EMBODIED INTERACTION: MULTIMODALITY, BODY AND COGNITION IN THE ANALYSIS OF CONVERSATIONS INVOLVING INDIVIDUALS WITH ALZHEIMER'S

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▪ **ABSTRACT**: This article aims to explore, theoretically and analytically, how we construct multimodal interaction spaces, i.e. how an action (verbal or non verbal) is constructed by virtue of an ecology of sign systems (GOODWIN, 2010) structurally different among themselves, but intrinsically related. For this end, we included some theoretical references in the field of Interaction Studies that understand social interaction and human cognition as embodied *(embodied interaction,* STREECK et al*.,* 2011). This discussion is based on the microanalysis of two excerpts from conversations involving Alzheimer's patients. The data were extracted from the *DALI (Alzheimer's Disease, Language and Interaction)* audiovisual *corpus.* Inspired by videoanalysis research (MONDADA, 2008; KNOBLAUCH et al., 2012), this paper explores the role of the body and gestures in the construction of an interaction space. The analytical focus is on the so-called minimal gestures present in the course of the interaction, and the moments when it is possible to detect a synchronicity between speech and gestures. As a potential contribution, the discussion promoted in this study aims to reflect on a multitude of cognitive resources which are or may be mobilized and analyzed in the construction of face-to-face interaction.

▪ **KEYWORDS:** Embodied interaction. Gestures. Videoanalysis. Ecology. Body. Cognition. Pathologies.

A brief introduction to the empirical research of pathologies affecting social interaction

Si le face-à-face invente le langage…[1]

The overall purpose of this study is to explore the elements at play in an interaction space where the actions are temporally and spatially organized based on collaborative

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1 "If the face-to-face invents the language …". Quote from the film *Adieu au langage* (Goodbye to Language, 2014) by French filmmaker Jean-Luc Godard.

work among participants in their face-to-face interactions. These actions involve speech, gestures, body, objects of the physical space, objects of a discursive space, orchestrating the construction of meanings and social actions produced face-to-face. More specifically, I would like to analyze the elements making up the space and the time of the interaction, starting from two excerpts from interactive situations with a common characteristic: in these interactive situations, the participants are affected by clinical disorders like Alzheimer or autism that affect social and mental life in a different way.

Many investigations and reflections within clinical disorders have given us opportunities to review and reframe the boundaries between normality and disease. Here we can mention some Brazilians research and clinical practice studies in which the notion of clinical practice, for example, is assigned a broader meaning, such as Pál Pélbart (2014), on the boundaries between art and philosophy; Kastrup (2007), on the field of psychology; Lier-De-Vito (2005), on the field of psychoanalytic speech therapy; Coudry (1996) and Morato (2013), on the field of language studies, among others. These reflections come from philosophy, arts, sciences, therapeutic practices, the literature and even the very experiences of the individuals with disease conditions. Studies along these lines offer important elements for understanding and reflecting on language, the possible and potential modes of human existence, and the creative forms of reorganization in the face of diseases or disorders.

We know that language is a form of social action. Maybe the same goes for the pathology-affected language, or language-impairing diseases. It is with 'this language disorder' that everyday practices are constructed. Added to it is the fact that everyone involved in an interaction relates to 'this language' or the conditions laid down by a pathology, and not just the individual affected by the disease. This is the picture that I want to paint here, i.e. to explore the relationship between some of the elements that compose the interaction space cut across by diseases that affect those interactions. This is what I call looking at the minimal, or concentrating on the constant language invention work that we carry out in face-to-face situations.

Looking at the minimal: the example of audiovisual corpora of Alzheimer's and autism

Part of the reflection brought in this article is the result of previous analyses or observations that I did to conduct up to this point, based on my attempts to constitute and explore audiovisual *corpora* of ordinary social conversation/interaction, especially in the Alzheimer's or autism's field. The videoanalysis (MONDADA, 2008; KNOBLAUCH et al., 2012), in general, is dedicated to the development of collections tools, transcriptions, representations and analyses of video-recorded social interactions, from a videographic perspective (KNOBLAUCH, 2012), to make direct reference to the ethnography which turns towards encounters and social situations.

Among the analyses I conducted, special note should be made on some specific language characteristics observed in two audiovisual corpora in Portuguese Language: the *DALI Corpus [Alzheimer's Disease, Language and Interaction]* (CRUZ, 2008; 2015) and the *CELA (Corpus for Language Studies in Autism)*[2].

Before we proceed with describing the previous analyses, it is worth making an important remark about the study of the pathologies mentioned here, Alzheimer's and autism. In nosological classification or clinical terms, they are not necessarily comparable. However, here they are juxtaposed based on a perspective very different from the clinical-biomedical perspective. In interactions involving person with some kind of pathology affecting language or social interaction, therefore either in Alzheimer's or autism or other diseases, the interaction itself can be constructed without the central presence of verbal language.

