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ABSTRACT

This paper considers four levels of analysis in the observation of the prosodic features of pause in speech: phonetic; syntactic; semantic; and informative. On the phonetic level, a pause is related to length and intonation, and intonation in turn, being a result of the speaker's meaning, constitutes an expression of his/her emotional state. On the syntactic level, a pause is the demarcation of a syntactic structure that can coincide with a tone-unit and with the punctuation used in a text; the grammatical mood (declarative, interrogative, hortatory, exclamative) also results from the speaker's attitude, but in this case, the attitude is logical and not emotional. The pause can also be a device for disambiguation of syntactic ambiguity. Semantically, a pause can have a dynamic component providing a change in meaning, or a static component in case of diversity of interpretation. Finally, a pause is an important device in the organization of discourse as a means of information. The uses and effects of pause are further analysed in three different types of discourse: declamatory; colloquial (familiar); and colloquial (formal). It is concluded that prosodic features in the form of pausing and pitch pattern are important for speech perception, and that pauses are essential to speech understanding in the form of disambiguation and emphasis. (Contains 13 references.)
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Silent pauses are connected with discourse, associated to text and dependent on context. Four levels of analysis can be considered in the observation of the prosodic feature of pause, depending on the kind of component: phonetic, syntactic, semantic and informative level.

On a phonetic level a pause is related to length and intonation. According to Grosjean and Collins (1979), the duration and frequency of pauses are dependent on the rate of speech, although it is also connected with its location in a syntactic environment. When speech rate increases the duration of pauses decreases, and following Cabrera and Maidment experimental work (1993), the duration of continuous chunks of voice behave in the same way, because when speech rate increases, the duration of continuous chunks of voice and silent pauses decreases. On the other hand the number of voice chunks increases with an increase of speech rate, and the number of pauses decreases with an increase of speech rate. Length and number of pauses are related to an increase of speech rate: \rightarrow length \rightarrow number of pauses = + speech rate; but in the case of voice chunks the result is: \rightarrow length + number of voice chunks = + speech rate. The lack of agreement between the behaviour of pauses and voice chunks can be due to the fact that a pause requires a position of the vocal folds similar to the one provided in the pronunciation of voiceless sounds.

On a comparative level the duration of pauses and voice chunks is larger in English than in Spanish. The difference can be explained taking into consideration that English is a stress timed language and Spanish is a syllable timed language.

A pause can be a phonetic cue for establishing the demarcation of a tone-unit, although according to Crystal (1969), phonetic lengthening or aspiration are articulatory cues for the delimitation of an intonation group. Articulatory movements are not the only points of reference concerning the nature of a tone-unit, because Laver (1970) considers that in the preparation and articulation of a speech program the unit of neural assemblage can be the tone group. The fact that a pause also marks the boundaries of a syntactic unit organization, can be a sign to indicate that the processing of speech is in need of blank spaces to conform to an informative pattern.

If in processing a language the role given to intonation is not precisely defined, in the appreciation of a language as a binary structural system there are two different points of view that represent Chomsky and Halle's consideration of stress and intonation as part of the surface structure (1968), and Bresnan (1971) that proclaims that they depend systematically on underlying structure.

In productive terms intonation is the result of the utterer's meaning or intention, and as such constitutes an expression of his emotional state. A distinction has to be drawn between emotion and attitude: the former refers to the speaker's inner state and the latter to some characteristics of the speaker's behaviour. The expression of the speaker's emotion is a spontaneous reaction to a given situation, while his attitude depends on a pattern of behaviour. The two manifestations can be linguistically indicated, according to Couper-Kuhlen (1986) by 'he is amused' and 'he is being affectionate'. It is understood that they constitute the expression of a state, and the transition to a state that is conformed as behaviour. The interpretation of the speaker's emotion can be conveyed by means of affective meaning, and his emotional attitude, mainly by means of intonation. It can be said that the use of affective meaning belongs to the productive stage, and that it agrees with the emotional state of the speaker, but an emotional attitude is part of the perceptive stage, and it reflects the emotional feelings as the speaker's behaviour. The speaker's use of intonation is a subjective choice with an objective aim, and the use of affective meaning is objective in choice and aim:

emotional attitude -----> subjective (objective aim).

affective meaning -----> objective (objective aim).

