

Phonological Interferences in the Third Language Learning of Swedish and German (FIST)

Robert Bannert

Department of Philosophy and Linguistics, Umeå University

Abstract

In general, the teaching of pronunciation has no high priority. This is also true of the beginner courses of German and Swedish at the academic level. A tailored pronunciation programme must be constructed upon empirically founded knowledge about the difficulties the learners encounter. A large material of both target languages compiled during three terms from approximately 30 students per language will be collected in the data base FIST and all deviations from the pronunciation norm will be marked systematically. Thus quantitative statements about the learning problems will be possible. Difficulty profiles are obtained for each individual, each group and each text type.

Introduction

In second language learning research of adults it is agreed that in the area of phonology and phonetics a clear negative transfer, interference, can be observed. This is due to the influence of the first language (L1). However, this is not the only reason for foreign accent; interlanguage, too, plays an important rôle. Only recently research has paid attention to the special case of learning in a multiple language setting.

A few years ago, beginner courses in German were introduced at the academic level in Sweden. In the German speaking countries, due to a long tradition, beginner courses in Swedish attract many students. For both groups, the teaching of pronunciation is allotted only a small amount of time. As a consequence of this, the learners' target language is characterized by a strong accent which in most cases becomes fossilised. In order to prevent this, a pronunciation programme should be constructed that is tailored just for the special preconditions of the learners, namely their first language (L1) and the multiple contexts: all learners have already learned at least one foreign language. An extraordinary challenge lies in the fact that German and Swedish are linguistically very close to each other. Therefore it should be rather easy to help the learners to a good pronunciation right from the start.

Aim

The aim of the project is to study the pronunciation problems of the students. The following questions, among others, will be answered:

- (1) What role does the first language (L1) play for the learning of the target language's pronunciation? Special concern will be given to each learner's dialect or regional variety of the Standard languages.
- (2) What role does the pronunciation of the second or third language play?
- (3) Which phonological and phonetic targets are easy and which are difficult related to the structural similarities in both languages?
- (4) Which interplay between the various difficulties is to be discovered? Which implications can be observed?

The answers to these questions will constitute the scientific basis on which new and well adopted learning material can be developed later by didactic and pedagogical experts for both language groups.

Research situation

Research on second language learning has centred around the question whether or not the first language affects the target language. Experience tells us that transfer and interference do occur when pronunciation, i.e. the learning of phonology and phonetics, is concerned. While the literature is abundant with studies of syntax and morphology, the learning of pronunciation has not been studied to a greater extent. Hammarberg has studied certain aspects of Swedish as a second language (1985, 1988, 1997). He (1993) made a study of third language acquisition investigating his co-author. Since the middle of the seventies, Bannert has done research on several aspects of learning Swedish pronunciation (1979a, b; 1980, 1984, 1990) and on the German sound systems and prosody (1983, 1985, 1999).

A large and extensive survey "Optimizing Swedish Pronunciation" (Bannert 2004) was carried out in the late seventies in Lund. Swedish being the target language, the pronunciation difficulties of 70 adult learners representing 25

first languages were studied. The survey included also German represented by three learners from different regions: Northern Germany, Bavaria and Switzerland.

Due to a grant from Vetenskapsrådet, it was possible to conduct several initiating pilot studies for the project. Recordings of students in Umeå and Freiburg were made and analysed. Students were interviewed about their introspection of their pronunciation difficulties and “Think-aloud” protocols were written. A demo version of the database (www.ling.umu.se/FIST) was programmed showing the labels to be used. Socio- and psycholinguistic background variables were collected. Thus the project is based on a secure and safe ground.

Theoretical approach

From long experience we know that phonological transfer is typical of the language learning processes, especially of adult learners. This characteristic phenomenon of foreign accent is caused by the phonological system, including orthography, of L1. However, with our student groups, interferences from L2 and L3 must also be responsible for the deviating pronunciation. Furthermore, contributions of the learners’ interlanguage (Selinker 1972) are to be expected. Therefore each deviating feature in the performance of the students will be coded. Each deviating sample in the speech signal will be labelled according to these codes. Thus it is easy to cross search the whole material and do a thorough inspection and statistics of the observations. This will allow us to make quantified statements about the learning processes.

Contrastive aspects

The phoneme systems of vowels and consonants, phonological processes are rather similar in both languages; however, prosody and the grapheme-phoneme relationships show some differences. Only the salient differences will be pointed out.

Vowels

Swedish: long [ɑ:] *gata* (street) and [ɯ:] *duk* (cloth), short [ɯ] *hundra* (hundred).

German: lax and short [ɪ, ʏ, ʊ] *Mitte* (middle), *Hütte* (hut), *Mutter* (mother), long [a:] *Vater* (father), diphthong [aʊ] *Haus* (house).