In the case of Alzheimer's Disease, when investigating, for example, repetition and echolalia in individuals with Alzheimer's, I could confirm that such repetition and echolalia were present in the language of individuals with Alzheimer's, as commonly described in the clinical, neurolinguistics or clinical linguistics literature (CULLEN et al., 2005; HWANG et al., 2000). But I could also verify that when analyzing these occurrences and their impact on the organization of the interaction and the talk of the co-participant non-Alzheimer, they seemed to point to the fact that also individuals without Alzheimer's, when dealing with those productions, had a particular role in that ecology. Moreover, the arrangement of turns and sequences was orchestrated with those echolalic or deviant productions with respect to descriptors of normal language uses. If, in a way, we are fairly familiar with concepts such as 'pathology-affected language' and 'deviant language', we would perhaps find others such as 'pathology-affected interaction' or 'deviant interaction' quite strange. In some studies, such as (CRUZ, 2010), I could see how echolalic repetition found in the verbal production of a speaker with Alzheimer's, and also in that of the speakers non-Alzheimer, served as environment or substratum for semantic operations or reorganizations of conversational turn-taking. This 'excessive linguistic materiality' of echolalia should therefore be considered, in analytical terms, a component element of the sequentiality, the dynamics of turn-taking,

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[2] The CELA corpus (São Paulo, Brazil) is currently under construction by Caroline Paola Cots in the context of her undergraduate research entitled «*The line of errancy of autism and the method-thinking of Fernand Deligny: where the language is absent, what is there?* », funded by FAPESP (Research Support Foundation of the State of São Paulo, under process # 2014/15206-6). This corpus is an integral part of the Minimal Gestures Project. 'Minimal Gestures' refers to the beautiful work of Fernand Deligny on the modes of existence of autistic children. But 'minimal gestures' is also an invitation to the very investigation of human interactions. The investigators in this project are interested in the minimal, as minimally described. Thus, this research project aims to study the modes of interaction of individuals with autism. This study is based on the construction of audiovisual corpora of individuals in natural environments (institutional or otherwise). In human interaction, the actions are not always organized through one single medium, such as speech, for example, but constructed by the simultaneous use of multiple semiotic resources with very different properties. Our analytical movement implies the acknowledgment of this diversity of semiotic resources used by participants in the interaction, and the investigation of how these resources interact to locally construct an action. The project scope also includes the challenges of multimodal transcription notations and the development of micro-video analyses.

the time and the rhythm (AUER et al., 1999) of that interaction, i.e., creating an ecology from which the interaction environment takes form, with all its component actions.

Another example relates to interactions involving a child with autism, which constitute the CELA corpus. When the verbal production of one of the participants is not present or not central to an interaction, as seen in these interactions, there is a whole reorganization visible in the production of meanings, in which everyone involved takes part, be they speakers with intact linguistics skills or not. There, the bodies, gestures, objects and a multitude of movements, including verbal, establish a time and a space specific to those interactions. Perhaps these nonverbal elements could be considered secondary in a linguistic and interactional analysis of situations in which the role of talk-in-interaction is central to the organization of the interaction. However, in those interactions[3], an analysis exclusively based on verbal elements, although possible and productive as shown by our long tradition of linguistic data studies, could be limiting or fail to cast light on important aspects.

Comparing this audiovisual material from the CELA corpus with audiovisual and written productions by Fernand Deligny (1913-1996) on autistic children interacting with others and with the environment, we can see a potential direction of analysis of these interactions. This French thinker is concerned with understanding these interactions not for the absence of verbal language, but for the powerful presence of gestures, body and actions, or, in his terms, for the acting. Deligny, whose work has been organized by Toledo (2007), microanalytically brings to light the minimal gesture, sometimes reflecting a particular communicability or sociability among participants who are sensitive to other semiotic systems and not so tied to the structuring of verbal language.

When observing and trying to carefully transcribe the existing interactive modes involving individuals with autism, we, as researchers, are continuously challenged to resist the temptation of placing verbal language as a central organizer of communication and human interactions. Perhaps it is not by hazard that so much praise is given to the silences in artistic performances, philosophical texts, poems...

One question to be raised when analyzing linguistic impairment would be: if on the one hand we cannot neglect or ignore the importance of describing occurrences and characteristics of the language as affected by certain conditions, on the other, it is intriguing how speakers, either or not affected by disease, relate to the language, and how interactions take place before any and every element integrating a field of relationships (i.e. an ecology). In other words, despite the 'absence of verbal language,' an interaction space exists and is analytically visible (GOODWIN, 2010a,b).

To set our analyses in this direction, we adopt a situated and contingent perspective of social actions (MONDADA, 2002; 2011) as a prism to observe the interactions involving disease-affected participants. In an instance of interaction, the analysis of

[3] Although here I am referring to interactions involving individuals with disorders that affect language, the same could be said for interactions involving a complex articulation with the material world, such as interactions in professional environments (workplace studies). In these interactions, the description of actions involving the body and material word is important for understanding the construction of the interaction.

language practices looks at the participants' language in a specific time and place, i.e., the action is situated and contingent to certain conditions. This allows us to assume that if, among the participants, there is one or more individuals with a condition that affects language, that interaction as a whole will be somehow affected, even with regard to the linguistic profile of non-affected individuals. In other words, the diseases here are not isolated as a clinical category but investigated in everyday life[4].

