

**Verbal and nonverbal signals in face-to-face interaction:
A theoretical framework for a holistic micro-analysis.
The example of a parenthesis**

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Abstracts

In order to explain a proposal for a theoretical framework for a holistic micro-analysis of verbal and nonverbal modalities, a micro-analysis of a *parenthesis* in a face-to-face interaction between three Portuguese participants will be presented. In this analysis both verbal and nonverbal signals were described in relation to each other and classified according to their interactional functions. In other words, various kinds of nonverbal communication, movements and positions of body, head, eyes, face, arms and hands will be analyzed not only regarding their form and semiotics, but also their multiple functions in relation to speech production/reception – which includes words, prosody, and what is beyond it: participants expectations, attitudes, motivations and relation to each other. Besides, this example will emphasize the importance of *when* and *where* a movement is made and *what* it means in interaction, independently of its idiosyncratic aspects. The moment and the function of each movement, as well as its synchronization with speech and other movements/positions of all participants can offer very important cues regarding speech processing. The functional categories used for the classification of verbal signals result from a synthesis of principles and categories of the theories of Ethnomethodological Conversation Analysis, Discourse Analysis and Contextualization. Furthermore, for the analysis of prosody, the Interactional Linguistics was taken in account. As for the nonverbal modalities, recent investigation from several disciplinary on gesture and body movements areas was considered.

Key-words: face-to-face interaction; multimodality; conversation analysis.

1. Introduction

In this paper I will describe some aspects of a proposal for a holistic analysis of both verbal (linguistic, non-linguistic, prosodic) and nonverbal (body and head movements, gaze, facial expression and gestures) communication from a functional point of view. In the next paragraphs the theoretical background and the methodology used in this study will be first described and then applied in the analysis of a parenthesis (aside) in face-to-face interaction.

2. Theoretical background

The theoretical background of this investigation is based on the following theories: ethnomethodological conversation analysis (Sachs, Schegloff, & Jefferson, 1974), contextualization theory (Gumperz, 1992a, 1992b), and discourse analysis (Roulet et al., 1985). These theories allowed me to consider face-to-face interaction, on one hand, as an activity that is reciprocally and simultaneously constructed by speaker and hearer; and, on the other hand, as a phenomenon comprising different levels: a) thematic

development, b) the structural relations between units, c) emotion and modalization and d) the interpersonal relations between speaker and hearer regarding their interactional roles. Based on these four levels, I developed (Rodrigues, 1998) one group of functional categories: the conversational signals. These were defined as linguistic, non-linguistic or nonverbal conversational units that can have several functions at different domains of pragmatic relations. This classification will be used as the fundamental framework for the present analysis.

In respect to prosody, the theoretical principles of interactional phonology and interactional linguistics (cf. Selting, Couper-Kuhlen, 2000) were followed. According to these perspectives, developed from Gumperz' (1982) contextualization theory, the prosodic phenomena are important contextualization cues for speech production and perception. The categories considered within these theories were conceived to approach prosody from a pragmatic point of view, so that they are flexible enough to explain prosodic variations caused by different kinds of spontaneous phenomena in the interactional context.

Regarding nonverbal communication (NVC), the results of investigation of different forms and functions of several body movements, made in the context of various disciplinary areas, were considered. None of the already existing gesture typologies, nor any other classification for nonverbal communication constitute variables for the present analysis. This is due to the fact that, on the one hand, I wanted to apply the functional framework of the conversational signals, initially developed for verbal signals only, to nonverbal communication; on the other hand, the classifications already developed by other investigators for gestures and movements of other body parts do not give a systematic account to the four different levels of face-to-face interaction (the structural, the thematic, the modal and the interactional). This does not mean that I did not use any of the most common terminology to refer to different types of gestures – for instance the iconic, the metaphoric, the deictic and the beats of McNeill (1992), and the different parts of gesture units, as Kendon's gesture phrases and gesture phases (Kendon, 1980).

3. Methodology

The *corpus* – consisting of video recordings of several face-to-face interactions between three students, who were asked to discuss various themes – was submitted to a prosodic transcription¹; this was followed by the annotation of nonverbal movements², together with the micro-analysis of the verbal and nonverbal units with a turn-maintaining function. Whenever possible, coordination between movements of different parts of the body of the speaker and its synchronization with the movements made by his/her interaction partners were taken into account. In this way, the analysis began with the identification of movement/non-movement units, and continued in several steps:

- a. movement units were correlated to simultaneous speech;
- b. based on the meaning of verbal elements and on the form of body movements, possible semantic correspondences between speech and movements were detected;
- c. conversational functions of certain elements of speech were identified;

¹ *Gesprächsanalytisches-Transkriptionssystem* [Transcription of speech/prosody according to GAT] (Selting et al., 1998).

