Miodrag Stankovski

THE DEVELOPMENT OF THE SERBOCROATIAN/CROATIAN SOUND SYSTEM IN THE SPEECH OF THE CHILD D10.03 IN THE JUBA-CORPUS

1.0
The aim of this article is to investigate the phonetic development and the stabilization of the "home language" phoneme repertoire in the speech of the child D10.03 stored in the Archive for Diaspora Language during the years 1981-1984.

On the basis of the process of stabilization we shall try to show whether an implicative system of rules concerning the order of phoneme stabilization exists in the speech of this child, who had an extremely unstable phonological system between the ages of 10.5-13 years.

The basis of this case study is text files under the personal code D10.03. The following texts are available: retellings of the story "One can never please the world", retelling of the story "The wolf and the fox" and texts produced from a visual stimulus, i.e. a picture of a family picnic. All of the texts were gathered during three test periods in 1981, 1983 and 1984.

The computation of the phoneme manifestations has been done with the program "CZOUNT" (concerning this program, see M. Stankovski: "The Obstruents in the Phoneme Systems and their Destructions in the D07. population in the Archive for Diaspora Language", Slavica Lundensia 11, Lund 1987, forthcoming).

1.1
During the first testing the child was 10.5 years old and attended the 4th grade of primary school. The child was born in Sweden, and the acquisition of his mother tongue took place in a Swedish-speaking environment. He has participated in mother tongue tuition 2 hours a week during a period of 4 years. He uses his

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		lab	dent	alv	pal	vel
Expl	vls	p	t			k
	vd	b	d			g
Fric	vls	(f)	s	š		* x
	vd		z	ž		
Affr	vls		c	č	ć	
	vd			(ǯ)	ǰ	
sonor	nas	m	n		* ń	
	lat		l		* ĺ	
	vibr			r		
glide		v			j	

Fig 1. Consonant phonemes of D10.03 during 1981.

Expl	vls	p	t s Ø			k
	vd	b	d t r ǰ ɦ Ø			g
Fric	vls	( )	s cs c t š ɦ sš			* Ø
	vd		z s ž j	ž z j ǰ ɦ		
Affr	vls		c cs s ts t Ø	č ć c š ɦ	cs t	
	vd			( )	ǰ z č	
sonor	nas	m	n		* n	
	lat		l		* l	
	vibr			r		
glide		v			j	

Fig 2. Consonant allophones in the speech of D10.03, 1981.

mother tongue in communication with his parents while, as he declares himself, he mainly uses Swedish when speaking to the rest of the children in the family. Outside the family circle communication in his mother tongue appears during some infrequent visits of elder relatives and during summer vacations in Yugoslavia.

2.0

The analysis of the texts from 1981 exhibits the system of consonants presented in Fig 1. (* marks an empty place in the system; () marks that the phoneme never appears in the texts)

In Fig. 2 we compare this system of phonemes with the phoneme manifestations in the same text.

We can notice that among the obstruents two chains of phonemes are manifested with a stable number of allophones - the labial and the velar chains - while the dental, alveolar and palatal ones are rich in their physical variations. Against the dental and alveolar chains palatals show slightly smaller variation in terms of average numbers. "2,5" allophones for the palatals against "5,1" for the rest. The relation 1 : 2,5 : 5,1 for the labials/velars : palatals : dentals/alveolars indicates that the peripheral chains of obstruents, the labials and the velars are stabilized in comparison with the central chains, which are still not stabilized. In terms of Jakobson (R.Jakobson: "Fundamentals of Language", Janua linguarum 1, Mouton&Co., The Hague 1956.) the opposition acute : grave is functioning during this test period and it appears as though another differentiation, i.e. palatal : dental/alveolar is going take place.

A statistical view of the correct and incorrect manifestations looks like this:

	% correctly manifested	% incorrectly manifested
labials/velars	100	0
dentals/alveolars	41.3	58.7
palatals	12.5	87.5

The palatals certainly have a high percentage of incorrect manifestations, but on the other hand, as was previously pointed out, the average value of the patterns is lower when compared to the same values for dentals and alveolars.

2.1
Fig. 3 presents the phoneme system of the texts 1983. Compared with the previous sample from 1981, we can notice only the the appearance of the phoneme /x/ in the system, a development towards the standard.