An analysis in this direction would not be interested in showing, prospectively or exclusively, the descriptive elements particular to the language in use in some specific disease, such as "the language of dementia", "the language of schizophrenia" or autism, among others. Furthermore, it would not be exclusively intended to highlight the descriptive characteristics of these languages or linguistic and communicative behaviors such as echolalia, repetitions, delays, nonsense, paraphasias, pauses or silences. Nor is the purpose to disregard or neglect the impact of diseases on the language and life of individuals. It would rather be focused on the task of descriptively restoring an ecology of interaction dynamics, taking into account the time, the space, and the elements involved in the actions that make up this certain time and space.

Notes on an ecological perspective, multimodality and embodied interaction

Let us start by trying to understand this notion of ecology of interaction dynamics, as already mentioned here a few times. In general, the notion of ecology is very productive, because it refers to the interaction between living things and the environment. And it implies the idea of systems, levels of organization, networks of interactions, laws and rules, and a complex dynamics of changes, variables and constants at play within the interaction.

We can say that our human actions, including the talk-in-interaction, make up an ecology of signs or signals, structurally distinct from each other, but closely related (GOODWIN, 2010a,b). Thus, individuals construct their interaction spaces in a multimodal way, where multimodal means that an action (verbal or non-verbal actions, linguistic or otherwise) is constructed and completed thanks to the combination of these sign systems structurally distinct from each other. In the 60s, Erving Goffman, in *The Neglected Situation* (1964)[5], describes what would be a microecological orbit in which social actions are constructed. This part of the text deserves attention and has even been highlighted by some scholars in their publications on multimodality:

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[4] The wording « in everyday life » is a free reference to the book "The Psychopathology of Everyday Life" (FREUD, 2006 [1901]), in which Freud shifts the boundaries between normality and disease through very concrete examples of linguistic behaviors and acts or actions of the speakers.

[5] GOFFMAN, E. **The Neglected Situation**. American Antropologist., 66 (6, part. 2), p.133-136, 1964. The Portuguese translation can be found in **A Situação Negligenciada** (RIBEIRO; GARCEZ, 2002).

> First, while the substratum of a gesture derives from the maker's body, the form of the gesture can be intimately determined by the microecological orbit in which the speaker finds himself. To describe the gesture, let alone uncover it's meaning, we might then have to introduce the human and material setting in which the gesture is made. For example, there must be a sense in which the loudness of a statement can only be assessed by knowing first how distant the speaker is from his recipient. *The individual gestures with the immediate environment, not only with his body. So, we must introduce this environment in some systematic way.* Secondly, the gestures the individual employs as part of speaking are much like the ones he employs when he wants to make it perfectly clear that he certainly isn't going to be drawn into a conversation at this juncture. At certain levels of analysis, then, the study of behavior while speaking and the study of behavior of those who are present to each other but not engaged in talk cannot be analytically separated. (GOFFMAN, 2002 [1964], p.15).

The notion of microecological orbit seems fundamental to me. Orbit implies a space in motion, and microecological implies minimal elements in a relationship. With respect to social interactions, Goffman suggests that when speaking occurs, it occurs within a social arrangement (op.cit., p.18). This also tells us that sometimes it does not occur during our actions. What human interactions seem to indicate, as Goffman would say, is that in every situation, a meaning is assigned to different elements that are not necessarily associated with verbal exchanges, such as, for example, body elements, but are still part of a certain form of communication within a social arrangement. Pasquier (2008), when trying to systematize the concept of body in the work of Goffman, and from there investigate the dimensions of corporeality in social relations, stated: "The body speaks. We are forced to deal with it more or less spontaneously in our face-to-face relations."[6]

So if we turn to what constitutes this arrangement, we turn to the joint action (i.e. involving at least two people) of constructing the universe of signs and signals that make up this orbit, this kind of *space in motion*. The notion of joint action evokes the tradition of studies on collaborative actions or processes (CLARK; WILKES-GIBBS, 1986; CLARK, 1992; 2005; TOMASELLO, 2008; 2009; LEVINSON; ENFIELD, 2006, to name a few). As reinforced by authors dedicated to the field of multimodal interaction analysis, such as Goodwin (2010a,b), Erickson (2010), Streeck (2010) and Mondada (2012), among others, an ecology would imply not only the occupation of the same place and time within the interaction, but also the collaborative construction of this environment.

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[6] Free translation by me of the original « Nos corps parlent. Nous sommes obligés de « faire avec » plus ou moins spontanément dans nos relations de « face à face ». Pasquier, S. (2008). Le corps chez Goffman, Quel statut du corps dans la réalité sociale ; quelle réalité sociale au-delà du corps?, **Revue du MAUSS permanente**. Available at <http://www.journaldumauss.net/./?Le-corps-chez-Goffman>. Visited on sep 28, 2015.

