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THE VOCABULARY TEST

The vocabulary test consists of 50 pictures, representing 32 nouns
and 18 verbs, to be named in S/C and in Swedish. In order to find
a set of pictures identifying the exact lexemes desired, special
attention was paid to the fact that all the pictures must repre-
sent everyday situations, well known to even the youngest of chil-
dren. The pictures have been extracted from "Språklådan", Gudrun
Malmer, Norstedts.   ·

One can evaluate the vocabulary ability independently from the
grammatical structure. In the results of this test, we have not
considered the relations between the vocabulary ability and the
grammatical structure. Our present results have shown that the
grammatical structure does not develop in the same way as the
vocabulary ability, the latter being related more closely to age.

In order to store the results in the computer it was necessary to
assign numeric values to the answers. We valued the nature of the
answer on a scale from 0 to 3, (0 = unknown/no answer, 1 =
correct, 2 = close or within the right semantic field, 3 = wrong).
For certain words a number of fixed synonyms (or another word
covering the illustrated object or action) were considered correct
in the final summary. The following words were accepted as
correct:

In S/C   picture No. 4: krpa, peškir, ručnik, šugaman,
                        12: sat, ura, budilnik, budilica,
                        13: kajiš, kolan,
                        17: klas, klasje, žito,
                        24: korpa, kotarica,
                        28: lopov, tat,
                        40: pegla, glača.

In Swedish picture No. 2: "eld, brasa",
                       13: "skärp, bälte, livrem",
                       17: "ax, säd",
                       21: "kedja, länk",

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35: "bakar, kavlar",
37: "sopar, borstar",
41: "fiskar, metar",
48: "ringer, talar i telefon".
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The category "2" was introduced when a large number of answers were found to be very close in meaning, but still not corresponding to the stipulated word to get the value "1", e. g.:

picture No. 18: (illustrating the noun "ruka/hand (hand)": the answer "prsti/fingrar (fingers)" was given the value 2, while "prst/finger (finger)" or "prsten/ring (ring)" was given the value 3 (= wrong).

picture No 26.: (illustrating the noun "los/älg (elk)": the answer "jelen/hjort (deer)" was given the value 2 but the answer životinja/djur (animal) was considered too general and was given the value 3.

The population consists of 291 subjects, divided into 15 age groups from 4 - 18. The number of subjects is, however, not the same in every group, see fig. 1. It proved more difficult to reach 4-5 year-olds than 15-18 year-olds, a fact that can be partly explained by the organization of the Swedish school system, in which mandatory school attendance is limited to the age group 7-15. Before the age of 6 children in Sweden only attend day nurseries if both their parents are working. Since all our subject were reached through the school authorities, it was not difficult to contact the yougest children, staying at home with their mothers.

Compulsory school attendance begins at the age of 6 and includes 10 years: a) one year of nursery school, b) three years of "lower grades", c) three years of "middle grades", d) three years of "higher grades".

Thus, the majority of the population investigated in our test is between 6 and 14 years old.

Fig. 1: Number of subjects in each age group

AGE GROUP	NUMBER OF SUBJECTS
4	6
5	12
6	17

7	17
8	26
9	25
10	20
11	32
12	36
13	21
14	28
15	13
16	13
17	10
18	15
Total	291

The present research includes only the synchronous part of the investigation because the diachronous part does not yet contain enough material for a relevant comparison.

Fig.2: The percentage within the whole population ranked according to the % for the word in S/C

Rank	Word	%S/C	%Sw	Rank S/C:Sw
1.	jede/äter	99.0	93.7	1:1
2.	ključ/nyckel	97.6	92.7	2:3
3.	sat/klocka	97.2	93.4	3:2
4.	srce/hjärta	97.2	90.2	4:11
5.	čita/läser	95.5	90.9	5:9
6.	trči/springer	95.1	83.2	6:22
7.	stolica/stol	93.7	92.0	7:5
8.	češalj/kam	93.4	90.9	8:8
9.	cipele/skor	93.0	92.0	9:6
10.	drvo/träd	89.5	90.6	10:10
11.	prozor/fönster	89.2	82.9	11:23
12.	vatra/eld	84.6	83.9	12:19
13.	pegla/stryker	84.6	78.7	13:28
14.	slon/elefant	83.9	88.5	14:13
15.	peškir/handduk	83.6	86.4	15:15
16.	put/väg	82.5	84.6	16:16
17.	crta/ritar	81.1	80.4	17:26
18.	ruka/hand	80.8	73.4	18:33
19.	sunce/sol	76.9	92.7	19:4
20.	peca/fiskar	76.2	87.5	20:14