² Annotation of nonverbal communication with the annotation program for nonverbal communication ANVIL (Kipp, 2001).

- d. the existence of possible relationships between the identified verbal conversational signals and co-verbal movements was verified;
- e. based on the correlations found between speech and nonverbal units, and always considering the interactional context, other meanings and functions of nonverbal units were described.

In other words, the analysis considered relationships between a) verbal and nonverbal communication regarding function(s) (the conversational functions described for conversational signals), meaning (if the nonverbal communication reinforces, contradicts, substitutes or completes the verbal communication) and coordination (if nonverbal communication anticipates, is synchronized or delayed in relation to the part of speech they refer to); b) nonverbal communication of different nonverbal modalities, also regarding functions, meaning and coordination; and between c) verbal and nonverbal communication of all participants, regarding functions, meaning and coordination with each other.

4. Categories of analysis

Attending to the heterogeneity of the modalities considered in a holistic analysis of face-to-face interaction, it is useful to describe the categories and units of analysis in three separated groups. The first consists of the categories that allow the segmentation of speech in parts of words, words, phrases, sentences, sequences of sentences, and so on. The second group concerns the prosodic units, belonging to the supra-segmental level, where every variation of intensity, pitch and quantity marks a kind of discontinuity/contrast between two parts of speech and creates a segmentation point. And to the third group belong the nonverbal units: that is, movements of several body parts; as in the case of prosody, every change in movement, for instance in respect to form or direction, is an important segmentation cue.

4.1. Units and categories of speech analysis

Conversation units, that allowed the segmentation of speech and, in its turn, represent the basis for the classification of conversational signals, are:

- The *turn-taking system*: the way the roles of speaker/hearer change from one person to the other (cf. Sachs, Schegloff, & Jefferson, 1974), corresponds to the "exchange" mentioned by discourse analysis theory (cf. Sinclair & Coulthard, 1975; Moeschler, 1987).
- *Turn*: defined by Goffman (1974, p. 201) as what the speaker says and does when it is his/her turn³, corresponds in some way to the "intervention" of the Geneva School. "Intervention" comprises at the same time the "move" (cf. Goffman, 1976, p. 272). This lack of correspondence is due to the fact that, within the Geneva school, hearer activities were not considered to be *out-of-turn* activities⁴.
- *Conversational act*: this unit seems to correspond to the "move". It is more than Searle's "speech act" (Searle, 1969), because it comprehends not only the illocutive value (from the point of view of the speaker), but also the in-auditive value (from the point of view of the hearer, i.e. the effect of speaker's utterance on the hearer) (Henne & Rehbock, 1982, p. 17).

³ Cit. in Henne & Rehbock, 1982, p. 22.

⁴ *Out-of-turn* activities are those produced by the participant who does not have the turn (cf. Yngve, 1970, p. 568).

- *Conversational signals*: as already mentioned, the linguistic and non-linguistic micro-structural elements which help speaker/hearer(s) to achieve their communicative purposes in conversation. They can be polysemic and polyfunctional, according to the following classification:

CONVERSATIONAL SIGNALS	interactive	argumentative contra-argumentative evaluation (evaluation, correction, résumé, conclusion) geographic (addition, alternative)			
	topographic	opening transition closing			
	modal				
	turn-taking	<table border="1"> <tr> <td>of the speaker</td> <td>taking the turn maintaining the turn giving the turn</td> </tr> <tr> <td>of the hearer</td> <td>yielding the turn feed-back (understanding/agreement/ disagreement/no-understanding/no- attention)</td> </tr> </table>	of the speaker	taking the turn maintaining the turn giving the turn	of the hearer
of the speaker	taking the turn maintaining the turn giving the turn				
of the hearer	yielding the turn feed-back (understanding/agreement/ disagreement/no-understanding/no- attention)				

According to this scheme, the different conversational signals are described as follows:

- *Interactive conversational signals*: this category is based on the Geneva concept of interactivity (Roulet et al., 1985; Spengler 1980), which is defined as "les relations qu'ils [the acts] entretiennent les uns avec les autres" (Spengler, 1980, p. 128). This type of relations was attributed to pragmatic connectors, a group of certain words belonging to the morphological classes of conjunctions and adverbs. In the present investigation, however, the elements forming this group do not build a closed class, but an open one: the interactive function can be attributed to other elements independently of their form or morphological class. The main functions described by Roulet and Spengler have been synthesized in the following four subgroups:
 - argumentative conversational signals: they create argumentative relations between conversation units;
 - contra-argumentative conversational signals: they create relations of contradiction and opposition between the conversation units;
 - evaluative conversational signals: they mark the new unit as a paraphrase, conclusion, résumé or precision.
 - geographic conversational signals: they localize additive or alternative arguments in conversation, establishing at the same time a thematic link.
- *Topographic conversational signals*: their main function is to structure the turns; and their semantic content is reduced but not completely suppressed. According to their capacity of introducing something new at the beginning of a turn or between turns, or to mark the end of preceding themes/turns, we can consider the following subgroups:

- opening signals: due to their focusing properties, they mark the initiation of the turn or the introduction of a new theme during the turn. Re-opening signals introduce a theme already dealt with;
- closing signals: they close a theme or a turn;
- transition signals: they are able to close a theme and at the same time to conduct the hearer's attention to what is going to be said. They have simultaneously cataphoric and anaphoric properties. These signals can realize not only a local but also a global articulation of turns or themes⁵.

Both the interactive and the topographic signals have an important role in maintaining the turn: they occur most of the times at TRPs (transitional relevance places)⁶ and are found introducing asides, where they realize a kind of framing (cf. Goffman, 1976, pp. 264-265).

- *Modal conversational signals*: using these signals speaker/hearers are able to express their expectations and suppositions regarding social relations and common knowledge with the other participants (emotive modality), their attitude in relation to the content of the utterances (cognitive modality), or their wish to influence others' behavior (volitive modality). Intonation is an essential factor to consider in the analysis of modality.
- *Turn-taking signals*: the turn-taking activities, i.e., the activities regarding speaker and hearer roles in conversation (the interactional level of conversation), can be resumed into five main groups, three for the speaker and two for the hearer:

SPEAKER

(the one who has the floor)

- in-turn activities:
- takes the turn (with/without interrupting the previous speaker; with / without pre-selection by the last speaker);
- maintains the turn (with/without running the risk of losing it);
- gives the turn (or is obliged to give it).

HEARER

(the one who does not have the floor)

- out-of-turn activities:
- returns the turn agreeing/disagreeing with the speaker
- yields the turn

As already mentioned, these activities can be achieved by different kinds of signals: linguistic, non-linguistic, prosodic, and nonverbal – like head movements, gaze, facial expressions and gestures.

4.2. Units and categories of prosody analysis

The units considered were:

- *Intonational unit* – generally with a primary accent, often with one or more secondary accents and presenting features that distinguish them from other surrounding units. Most of the times, but not always, the intonational unit coincides with the conversational act. That is the reason why these two terms are used differently: whenever a verbal unit is treated under its prosodic point of view, it is referred to as an intonational unit; when this same unit is treated under

⁵ These properties were already appointed by Roulet (1985).

⁶ TRP (transitional relevance place) is the moment of a turn which coincides with the end of a sentence and where therefore there is a greater probability for the occurrence of a turn-taking (cf. Sachs, Schegloff, & Jefferson, 1974, pp. 702 ff.).

the perspective of any other conversational function, the term (conversational) act is used.

- *Pitch* or variations of pitch in the last syllable of the intonational unit offer very important cues for functional analysis. Different kinds of pitch variation can be detected: an ascending pitch that reaches a high level (?) or a middle high level (.); a descending pitch that reaches a low level (.) or a middle low level (:); and a stable pitch, that is, the maintenance of the same pitch level (-)⁷.
- *Intensity*, the prosodic parameter that determines stress.
- Recent prosody analysis in face-to-face interaction also proved that an intonational unit cannot be defined as having only one accent: there are cases of *beat-clatches* (cf. Auer & Couper-Kuhlen, 1994, p. 86; Uhmann, 1997), where accent falls on several successive syllables. This kind of emphasis conveys the utterance a communicative meaning. Other parameters that characterize *emphatic speech* style are extra long or extra low pitch peaks and the impression of a lower speech rate (cf. Selting, 1994, p. 385; 1995, p. 249).
- The *quantity*⁸ parameter that determines the quantity of syllables articulated in a certain unit of time is responsible for the impression of a lower or higher speech rate. Sounds produced with quick articulatory movements give the impression of a high speech rate. Nevertheless, the impression of speech rate also depends on intensity: Uhmann (1992; 1997) showed that the criteria giving the impression of a higher or lower speech rate are different ways of combining density I (quantity of syllables produced per time unit) and density II (quantity of accentuated syllables per unit of time).
- Linked to the impression of speech rate are the *pauses*: silent pauses (of variable duration), full pauses and sound prolongations that are typical for hesitant speech (cf. Boomer & Dittman, 1962; Goldman-Eisler, 1972; Uhmann, 1992).
- Another category considered is *rhythm*. The rhythmic forms are understood as event repetitions at identical perceived distances. The repetition of three events is needed to build a rhythmic pattern that, once installed, creates a scheme of perspectives regarding the allocation of the next event in time (cf. Auer & Couper-Kuhlen, 1994, 85 ff.). Rhythm still has an important role in the organization of conversation, establishing cohesive relations within the turn (cf. Couper-Kuhlen, 1983), and in turn-taking, where rhythmic integration and non-integration between two consecutive turns can be very significant (cf. *ibid*, 97 ff.).