Streeck et al. (2011), for example, while introducing and systematizing research studies of the embodied interaction (op.cit, p.6), consider that the first extract above from the article published by Goffman in 1964 is some kind of presages for the common ground of contemporary research studies on embodied and multimodal interaction.

We know that the talk-in-interaction has been this privileged place for a more thorough and detailed study of the co-construction of social actions. In methodological and analytical terms, the conversation and the system of turn-taking (a universal component of human action, STIVERS et al., 2009), favor a sociological and/or linguistic analytical exercise due to, among other aspects related with their systematization and organization, their possibility of being recorded in audio, transcribed, analyzed and re-analyzed in detail. The conversation tells us a lot about the social organization and how the speakers organize their actions. And on this subject, we fortunately have an important legacy in the field of linguistic interaction studies (to name a few references we have GARFINKEL, 1984; SACKS, 1972, 1992; ATKINSON;HERITAGE, 1984; DURANTI, 1997; and in Brazil, we have, among others, the works of OSTERMANN, 2002; SILVEIRA; GAGO, 2005; GARCEZ, 2006; ALENCAR, 2007; OSTERMANN; OLIVEIRA, 2015, whose analyzes of talk as an action apply to different empirical domains such as interactions in educational settings, medical encounters, call centers, court hearings).

But there is also a range of interaction spaces structurally organized in temporal and sequential terms in which, although talk or verbal language appears as one additional element among many other signal systems, its isolation in methodological and analytical terms could lead us to overlook a number of variables or cues that are central to the understanding of collaborative actions. In this sense, there are quite a few authors/analysts who have been devoted to describing and analyzing social interaction in its multimodal conception, i.e., as a temporal, spatial, body and materially collective organization. We have the pioneering studies focused on the actions that constitute and organize the talk-in-interaction, such as gaze direction (GOODWIN, 1979), hand gestures (KENDON, 1983; GOODWIN, M.; GOODWIN, C., 1986), and overall gestures (GOODWIN, 2007; STIVERS; SIDNEY, 2005; MONDADA, 2004; DUNCAN, 2002). Special note should also be made of the studies that employ a multimodal analysis and, starting from the verbal actions, give very distinct outlines to key notions of the analysis of talk-in-interaction and social interactions, such as turn-taking, sequentiality and indexicality, as pointed out in Mondada (2004, 2013).

Among these authors dedicated to a multimodal dimension of human interaction, we sometimes find some criticism to the sort of logocentrism that sees talk or verbal communication as privileged in the analysis of social interaction. Historically, in the 70s, there seems to have been some lament in the scenario of American research over the artificial separation between verbal and nonverbal behavior, as pointed out by Streeck et al. (2011). This topic could certainly warrant extra attention in our research about interaction in Brazil, and even has important implications on the interaction research agenda; the construction of new empirical fields and studies, and

the practices for transcription and presentation of audiovisual data on interactions, to name just a few.

With no disregard to the presence of talk in our everyday actions, perhaps we can analytically see it as just one more among so many sign systems. Thus, a multimodal approach[7] of human actions would focus on that simultaneity, i.e. the simultaneous use of multiple sign systems with quite different structural properties.

The analytical focus would be trying to understand how participants simultaneously make use of different types of semiotic resources, which, in turn, have different structural properties and are instantiated in different types of semiotic materials, as shown by Streeck et al. (op.cit., p.2): linguistic structure in the stream of speech; signs such as pointing displayed through the visible body; the construction and operation with referents and spatial objects in interactions involving work activities, such as geographers, architects, surgeons etc.

A multimodal analysis would then be an analysis of a fundamental minimal, of that which synchronizes speech, gestures, space and other actions in constructing the interaction, casting light on how social interactions and meanings shape themselves in the sequentiality and temporality of these actions.

Finally, with respect to data from interactions involving individuals with diseases such as Alzheimer's, I would like to show some elements of this space in motion in these interactions, by looking at the minimal. This method of looking at the minimal converses directly with multimodal studies and the tradition of ethnomethodological interaction studies (see, for example, the publication *"Doing Conversation Analysis,"* TEN HAVE, 1995; GARCEZ et al., 2014), concerned with the nature of data, audiovisual records, thorough and detailed transcription, "line by line" description (in reference to the way transcriptions are presented, but also the dynamics of sequentiality of interaction), and the temporality of the actions.

