THE ACQUISITION OF POLISH FRICATIVES AND AFFRICATES BY CHILDREN LIVING IN SWEDEN.

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0.1 At present about 30,000 people of Polish origin live In Sweden, 3,000 of whom are school-age children. This number of Polish-speaking children includes first generation immigrants, i.e. children born in Poland as well as second generation immigrants, i.e. those born in Sweden either of Polish parents or of mixed marriages.

1.

0.2 Research on the language development of immigrant children in Sweden has been very scanty so far. In fact, the only extensive investigation in this field is the longitudinal studies of Serbo-Croatian-speaking children carried out by the Slavic Department of Lund University within the research project JUBA (now called Arkiv för diasporaspråk).

The Slavic Department has also stored tape recordings of the Polish language spoken by immigrant children in Sweden. These recordings - so far comprising about 30 informants - were primarily intended as a teacher-training aid for the Haimo School of Education. The recordings and transcripts were made by Polish students and utilized within the curriculum of the 'home language" teacher programme. Subsequently, the transcripts have been scrutinized once more by the author of this report. The texts coneist mainly of spontaneous monologues and comprise 300-1000 words from each informant. The selection of informants was not fully random. Due to didactic considerations, only informants with evident deviations from standard Polish have been recorded. Informants whose fluency was so poor that it would have been difficult to make a recording have not been taken into consideration. Hence the texts cannot be considered a fully representative sample of the language spoken by Polish children in Sweden.

Nevertheless this minicorpus of Polish diaspora language displays a scale of language ability ranging from informants with an essentially correct language interspersed with syntactic, lexical and

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phraseological Interference features to informants with severe deviations in phonology and morphology.

1.1 Experience fron teaching Polish as a second language proves unambigously that the following oppositions in the Polish phonological system are the most troublesome for a Swedish learner:

1) dental : alveolar : palatal

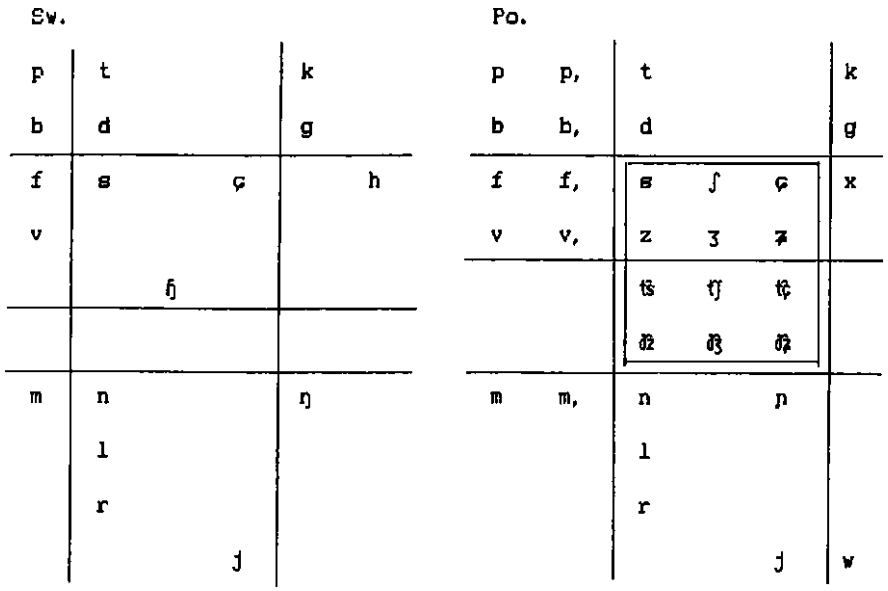
2) fricative : affricate

and

3) voiced : unvoiced (with regard to phonemes for which 1) and 2) are relevant).

The problem of non-labial fricatives and affricates is not unique

Fig. 1 Swedish and Polish consonant phonemes. 1>



Sw. /fj/ is a labialized fricative with a point of articulation that fluctuates from alveolar to velar.