The table of the phoneme manifestations in the same sample (Fig 4.) shows further stabilization among the palatals. The phoneme /ć/ is manifested with one allophone [ć] and only /ǯ/ is manifested with four allophones [ǯ], [c], [ʒ] and [z]. The relation lab/vel : pal : dent/alv in an average number of manifestations is 1 : 7,2 : 2,5 which again points to a further stabilization of the palatals.

The statistical view of correct and incorrect manifestations is as follows:

	% correctly manifested	% incorrectly manifested
labials/velars	100	0
dentals/alveolars	47.2	52.8
palatals	75.0	25.0

2.2
Figs. 5 and 6 display the phoneme system which we established in the texts from 1984 and the manifestations of the phonemes in these texts.

No dramatic changes appear. The phoneme /x/ is manifested as [Ø], probably a dialectal feature (Fig 6.). The alveolar /ž/ through all this sample is manifested as [z] and [Ø] (Fig 6.). The relation lab/vel : dent/alv : pal in an average number of manifestations is 1 : 3,1 : 2,5.

The statistical view of correct and incorrect manifestations during 1984 shows:

	% correctly manifested	% incorrectly manifested
labials/velars	100	0
dentals/alveolars	50.4	49.6
palatals	62.5	37.5

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sonor	nas	m	n		* ń	
	lat		l		(ĺ)	
	vibr			r		
glide		v			j	

Fig 3. Consonant phonemes 1983.

Expl	vls	p	t			k
	vd	b	t c d g			g
Fric	vls	( )	c t s č	š c s č Ø		h Ø
	vd		z ǵ	ž z d		
Affr	vls		c t cs	č c s t š ć	ć	
	vd			( )	ǵ ǯ c z	
sonor	nas	m	n		* n	
	lat		l		( )	
	vibr			r Ø		
glide		v			j	

Fig 4. Consonant allophones 1983.

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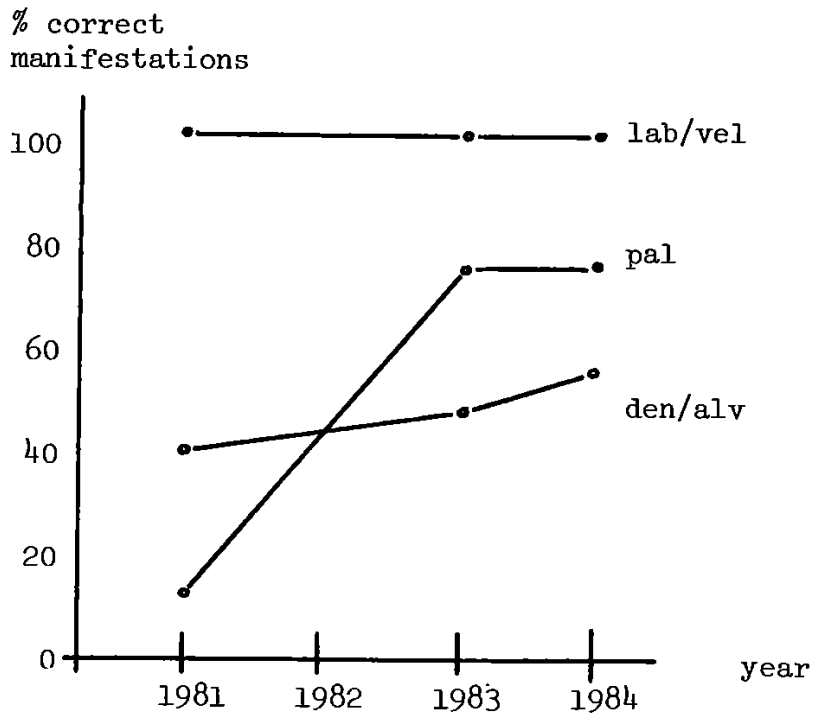
Fig 5. Consonant phonemes 1984.

