn Helen's School, Pearson's r shows a significant positive correlation between the number of switches produced by the teachers and students, $r = .93$, $p \leq .01$ (one-tailed), and in Tartu Hiie School, there is a strong positive correlation between the number of teachers' switches and the mean number of the students' switches, $r = .90$, $p > .05$ (one-tailed).

When analysing the lessons separately, it appeared that most of the students' switched utterances in Tallinn Helen's School occurred in the lessons taught by hearing teachers ($M = 47.7\%$), whereas the main form of communication with deaf teachers was Estonian Sign Language, as only 9.3% of the students' utterances contained some type of switching. In Tartu Hiie School, the percentage of switches was at the same level in all three lessons: Estonian (60.6%), social studies (63%), and English (58.7%).

ESL proficiency did not significantly influence the results in either school; the students with lower levels of ESL (B1 and less) switched slightly less than the students with higher level of ESL (B2 and above) in Tallinn Helen's School. The former produced 22% switches, while the latter produced 28% switches on average. In Tartu Hiie School, the students with a lower level of ESL proficiency (A1) switched slightly more often than those with higher levels of ESL proficiency (A2 and above). The mean percentage of switches was 61.5 in the former and 56.9 in the latter group.

Table 4. Correlation between variables and the level of switching

Variables	Tallinn Helen's School lessons	Tartu Hiie School lessons
Level of hearing loss	$r = .10$	$r = -.29$
Parental hearing status	$r = -.32^*$	–
Estonian language proficiency	$r = -.06$	$r = .04$
Interlocutor's switches	$r = .93^*$	$r = .90$

As indicated in Table 5, the students from Tallinn Helen's School had slightly more verbs in code-blends (30.1%), whereas more nouns occurred in the code-blends of the students from Tartu Hiie School (44.2%). No major difference occurred between the nouns and verbs in code-switches.

Table 5. Percentages of nouns and verbs in code-switches and code-blends

Variables	Tallinn Helen's School lessons		Tartu Hiie School lessons	
	Verbs (2185)	Nouns (2000)	Verbs (1996)	Nouns (2391)
Code-blends	30.1	25.0	26.8	44.2
Code-switches	28.4	29.0	28.1	27.9

The Matrix Language (ML) of the utterances produced by the students proved to be Estonian (R¹⁵ 61.0%, E1¹⁶ 48.3%, E2¹⁷ 54.4%), and the Accompanying Language in the case of code-blends was Estonian Sign Language (R 14.0%, E1 18.0%, E2 14.3%), which may partly be caused by the nature of the data, as some of the videotaped data came from Estonian language lessons. In Tartu Hiie School, most of the code-blended utterances also appeared to have Estonian as the ML (R 20.4%, E1 29.5%, E2 28.9%) rather than Estonian Sign Language (R 6%, E1 9.1%, E2 8.6%).

The ML could not always be determined, due to too short utterances and semantically non-equivalent code-blends¹⁸, some of which consisted of lexical items produced with differing word order in each language, making the utterance syntactically correct both in Estonian and Estonian Sign Language.

- (1) T1H: shake – VASTAMA MITTE
 ei sa ei vasta
 not you: 2SgNom NEG/answer answer/no
 'You don't answer.'

In the first line there are signs in ESL, the second line contains spoken Estonian, the English glosses¹⁹ are in the third line, and the fourth line translates the utterance (example 1) The negative particle *ei* 'not' precedes the verb *vastama* 'to answer' in Estonian, while in ESL negation is indicated post-verbally. This means of code-blending enables access to grammatically correct input for both a hearing and deaf audience. As both the characteristics of ESL and Estonian are present, determining the ML proves to be problematic, as also found for some spoken language pairs, e.g. in Russian-Estonian contact (Zabrodskaia 2009: 60).

¹⁵ Researcher's opinion.

¹⁶ First expert.

¹⁷ Second expert.

¹⁸ See Emmorey et al. (2005, 2008) for the categories of semantically non-equivalent code-blends in American Sign Language-English hearing bimodal bilinguals.

¹⁹ See Paabo (2010) for ESL glossing conventions.

7. Functions of switching

7.1. Emphasising a constituent

The students frequently switched in order to emphasise a constituent in a clause, which often resulted in fingerspelling in ESL and frequently occurred with proper names, such as names of people and places, as well as words that the subjects were not familiar with.

A new term is emphasised in (2) which originates from Tartu Hiie School. Here, S31H utters the recommendation in Estonian only, which remains unclear to the hearing teacher, so he/she fingerspells the new term to emphasise it in a question after a 0.5-second pause. S31H and S29H then explain the term to the teacher by code-blending.