21.	šator/tält	74.8	83.9	21:17
22.	korpa/korg	74.5	82.2	22:24
23.	garaža/garage	74.1	70.3	23:36
24.	kupaju se/badar	74.1	70.3	24:7
25.	maše/vinkar	73.1	83.6	25:20
26.	lula/pipa	67.8	83.9	26:18
27.	most/bro	65.4	77.6	27:31
28.	slika/filmar	63.6	67.5	28:39
29.	oblak/moln	63.3	83.2	29:21
30.	kajiš/skärp	60.5	65.7	30:40
31.	lanac/kedja	54.9	72.0	31:34
32.	lopov/tjuv	53.1	75.2	32:32
33.	roni/dyker	53.1	78.7	33:29
34.	pokazuje/pekar	44.1	71.7	34:35
35.	zeva/gäspar	43.4	67.8	35:38
36.	gušter/ödla	42.0	69.2	36:37
37.	mesi/bakar	40.2	89.9	37:12
38.	zmaj/drake	39.5	69.4	38:27
39.	krug/cirkel	39.2	43.0	39:45
40.	orao/örn	32.5	58.7	40:43
41.	vesla/ror	30.1	82.2	41:25
42.	klas/ax	29.4	25.9	42:48
43.	zida/murar	25.5	47.6	43:44
44.	ringer/telefonira	20.3	42.3	44:46
45.	mete/sopar	18.9	65.4	45:41
46.	kljuca/pickar	18.5	9.4	46:50
47.	levak/tratt	12.9	34.3	47:47
48.	sidro/ankare	10.1	60.5	48:42
49.	teg/vikt	4.5	12.2	49:49
50.	los/älg	0.7	77.6	50:30

Ranking the words according to the percentage of the whole popu-
lation that gave the correct answer, the first 13 words received a
higher percentage for S/C than for Swedish. These 13 words can be
characterized as belonging to the "immediate surrounding" of the
subjects. Thereafter the percentage of correct answers for Swedish
is consistently higher than for S/C with the exception of the
words "ruka/hand" and garaža/garage, which can also be assigned to
the above group of "immediate surrounding" words, (see fig. 2).

Among the 10 least frequent words we can, however, find two words
with higher percentage in S/C: "klas/ax" and "kljuca/pickar",
which are words belonging to a "rural surrounding". The reason for
this might be that the children encounter rural life more frequen-
tly in Yugoslavia, when visiting relatives in the country.

Although the majority of the immigrants in Sweden are factory
workers and they are concentrated to urban districts here, they
are of peasant origins.

