

A PHONETIC AND LINGUISTIC STUDY OF THE WHISTLED SPEECH OF KUSKOY, TURKEY

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A group of about 35 villages in the Northern region of Turkey, between Görele and Trapzon, near the Black Sea, has practised, for about one century, a whistled language which is analogous to the other speech surrogates studied by Cowan and Class and by ourselves, the scientific results having been presented in the IVth International Congress in Helsinki, 1961 (Busnel, Moles et Vallacien 1962). They present for the linguist a scientific interest at present, because they reduce the linguistic material to its essential elements, so to say to an informational skeleton of the phonetic message.

These speech surrogates are always used in mountainous places, where walking motion is relatively difficult and this is also the case in Kuskoy, a village of 1,000 people scattered around a valley in this district. Due to these factors, these languages enable us to get an idea of the phonetic and semiotic structure of phonetic communication. We sum up in this paper the most important results which have been found.

A number of physical and psychological studies has been made on the Northern Turkish whistled language of Kuskoy, they have established the following:

1. The existence of whistled languages seems definitely bound to special conditions of communication including: (a) large distance between people in communication; (b) mountainous or hill-and-dale types of landscape which create a contrast between 'optic distance' and 'geographical distance'; (c) a given amount of secrecy, contrasting people in and out of group (e.g., villagers and officials).

2. The whistled language of Kuskoy is relatively well developed, let us say as much developed as its social function enables it to be. This language has shown to be at a level of development not very far from the one of the whistled Spanish of Gomera Island, which has been studied by Class. This whistled speech is in full daily use in the 15 odd villages, on which we have had evidence in this district of Turkey.

3. Whistled speech is closely limited by the basic knowledge, culture and linguistic development of the practicing population. The 'linguistic field of freedom' of whistled speech is therefore not predominantly determined, by the physical nature of its channel, but is bound by the field of freedom or expressive range of the underlying language.

4. There is some kind of differentiation at the level of vowel sounds which emerges out in the whistled form. Roughly, it may be admitted, that the whistled speech has THREE types of differentiated 'vowel' sounds, as is demonstrated by the confusion matrices. Considering that the underlying Turkish languages include about 15 vowels, in the transition from speech to whistling the variety is reduced at a ratio 5:1.

5. The two fundamental carriers of information are: (a) this differentiation between the three 'quasi vowels' and (b) the melodic rhythm of the sentence. Both are the elements which settle the distinctive features. The shape of the transients is too delicate to be conveyed properly upon large areas, in the flow of an elocution which is not totally mastered by the speaker. It contributes only, as a complementary feature, to a small amount of reduction of equivocation. But the receiver relies heavily on the elementary vocal sound distinctions and on amplitude and modulation frequency, more or less parallel to the ones of the speech.

6. The sentence is the essential syntagmatic unit of whistled language: neither the logatoms nor the words have any relevant importance. The sentence is built out of connection of elements — larger than words — which are akin to diagrams or trigrams of words of the basic language, thus combined into new series of semantic units. It is easy to understand that, among these units, the number of those which are quite familiar i.e., intuitively grasped, is very restricted in comparison to the range of a supposed word-vocabulary, copied on the ordinary Turkish, which *in facto* does not exist in the brain's repertoire of the communicators. This accounts for the shape of the Zipf-curve, clearly revealing a discontinuity in the structure of the repertoire.

7. The percentage of intelligibility of logatoms is not over 30%. This leads to an intelligibility-rate of 8-9 out of 10 sentences, as much as the couple transmitter-receiver remains at the level of elementary concepts.

8. Any unusual sentence trespassing the accustomed language gives rise to an unnormal task, to which the individuals are not prepared. It may be thought that better mental flexibility or greater intellectual fluency would enable him to dominate these sentences in other conditions of culture.

9. From these results it shows that the logatom intelligibility-test is in fact a kind of phonetic exercise, definitely alien to the normal scope of language practice. In spite of its practical advantages due to the accuracy of its procedure, the exchange of logatoms is not the best experimental procedure for whistled speech and connected speech surrogates. A prospective work should be directed toward sentences, with practical exclusion of other material and would build confusion matrices out of this kind of linguistic material. A proper and careful study of 'surrealistic' sentences would be of very wide use in these cases.

10. We have established a very short and sketchy 'dictionary' of whistled speech ranked according to frequency, and a type-token diagram see Appendix. This latter reveals two zonings of words: (1) terms which are extremely frequent and whose "temperature" is quite near to the ordinary spoken language; (2) zone of unfrequent

words which are used, or usable, only to the extent where the I.Q. or the 'notional field' of the pair of communicators (Matore) makes it possible.

11. It would be interesting to look for whistled surrogates which would rely on different kinds of linguistic substrata, among others languages rich with vowels, e.g., Finnish (16 vowels) or languages the rhythmic structure of which is extremely well delineated.

12. It is clear from this study that the linguistic mechanism is strongly linked to a mechanism of social linguistic situations. There is no linguistics of such surrogate languages without a sociology of the people who practice them. The factors of intelligence and culture are the only concepts which enable the carriers of these communications devices to escape this necessary correlation rooted in a psycho-biology of language.

[Two movie pictures of the studies which had been carried on the spot in Kuskoj, afterwards in Ankara and Paris, by X-rays cinematography, have been presented during the Congress.

A short vocabulary, ordered by frequencies, has been finally corrected on a tape-recorder accompanied with the corresponding word in spoken Turkish.]