Presentation of data and transcription notation: a few words before the analysis

We present below two excerpts from interactions involving individuals with Alzheimer's, taken from the *DALI* audiovisual corpus. The transcription of audiovisual data is a key aspect and an important analytical tool. Very often, important elements for understanding the structure and organization of situations have a multimodal constitution, including openings and closures of interactions; hesitations; adjacent pairs (of questions and answers); turn-taking dynamics; repairs etc. In audiovisual *corpora,* these actions can be seen, transcribed and thoroughly analyzed in sequential terms

[7] The notion of multimodality also applies to studies of text, with scope, objectives and analyses different from those of analyses focused on human actions. We have studies concerned with the semiotics of text, such as images and films (KRESS; VAN LEEUWEN, 2001; NORRIS, 2004). In Brazil, we have a significant production in this field of studies looking at the relationship between orality and writing. See, for example, Marcuschi, L. A.; Dionísio, A. P. (Org..). **Oralidade e Escrita**. Belo Horizonte: Autêntica, 2005.

through hand movements, body movements, gazing, pointing, and gestural references to objects present in the space. However, the transcription of multimodal elements is not always an easy task. In situations where data are orally presented, such as courses, conferences etc., video can be a good resource or support to provide visibility to the data. Nonetheless, it does not eliminate the need for transcriptions work that is, in itself, an analytical activity (OCHS, 1979; MONDADA, 2000; TEN HAVE, 2002). Transcribing is therefore a "see-through" activity, to see through the potential analytical elements in an interaction.

The data as presented in this article raise some questions as previously explained. They were transcribed using a transcription notation system based on elements proposed by Mondada (2004). What justifies the adjustments is that both the transcription practice and notation adopted are sensitive to the effects that theoretically and analytically configure this practice. Table 1 shows the transcription notation used.

Table 1 – Transcription notation system.

General information	Each participant is indicated by two initials (MA, MH and AN, for Excerpt 1 and ME, PA, AC for Excerpt 2). Capitalized initials indicate speech. Small initials indicate gestures. Where reference is made to the participant by another participant within the speaking turn, we use the alias corresponding to the initials indicated. In the text for data analysis, we use the alias. Each transcription line is numbered and *does not* necessarily correspond to speaking turns. Each participant receives a graphic symbol indicative of his or her gestures. In the case of Excerpt 1: + MH's gestures; * MA's gestures; # AN's gestures. In the case of Excerpt 2: + PA's gestures. To graphically distinguish speech from gestures, the first is shown in **bold** and the second in *italics.* Translation: an indicative translation is provided line per line in grey; its primary aim is to help the reading of the original transcript.
Unintelligible segment	Xxx

Sequential phenomenon: marks the continuity of the speaking turn by the same speaker after a break in the transcription line to introduce the description of a gesture by the other speaker	&
Pauses	. (small pauses, less than 0.3 seconds, not measured) (x,x s) pauses measure with the help of the audio edition program (free software) Audacity version 1.2.6.
Segmental phenomena	: syllable lengthening .h marks the speaker's inhalation
Intonation - Prosodic structure	/ and \ rising and falling intonation // question intonation (rising) Underlined segment: particular emphasis (intensity, accent) Capitalized segment: loud voice ° ° low voice, breathy voice ↑: Rise in the intonation curve on nuclear syllables (before the syllable) ↓: Fall in the intonation curve on nuclear syllables. → Neutral intonation curve on nuclear syllables.
Description and marking of actions like (gestures, gazing and posture)	+----+ delimitation of the action described in relation with the speech transcribed in the previous line. The transcribed speech has graphic symbols indicating gestures (+, *, #), positioned at the exact moment they are made in relation to the speech. ,,,, indicates the action described is ongoing -----> (line x) indicates the action described continues down to a certain line ----->+ indicates the exact moment when, in an ongoing action described, there is another focal action; or when there is an action at a precise moment within the speaking turn.

Source: author's elaboration.

Analyses: silence and body in interactions involving individuals with Alzheimer's

In Excerpt 1, we have an interaction involving Maria Helena (MH), a woman who had been diagnosed with Alzheimer's; Marcia (MA), her daughter in law; and Andre (AN), her grandson. The data on Maria Helena were collected between 2006 and 2007, corresponding to a relatively diverse series of everyday interactions involving Maria Helena in her family environment. Maria Helena had been diagnosed with Alzheimer's about 10 years before the date of data collection.

In these interactions, we not always have signs or evidence of speech or verbal expression coming from Maria Helena. Certain characteristics described in clinical studies of language in Alzheimer's settings, or in descriptions of the linguistic behavior of Alzheimer's patients, confirm that over the course of dementia, there is progressive loss of the drive to speak, as well as silences and even mutism (FERRIS; FARLOW, 2013). Silence, in very general terms, is sometimes associated with the idea of a gap or absence. Here, I would like to analytically explore a situation in which we identified "silence" from an individual with Alzheimer's. How does it integrate into the ecological orbit of the interaction? And yet, what could the proposal of looking at the minimal in these interactions provide as inputs for understanding the social and cognitive resources of the individuals?

In the excerpt below, the three participants are sitting at the table, eating lunch. Marcia speaks to her son, drawing his attention to the food spilling on his clothes (reference to Figure 1).

Figure 1 – DALI Corpus

Source: author's elaboration.