The most significant figures are those for "los/älg" and
"sidro/ankare", where the difference between the percentages is
76.9 and 50.4, respectively to the advantage of Swedish. The
natural reason for the first case is that the animal "los/älg" is
not common in Yugoslavia, while one can hardly avoid encountering
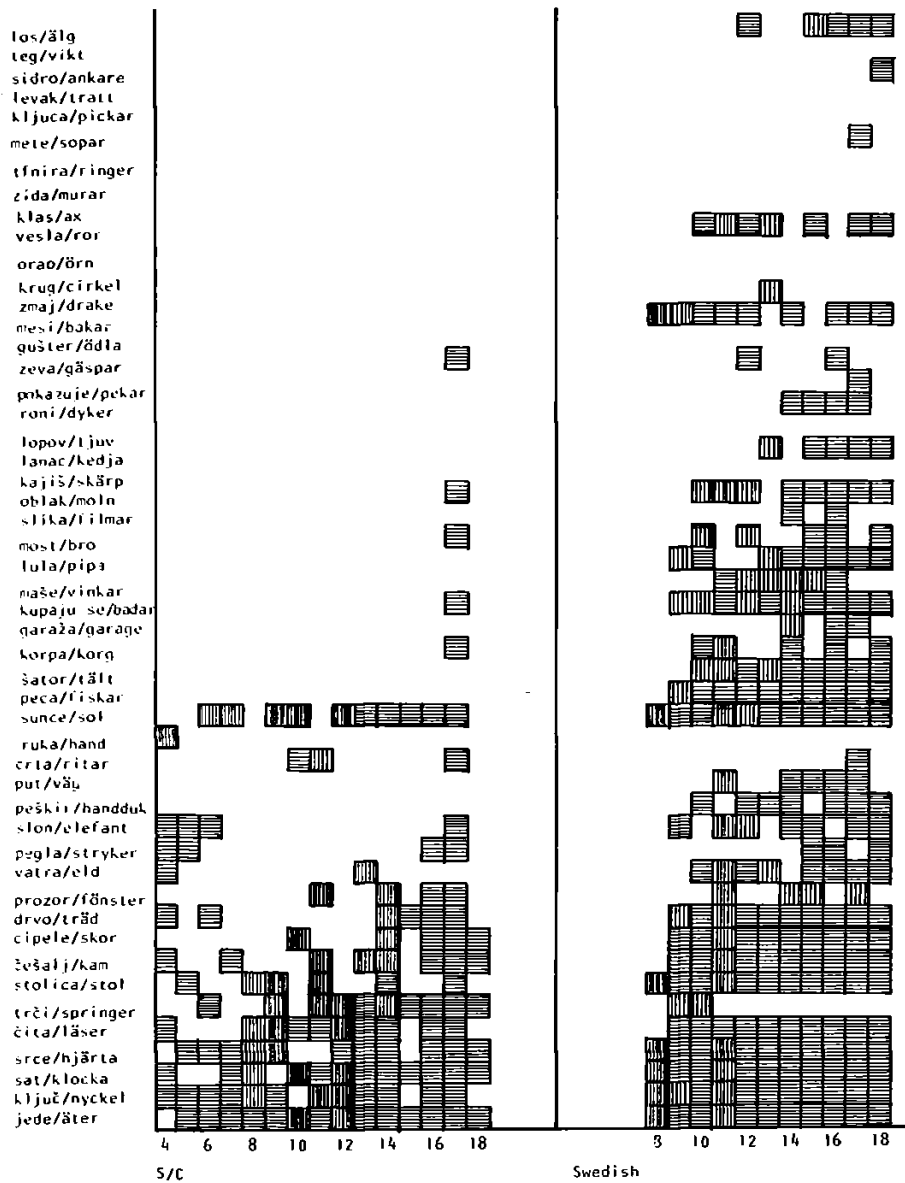the word in Sweden - in the newspapers, at least.

Using the same principle we developed the following scale for a
ranking of the words in Swedish.

Fig.3: The percentage within the whole population ranked
according to the % for the word in Swedish