4.3. Units and categories of nonverbal communication analysis

The analyzed categories were the movements of the trunk and head, gaze, facial expressions and gestures. As all these body parts have very different features regarding movement shape and direction, it seems quite difficult to find a movement unit that can be equally used in the analysis of all nonverbal modalities. We can say that the trunk is the part of the body that makes less complex movements: it can only move forwards, backwards and to both sides, according to two axis. Eye movements are a little more complex, because they involve on the one hand direction (where you are looking), and

⁷ Transcription code after GAT (*Gesprächsanalytisches Transkriptionssystem*) (Selting et al., 1998).

⁸ Instead of using the term *quantity* to refer to the auditive parameter whose acoustic correlate is duration, I use expressions that, due to their transparency, are generally preferred to refer to prosodic phenomena linked to this parameter: *speech rate* and *syllable elongations*.

on the other hand, the position of the eyes in the ocular globe, eye-lid movements and opening grade. Linked to eye movement is eyebrow-raising, here included in the group of facial expressions. Due to technical constraints, the micro-movements of the face were not considered, only the movements of the mouth and eye region. The body parts that are capable of a great variety of movements are the hands. Hand movements also articulate with arm movements.

In all these types of nonverbal communication two aspects should be considered: difference/discontinuity/contrast and identity/continuity/fusion. Discontinuity happens in movements with opposing direction: for instance, to the right and then to the left; continuity, in movements with the same direction: to the left and then again further to the left; or the beginning of a circular movement and the continuity of it. It is also important to consider repeated sequences of contrasting movements (to the right and to the left, or up and down) and of circular movements in the same direction or in different directions, that build rhythmic patterns. Head and arms/hands are the parts of the body that most easily perform these kinds of movements.

To analyze gesture, not only in the different phases of its trajectory, but also as a movement embedded in a sequence of other movements, I recurred, whenever necessary, to the classification referenced by McNeill (1992, 82 ff.), based on the gesture hierarchy of Kendon (1980, p. 214). In this way, the main unit is the *gesture unit*, composed of gesture phrases (gestures), which can be divided in different phases: preparation, stroke and retraction.

Actually the subdivisions of gesture units were conceived for ideal cases. In reality, a gesture/gesture sequence is not always as clear as these categories suggest. During its execution, a gesture is subjected to readjustments or interruptions in its trajectory or morphological features. Although these discontinuity phenomena can also be found in movements of other parts of the body, in the case of gestures they are easier to detect: the articulation of hands and arms conveys a great variety of precise and complex movements, so that any change of trajectory or shape is easily seen.

Regarding its structuring and organizing function, a gesture phrase can be correlated to movements of other body parts (for instance to a head rotation movement to one side, or to a forward movement of the trunk). In my opinion, the notion of *phrase* can also be applied to such cases, or even to the small head-movements that extend from one (more or less static) position to another. In the case of head movements, the movement phase with more amplitude in one direction coincides with the final phase of the phrase-unit. Independently of its amplitude, these movements last often a few thousandths of seconds from their starting to their ending point, both of them more or less stable positions. In the description of movements of other body parts, the expression *movement phrase* will be used, indicating that this unit is equivalent to the *gesture phrase*, although this solution does not seem to me very adequate to refer a bidimensional and uniphasic movement.