The expression of emotional feelings, in their interpretation as attitudes, is better accomplished by means of intonation, because affective meaning is depending on grammatical categories as verbs, adjectives (within a definite syntactic structure) and interjections, while the variations in pitch are concerned with a wide range of syntactic structures.

The lexical indication of the emotional state of the speaker or his behaviour, can also be due to the expression of different attitudes: (a) he is ^vbored;

(b) he is being affectionate.

The prosodic feature of pitch provides some restrictions on the lexical use for the expression of emotions, and what is known as linguistic prosody, supplies patterns of agreement between intonation, syntax and semantics: falling pitch for a declarative sentence or a statement: **he is \angry**. To say that linguistic prosody is linked to certain types of linguistic structures, is to say that it is also dependent on lexis and grammatical categories: **give me \that book**.

Because of the wide scope of application of emotions by means of emotional attitudes, it can be inferred that attitudinal meaning is expressed by other ways than through variations in pitch, due to the fact that these are not clearly perceived by untrained listeners. These other ways are likely to be stress and pauses.

Pauses are important in the syntactic, semantic, phonetic and informative understanding of a sentence. The addition of a pause can bring about a new focus of interest on informative level: (a) I think James broke it; (b) \I think I \James broke it. The attitudinal meaning, depending on the kind of nuclear tone, can be changed in (b) \I think I \James broke it. Two different attitudes are provided, but in the case of the personal pronoun it could be considered as emphasis, if the perception of the expression by the listener is taken into account.

Under a syntactic analysis a pause is the demarcation of a syntactic structure, that can be in coincidence with a tone-unit, and with the punctuation attached to a text. The connection of grammar with intonation is mainly by means of the grammatical category of mood (declarative, interrogative, hortative and exclamative). Mood is also the result of an attitude of the speaker, in this case a logical attitude, in contrast with the emotional attitude connected with intonation. Logical attitude or modality combines with the emotional attitude, conferring to it a certain referential pattern, as it can be a fall in pitch for a command: **bring the chair \here**, although a rise is provided for a request: **bring the chair /here, please**.

As the logical attitude of the speaker, linked to the sentence type, not always agrees with his emotional attitude, it provides the ground to think that the emotional attitude is often dependable on a pragmatic function of the sentence.

According to Halliday (1976), grammar is a level of linguistic form at which closed systems operate. If the linguistic form is not concerned with the operation of a closed system, it is assigned to the level of lexis, so intonation that enters the domain of grammar, is part of a closed system.

The addition of a pause in a contrastive pair established in the form of coordination, is the cause of emphasis on the first action, independent of the second that is extended to an object: (a) **he washed and brushed his hair**; (b) **he washed || and brushed his hair**; the addition of a pause, with two foci of interest, is the source of a change in meaning, because of a problem of scope.

Sentence adverbials are usually considered as a different tone-unit, separated by a pause, but, according to Allerton and Cruttenden (1974), it can be part of the preceding tone-unit, if it is non-nuclear: (a) **he speaks English || naturally**; (b) **he speaks English naturally** (the insertion of a pause is the cause of a change in meaning).

There are opinions against the grammatical function of intonation. Bolinger (1958) sustains that the relation between intonation and grammar is casual. Cruttenden (1970) holds the same opinion; one of his reasons is that disambiguation by tone-unit boundary placement is relatively infrequent. On the other hand Crystal's experimental work shows conclusions in pro of the grammatical function of intonation.

The coincidence or no coincidence of a tone-unit with a syntactic structure, is not an objection to the disambiguating property that can be attached to pausing, and that concerns mainly with cases of semantic ambiguity, when it is based on scope: **old men and women should be out of danger**. The marked interpretation requires a pause after men: **old men || and women should be out of danger**. Although in this case there is a coincidence with the break for coordination, it is not so in **they think that a republican || will win**, where the pause before the predicate indicates the option that represents the marked interpretation. A pause can also be the means of disambiguating a syntactic ambiguity: **they are visiting friends**, where a pause after are invalidates the ambiguity, when emphasis is not the effect required.