(2)

S31H: metroo vői-ks ka olla
metro: can-Cond also be: Inf
NomSg

‘We could also have a metro.’

(0.5)

T8D: – – – – m-e-t-r-o-o
metroo (.) kohvik saa-b teha metroo
metro: café: can-3Sg make: metro:
NomSg NomSg Inf NomSg

‘The café can make a metro?’

S31H: – (.) SAI LÕIKAMA PANEMA
jah (.) sai lõika-n poole-ks pane-n pea-le
yes baguette: cut-Pr1Sg half-Tr1Sg put-Pr1Sg on-All
NomSg

‘Yes. I cut a baguette in half and put stuff on it.’

S29H: TEADMA m-e-t-r-o-o
tea-d metroo
know-Pr2Sg metro: NomSg

‘You know metro?’

7.2. Expressive function

Deaf students sometimes switched for expressive purposes: to make fun, to be original, or to play with language. In (3), the hearing teacher and students from Tallinn Helen’s School are discussing if it is possible to guess the character of a person by reading his/her self-description. The first utterance by T2H functions as a question.

- (3)
- T2H: või kui ta ütles, et (.) [mulle
or if he: 3SgNom say-Pr3Sg that I: AllSg
meeldi-b kan-da kleit-e ja seelikui-d ja
like-Pr3Sg wear-Inf dress-PartPl and skirt-PartPl and
ma ei armasta eriti pükse]
I: NomSg NEG love particularly trousers:
PartPl
- ‘Or if she says that I like to wear dresses and skirts and I do not particularly like trousers.’
- I1D: [ÜTLEMA KLEIT MEELDIMA PÜKSID MITTE-MEELDIMA]
say dress like trousers not like
‘If she says that I like to wear dresses and I do not like trousers.’
- S12H: BEIB
beib
babe: NomSg
‘Babe.’
- I1D: beib
babe: NomSg
‘Babe.’
- T2H: [h h h]
S12H: [h h h]

In answering the teacher’s question, the student emphasises a specific type of image-obsessed girl (BEIB ‘babe’) by signing and speaking at the same time, which serves an expressive and humorous function that would not be revealed if only one language were employed. The interaction, which in terms of speech acts consists of statements only, ends with the simultaneous laughter of T2H and S12H.

7.3. Attracting attention

Another interaction where switching is used for expressive purposes occurs at the end of the Estonian class in Tallinn Helen’s School taught by a hearing teacher fluent in ESL.

- (4)
- S1H: kas kodust ülesanne-t ei ole vä
if home: PartSg task-PartSg not be or
‘There’s no homework?’
- (1.5)
- S1H: MARI
Mari
‘Mari!’
- (0.5)

S1H:	KODU^ÜLESANNE		POLE
	homework		NEG + be
	'There's no homework?'		
T1H:	–	KODU^ÜLESANNE	POLE
	ee (.)	koduülesanne-t	ei ole
	ee	homework-PartSg	NEG + be
	'There's no homework.'		
S1H:	JESS	(.) –	
	–	(.) bingo	
	yes	bingo	
	'Yes. Bingo!'		

First, S1H asks T1H in colloquial Estonian if there is homework, and as there is no answer in 1.5 seconds he/she calls the teacher's name to attract attention. After another pause (0.5 seconds) the student reiterates the utterance in ESL to receive attention. The teacher first fills the pause and then produces the answer by code-blending, which is warmly received by the students, as seen in the utterance by S1H. The fact that both Estonian and ESL are represented in this utterance indicates that in language negotiation, the student is moving towards the teacher's code choice – code-blending. As for speech acts, this excerpt mainly follows the question-statement pattern.

7.4. Side-comment

The teachers at Tartu Hiie School also produced side-comments, which were mainly uttered in Estonian.

(5)

T8D:	–	–	–	–	SALAT
	valik	on	kas	sinu-le	salat
	choice: NomSg	be: Pr3	if	you-AllSg	salad: NomSg
	MEELDIMA		MITTE_MEELDIMA		–
	meeldi-b	või	ei	meeldi	kirjuta
	like: Pr3Sg	or	NEG	like	write: Imp2Sg
	'The choice is: do you like salad or not; write.'				
	(1.0) (schoolbell is ringing)				
S28H:	salat	ei	taha		
	salad: NomSg	NEG	want		
	'I don't want salad.'				
T8D:	no		siis		kirjuta
	well		then		write: Imp2Sg
	'Write then.'				
	(5.5) (students are writing)				

T8D: pea-me selle ikka vist valmis tege-ma
 have to-Pr1Pl it: GenSg still probably ready make-Inf
 ega me muidu ei pääse
 or we: NomPl otherwise NEG get away
 ‘We probably have to finish this; we don’t get away without it.’