Consonants

Swedish: voiceless fricatives [ç, ʃ] *tjugo* (twenty), *sju* (seven), retroflexes [ʈ, ɖ, ʂ, ɳ, ʣ] *fort* (fast), *bord* (table), *mars* (March), *barn* (child), *Karl* (Charles).

German: voiceless fricatives [ç, ʃ] *Schuh* (shoe), *mich* (me), glottal stop [ʔ] *Theater* (theatre).

Prosody

Swedish: two word accents [acute, grave] *'bu-ren* - *'büren* (the cage - borne), focus accent manifested separately, complementary length of stressed vowel and consonant, stress pattern (speech rhythm)

German: short consonants, word accentuation, stress pattern (speech rhythm).

Phonological processes

Swedish: retroflexation of [r] + [t, ɖ, ʂ, ɳ, ʣ] across morpheme and word boundaries: *mer tid* (more time), *har du* (do you have), *när som* (whenever), *har nu* (have now).

German: final devoicing of [b, d, g] to [p, t, k]: *Sieb* (strainer), *Rad* (wheel), *Steig* (path); initial [s] to [z] *See* (lake); [s] to [ʃ] in consonant clusters initially: *Stein* (stone), *springen* (jump); voicing of medial [s] to [z]: *lesen* (read); deletion of unstressed [e] in endings -el, -en: *Himmel* (heaven), *Zeiten* (times); vocalisation of post vocalic [r] to [ʁ]: *Wasser* (water); assimilation of place of articulation of [n] to [m], [ŋ] after deletion of unstressed [e]: *Lippen* (lips), *Banken* (banks).

Grapheme-Phoneme-Relationships

Swedish: <o> signifies [u] and [o] *skola* (school), *sova* (sleep); <å> signifies always [o] *måla* (paint), *åtta* (eight); <g, k, sk> becomes palatalised to [j, ç, ʃ] *gift* (poison), *källa* (well), *skinka* (ham); initial <h> is not pronounced in <dj-, gj-, hj-, lj-> *djup* (deep), *gjuta* (pour), *hjul* (wheel), *ljuga* (lie).

German: <o> signifies always [o] *Sohn* (son), *Sonne* (sun); <z> signifies [ts] *Zahn* (tooth); final <b, d, g> become [p, t, k] (final devoicing): *Sieb* (strainer), *Rad* (wheel), *Steig* (path).

Pronunciation norms

The impression of foreign accent, to the greatest extent, is caused by segmental and prosodic deviations from the pronunciation norm of the target language. This is spoken with parts of the

phonology of the first language. The notion of norm, however, stands for a very complex phenomenon. In the pronunciation dictionaries for both languages, the correct pronunciation is given for isolated words spoken very distinctly. Phrase and sentence level perspectives (assimilation and elisions) are not dealt with nor are different speaking styles, speech rhythm and intonation.

Swedish: Standard (Stockholm) Swedish, described by Elert in Hedelin (1997). Problems: While Standard Swedish has an apical trill or fricative, Southern Swedish has an uvular trill or fricative and therefore no retroflex consonants. As three main Standard pronunciations are generally accepted in Sweden (Standard, Stockholm or central Swedish, Finland Swedish), both /r/-types are included in the norm. The /r/-type for each speaker is noted.

German: Standard German, described in the DUDEN (Umgangslautung, 2001). The r-sound is an uvular trill or fricative [R, ʀ]. Problems: The unstressed /e/ in the endings <-el, -en> is always dropped in conversational speech and sometimes in formal style too. This gives rise to certain assimilations of the nasal [n]. Postvocalic [R] is always vocalised.

Coding system

Each deviant pronunciation from the norms defined above, due to different causes, is labelled by a special mark, a code number, separately for each language. Code numbers are listed for different areas of interest: vowels, single consonants, consonant clusters, phonological processes, prosody, grapheme-to-phoneme relationships and use of first language forms. Although a number of deviations is identical in both languages, language users show a great variety of different labels. Most of the observed code numbers and their labels are presented below (results). The coding system allows different statistical treatments of the data, especially the quantifying of deviations. Thus it is possible to calculate each learner's profile of pronunciation difficulties, those for each kind of material: read aloud texts, descriptions of pictures and a narrative, for the male and female learners as sub groups and finally for all the learners together. This will be an important aspect and the basis for the construction of a self-going program for the learning of pronunciation.

Material, recordings and analyses

All the material recorded, except the short story, was well known by the students, it was covered during their lessons. The material consisted of three texts, two descriptions of pictures and one short story. A DAT-recorder was used. The recordings were fed into a computer and the analysis of the material was done audiotively, supported by the speech wave from the WaveSurfer program. The portion of analysed speech amounts to approximately 45 minutes for the Swedish learners and 35 minutes for the Germans.