Excerpt 1 – DALI Corpus

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01    MA    +AnDRE↑/ você tá se sujando to:do di di macarrão\+
            +AnDRE↑/ you are spilling a:ll your your pasta\+
02    ma    +------------MH volta-se para AN-----------------+
            +------------MH turns to AN----------------------+
03    MA    +Andre↑/ a o macarrão caindo+
            +Andre↑/ look at the pasta spilling+
04    mh    +------MH volta-se para AN-------------------------+
            +------MH turns to AN-------------------------+
05    MA    *+na sua ca- no seu prato aí (0.3) Andre\.+
            *+on your sh- on your plate right there (0.3) Andre\.+
06    ma    *MA aponta para André
            *MA points to André
07    mh    +-----MH volta-se para AN-----------------+
            +-----MH turns to AN-----------------+
08    MA    +me poupe\ . põe↑ esse prato pra perto\
            +come on\ . pull↑ that plate closer\
09          (1.5)
10    MA    ã:::+\
            ahn:::+\
11    mh          +------------MH volta-se para MA
                  +------------MH turns to MA
12    MA    e CO↑me hein\+
            and EA↑t your food\+
13    mh              + MH volta-se para a mesa
                      + MH turns to the table
14    AN    já TO comendo
            I AM eating
15          (1.9)
16    AN    +se eu comer posso xxx/
            +if I eat can I xxx/
17    mh    +.....volta-se para AN,,,,,,+
            +.....turns to AN,,,,,,+
18          +(1.0)+
19    mh    +---MH olha para MA----+
             +---MH looks at MA----+
20          #+(0.8)+#
21    mh    +MH volta para MA+
            +MH turns to MA+
22    an    #AN volta par MA #
            ♯AN turns to MA ♯
23    MA    *limpa essa boca*\
            *clean that mouth*\
24          *movimento negativo com a cabeça*
            *shakes head in disapproval*
25          ((todos voltam a comer))
                  ((all go back to eating))
```

In this interactive situation, the verbal action, which I shall restrict to the use of talk *(lines 01, 03, 05, 08, 10, 12, 14, 16, 23*) take place between Marcia and Andre at the same time the three participants eat a meal. We see that Marcia, Andre's mother, repeatedly calls his attention to the food spilling from the plate. During these interventions, Marcia requires a response from Andre in the form of an action. This type of exchange was analyzed as an interaction sequence referred to as an embodied directive sequence by

M. Goodwin (2006) and Cekaite (2010), in which the mother/father or an adult asks something of the child who, in turn, may respond or not with a body action, thus forming a question-answer adjacent pair. So, *sit straight at the table*/*pull the plate closer*/*eat the food* make up the sequence of requests from Marcia to Andre. Looking at the way these sequences organize themselves in this interaction, there is a temporality marked by Marcia's waiting for Andre to fulfill her requests. This temporality of waiting, so to speak, is spatially visible in the multimodal construction of the participants' joint attention to the problem, i.e. the food spilling from the plate. This joint attention is mutually constructed through verbal resources: *"Andre / look at the pasta spilling on your sh- on your plate there (0.3) Andre" (lines 03-05),* with presence of the deictic form *(a ô = look at the, structure type look + X,* as in the proposal of Bernardo (2005), for example). But also gestural: *"Marcia points to Andre" (line 06).*

At every request from Marcia and every new information in constructing joint attention to the problem, Maria Helena indicates, with her gaze direction, the exchange dynamics of these request-response pairs between Marcia and Andre. In this case, Maria Helena participates in this joint construction of attention by monitoring and anticipating, through her gazing, the turn-taking alternation. In other words, we can say that Maria Helena, without expressing herself verbally, tracks the sequential organization of this activity through her gazing and body posture.

The actions taken by the three participants to accomplish this type of sequence *(embodied directive)* provide a situated dimension of the child's socialization through body practices and gestural movements in this interaction space. This is one of the analyses proposed by Ceikate (2010), particularly interested in interactions involving children. For Excerpt 1, we can infer some aspects that converse with an analysis of sociability processes and what they indicate about the resources used (or not used) by individuals with cognitive impairments. In methodological and analytical terms, many variables could and can be mobilized to understand an interactive situation or action being co-constructed by individuals, such as: age; degree of familiarity among participants; shared knowledge; different types of motivation, such as emotional, psychological, ideological, etc.*;* purpose of the interaction; competencies and skills; cognitive, cultural aspects; the environment; and many others we can imagine or describe when observing an interaction, considering the conditions that are specific to each situation.

Amid this wide range of possibilities to analytically explore these actions, here we have chosen an emic perspective of the interaction and human practices, i.e., one that adopts the point of view of the actors or participants of an interaction (see DURANTI, 1997; GARCEZ, 2008). This has a direct implication on how to see and analyze interactions. It means assuming, for example, that the relevance or pertinence of the resources mobilized by the actors is given at the time of a certain interaction by the participants themselves, and by the circumstances limiting the action in question. But what we want to reinforce is not just the fact that during our daily interactions we activate a wide range of resources and actions to produce meaning. The focus is to point out how

the elements of this architecture of intersubjectivity (HERITAGE, 1984; SCHEGLOFF, 1992) are arranged in the space and time of what is defined as the interaction dynamics, and how participants take it into account, publicly, in their actions (see concepts of *accountability* (HERITAGE, 1984); and *explicability* (GARCEZ, 2008)).