Rank	Word	%Sw	%S/C	Rank Sw:S/C
1.	äter/jede	93.7	99.0	1:1
2.	klocka/sat	93.4	97.2	2:3
3.	nyckel/ključ	92.7	87.6	3:2
4.	sol/sunce	92.7	76.9	4:19
5.	stol/stolica	92.0	93.7	5:7
6.	skor/cipele	92.0	93.0	6:9
7.	badar/kupaju se	92.0	74.1	7:24
8.	kam/češalj	90.9	93.4	8:8
9.	läser/čita	90.9	95.5	9:5
10.	träd/drvo	90.6	89.5	10:10
11.	hjärta/srce	90.2	97.2	11:4
12.	bakar/mesi	89.9	40.2	12:37
13.	elefant/slon	88.5	83.9	13:14
14.	fiskar/peca	87.5	76.2	14:20
15.	handduk/peškir	86.4	83.6	15:15
16.	väg/put	84.6	82.5	16:16
17.	tält/šator	83.9	74.8	17:21
18.	pipa/lula	83.9	67.8	18:26
19.	eld/vatra	83.9	84.6	19:12
20.	vinkar/maše	83.6	73.1	20:25
21.	moln/oblak	83.2	63.3	21:29
22.	springer/trči	83.2	95.1	22:6
23.	fönster/prozor	82.9	89.2	23:11
24.	korg/korpa	82.2	74.5	24:22
25.	ror/vesla	82.2	30.1	25:41
26.	ritar/crta	80.4	81.1	26:17
27.	drake/zmaj	79.4	39.5	27:38
28.	stryker/pegla	78.7	84.6	28:13
29.	dyker/roni	78.7	53.1	29:33
30.	älg/los	77.6	0.7	30:50
31.	bro/most	77.6	65.4	31:27
32.	tjuv/lopov	75.2	53.1	32:32
33.	hand/ruka	73.4	80.8	33:18
34.	kedja/lanac	72.0	54.9	34:31
35.	pekar/pokazuje	71.7	44.1	35:34
36	garage/garaža	70.3	74.1	36:23
37.	ödla/gušter	69.2	42.0	37:36
38.	gäspar/zeva	67.8	43.4	38:35
39.	filmar/slika	67.5	63.6	39:28
40.	skärp/kaiš	65.7	60.5	40:30
41.	sopar/mete	65.4	18.9	41:45

42.	ankare/sidro	60.5	10.1	42:48
43.	örn/orao	58.7	32.5	43:40
44.	murar/zida	47.6	25.5	44:43
45.	cirkel/krug	43.0	39.2	45:39
46.	ringer/telefonira	42.3	20.3	46:44
47.	tratt/levak	34.3	12.9	47:47
48.	ax/klas	25.9	29.4	48:42
49.	vikt/teg	12.2	4.5	49:49
50.	picka/kljuca	9.4	18.5	50:46

Fig. 4:

Here the words have been listed in an order opposite to the one in Fig 2. (with the most frequent words starting from the bottom). The squares with horizontal lines illustrate the age groups of which all the subjects (100%) gave the correct answer to a word and the squares with vertical lines represent the age groups of which 95 to 99.9% gave the correct answer.

Comparing the results for the two languages, one can immediately see the relatively open area between the age groups 8 and 12 for

S/C. The corresponding area on the Swedish side is relatively densely filled, indicating how the monitoring of Swedish takes over from the age when the children first go to school.

The younger age groups - from 4 to 8 - do not mix with Swedish children to the same extent that the older ones do. They often play with other Yugoslav children at home and if they do attend a day nursery or nursery school, there will most likely be at least one teacher who speaks their own language. Most places in Sweden with many immigrant children have arranged monolingual or bilingual groups, enabling some children to speak nothing but their mother tongue during their pre-school years. This fact is reflected on the "Swedish" side of Fig. 4, : not one of the age groups from 4 to 8 responded 100% correctly to any of the 50 words. On the other hand, 100% of these groups answered to a considerable number of words on the "S/C" side, which confirms that their active knowledge of S/C is higher.

