PSYCHOLINGUISTIC UNITS: EXPERIMENT IN EXTEMPORE SPEECH*

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An ideal communication system will consist of five components : source, transmitter, channel, receiver and destination. Communication takes place when a source of information transmits signals over a channel to a receiver at the destinaton. The process of transforming messages that are originated in the source into signals is called "encoding". This process is carried out by the transformer. These signals travel through the channel and reach the receiver at the destination. The receiver transforms these signals into the original forms of the message and this process is called "decoding". Encoding and decoding in speech pre-requisite knowledge of the code, of the levels, the possible units and the laws of combination of units; on the part of the speaker and the listener.

The mechanism of unit formation in decoding and encoding is one of great importance to psycholinguists. Fry (1963, p. 68) actually says that "not much is yet known about the encoding process in the speaker". One of the lines of investigation conducted sporadically was the examination of the so called hesitation phenomena (i.e. interruptions in the flow of speech). "Interruptions in the flow of speech are occasioned by both breathing processes and hesitation pauses ; the former seems to vary with emotionally and the latter with cognitive processes" (Goldman Eisler 1961). It is presumed that hesitation phenomena normally occurs in between the boundaries of psycholinguistic units. Lounsbury (1954) opines that the hesitation pauses and the points of high statistical uncertainty correspond to the beginning of units of encoding. Moreover, it is believed that hesitation pauses anticipate sudden increases in information or uncertainty in the message being produced (Golden Eisler 1958), Hesitation phenomena are clearly related to the dynamics of grammatical and lexical selections (Fry 1963).

The Problem :

The problem of the present investigation was to determine the nature of unit formation in speech encoding. For this purpose we have examined the hesitation phenomena, as found in Tamil extempore speech.

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This paper is based on a thesis ("Hesitation phenomena **as found in Tamil** Extempore **speech") (1968),) submitted by the author to Annamalai** University **in** partial **fulfilment of the requirements of the degree of Master of Arts in Linguistics.**

The Method :

Objective experimental method was extensively used. Some seven post graduate students at Annamalai University were requested to assemble in the phonetic laboratory. They were informed that each of them has to make a speech in Tamil before the mike for five minutes, without referring to notes. The topics were left to their choice. They were not informed about the aim of this experiment. No appreciable reinforcement was presented to the subjects during their discourse. An ideal experimental situation was prevailing during the experiment.

About forty five minutes of recording; were taken on the tape from seven subjects. The speeches were playedback and transcribed in Tamil scripts. The hesitation characteristics were marked on these transcribed materials.

Result and Discussion:

Eight categories of hesitation phenomena were found. Here again disagreement prevails among the researchers regarding the number of categories. For instance Osgood and Maclay (1959), and Wingate (1964) prefer a four way distinction of hesitation phenomena, as against Jane Blankenship and Christian Kay's (1964) seven way distinction. George Mahl (1948) has developed three categories of hesitation phenomena and Goldman Eisler (1961) speaks of two categories of hesitation phenomena. Having examined our data and the different classifications of hesitation phenomena, an eight way classification is made. The eight categories of hesitation phenomena are as follows:

1. Filled Pauses: (F.P.)

All occurrences of nonlinguistic intrusive sound units are grouped under this category. It has been reported that in English, æ.,r, 'm.are the filled pauses found commonly. Jane Blankenship and Christian Kay prefer to call these as "nonlexical intrusive sounds". In the corpus examined here, besides single units occurring, we have found different units occurring successively.

a. Occurrence of single unit:—ippolutu na :m parrkkum polutu oru (X $ ::t...) kutattai torruvikkinran oruvan.

b, Occurrence of different units (occurring) successively : anta samayattai-ppa : rkkum polutu itai ka: lattil na: m ettanayo (m...i) ettanayo ke: tukal anta samayattai vantu attintirukkala: m.

2. Unfilled Pauses (U.P)

These were marked when these were judged to be an abnormal hesitation in speech that could not be referred to other categories. Silence of unusal length marks its occurrence. All most all sentences carry this phenomena and therefore the largest number among the categories is found to be this kind of pause. There were some

instances where there were unusually long pauses which cannot be identified as unfilled pauses. The intonation preceeding such instances were also found to be different from that of the unfilled pauses. As it was very difficult for us to objectively define the phenomena and as these two were close in characteristics, we have not taken this into consideration separately. *Example for unfilled pauses is given below :*

a : na : 1 ± Samayam parri ± ennutaya karuttu ± enna enpatu
parri ±. na : n inku ± terivi-kha virumpukiren.