There are two functions of the code choice in example (5): the make-up of the participants involved and side-commenting. The teacher starts with code-blending in giving the order, but as S28H answers in Estonian, he/she also switches to Estonian. This choice may be influenced by the fact that the student sits in the first row and can clearly see the teacher’s mouth patterns. After that there is a 5.5-second silence, as the students are filling in their questionnaires. The bell rings, and the teacher states that they cannot end the lesson at this stage, as the questionnaire has not been completed yet. This side-comment is produced in Estonian only, and after that the teacher continues talking in the code-blended mode.

7.5. Pedagogical reasons

A teacher from Tartu Hiie School occasionally switched to make information explicit or asked a student fluent in ESL to explain a term to other signers. In (6) the teacher asks a student in the code-blended mode if he/she knows what an X-ray is with an illocutionary force to receive an answer about an X-ray. As a perlocutionary effect, he/she receives an affirmative answer even before the end of the utterance. The teacher then asks S30H to explain the term to others, which can be seen as an order, as the word *please* is not used. S30H’s interruption of T8D in the middle of the utterance allows the teacher to continue talking, as it is signed. S30H then explains to the other students in ESL what an X-ray is in a question format.

(6)

T8D: – – – – – r-ö-n-t-[g-e-n]
 kas sina tea-d mis on rönt[gen]
 if you: 2SgNomknow-Pr2Sg what: NomSg be: Pr3 X-ray: NomSg
 ‘Do you know what an X-ray is?’

S30H: [PILT]
 [pilt]
 picture: NomSg
 ‘Picture.’

T8D: – – SELETAMA –
 voh(.) [näe-d] seleta nei-le
 well see-Pr2Sg explain-Imp2Sg they-AllPl
 ‘See? Tell them.’

S30H: [TEADMA]
 know
 ‘I know.’

KOPS k-o-p-s	PILT
lungs lungs	picture
k-o-p-s TEADMA	(to other students)
lungs know	
'You know lungs, picture of the lungs.'	

7.6. Sequential analysis

In some excerpts, a switch displayed the characteristics of several functions, or could not be matched with any particular function, which lead to examining the conversation sequentially. Example (7) displays characteristics of category IIIb in Auer's (1995) sequential classification of switching (AB1 A2 A1), and originates from a biology lesson in Tallinn Helen's School taught by a deaf teacher who frequently code-blends.

(7)

T6H: r-a-k-u-k-e-s-t KEST (.)
 cell: GenSg- wall: wall
 NomSg
 'Cell wall, wall.'

MÄLETAMA EILE VIIPLEMA r-a-k-u- OLEMA (.) [OLEMA]
 k-e-s-t
 – – – rakukest on (.) [on]
 remember yesterday sign cell: GenSg- be: (.) be: Pr3
 wall: NomSg Pr3
 'You remember we signed yesterday about the cell wall, don't you?'

S21H: [POLE]=
 NEG + be
 'No, I don't.'

T6H: =POLE
 =pff
 NEG + be
 'You don't.'

Here, in a statement followed by a question, the teacher introduces a new term, and asks if the students remember signing it. T6H expresses the new term by code-blending, but when S21H produces the answer in ESL, he/she also switches to signing only. The characteristics of the sign may also contribute to the choice of ESL, as the verb POLE 'am/is/are not' is occasionally accompanied by a specific mouth pattern (*pff*).

Although some teachers and students showed a preference for a particular code, the situation altered during the lesson: in an Estonian language lesson at Tallinn Helen's School where the interpreting service was used, the students mostly preferred ESL, and the hearing teacher Estonian, while towards the end of the lesson, the teacher code-switched once and there were more code-blends in the students' utterances.

8. Conclusions

The results show that the students in Tallinn Helen's School predominantly code-blend rather than code-switch, as also found in previous studies on bimodal bilingualism (e.g. Emmorey et al. 2008), whereas the students from Tartu Hiie School code-switch more often than code-blend, probably due to their confidence in using spoken Estonian in an oral deaf school.