If it is thought that speech planning is organized in tone-units, and it is

shown in the lack of slips of the tongue in its boundaries, disambiguation by a pause can be a strategic device to make a new planning of a linguistic expression, that creates understanding difficulties to the listener.

In a semantic outline a pause can have a dynamic component, and its insertion provides a change in meaning, or a static component, and its use is the cause of meaning specification, in case of diversity of interpretations, as it occurs in ambiguous expressions. In a compositional analysis, a pause placement is due to restrictions with regard the separation of syntactic or semantic constituents. It can occur that, in the case of an ambiguous sentence, the insertion of a pause keeps aside one interpretation of the sentence, that is based on a logical relation: I killed || a man with a spear presupposes 'he killed a man who had a spear', that is the marked interpretation or sense of the sentence I killed a man with a spear, which presupposes 'he killed a man using a spear'.

A pause is an important device in the organization of text and discourse as a means of information. Tone-units provide prosodic cohesion to a text, together with the use of paratones at a macro stage level. The value of information depends on the individual use of speech pattern information, that occurs at a low level of processing linguistic material, apart from the fact that there are different abilities in making use of contextual information.

Three different types of discourse are analysed to consider: (a) the grammatical categories and types of syntactic organization involved in pause placement; (b) a pause as a cause of change in meaning and disambiguation; (c) the location of a pause as a means of emphasis and the way to alter pitch patterns. Three devices are provided to check effects and causes: the permutation of a pause, its addition and its omission.

The three types of discourse dealt with are classified as (1) a speech addressed to a group of people (22 lines), taken from **The Gettysburg Address** by Abraham Lincoln, in a declamatory style, with short phrases, frequent connective intonations and phrase-final pauses. (2) A talk in the form of dialogue between two young people (22 lines), that comes from **Eating People is Wrong** By Malcolm Bradbury, in a colloquial style approaching the familiar line, with lengthening

of phrase-final syllables or the use of intonation alone, to mark minor phrase boundaries; few pauses are provided. (3) A dialogue, in the form of an interview, where opinions are expressed (26 lines), taken from *Intonation of Colloquial English* by J.D. O'Connor and G.F. Arnold (1973); it is written in formal colloquial style, with long phrases and few phrase-final pauses.

Discourse 1. A great amount of pauses occur in this type of discourse, where declaratory style is involved.

(A) **Syntactic analysis.** Pause placement can be concerned with:

(a) the function of the elements in the sentence, and it can separate a subject or object from the predicate.

(b) grammatical categories, and it can separate an adjective, infinitive, present participle, past participle or a noun in apposition.

(c) phrases; the phrase connectors can be **and, whether, or, nor, as, far above, rather, so, on, in, for, to, under, of, by.**

(d) clauses, and it can mark the border line between a subordinate and a main clause, or an antecedent and a relative clause; the connective word can be **that, who, which, what.**

(e) sentences; there is a zero realization of sentence separation by pauses in non-final position.

Discourse 2. Few pauses are involved in this discourse in the form of dialogue, where colloquial style, close to the familiar end of the range, is used.

(A) **Syntactic analysis.**

(a) There is a zero realization of pauses separating words with a function.

(b) Grammatical categories: adverbs are subject to be separated by pauses.

(c) Phrases bounded by pauses are reduced in number; the connectors are **and, of, like, out of** (idiomatic expression).

(d) clauses: there is a zero realization in the separation of subordinate clauses, which use is restricted.

(e) Juxtaposed, and coordinated sentences with **and** are due to pausing, when **because** is implied. **Look**, with the interpretation of demanding attention, can be separated from an assertion or a negative question.

Discourse 3. The number of pauses (18) differs from discourse 2 with 14

pauses. The differences are extended to their syntactic arrangement.

(A) Syntactic analysis.

(a) There is a zero realization of pauses separating words with a function.

(b) Grammatical categories: an adverb, infinitive or interjection are elements to be separated.

(c) Phrases are separated by pauses, and the connectors are **and**, **in**, **even**.