Whenever there are stops during the trajectory of one uniform movement, limits are difficult to determine. But if the movements are fluid and change their shape and direction often, the frontiers between units are easier to define. The criteria considered are amplitude and trajectory shape, as well as immobility time, contrasting with the movement phase. Thus, in the case of less defined, or more complex movements, movement units are limited by the points of the greatest amplitude (that can be very

reduced) of its trajectory. For instance, one nonverbal communication unit of gaze will extend from the moment where the eyes stop looking at one interaction partner/object and start looking at another interaction partner/object or up/down. That is, it corresponds to the changing phase of gaze direction. Another unit is, for instance, the quantity (in time) of gaze in a certain direction. In this case, we cannot talk about movement, but about movement-freezing, in other words, a static unit called non-movement.

The same happens with the movements/non-movements of the head: there can be distinguished dynamic units (of change of direction) and static units (of immobility). The series of shorter movements along the vertical and horizontal axis, often caused by speech articulation activities, are only considered whenever they express a greater emotion of the speaker/hearer. Other movements made along the vertical and horizontal axis are head-nods and head-shakes.

5. EXAMPLE: introduction of a parenthesis and retaking of the main theme

5.1. Prosodic transcription

- 1p13-18 CL: (0,327) -se=hÃ-uma rela`cãõ d'in`ti`mi`DA`de;
 ((bate com uma mÃõ na outra))
 if there is an intimate relationship
 ((beats one hand with the other hand))
- 1p13-19 -uma relaçaõ `d'amOR,
 a love relationship
- 1p13-20 ((bate com uma mÃõ na outra))
 ((beats one hand with the other hand))
- 1p13-21 -é normAl que`quEI`ram-alIcerçar=Isso
 it is normal that they'd want to strengthen it
- 1p13-22 <<a>`com='ma ``cri`ança;>
 with a child
- 1p13-23 ES: <<pp>claro->
 sure
- 1p13-24 CL: `na=`im`po`ssi`biliDA(`hA)-de de tEr-
 being impossible to have it
- 1p13-25 -A nÃõ ```ser `que -no `fu`tUro;
 unless in the future
- 1p13-26 `-hAja ma`nipula[ções-ge`NÉ:]`ti-cas
 there may be genetic manipulations
- 1p13-27 ES: [<<pp>(manipulações)>]
 manipulations
- 1p13-28 CL: ((inspiraçaõ))`no-corpo[`hu`Mano]
 ((inspiration))in the human body
 <<all>-e `nãõ`sei`quê.>
 and whatever
- 1p13-29 IV: [<<pp>(nãõ)>]
 no
- 1p13-30 CL: ((inspiraçaõ)) <<all>`portanto>
 ((inspiration)) then
- 1p13-31 `na=impo`ssi-biliDAde `de TER,
 being impossible to have it
- 1p13-32 <a>-as pe`ssOas `vÊEm na adop`çÃõ
 uma`forma ```DE>
 people see in adoption a way of

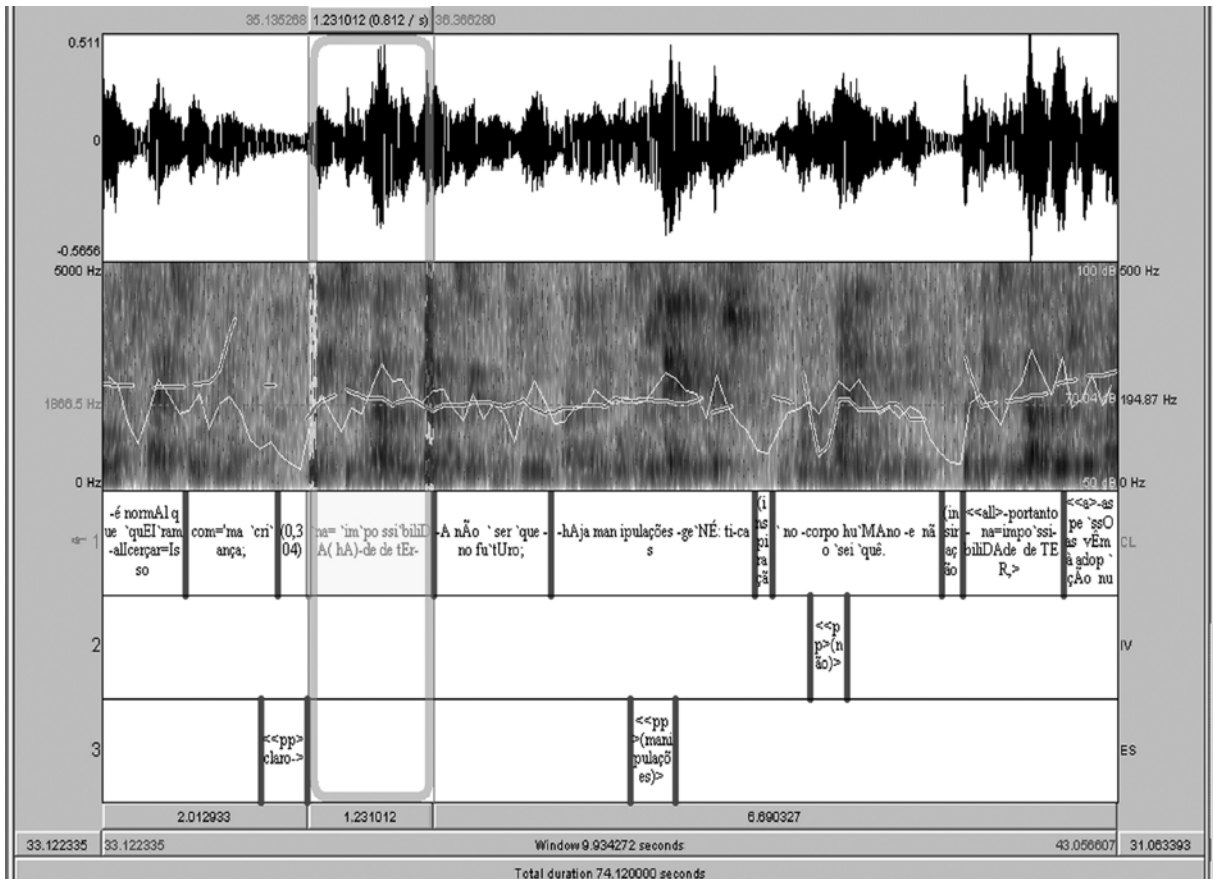
Commentary:

Interrupting the main theme: line 24;

Parenthesis - lines 25 – 30;

Retaking the main theme: line 31.

5.2. Graphic representation of the acoustic signal



5.3. Nonverbal communication accompanying this interaction segment:

`na=`im`po`ssi`bili (being impossible) - CL raises her arms a little higher and moves them forward, maintaining the same hand position; moves her head upwards; looking upwards, keeping her eyebrows arched; then moves her head to the left (IV); IV is also looking at her;

DA(`hA)-de de tEr- (ble to have it) - CL looks at IV; moves her hands away from each other towards her sides, loosening her fingers, whose tips stay in contact; raises her head a little, facing IV the entire time;

-A nãO ```ser `que -no fu`tUro; - (unless in the future) CL moves her hands closer to her body; the fingertips are intertwined and begins a circular movement, from her lower front to her upper body; completes two consecutive circular movements (one coincides with the utterance "a não ser" and the other with "no futuro"); then, stops the intertwined hands in front of her chest; during these circular movements, lowers, raises and then lowers again her head, moving it slightly to the right, towards ES, and repeats the raising and repeats the lowering of her head.

´-hAja man´ipula[ções -ge`NÉ:] - (there may be gene) - CL designs, with her hands/arms, another circle identical to the previous ones; continues looking at ES; at "pulações" turns her head towards IV and looks at her; ES emits a feed-back signal (at "gene");

´ti-cas (tic) - CL makes another movement, a little less circular than the previous ones; finishes with her hands intertwined on her lap, head facing ES;

((inspiração/inspiration)) - CL raises her hands a little, keeping the palms facing towards her body, fingers pointing upwards; starts to slope head downwards and look downwards;

´no -corpo (in the body) - at "corpo" - still looking downwards, towards her own body, CL makes two asymmetric movements with her hands: at "no cor" - moves her right hand in the direction of her body, left hand towards the front; at "po" moves the right hand to the front and the left hand towards her body;

[´hu`Mano] (human) - CL intertwines her hands in front of her chest; continues to look downwards, after "mano", arches her eyebrows; IV emits a disagreement signal which CL doesn't react to. <<all>-e ´nãõ `sei `quê.> (and whatever) - CL turns her head a little to the left and shrugs her shoulders, the left shoulder remaining higher; continues to have arched eyebrows; looks at ES;

((inspiração/inspiration)) - CL keeps her eyebrows arched; moves visual focus upwards;

<<all>-portanto-> (then) - CL raises her head a little more; continues to look upwards; eyebrows arched; starts to rotate her hands towards the outside;

´na=impo`ssi-biliDAde ´de TER, (being impossible to have it) - CL rotates her hands further towards the outside, keeping them open with the fingers intertwined, palms facing her body; starts to stretch her arms towards the front;

<<a>-as pe`ssOas ´vêem na adop - (people see in adop) CL looks down, lowers her head, pushing her neck forwards, lowers the shoulder that was more raised; stretches fully her arms towards the front until her hands reach the level of her knees, palms of the hands largely open pointing upwards;

´`çÃõ ´uma ´forma´`´dE> (tion a way of) - retains the same position of her arms/hands and head.