When comparing the area illustrating Swedish for the age groups from 9 to 18 with the corresponding S/C area, it is obvious - even with as simplified a diagram as this - that the active knowledge of S/C does decrease slightly between ages 7 and 10 (see Fig.5)
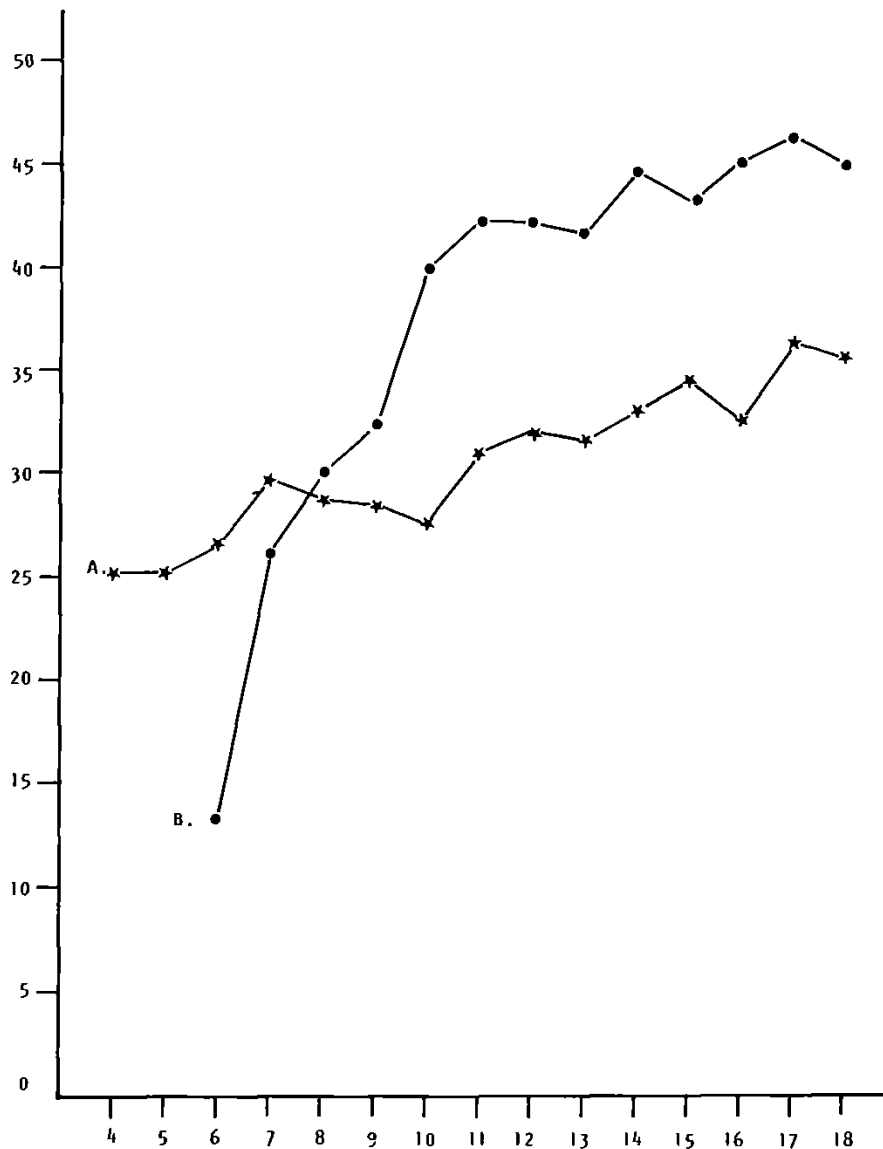
Fig 5.

Fig 5 shows the average number of correct answers obtained by each age group. When comparing the two curves (with A representing S/C and B representing Swedish), the following differences are the most prominent:

a) <u>the lowest</u> age group average for S/C is 25 (age group 4 and 5), and only 13 for Swedish (age group 6). We did not include the 4 and 5 year-olds in the statistics for Swedish, because a majority of these children did not speak Swedish at all even though all were born in Sweden.

b) <u>the highest</u> age group average for S/C is 37 (age group 17) compared to 46 for Swedish (age group 17).

A critical point in vocabulary development occurs at the age of 7: at this age children in Sweden begin compulsory education. At this point the monitoring of Swedish becomes dominant and the active knowledge of S/C is relatively reduced. This finding confirms earlier studies which were based on a population of less than half the size of our present study's population.

The S/C average value of age group 7 is 13% higher than for age group 6. For Swedish, however, such a comparison shows that the 7 year-olds had an average which was 50% higher than the 6 year-olds' average, another fact confirming the effect of the Swedish monitoring.

The subjects develop vocabulary skills in both languages through the ages 10 to 18, although the Swedish average is generally 22% above S/C average.

In order to prove the above results a test of significance was carried out, assuming as a "null hypothesis" that the level of the two languages was the same. An examination of the means for the showed them to differ by amounts varying from 13 to 45 (words). The standard deviation as well as the number of subjects varied from one group to another, the standard deviations varying from 4 to 11. A standard statistical analysis was performed, and a significance at the 0.5% level was achieved for all four groups (6, 10, 14 and 18 years), proving the reliability of our results in Fig 5.