Sw. /h/ is a laryngal fricative.

to Swedish learners. Even a cursory glance at our Polish minicor-pus shows that about one third of the diaspora children have evident difficulties with this fragment of the Polish consonantal system. In this report we will give detailed information about the way seven of our informants substitute these phonemes.[2]

1.2 A comparison of the Swedish (Sw.) and Polish (Po.) consonant systems shows quite clearly why the three Po. phonological contrasts mentioned in 1.1. cause problems for speakers with a Sw. background (cf. Fig. 1).

In what follows, we are going to deal with the framed phonemes only. Hence there is no reason for us to comment upon certain well-known controversies in the phonological description of Polish, e.g. a mono- vs. biphonemic interpretation of palatalized labials. The statue of the twelve framed Po. phonemes seems to be unquestionable.

1.3. Sw. differs from Po. in having no affricates. The articulator y complex Cts] is considered to be biphonemic - moreover tt] and Ce] are always separated by a morpheme boundary, at least diachronically.

The opposition voiced : unvoiced is not relevant for Sw. fricatives with an articulation point comparable to that of Po. */s : S :G/.*

Last but not least, the Sw. non-labial fricatives constitute a binary system as opposed to the Po. trinary one. It is true that Sw. also has the fricative /fi/, but its characteristic labialization makes the identification of it with any one of the Po. consonant phonemes rather unnatural. This implies that linguistically naive Sw. speakers generally substitute orally perceived Po. /J'/ with [si, not with [fj] - the same holds for the adaptation of many loanwords from languages with phonemes of the /S/-type.

1.4. The data concerning the substitutions of the twelve Po. phonemes in question by the chosen informants has been compiled in appendices 1-7.
Each appendix contains -
- a matrix depicting the realizations of each phoneme (the symbol в) and quantitative specifications in case of alternative realiza-

tions

- a tabular display of 1) phoneme which definitely belong to the speaker's system (transcription symbols without brackets), 2) phonemes which at the moment of recording existed potentially but were not yet stable, (symbols in brackets) and 3) the substitutions of phonemes (arrows).

Before making up the table, all incorrect phoneme realizations which appear only once in text were eliminated in order to reduce the bias of slips of the tongue.

The first two digits of the individual code of the informant indicate the age, eg. 07.01 is 7 years old.

2.1. Informants 07.01. 08.02. 09.02 (app. 1-3)

These three informants have almost identical phonological systems. They have acquired only four of the phonemes in question:

/ɕ/ /ɕ/

/z/ /ʐ/

The substitution of the phoneme /ɕ/ in some instances by [s] can imply that the opposition dental : non-dental has been mastered recently.

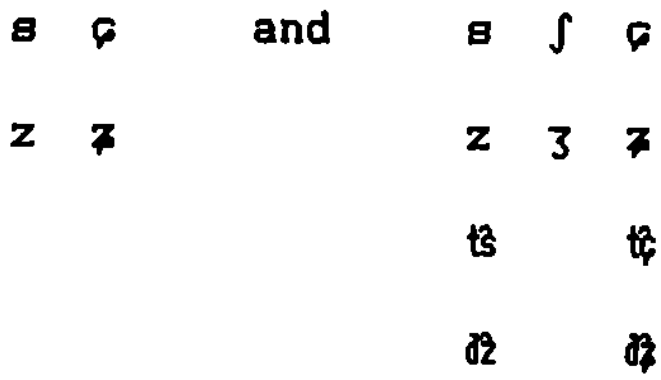
It is striking that the palatal affricates are never represented by dentals, but by palatal fricatives. The alveolar phonemes are mostly substituted by dentals, seldom by palatals. Only informant 09.02 displays an equal number of palatal and dental realisations.

The dental and palatal affricates are represented consistently by fricatives with analogous points of articulation and voicing. Some sporadic correct realizations /S/->[S], /ʒ/->[ʒ], /tɕ/ -> [tɕ]indicate that all three informants have entered the first stage of acquiring the oppositions palatal : alveolar and stop : affricate. The material is, however, not sufficient to allow us to establish whether one of these oppositions is prior to the other.

It is amazing that informant 07.01 - in accordance with the lack of alveolers - substitutes /tj/ by / ʦ /, i.e. by an affricate. The informent produces the segment in question but is not able to assign the relevant function to it - an expected / ʦ / always

appears as fricative [s]. The only segment [S] found in the text represents the phoneme */tj/* and not /S/.