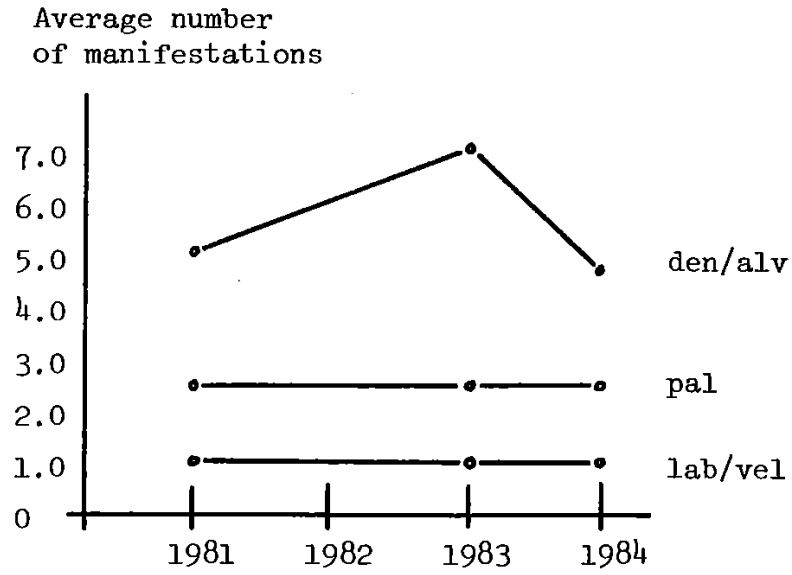
Expl	vls	p	t			k
	vd	b	d			g
Fric	vls	( )	s c cs t ć ɧ	š s ć ɧ		* ø
	vd		z ʒ	z ø		
Affr	vls		c cs t	č c ć š ɧ	ć c	
	vd			( )	ǰ z č	
sonor	nas	m	n		* n	
	lat		l		( )	
	vibr			r š		
glide		v			j	

Fig 6. Consonant allophones 1984.

2.3
The development of the obstruents shows the following tendencies in terms of correct manifestations:



And in terms of an average number of manifestations:



Two conclusions appear reasonable to me:

a) The development of the "central" group dent/alv is more retarded than the development of the palatals.
b) Stronger stabilization implies a lower average number of allophones per phoneme.

2.4

Some special individual rules concerning the manifestations of the dentals */s/* and */c/* are interesting to follow during this period of three years.

During 1981 the child's incorrect manifestations of the phoneme */s/* show the following structures: */s/* is manifested with incorrect allophones in medial and initial, never in final, positions.

/s/	position			total	%
alloph.	init.	med.	fin.	number	
[s]	28	12	1	41	66.1
[c]	0	1	0	1	1.6
[cs]	0	8	0	8	12.9
[t]	0	3	0	3	4.8
[š]	2	4	0	6	9.7
[čš]	0	1	0	1	1.6
[ʒ́]	0	1	0	1	1.6
				Total:	100

Fig 7. Manifestations of */s/* by D10.03 during 1981.

If we examine the incorrect manifestations of */s/* in medial position we find:

nocsi*nosi (106)
nocsio*nosio (159)
pocsje*pos(l)ě (158, 161, 19, 108, 113, 40, 332, 125)
kocsu*kosu (369)

(The numbers in paranthesis are the running numbers of the actual words in the text from the test year in question.)

licsica*lisica (212)
licsicsa*lisica (317)
licsia*lisica (321)
liticsa*lisica (217)
litica*lisica (220, 281)

The remaining two are /s/ in initial position:

š-*sa (probably the preposition "with") (343)
šedu*sědu (dialectal form av sěde) (397)

and one in medial position:

puʒe*puste (125).

All these incorrect manifestations can roughly be divided into two types of distribution:
/s/ preceding a vowel (/s/V) and
/s/ preceding a vowel followed by a syllable containing a morphophonological (c).

In the latter case the manifestation of /c/ is irrelevant to the /s/ manifestations. During this year there appears only one lexeme showing this innovation - lisica. /s/ -> [š] (in 343 and 397) could then be explained as belonging to the first distributional type. The last example /st/ -> [ʒ] (125) could have to do with the regional varieties where a st//št alternation is common.

2.4.1
The incorrect manifestations for the phoneme /c/ also show some interesting features:

/c/ alloph.	position init.	med.	fin.	total number	%
[c]	0	3	1	4	10.0
[cs]	1	10	12	23	57.0
[s]	9	2	1	12	30.0
[ʒ]	0	1	0	1	2.5
				Total:	100

Fig 8. Manifestations of /c/ by D10.03 during 1981.

In nine of ten cases /c/ in the initial position is manifested as [s], and once as [cs] (i.e the fricative part is longer than it should be). We can perhaps see a rule based on the distribution of the phonemes in Swedish.