Most of the switched utterances in Tallinn Helen's School occurred in the lessons taught by hearing teachers, while the main form of communication with deaf teachers was ESL. Pearson's *r* showed a strong positive correlation between the number of switches produced by teachers and students in the two schools, which should be borne in mind when teaching deaf students – the available input influences the language production to a great extent. Thus, if it is aimed that the students use both ESL and Estonian, then these two languages should also be employed in the classroom.

In both Tallinn Helen's School and Tartu Hiie School there was no major difference between the percentage of verbs and nouns in code-switches. In code-blends, verbs were more often used than nouns in Tallinn Helen's School, and in Tartu Hiie School, the results were in the opposite direction. Previous research shows mixed results: Emmorey et al. (2008) found that verbs tend to occur significantly more often than nouns in the code-blends and code-switches of hearing bimodal bilinguals, and Van den Bogaerde and Baker (2008) found the opposite: more nouns than verbs were code-blended. Besides word classes, other aspects have to be considered, such as frequency and meaning, which are linked to different types of switching (Backus, Verschik 2012).

Although it was sometimes difficult to determine the ML and EL, as also noted in some spoken language pairs (Zabrodskaja 2009), the analysis shows that the Estonian syntactic structure was utilised more often than that of Estonian Sign Language. The results are in accordance with previous findings in bimodal bilingualism, as Emmorey et al. (2008) state that the spoken/written language was the ML in most of the utterances.

The most often used function of switching in the two schools was emphasising a constituent in a clause. The students in Tallinn Helen's School also switched to attract the attention of the teacher and to express themselves in an original way (humour, language play). The teachers in the two schools occasionally switched to side-comment in Estonian, perhaps because deaf people do not often sign alone, but it is normal for the hearing people to side-comment in Estonian. The use of this function has not been thoroughly researched in the previous studies on bimodal bilingualism and should be further investigated.

The main difference in the functions of switching between the two schools lies in the fact that the students at Tartu Hiie School used switching less for attracting the attention of the teacher, as the teachers called on the students. In Tallinn Helen's School, some lessons consisted of independent work by the students, during which they had to attract the teacher's attention in order to ask for advice.

In conclusion, the analysis of the lessons shows that the deaf students and teachers at Tallinn Helen's School and Tartu Hiie School switched for various reasons. Besides emphasising the constituent, the informants also code-switched to express

themselves in an original way, for the purpose of humour, and for pedagogical reasons. Thus, the teachers should be aware that the lexical gap does not influence switching much; other functions play a greater role. As in some utterances the code choice was caused purely by the code choice of the previous turn, they were analysed by using the sequential model of code-switching compiled by Auer (1995), which has not been done in studying sign language – spoken language switching before. The results show that code choice may change in time, as in both deaf schools, accommodation was observed at the end of the lesson: the students spoke more often and the teacher signed more.

This is the first study on switching between Estonian Sign Language and spoken Estonian, which hopefully sheds some light on the nature of bimodal bilingual communication and may assist in teaching deaf children. Future research could focus on the functions of switching between Estonian Sign Language and spoken Estonian in conversations between hearing bimodal bilinguals.

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EESTI VIIPEKEELE JA SUULISE EESTI KEELE VAHELINE KOODIMUUTUS KOOLIKESKKONNAS

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Artiklis uuritakse, mis näitajad ja funktsioonid mõjutavad koodimuutust (koodivahetust ja koodisegunemist) eesti viipekeele ja eesti keele vahel bimodaalsete kakskeelsete hulgas. Tundidest kogutud andmed näitasid, et Tallinna Heleni Kooli õpilased eelistavad koodisegunemist, st nad viipelevad ja räägivad samaaegselt, ning Tartu Hiie Kooli õpilased kasutavad sagedamini koodivahetust, st lõpetavad viiplemise ja alustavad rääkimist või vastupidi. Kuigi koodisegunemise maatrikskeel oli enamasti eesti keel, jäi see mõnikord määramata, kuna bimodaalsetel kakskeelsetel on võimalus kasutada eesti viipekeelt ja eesti keelt samaaegselt erineva sõnajärgiga.

Kurdi õpilase koodimuutuse tase sõltus kõige enam sellest, mil määral õpetaja koodi muutis. Koodimuutuse peamine funktsioon õpilaste seas oli lauseosa rõhutamise, kuid koodi muudeti ka huumori ja keelemängu eesmärgil. Lausungites, kus koodimuutuse funktsiooni määramine osutus keeruliseks, analüüsiti vestlust vooru vooru järel (Auer 1995).

Võtmesõnad: sotsiolingvistika, bimodaalne kakskeelsus, koodivahetus, koodisegunemine, eesti viipekeel

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