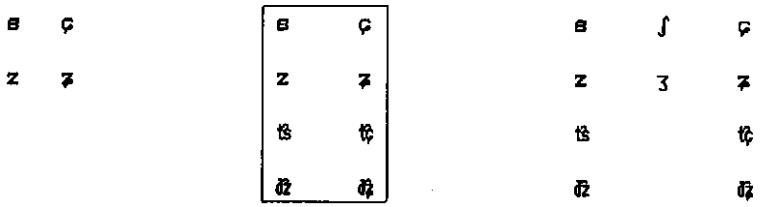
No doubt informants 07.01, 08.09 and 09.02 represent the same stage of phonological development, namely an intermediate stage between the model



2.2. Informant 07.02 (app. 4)

This informant has already fully acquired the oppositions dental : non-dental and stop ! affricate, whereas the opposition dental : alveolar is still fairly unstable. Alveolar phonemes are often substituted by dentals, sometimes also by palatals. The two established chains of phonemes - dental and palatal - exhibit the same degree of stability.

In our opinion, informant 07.02 represents a model which could be regarded as a link between the two mentioned above:



07.02

Such an interpretation would give a preliminary hint that the opposition stop : affricate is prior to the opposition dental : alveolar.

2.3. Informant 09.01 (app.5)

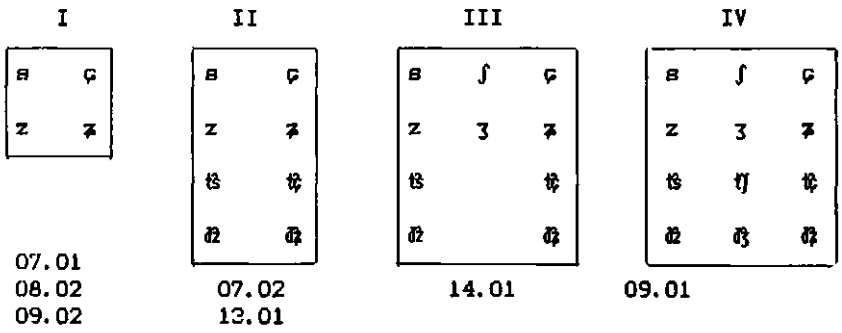
All 12 phonemes in question have already been acquired by this informant. However, the realisation of alveolare and palatals is

not entirely consistent - alveolare are sometimes substituted by dentals (/(J/ often by palatal (/tj/ and palatals by alveolare.

The phoneme inventory is basically complete but not quite stable. The fact that */tj/* -> [tc] -> the most frequent deviation supports our hypothesis that the acquisition of the phonemes /tj dʒ/[3]
last stage towards complete mastery of the consonantal system. Those two phonemes are the marked exponents of both of the crucial oppositions examined in this report.

2.4. Informants 13.01. 14.01 (app. 6-7)
These two informants - both considerably older than the preceding ones - have fully acquired both the dental and the palatal chains of consonants, including the contrast between fricatives and affricatives. However, 13.01 exhibits a total and 14.01 a partial lack of alveolare. The alveolare are consistently substituted by analogous dentals. The situation makee one think of mazurzenie, a dialectal feature, widely spread in Poland, which could no doubt be transferred from parents to children also in diaspora. However, mazurzenie - the substitution of Standard Polish alveolare by dentals - never afflicts those /ʒ/ and /S/ which historically originate from palatalized */R,/*.. But in text 13.01 and 14.01, the dentals occur as substitutions of alveolare regardless of their diachronic status [4]). hence the lack of alveolers represents a Btage in phonological development and not a stable dialectal model.

3. The minicorpus of Polish diaspora child language thus reveale four different structures as regards the non-labial fricative and affricate phonemes:



The remaining school-age informants in the minicorpus not presented here represent either an intermediate stage between III and IV (2 informants, 11 and 15 years old) or Hödel IV (11 informants). Some of the informants in the latter group exhibit sporadic vacillation between the dental, alveolar and palatal chains of consonants of the same type as 09.01.