What is at stake in this explicability is a complex field that can be analytically decomposed, involving the coordination of actions and movements. We can say that Maria Helena, an Alzheimer's patient, is also monitoring and actively constructing that coordination of actions, and playing a role distinct from that of Marcia, the child's mother, who is requesting those actions. Maria Helena, in turn, follows this coordination of actions and this dynamic of request-response pairs directing her gaze to follow all movements closely. The construction of this temporally marked alignment of the participants' actions is completed just as the sequence of requests and responses ends *(lines 25 and 25)*, and when all three participants finally begin to eat *(line 26)*.

An embodied interaction approach has stressed that the primary place for organization of human action, cognition, language and social life consists of a situation in which the various participants are jointly co-constructing an interaction space and, at the same time, jointly co-constructing the actions that outline and shape their social world. Moreover, all this happens while they mutually orient themselves to the detailed organization of the ongoing talk; to the relevant events in the environment; and to the multiple activities in which they are engaged (HADDINGTON et al., 2013).

In terms of coordination of actions, here we have a social interaction involving multiple activities, basically defined as simultaneous activities, whose organization casts light on how individuals interact with each other at the same time their attention and time are directed to other activities (eating, educating a child, talking...).

In the case of interactive situations involving people with Alzheimer's, I believe this is an interesting niche to explore, particularly due to the question of what we could analytically identify as evidence of social cognitive resources mobilized by the individuals, with or without cognitive impairment, during the collaborative construction of the actions. As a leading indicator, we must bring to the field of interaction analysis the role of the body in that interaction space. The body displays primarily to the other participants during the social interaction a multitude of cognitive resources being mobilized in the coordination of these actions.

I will try to dig deeper on the role of the body in an interaction space, and the implications of an embodied perspective of cognition for the collection of data on diseases that affect language and cognition, by exploring a second interactive situation.

The following scenario takes place in a clinical institution that operates as a care center for people with Alzheimer's, in São Paulo, Brazil. Just like Excerpt 1, this is also data taken from the DALI corpus, from the collections dedicated to interactions in clinical settings. I chose to indicate the participants according to doctor-patient categories directly related to this clinical setting (see, for example, Ten Have, 1999 for the discussion on the choice of participants during the practice of transcription).

We have here a patient diagnosed with Alzheimer's (PA); a doctor (ME); and the wife/ companion who is accompanying the patient to the appointment (AC).

Excerpt 2 – DALI Corpus

01	ME	**e a memória/ (.) como é que anda/**
	ME	and how is/ (.) your memory/
02	PA	**como//(.) a memória//**
	PA	what the//(.) memory//
03	ME	**é**
		yes
04	PA	**a: doutor xx+xxxxx né/ vo- agora difícil mas tá**
		well: doctor xx+xxxxx well/ now it- is hard but
05		**chegando+**
		it is coming back+
06	pa	***+volta-se para sua esposa do lado***
		+turns to his wife next to him
07	AC	**eu não sei nada**
		how would I know
08	ME	**o que que a senhora acha//**
		what do you think//

In the Excerpt 2, the doctor asks the patient about the status of his memory. Memory problems are one of the main complaints and most important signs of Alzheimer's disease. This type of question is part of medical appointments for people with Alzheimer's. Some discursive manifestation or explicability of the cognitive state is then expected. Although common, this type of question reveals some tensions, because it places evidence on the subjects' memory problem and all the related social consequences (CRUZ; MORATO, 2005; CRUZ, 2014). But interactionally, would it be possible to analyze some of the tensions and their implications for the course of this interaction?

The cognitive state of a patient being evaluated in a clinical appointment is checked within an interactive dynamics, even if this requires the use of standard or structured tests with questions and answers (MARLAIRE; MAYNARD, 1990). These medical appointments for assessment of the cognitive state bring to light the different ways through which individuals manifest their "mental state". For example, discursively, through account such as "*I don't know, I don't remember, I forgot*", "*my memory is not good*" as well as linguistically and interactionally, through hesitations, pauses, search for words or repairs. This last aspect is of interest for us.

In the example above, the doctor's question about memory is answered by the patient with a repair: "*what//(.) the memory//" (line 02*). The repair, as an interactional phenomenon, has important implications in the analysis of the course of an interaction, because it is with this resource that participants demonstrate to the others what they consider a trouble source i.e. that which has the potential to be interactionally treated by the participants (see SCHEGLOFF; JEFFERSON; SACKS, 1977; DREW, 1997;

GARCEZ; LORDER, 2005, among others). In this sense, repairs, from the sequential standpoint, do not just happen at any point. In the example above, this is a fundamental characteristic for us to build a plane of analysis of the several small tensions and actions that take place in the clinical settings, with respect to the mental state of someone diagnosed with progressive loss of his cognitive capacity.