The Swedish language lacks the combination /ts/ in initial position, while /s/ is normal there. The loan word tsar (graphically) is pronounced [sa:r]. So the total amount of /c/ in initial position is manifested accordingly:

csurica*curuca	(236)
s-*cvět	(383, 385)
suricsa*curica	(365)
suricsom*curicom	(344)
suricsu*curicu	(346)
svie-csu*svěću	(384)
sviecsa*cvěća	(386)
sviecse*cvěće	(390)
sviecsu*cvěću	(387)

The allophone [cs], which actually consists of an occlusion and a prolongated friction, could psychologically be felt as [ts], which in its turn again points to the Swedish distribution of the phonemes. The phoneme sequence /ts/ in Swedish is possible in medial and final position. So /c/ found in these positions is accordingly manifested once again.

2.5

The development of the manifestational rules concerning /s/ during the next two test periods is shown in Figure 9:

1983

/s/ alloph	position init.	med.	fin.	total number	%
[s]	21	9	0	30	83.8
[c]	1	2	0	3	8.1
[tc]	0	2	0	2	5.4
[č]	1	0	0	1	2.7
				Total:	100

1984

/s/ alloph	position init.	med.	fin.	total number	%
[s]	32	26	0	58	85.3
[c]	0	2	0	2	2.9
[cs]	0	1	0	1	1.5
[t]	0	2	0	2	2.9
[š]	3	1	0	4	5.9
[šš]	0	1	0	1	1.5
				Total:	100

Fig 9. Manifestations of /s/ by D10.03 during 1983 and 1984.

In the examples from 1983 which are:
cve*sve (210)
čedi*sědi (256)
in initial position and
licica*lisica (198, 203)
litcica*lisica (141, 144)
in medial position, we can see a development in which the rule of /s/ preceding a vowel (see 2.4) has disappeared and only the rule of /s/ preceding a vowel followed by a syllable containing a morphophonological (c) is still functioning. However, it occurs in these texts only in a single lexeme, i.e. "lisica".

The examples from 1984 show almost exactly the same situation:
štari*stari (30)
šjedi*sědi (42, 91)
in initial position and
licica*lisica (252)
licsica*lisica (255)
litica*lisica (159)
mjetec*měsec (200)
confirming the rule of the morphophonematic (c).

There are only three examples left which do not fit into the picture:

zencka*ženska (317)
poše*pos(l)ě (20)
pošše*pos(l)ě (91)

2.5.1
The development of the manifestational rules for /c/ during the period 1983-1984 (Fig. 10) also shows the same tendencies as for 1981, but this time we can see that the stabilization is taking place where Swedish allows the sequence /ts/, i.e. in medial and final positions.

1983

/c/ alloph.	position init.	med.	fin.	total number	%
[c]	0	6	2	8	53.0
[cs]	2	2	2	6	40.0
[ts]	0	1	0	1	6.7
				Total:	100

1984

/c/ alloph.	position init.	med.	fin.	total number	%
[c]	1	12	8	21	77.8
[cs]	0	0	2	2	7.4
[s]	2	0	0	2	7.4
[ts]	0	0	1	1	3.7
[t]	0	0	1	1	3.7
				Total:	100

Fig 10. Manifestations of /c/ by D10.03 during 1983 and 1984.

The examples from 1983 are:
csuricsa*curica (223, 236)
in initial,
csuricsa*curica (223, 236)
magaratse*magarace (133)

in medial, and
magaracs*magarac (10, 87)
in final position.

Examples from 1984:
surica*curica (274, 321)
in initial, and
magaracs*magarac (12, 61)
magarat*magarac (44)
magarats*magarac (6)
in final position.

3.0
Apart from the obstruents, the system of sonorants is behaving differently. The palatal chain there is the most unstable part. If we look at the sonorants during the same period (1981-1984) in Figures 1, 3 and 5, we notice that they have been completely substituted with their dental counterparts - /ń/ is always manifested as [n] and /l'/, when it appears, is manifested as [l]. At this moment it is difficult to judge whether it is a result of dialectal influence upon the acquisition process or perhaps an influence from the Swedish environment. Further investigations in other children's texts will be necessary in order to answer such questions.

4.0
This extremely retarded process of acquisition of the "home language" shows some clear tendencies. One is that the stabilization of the obstruent system runs from the "borders" towards the central parts of the system. It seems as if the stability of the system is based on two fundamental chains: the labial one and the velar one. Another tendency is that this process seems not to affect the sonorants. The archived material is still too small to throw light upon some other implicational rules in the speech of this child.

This opens some new questions - for example: Are these processes general or are they perhaps typical only of Serbocroatian/ Croatian? To what extent is the structure of the Swedish language, surrounding this idiolect, "correcting" the processes?

The answers may be hidden in the rest of the Archive for Diaspora Language waiting for further investigation.