The low correlation between age and degree of phonological development is striking. A 9-year-old pupil can exhibit every stage between the very rudimentary four-phoneme model, quantitatively not exceeding what is normally mastered in a natural Polish environment at the age of 2 years[5], up to a full-fledged consonant system. The discrimination of the three chains - dental : alveolar : palatal -, which is mastered by most pre-school children in Poland, can be severely disturbed as late as the teens.

Of course, we ought not to yield to the temptation of regarding these four models as four subsequent stages that diaspora speakers regularly pass through. Such a view should rather be considered a hypothesis for further checking based on diachronic materials, i.e. repeated recordings of the same informants during a long time. At present it would be too hasty to assume that an informant who at the age of 9 still has the rudimentary Model I can be expected to acquire a full-fledged phonological system of type IV. Diachronic studies will be necessary to cast light upon the important question of what degree of retardation is crucial for the survival of the language ability. In other words, does the rudimentary Model I preserved by one of the informants at the age of 9 ever develop into a complete system?

4.1. A comparison of our observations with the Sw. phonological system gives an unexpected result on some important points. We have already mentioned that Sw. lacks the opposition voiced: unvoiced in the section of the consonantal system in question. The difficulties in secondary language learning arising from that fact are well-known to students of Slavic philology as well as to school-children learning English or German.

Nevertheless, we have not registered any lack of voicing in the recordings of the seven Po. informants. Voiced phonemes are always substituted by voiced segments and unvoiced by unvoiced, regardless of other deviations on the phonological level. The weak functional load of voicing in the surrounding Sw. language does not affect the consonantal system of Polish diaspora children.

4.2. It also seems that the implicational order of the phoneme acquisition in this specific diaspora situation differs from that which has been observed in the genuine Polish environment.

The data at our disposal - although rather scarce - show that in natural conditions Polish children master the opposition fricative: affricate earlier than the differentiation with respect to the point of articulation.

Zarębina (1965:17,31) observed that at the age of 2.3 her main informant had a consonant system including[6]:

p p, b b, t d k c g ɟ t͡s, d͡z, f f, v v, s, (ɕ) z x m m,
n ɲ (r,) l w j

Thus she had only one (slightly palatalized) dental chain of fricatives and affricates (and just a slight tendency to distinguish /s/ and /c/.

At an earlier age - 1.6 - the same informant had the consonants[6]

d n m t b s, t͡s, p d͡z, ɲ k x g l f z, v

She had already established the opposition fricative : affricate but still showed no traces of the phonological contrast dental : non-dental.

From references made by Rocławski (1981:114f) to studies by Bartkowska we learn that 3 year-old children with minimal communicative ability have one chain of fricative and affricative phonemes namely /c z t͡cdž /(palatals), but lack the chains /s z t͡š dž/ (dentals) and // S ʒ tj dž(alveolers). These data give sufficient evidence that Polish children normally develop affricates earlier than the trinary (or even a binary) opposition with respect to the point of articulation.

In our diaspora study Model I (and to some extent Model III) as presented in 3. is contrary to the data from Poland. In retarded language acquisition in Swedish environment the differentiation of fricatives with respect to point of articulation seems to precede the acquisition of affricates. In our opinion the only factor responsible for this can be the Swedish phonological environment. As we pointed out in 1.2., Sw. has no affricates, hence produces a delay or loss of the affricates in the Polish system. On the other hand, Sw. has a binary fricative opposition */ɕ* : c/ and the analogous development in Po. is not hampered on that point.

As a preliminary hypothesis to be checked on more extensive material ve vould propose a different ordering in the acquisition of phonological contrasts:

Natural Polish environment:	Swedish diaspora:
unvoiced: voiced	unvoiced : voiced
fricative : affricate	palatal: non-palatal
palatal: non-palatal (i.e. dental)	fricative : affricate
dental: non-dental (i.e. alveolar)	dental: non-dental

Further investigation ought to establish whether the considerable delay in the development of three chains of consonants exhibited by some informants is also caused by the Sv. binary fricative opposition.