Preliminary results

A representative choice of deviations for each group is shown in the following tables. Group results are presented according to their frequencies of appearance. Together with the code number and the frequency of appearance of each deviation, the target symbol and its replacement (deviation) is given.

Swedish

target	replacement	code	frequency
ɑ	a	S114	85
ɐ	ɛr	S308	83
ø	u	S110	47
Vɐ	Vr	S309	39
stressed syllable	wrong	S501	36
y ^s	y ^t	S104	33
Vr	0	S231	27
o	ɔ	S112	27
ʉ	y	S107	25
-d#	t	S302	23
ʉ	u	S108	18
u <o>	ɔ	S111	15
ø ^s	ø ^t	S105	14
j <g>	g	S409	11
-v#	f	S304	11
e	ɛ	S102	11
-b#	p	S301	10
V:	V	S116	10
V	V:	S117	8
ə	0	S305	7
h̥	ʃ	S213	6
ɔ <o>	u	S113	6
s	z	S212	5
sk	ʃ	S416	4
-g-	j	S415	4
å	a	S404	3

t	rt	S221	3
p ^h	p	S201	3
a	ɔ	S118	3
a	ɑ	S115	3
ø	y	S109	3
s/V _{pal}	ʃ	S418	2
ç/<k>V _{pal}	k	S408	2
-t-	tʂ	S236	2
-t-	d	S234	2
ŋ	rn	S223	2
ç	ʃ	S211	2
b	p	S204	2
e:	ej	S119	2
d	t	S235	1
-g-	0	S232	1
ʂ	rs	S224	1
ʃ <sk->	sk	S414	1
j	dʒ	S216	1

g/V _{pal}		T402	3
-er#	-er	T317	3
ʃ	x	T222	3
e:	εɐ	T111	3
Obstr +Voice	Obstr -Voice	T218	2
ʃ	s	T215	2
ç	x	T214	2
s	z	T212	2
a:	ɑ:	T112	2
-ieht	ç	T418	1
ie	ae	T415	1
ie	je	T414	1
-z-	ʃ	T223	1
ts	z	T220	1
-er	-r	T219	1
-ert	-et	T216	1
d	t	T209	1

German

target	replace- ment	code	frequency
"z-	s	T206	170
ɐ <-er>	-er	T308	147
-Vɐ	-Vr	T314	114
ç	ç	T203	113
-z-	-s-	T207	58
tʂ	s	T202	43
ʃC	sC	T304	35
V:	V	T104	35
y ^t	y ^s	T101	32
-t#	d	T302	27
-(e)l	-el	T306	24
C	C:	T505	15
V	V:	T105	15
e:	ε	T110	13
ʔ	0	T504	12
ø ^t	ø ^s	T113	12
ε/-r	æ	T102	12
-p#	-b	T301	11
ʃCC	sCC	T305	9
o:	ɔ:	T103	9
y	u	T411	8
-k#	g	T303	8
ç	x	T208	8
ü	u	T412	6
-ig/ç	g	T409	5
u	y	T405	5
stressed syllable	wrong	T501	4
rs	ʂ	T320	4
h	h	T413	3

Acknowledgement

The expert and skillful technical support by Thierry Deschamps is gratefully acknowledged.

References

- Bannert Robert. 1979a. Ordstruktur och prosodi. I: *Svenska i invandrarperspektiv*, pp. 132-173. Hyltenstam Kenneth (ed.). Lund.
- Bannert Robert. 1980. Phonological strategies in the second language learning of Swedish prosody. *PHONOLOGICA* 1980, pp. 29-33. Dressler W.U., Pfeiffer O.E. and Rennison J.R. (ed.). Innsbruck.
- Bannert Robert. 1984. Prosody and intelligibility of Swedish spoken with a foreign accent. *Acta Universitatis Umensis* 59, pp. 8-18. Elert Claes-Christian (ed.).
- Bannert Robert. 2004. *På väg mot svenskt uttal* (including CD-rom). Lund: Studentlitteratur.
- Bannert Robert. 1999. (with Johannes Schwitalla). Äusserungssegmentierung in der deutschen und schwedischen gesprochenen Sprache. *Deutsche Sprache. Zeitschrift für Theorie und Praxis* 4, pp. 314-335.
- Duden. 2001. *Aussprachewörterbuch*. Mannheim: Dudenverlag.
- Hedelin Per. 1997. *Norstedts svenska uttalslexikon*. Stockholm: Norstedts.
- Selinker Larry. 1972. "Interlanguage". *International Review of Applied Linguistics* 10, 209-