3. Broken Word (B. W.)

When a word is pronounced incomplete immediately followed by the came word in full form, the phenomena can be called as broken word. *Example :*

inpamum amaitiyum inta ulakattile na : m ka : nukinra
alavukku kitai/kitaikkavillai.

4. Sentence Correction: *(S.C.)*

The speaker interrupts his chosen grammatical pattern and substitutes another. *Example*

/anta samaya/ appati */ku : rukinra/* ku : ri anta
samayattai na:m, anta katavulai na:m ataiya ve:ntum.

5. Repeats *(R) :*

When one or more words are repeated we called them as repeats. *Example:* itarku munpu to : nriya anaittu uyirkalum *o : ranu/o* : *ranu* uyir mutal inru manitan to : nriya alavirku ella : uyirkalum inpattaye na : tukinrana enpatu ya : rum marukka mutiya : tu.

6. Omission of Part of Word (O) :

" Words which were left incomplete". This evidently differs from broken word as the incomplete sound sequence is not repeated in its full form. *Example : /ata/a.*: na : 1 nammaip po : nra valivu mikka orrajavukku uyarnta manitarka!.

7. Sentence Incompletion : (S.I.)

The sentence is left unfinished and a new sentence is started. In sentence correction the grammatical pattern is substituted by another which actually is a correction itself. *Example*

inta lo : ka atai intia nattai porutta a!avil lo: ka:yata
va ; tam enru kurippitukira : rka!

8. Word Change : (W.C)

One word is substituted by another of equivalent grammatical identity. *Example* avanukku na : m ippolutu *(po* : *vjpo* : *na)* etuttautaneye ariva pukattuvatu enramu-rayil pa ; tankajai collikotuttuk kontirukka mutiya : tu.

The specification of environments where the hesitation phenomena occur seems to be a little difficult. The procedure followed by Jane Blankenship (1964) Osgood and Maclay is with reference to function words and content words. Unfortunately there is no complete agreement among linguists on such a binary classification of lexemes into function and content words (Miller, 1954; Long, 1961; Fries, 1940; Rommetveit, 1968 ; Hocket, 1956; Owan Thomas ; 1966).

The problem becomes more acute in the case of Tamil. In Tamil the occurrence of free forms having structuralistic functions are very rare. For example, the morpheme/u t a ya/is having the grammatical function of a genetive marker as well as meaning 'possessed'. Most of the inflected morphemes can thus be traced back to older free forms having specific lexical meaning although they have almost their independent status in the present day verbal behaviour. We were thus forced to adopt a different procedure in distinguishing between function words and content words in Tamil.

The environments in which these categories occur can be classified as follows :

C denotes content word, *F* denotes function word and X denotes pauses. The hesitation phenomena may be preceeded by C, or F, or X and followed by C or F or . Some categories take some specific environments, for example unfilled pauses never occurs after a pause i.e. it will not either be followed or preceeded by a pause. Environments vary according to the categories of hesitation phenomena and their distribution.

Table 1 *Environments and the Percentage of Occurrence*

Total number of words uttered by the subjects is 2757

Categories	No. of occurrences	Percentage
U.P.	804	29.16%
B.W.	29	1.52%
F.P.	25	0.91%
.R	15	0.54%
O	14	0.51%
S.C.	14	0.51%
S.I.	1	0.05%
W.C.	1	0.05%

Table 2 *Unfilled Pauses*

Total Number of U.P.: 804

Environments Preceeding	Following	No. of occurrence	Percentage
C	C	550	68.4%
F	F	10	1.2%
F	C	169	21.00%
C	F	75	9.3%

Table 3 *Total Number of Broken Words : 29*

Environments			No. of occurrence	Percentage
X	=	C	2	6.89%
C	-	C	18	62.06%
C	-	X	4	13.78%
F	-	C	4	13.78%

Table 4 Filled Pauses

Total Number of Filled Pauses : 25

Environments			No. of occurrence	Percentage
C	-	**C**	14	56.00%
C	-	**F**	4	16.00%
F	-	C	6	24.00%
X	-	C	1	4.00%