4.3. What has been presented here brings to mind a notion introduced by Stankovski in a study of phonological reduction processes in the speech of Serbocroatian-speaking children in Sweden (Stankovski 1978). The common features of Sw. and Serbocroatian have there been labeled "the inter-section system" (sistem prisje-ka) and suggested as a goal model for the reductions taking place under diaspora conditions.7) Our Hödel I is identical to that "inter-section" of Sw. and Po. non-labial fricatives/affricates plus the phonological feature voicing which, albeit irrelevant in this part of the Sw. phonological system, has elementary status in Sw. by way of the phoneme chain /p:b t:d k:g/.

Notes

1) The use in these tables of identical IPA-characters for Sw. and Po. phonological units implies only that the physical correlates of these phonemes are similar and does not mean that they have the same phonological system properties.
2) This report is a slightly extended version of a paper read at the Polish-Swedish conference on Variants of Contemporary Polish held Sept. 25-28th, 1986 in Jurata, Poland.
3) Our references to the phoneme */dž/* must be taken with some caution. Its frequency in Po. is extremely low, and spontaneous speech can hardly provide sufficient proof of the child's acquisition of it.
4) Examples of historic (r,/ in 13.01: rzeki Czeci], drzewo [đhvo], krześle Ckseçle], przysli [psisli], ugrzejesz [ugzEJEs], potrząsnąć [pofensnoptç], etc.

5) Cf. Zarębina (p. 17) who established for the age of 1.6 a consonantal system with four non-labial fricatives/affricates - which however do not exhibit the same distinctive features as the phonemes of our Model I.
6) For the sake of consequence we quote the lists of phonemes in IPA-transcription. Cf. in Zarębina's original text with the Slavic transcription^ mode: (age 2.3.) 'p, p, b, 6, t, d, k, It, g» 0/ o', j', f, f, v, v, s', (ś), z, x, m, A, n, Л, (f), 1, 1 (właściwe u), j (właściwie j)" (p.31) and (age 1.6.) 'd, n, m, t, b, s', "c', p, 3', ń, k, x, g, 1, f, z', v" (p. 17).
7) However, we would not include Sw. /// </)) into this inter-section system of reasons mentioned in 1.3.

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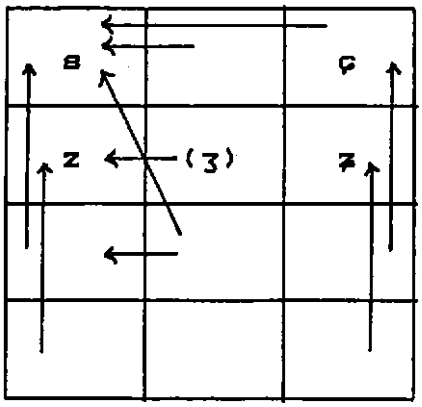
Appendix 43

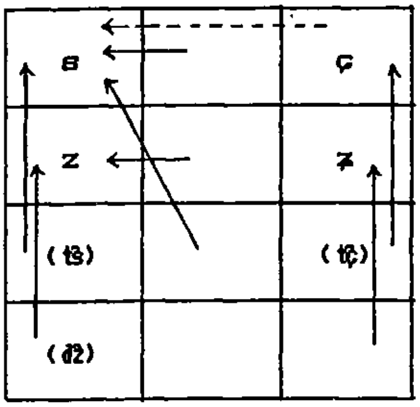
	/s/	/z/	/ɕ/	/ʑ/	/ʂ/	/ʐ/	/tɕ/	/dʑ/	/tʂ/	/dʐ/	/tɕ/	/dʑ/
[s]	θ		θ		θ^{21}		θ^{11}		θ^{4}			
[z]		θ		θ		θ^{3}						
[ɕ]							θ^{4}					
[ʑ]												
[ʂ]							θ^{1}					
[ʐ]						θ^{2}						
[tɕ]												
[dʑ]												
[tʂ]					θ^{1}		θ^{1}		θ^{10}		θ^{12}	
[dʐ]						θ^{1}				θ^{2}		θ^{10}
[tɕ]											θ^{1}	
[dʑ]												θ^{1}