(d) Clauses: subordination is frequent, specially when a condition is expressed, and it is marked by a pause; the connectors are **if**, **that** (conjunction, relative pronoun); coordination with **and** is also due to pausing.

(e) It is not the case of occurrence of juxtaposed sentences, but there is the separation of an assertion from the particle **yes**, that expresses its reassurance, as an after thought.

(B) Semantic analysis. A pause placement can be the cause of ambiguity, or of its invalidation. There are three variants for pause placement: permutation, addition and omission.

(a) **Permutation.** It's the cause of ambiguity in type of discourse 1, 2 and 3, with variations in the relations of presupposition:

1. (original text): Four score and seven years ago || our fathers brought forth | on this continent || a new nation.

(ambiguity with permutation) Four score and seven | years ago our fathers brought forth | on this continent || a new nation.

2. (original text): "It's all right, Mrs. Bishop, | it's someone I know."

(ambiguity with permutation): "It's all right, Mrs. Bishop, it's someone | I know."

3. (original text): "There are certain things coming along | that'll make simplified spelling | even more desirable. "

(ambiguity with permutation): "There are certain things coming along | that'll make simplified spelling even | more desirable." Lexical meaning is the cause of ambiguity.

(b) **Addition.** It can be the cause of ambiguity in discourse 1, 2 and 3.

1. (original text): ... | which they who fought here | have thus far | so nobly advanced.

(ambiguity with addition): ...| which they who fought | here have thus far | so nobly advanced.

2. (original text): He had come to a kind of desperation, || and had, | somehow, | to act.

(ambiguity with addition): He had come to | a kind of desperation, || and had, | somehow, | to act (lexical meaning is the cause of ambiguity).

3. (original text): "I think it'll become obvious, | even to English people," |...

(ambiguity with addition): "I think it'll become obvious, | even | to English people," |...

(c) Omission. It provides ambiguous expressions in discourse 1, 2 and 3.

1. (original text): That this nation | under God | shall have a new birth of freedom.

(ambiguity with omission): That this nation | under God shall have a new birth of freedom.

2. (original text): "It's all right. Mrs. Bishop, | it's someone I know."

(ambiguity with omission): "It's all right, Mrs. Bishop, it's someone I know."

3. (original text): "Who by, | I should like to know?" || — "By circumstances, | in my opinion."

(ambiguity with omission): "Who by, | I should like to know?" || — By circumstances, in my opinion."

Prosodic analysis. The components are length, intonation and emphasis. The permutation of pauses can affect the lengthening of phrase-final syllables in colloquial style, with a familiar connotation. The distribution of tone-units and the choice of nuclear tones is altered in the three types of discourse, with the corresponding styles. The foci of emphasis are affected in all the types of discourse analysed, because of the permutation of pauses. In the addition of a pause, the lengthening of phrase-final syllables is affected in discourse 2, where colloquial style, on the familiar approach, is involved. The addition of pauses is a means of increasing tone-units and of using different nuclear tones for divided nucleus. Styles differ concerning addition, because it is restricted in declamatory style. Emphasis is largely related to the addition of pauses. The omission of pauses

affects the number of tone-units in the different types of discourse, and it provides a reduction in emphasis. Length on phrase final syllables is altered in discourse 2.

We come to the point that prosodic features, in the form of pausing and pitch pattern are of importance for speech perception, and pauses are essential in speech understanding, by means of disambiguation and emphasis.

In connection with the speaker's attitudes, the listener is more concerned with his logical attitude in the formulation of the type of sentence, than with his emotional attitude, although there can be an agreement between them.

On information grounds, a declamatory style with more foci of interest is more informative than the formal colloquial and colloquial style. Information is also enlarged with the use of more references to the emotional attitude of the speaker.

The analysis of discourse is linked to style, and style is dependent on syntactic and prosodic organization. A pause plays an important role on discourse structure: it has grammar as a referent, it is a means of disambiguation, and of ruling intonation. As a way to control information, a pause provides the ground for turn taking, and it increases the occasions for emphasis, so that information in the form of a monologue, can convincingly reach the listener.

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