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APPENDIX

Dictionnaire des langues sifflées

	Turkish	English	French
1	Gitmek	to go	aller
2	gelmek	to come	venir
3	ben	I	je, moi
4	tarla	field	champ
5	çalışmak	to work	travailler
6	imeci	collective work	travail collectif (en équipe)
7	olmak	to be	être
8	sabahca	tomorrow	demain
9	bugün	today	aujourd'hui
10	yayla	plate	plateau
11	pazar	bazaar	marché (dimanche)
12	haydi	let us	faisons (impératif)
13	balık	fish	poisson
14	yapmak	make	faire
15	findik	hazel nut	noisette
16	var	there is	il y a
17	tohum	seed	graine, semence
18	koyun	sheep	mouton
19	toplamak	collect	collecter
20	yagmir	rain	pluie
21	ev	house	maison
22	muhtar	mayor	maire, chef du village
23	haber	news	nouvelles
24	inek	cow	vache
25	götümek	fetch	aller chercher
26	karakol	police station	poste de police
27	bu	this	ceci
28	yagmak	to rain	pleuvoir
29	çagumak	to call	appeler
30	araba	car	charrue
31	bir	one	un
32	sira	range	rangée
33	doktor	doctor	docteur
34	seni	your	vous
35	hava	weather	temps qu'il fait
36	okul	school	école
37	getirmek	to ...	
38	tedavi	to cure	soigner
39	güllük	rose	rose
40	kaç	how many	combien
41	tane	" "	" "
42	kari	wife	la femme de quelqu'un
43	oküj	ox	bœuf
44	o	he, she, it, that	il, elle, le
45	yukari	upwards	vers le haut
46	alt	under	dessous
47	dagitmah	to distribute	distribuer

	Turkish	English	French
48	yaralı	wounded	blesé
49	hükümet	government	gouvernement
50	yol	way	le chemin
51	tutmak	hold	attraper
52	bilmek	to know	savoir
53	ticaret	commerce (villages use this word in the sense of "benefit")	le commerce, le bénéfice
54	için	for	pour
87	cēmaat	meeting	assemblée
88	bedava	free, no fee	gratuite
89	etmek	given	donné
90	kavga	luggage	bagage
91	ne	what	quoi
92	ve	and	et
93	menetmek	to prevent	empêcher
94	uslu	wise	sage
95	yaprak	leave	feuille
96	üç	three	trois
97	kisi	nobody	personne
98	de	too, also	aussi
99	al	to take	prendre
100	görelé	Görelé	Görelé
101	ise	if	si (condition)
102	bellemek	to plough	labourer
103	bahçe	garden	jardin
104	tepe	hill	colline
105	yukari	up	en haut
106	obür	the other	l'autre
107	gün	day	jour
108	zaman	time	temps
109	degirmen	hill	colline
110	belâ	misfortune	infortune
111	kar	snow	neige
112	geyik	deer	cerf
113	hasta	ill	malade
114	arkadas	friend	ami
115	igne	needle	aiguille
116	çoban	shepherd	berger
117	söylemek	to say, to speak	parler, dire
118	bag	vineyard	la vigne
119	armut	pear	poire
120	köprü	bridge	pont
121	keçi	goat	chèvre
122	tavuk	hen	poule
123	pencere	window	fenêtre
124	elbise	dress	habit
125	kazmak	to dig	creuser
126	dolmak	to crowd in	se remplir
127	yikilmek	to be broken down	casser
128	yemek	to eat	manger
129	çikartmak	to take out	enlever
130	islanmak	to get wet	se mouiller

	Turkish	English	French
131	hartamak	to cover the roof with "harta"	couvrir le toit avec "harta"
132	kapramak	to close	fermer
133	yenge	aunt	tante
134	cav	hunt	chasse
135	Mehmet	Mehmet	Mehmet
136	Mustafa	Mustafa	Mustafa
137	Hakki	Hakki	Hakki
138	Osman	Osman	Osman
139	Adil	Adil	Adil
140	esek	donkey	âne
141	av	prey	la proie
142	Kadirga	Kadirga	Kadirga
143	trabzon	Trapzan	Trebizonde
144	Mahmut	Mahmut	Mahmut
145	Halil	Halil	Halil
146	almak	to take	prendre
147	görmek	to see	voir
148	istemek	to want	vouloir
149	sigara	cigarette	cigarette
150	ot	grass	herbe
151	çanakgi	Canakee	Canakee
152	kalas	log	bille de bois
153	dere	stream	courant
154	hoca	teacher	instituteur
155	o-dun	wood	bois
156	sio	Sio	Sio
157	koyun	sheep	mouton
158	çatmak	to face	faire face
159	kirmak	to break	casser
160	kiremit	brick	brique
161	çacuk	child	enfant
162	hizar	a saw	scie
163	gegel	gegel	gegel
164	amice	uncle	oncle
165	agac	tree	arbre
166	Apturahman	Apturahman	Apturahman
167	çarsi	market	marché
168	sik	corn	épi
169	Ali	Ali	Ali
170	Sadik	Sadik	Sadik
171	kesmek	to cut	couper
172	girmek	to enter	entrer
173	biçmek	to graze	faucher
174	Hasan	Hasan	Hasan
175	ormanci	forest police	police forestière
176	sene	the year	l'année
177	Ahmet	Ahmet	Ahmet
178	bildirmek	to inform	informer
179	cervirmek	to encircle	encercler
180	hatah	wrong	faux