Informant 07.01

Appendix 44

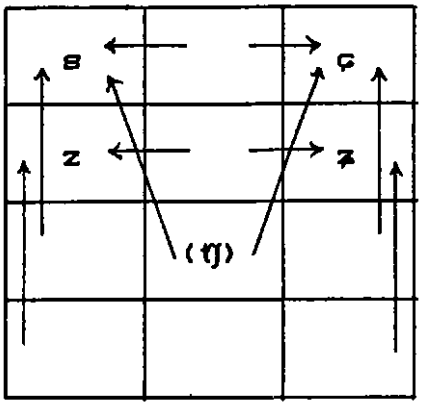
	/s/	/z/	/t̂s/	/d̂z/	/ʃ/	/ʒ/	/t̂ʃ/	/d̂ʒ/	/ç/	/ʑ/	/t̂ç/	/d̂ʑ/
[s]	θ		θ^{7}		θ^{14}		θ^{3}		θ^{2}			
[z]		θ		θ^{2}		θ^{12}						
[t̂s]			θ^{2}				θ^{1}					
[d̂z]				θ^{2}				(θ^{2})				
[ʃ]					θ^{1}							
[ʒ]												
[t̂ʃ]												
[d̂ʒ]												
[ç]							θ^{1}		θ^{20}		θ^{8}	
[ʑ]										θ^{2}		θ^{11}
[t̂ç]											θ^{3}	
[d̂ʑ]												θ^{1}



Informant 08.02

Appendix 45

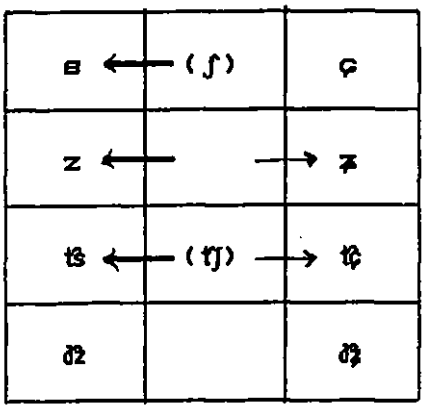
	/s/	/z/	/ʂ/	/ʐ/	/ʃ/	/ʒ/	/ɕ/	/ʑ/	/ʧ/	/ʤ/	/ʈʂ/	/ɖʐ/
[s]	θ		θ		θ^{7}		θ^{2}		θ^{1}			
[z]		θ		θ^{1}		θ^{9}		θ^{1}				
[ʂ]			↘									
[ʐ]				θ				θ^{1}				
[ʃ]					θ							
[ʒ]						θ						
[ɕ]							θ					
[ʑ]								↘				
[ʧ]					θ^{5}		θ^{4}		θ		θ^{9}	
[ʤ]						θ^{4}				θ		θ^{4}
[ʈʂ]											↘	
[ɖʐ]												θ



Informant 09.02

Appendix 46

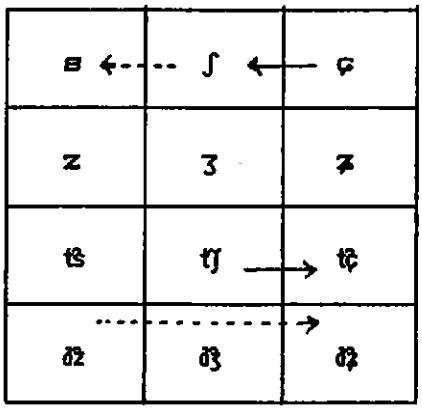
	/s/	/z/	/ʦ/	/ʤ/	/ʃ/	/ʒ/	/ʧ/	/ʝ/	/ɕ/	/ʑ/	/ʨ/	/ʥ/
[s]	θ				θ^{19}							
[z]		θ				θ^{12}						
[ʦ]			θ				θ^{30}					
[ʤ]				θ^{1}								
[ʃ]					θ^{2}							
[ʒ]												
[ʧ]							θ^{8}					
[ʝ]												
[ɕ]									θ^{12}			
[ʑ]						θ^{3}				θ^{2}		
[ʨ]							θ^{7}				θ^{10}	
[ʥ]								(θ^{1})				θ^{23}