5.4. Images taken from the film



1

CRIANÇA



2

ES: CLARO



3 NA



4 IMPOSSIBILIDADE DE TER



5 A NÃO



6 SER



7 -TURO



8 HAJA



9 MANIPU-



10 -LAÇÕES



11

GENÉ-



12

-TICAS



13 (INSPIRA)



14 NO CORPO



15 HU-



16 -MANO



17 E NÃO SEI QUÊ



18 (INSPIRAÇÃO)



19 NA IMPOSSIBILIDADE



20 AS PESSOAS VÊM



21 ADOÇÃO



22 UMA FORMA DE

5.5. Commentary

5.5.1. Main theme

In this part of CL's turn there is an argumentative orientation. In the acts following (24) an implicit causality dimension can be found. There, (24) represents the cause and (32) the consequence. The verbalization of the cause installs sequencing constraints that shall only be satisfied after the verbalization of the consequence.

Indications about speaker's attitude regarding the content of the following speech: in “*na impossibilidade de ter*” (*being impossible to have it*) speech is marked by laugh-particles, that show speaker's attitude towards a fact that she considers ridiculous. She remembers, then, that with technical advances everything is possible to get. As this laughter communicates about communication, it has a metacommunicative character.

At the nonverbal plan, the beginning of the utterance (24) is marked by the moving of the hands away from each other towards both sides, loosening her fingers and putting the tips in contact again. This gesture marks the retaking of the turn and is a topographic opening signal (image 5).

5.5.2. Parenthesis

To the speaker's mind comes a new idea that she wants to communicate. For this reason, she has to interrupt the planned speech and introduce this new idea, an additional comment to the content of (24). The acts where it is expressed - (25), (26) and (28) - constitute a parenthesis.

Linguistic features: the elements “*a não ser que*” [unless] introduce (open) the new idea, and show that it is an exceptional case of the situation, related to the main theme. The closing of the parenthesis is verbally indicated by an imprecise expression “*e não sei quê*” [and whatever], that functions like a summary (résumé) of what could have been said about this exceptional case. Thus this expression is simultaneously a topographic closing signal and an interactive evaluation signal).

Prosodic features: a constant pitch level with clear frontiers between constituents – onset at a lower pitch level, followed by a pitch jump; on the last syllable of “*futuro*” [future], there is an abrupt descending pitch; this moment coincides with an inspiration. The remaining part of this utterance is prosodically divided into two intonational units, whose frontiers coincide with the inspiration activities of the speaker (cf. 5.2). In this way, the final frontiers of the parenthesis are prosodically characterized by a final descending pitch, and the initial frontiers by an ascending pitch. Different from a typical parenthesis, which is said to be produced with a higher speech rate, a deeper tone of voice and at a lower stable pitch level than the surrounding utterances, prosodic features that qualify background speech (cf. Uhmann, 1992, p. 317), in this parenthesis speech rate does not change; this seems to have to do with the respiratory activity of the speaker. For this reason, it does not have a background position.

Nonverbal signals: this parenthesis is accompanied by gestures that are morphologically different from the preceding ones – hands open, palms facing the body, fingers intertwined, thumbs up (cf. picture 4). Keeping the hands intertwined, CL executes circular movements:

- the first circle, of lesser amplitude, coincides with the production of “*a não ser que*” [unless] (cf. images 5,6);
- the second circle, of more amplitude, coincides with the production of “*no futuro*” [in the future] (cf. image 7);
- the third, wider and higher, coincides with “*manipulações gen-*” [gen-manipulations] (cf. images 8, 9);
- the fourth movement, not so circular, localized at the same level as the last circle, coincides with “*éticas*” [-etic] (cf. images 11,12).

The verbalization of “*no corpo humano*” [in the human body] is accompanied by a gesture where the hands seem to move along her own body, from the top to the bottom; simultaneously the speaker bends her head forward and looks at her own body. These movements have a deictic function, because they point to an object, in this case an object that stays metaphorical for the content of the utterance (images 14-16).

The function of closure, as well as the meaning of the expression “*e não sei quê*” [and whatever] are reinforced by a light shoulder shrug (there is a semantic relationship between the verbal elements and the body movements) and by a coming back to a rest position of the hands and arms (images 17, 18).