Table 5 Repetition

Total Number of Repetition : 15

Environments			No. of occurrence	Percentage
C	-	C	8	53.3%
F	-	C	3	20.0%
C	-	X	1	6.7%
			3	20.0%

Table 6 Omission of Part of Words

Total No. of omission occurred : 14

Environments			No. of occurrence	Percentage
C	-	C	3	21.3%
X	-	C	6	42.6%
F	—	C	3	21.3%
F	___	p	1	7.1%
C	-	X	1	7.1%

Table 7 **Sentence Correction**

Total No. of sentence correction occurred

Environments		No. of occurrence	Percentage
C	C	5	35.8%
F	C	5	35.8%
C	F	2	14.2%
F	X	1	7.1%
C	X	1	7.1%

Word change and sentence incomplete occur only once in the data and therefore the percentage calculation is not considered.

From the findings of this experiment we arrive at the following conclusions.

1) As has been aptly remarked by Goldman Eisler "spontaneous speech is highly fragmented and discontinuous activity...The flow and fluency in spontaneous speech must be judged an illusion" (Goldman Eisler. 1968, p. 31). The different categories of hesitation phenomena indicate this fact. Spontaneous speech is fragmented and discontinuous because encoding is a continuous process. The speaker in spontaneous speech, does not frame a complete sentence before he begins to speak. Also "during an utterance the speaker's brain must first carry out the linguistic encoding which it will probably do for a few words at a time in spontaneous speech" (Fry, 1963, p. 71).

2) At some level of organisation, the encoding unit will be phrase like, that is, a lexical core accompanied by a grammatical context. Also the encoding unit cannot be smaller than a word There seems to be two levels of organisation in encoding, that is, 1. lexical or semantic and, 2. grammatical or structural. The evidence for the possibility of occurrence of two levels in encoding is that a speaker often begins a phrase and then pauses before the lexical choice of that phrase, because he selects the lexical item from innumerable alternatives available, after he has made structural choice.

3) The findings of the present investigation support the hypothesis that hesitation phenomena anticipate an increase in information (Lounsbury 1954). Because hesitation phenomena occur predominantly on contest words (refer table 2, 3, 4, 5, 6 & 7). Unlike function words, content words carry a great deal of information and thus hesitation phenomena anticipate an increase in information. Golden Eisler suggests that a chose relationship exists between pauses and information on the one hand and, fluency and redundancy on the other, indicating that the interpolation of hesitation pauses is a necessary condition for such an increase.

4) Hesitation phenomena occur more often before content words than before function words. It is because of the intense cognitive activity involved in the selection of content words Also it is presumed that the great deal of information that is conveyed by the content words causes intense cognitive activity and thus the speaker's brain takes more time in encoding them. Moreover the speaker selects the lexical items from the innumerable alternatives available after he has made structural choice. Encoding proceeds rapidly through function words because they are readily found and convey very little information. Since they convey very little information the cognitive activity also will be very less.

Although the findings of the present study are consistent with the earlier hypotheses (Goldman Eisler, 1958 ; Lounsbury, 1954) a definite conclusion regarding the environmental predominance (of the different categories of hesitation phenomena) is impossible. Because our criterion for the classification of envoironments into content and function words is based on purely arbitrary considerations. Modifications need to be made in the procedures used in the study so that investigations can be carried out with a different criterion for environments say, certain syntactic points. The separate free items on the syntactic string need not have any specific significance with regard to the occurrence of hesitation phenomena. The items, as far as a flow of speech is concerned, have much dependence on the form used for the whole verbal behaviour and hence cannot claim independence by themselves. Further, the binary classification of items into function and content words in Tamil involved greater difficulty than in the case of English, as in Tamil the morphologically free forms are sometimes syntactically bound. It is also to be noted that individual peculiarities of verbal behaviour contribute differently in the case of out puts. These idyosyncracies have not been examined in our study of hesitation phenomena. Regarding unfilled pauses especially, these peculiarities show a wide range of variations. Above all, the subject matters on which the behaviours of the subject were called for, might have its influence in the responses emitted. The past experience will also have its effects on the outcome. Subjects were not chosen from different social groups.

Factors such as educational background, social class, age and sex should be accounted for in future studies. The Listener's response in normal conversation also may influence the speaker's verbal behaviour.

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