Informant 07.02

Appendix 47

	/ɕ/	/ʑ/	/tɕ/	/dʑ/	/ʃ/	/ʒ/	/ʧ/	/ʤ/	/ʂ/	/ʐ/	/ʈʂ/	/ɖʐ/
[ɕ]	θ				θ^{2}							
[ʑ]		θ										
[tɕ]			θ								θ^{1}	
[dʑ]				θ^{4}								
[ʃ]					θ^{27}				θ^{4}			
[ʒ]						θ^{7}						
[ʧ]							θ^{5}				θ^{1}	
[ʤ]								θ^{2}				
[ʂ]									θ^{8}			
[ʐ]												
[ʈʂ]							θ^{7}				θ^{10}	
[ɖʐ]				θ^{1}								θ^{20}



Informant 09.01

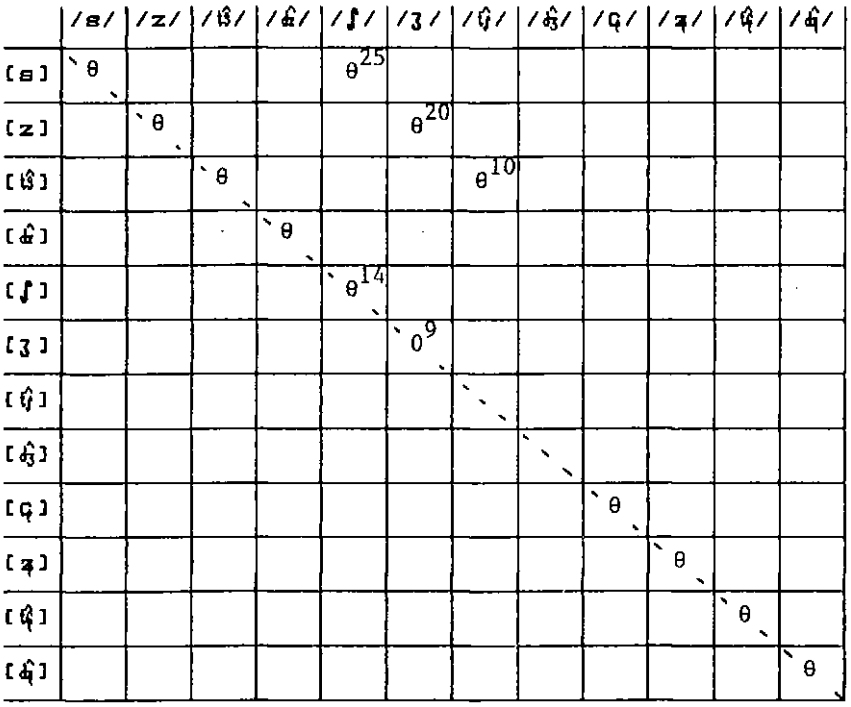
Appendix 48

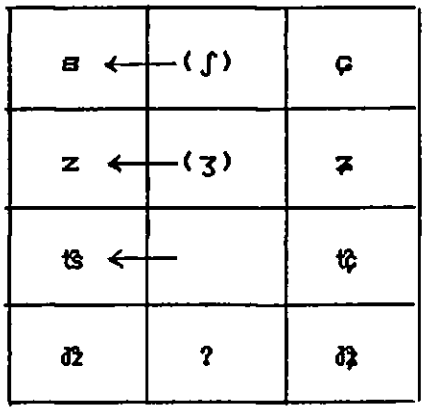
	/s/	/z/	/ʃ/	/ʒ/	/ʧ/	/ʤ/	/ɕ/	/ʑ/	/ʂ/	/ʐ/	/ʨ/	/ʥ/
[s]	θ				θ							
[z]		θ				θ						
[ʃ]			θ				θ					
[ʒ]				θ				θ				
[ʧ]					θ							
[ʤ]						θ						
[ɕ]							θ					
[ʑ]								θ				
[ʂ]									θ			
[ʐ]										θ		
[ʨ]											θ	
[ʥ]												θ

s ←		ɕ
z ←		ʑ
ʦ ←		ʨ
ʣ ←		ʥ

Informant 13.01

Appendix 49





Informant 14. 01