During the verbalization of “*não sei quê*” [and whatever] CL looks up at ES, indicating that she is going to continue her turn (retaking the main theme) – thus, the gaze that is simultaneous to the other closing signals, has a function of an opening topographic signal. Here we have a case of two nonverbal modalities with contrasting functions: the position of hands/arms have a closing function in relation to the previous speech; gaze has an opening function in relation to the speech to follow.

5.5.3. Retaking the main theme

Linguistic features: The retaking of the main theme in (30) is linguistically marked by the element “*portanto*” [then] and by the repetition of the elements verbalized just before the introduction of the parenthesis. The word “*portanto*”, considering its lexical meaning, is an interactive argumentative signal. As it articulates the beginning act with the speech before the introduction of the parenthesis in (24), it is simultaneously a topographic transition signal. The repetition of the elements produced before the introduction of the parenthesis establishes a cohesive relationship between the interrupted part of the turn and the one that is going to begin. It is the so called syntactic loop (Uhmann, 1997), a means of creating cohesion between two parts of speech, interrupted for the production of a parenthesis.

Prosodic signals: at the moment of retaking the turn in “*portanto*” [then], the onset is at a higher pitch level; the rest of the utterance has a descending pitch. The repeated elements are produced at the same pitch level of the first, this time with an ascending pitch, showing that the turn is going on (cf. 5.2).

The last act of this sequence (32) is the most prominent part of the turn. It contrasts with previous speech through a higher voice quality and a higher speech rate. The last syllable of this act, produced with the highest pitch is the most prominent. The attribution of more emphasis to this element is due, certainly, to the grammatical incompleteness in this act: there is an ellipsis of a syntactically obligatory constituent – “*uma maneira de ter uma criança*” [a way of having a child]. The element “*de*” seems to

have more communicative weight because it also represents the implicit non-verbalized information. The prosodic emphasis accentuates this value.

Nonverbal signals: the retaking of the main theme, already announced by gazing up/sideways during the verbalization of “*e não sei quê*” [and whatever].

When CL verbalizes “*portanto*” [then], she looks again to the front; she continues with a gestural activity, formally identical to the gesture she was doing before the interruption – the same hand shape and position and identical trajectories (cf. image 19). The execution of a gesture with features identical to those of the gesture made before the introduction of the parenthesis seems to be the same phenomenon as the repetition of the prosodic features and of the lexical elements at the retaking of the main theme. These different kinds of repetition have an equivalent cohesive function.

At the utterance (31) (image 19), CL stretches her arms towards the front, hands intertwined, palms facing her body. At (32) she moves her head down and looks down; she stretches her arms further to the front, until her hands, always maintaining the same configuration, reach her knees. This position corresponds to the moment where she verbalizes the word “*adopção*” [adoption] (images 20-22). During the verbalization of the rest of the utterance, she keeps the hands in the same position. This opening gesture cannot be considered a feed-back request, because there is no feed-back coming from the hearers. It is an information reinforcement signal, a kind of turn-maintaining signal, through which the speaker reinforces both what she has just said, and the information suggested through the ellipsis.

6. Conclusion: strategies to contextualize a parenthesis

To sum up, we find several kinds of cues contextualizing not only the introduction and the end of a parenthesis, marking frontiers (a kind of frame), but also characterizing it differently from the surrounding speech.

Parenthesis initial frontier:

- interactive argumentative (restrictive) and simultaneously topographic opening conversational signal – “*a não ser que*” [unless];
- initially lightly ascending, afterwards stable pitch;
- beginning of a new gestural unit, formally different from the preceding one;
- head movement – raising.

Parenthesis final frontier:

- shrug of the shoulders
- descending pitch;
- silent pause with a light gesture stop;
- gaze: looking up
- topographic closing conversational signal - “*e não sei quê*” [and whatever].

Retaking of the main theme:

- interactive argumentative (cause relation) and transition topographic conversational signal - “*portanto*” [thus/so];
- repetition of the last elements of the interrupted utterance (syntactic loop);
- onset at a much higher pitch than previous talk; afterwards, maintenance of a global ascending pitch;

- reactivation of the gesture that had accompanied the last elements of the interrupted utterance.

An “aside” observation: the typical prosodic characteristics of parentheses (already described for English and German), (Schönherr, 1997; Uhmman, 1992) consisting of higher speech rate, deeper voice tone, and lower or stable pitch were also detected for Portuguese.

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