In Excerpt 2, we have a repair design initiated by the patient regarding the previous turn, immediately after the moment he is asked by the doctor about his memory. The patient identifies, in interactional rather than cognitive terms, the question about his memory status as a trouble source. This repair displays in the sequentially 'next' step an understanding of what the 'prior' turn was about. The doctor confirms the trouble source which is displayed by a repair ("*yes*", *line 03*). Next, after confirmation of the repair by the doctor, the patient starts responding to the question-answer adjacent pair (*question about memory status/answer*) proposed by the doctor before the repair. At this time, he adds an assessment, a self-evaluation: "*now it is hard*" (*line 04*) and then a projection that seems to transport the action of remembering (or the cognitive ability being questioned) to the present moment of the interaction: "*but it is coming back*", referring to the memory. In the construction of this turn, we see a combination of some of the patient's actions: repairs, the answer to the question-answer adjacent pair; an evaluation about his own cognitive state; a projection of a latent memory that is supposedly coming back; and, finally, in *line 06*, a body action, when the patient turns his gaze to his wife, AC.

By gazing at his wife, the patient selects her to take on the role of speaker in the conversation with the doctor, proposing a different participation framework and the roles played by the three participants. Please note that the patient does this in a multimodal way, combining the speech with the actions described above, and continuing the construction of the turn.

Although his wife refuses, at first, to actively talk with the doctor, the latter aligns with the patient' action and effectively accomplishes it. By selecting another participant to take his place in the conversation and reorganizing the participation framework established so far, the patient is less required to talk about his cognitive state in this situation. What the patient is building over the course of this interaction may be interpreted as strategies for maintaining face. In a recent study by Pollock (2007), a very similar finding was demonstrated. Pollock (2007) explored how actions for face-work (GOFFMAN, 2011 [1967]) are constructed in situations of psychiatric consultations. According to the author, the term *face* consists of

> […] the positive social value a person effectively claims for himself by the line others assume he has taken during a particular contact. Face is an image of self delineated in terms of approved social attributes-albeit an image that others may share, as when a person makes a good showing for his profession or religion by making a good showing for himself (GOFFMAN, 2011, p.14)

In the complex game of interactions, many events orient and organize everything that makes up a ritual. Its complexity, according to Goffman, does not seem to be in major events or movements, but in "glances, gestures, positionings and verbal statements that people continuously feed into situations, whether intended or not." (op.cit., p.9). Therefore, among repairs, pauses, hesitations, small and brief gazing, we have a set of minimal gestures, verbal and body, impregnated with pragmatic and semantic effects, constructing the interaction. These elements cast light on how individuals with Alzheimer's and their network, including family members and healthcare professionals, deal with the mental states at different relevant moments of this microecological orbit involving an interaction.

Discussion: observability of mental states and social interaction

Talking about "*the way they manifest*" or "*manifestation of*" mental states leads us directly to an important question in the field of empirical human sciences focused on human cognition, the question of the *observability* of cognitive states. During interactions, the manifestations indicative of a mental state are not restricted to the linguistic structure or the verbal behavior of the individuals with AD. This type of finding converses with studies in other fields, and this topic deserves some lines in the reflection proposed in this article.

The field of *Discourse Psychology* (EDWARDS, 1997; MOLDER; POTTER, 2001) investigates the way psychological and mental aspects are described, nominated and evoked in an interaction, as well as the ways psychological categories and notions are used by the individuals as tools for action taking. In this approach, some central terms of the field of classic cognitive research have been revisited from a perspective which is not mentalist but rather discursive, such as, for example, the notions of memory (EDWARDS; POTTER, 1992; LYNCH; BOGEN, 2005); attitude (POTTER, 1998); categories and identities (EDWARDS, 1991), emotion (LOCKE; EDWARDS, 2003) and script (EDWARDS, 1997). The studies based on this approach propose a way to conceive and focalize mental or psychological phenomena starting from the way they would be constructed, adjusted and situated in natural human interactions.

Thus, a repertoire of terms related with mental states is conceived in the form of discursive attributes, related not only to the representation of internal mental states, but also the expression of these states over the course of an interactional activity, for discursive and interactional purposes. The several studies in this field investigate both the rhetorical nature and the rhetorical use that participants can make of these terms, and the ways the terms or other actions attributed to certain mental states can act to organize the microaspects of the interaction.

In the field of interaction studies, not necessarily linked to psychological dimensions, the mental or cognitive states present in the interaction also receive the status of object of analysis. An example in the field of conversational analyses is the study by Goodwin

(1987) showing how manifestations of forgetfulness, uncertainties and hesitations may operate as a request for collaborative work, established during a narrative activity or a conversational sentence. In this sense, the manifestations of forgetfulness or difficulty evoking may be analytically understood as *resources* (DREW, 2005, p.166) used by participants during interactive practices. The notion of resource has to do with the fact that they play a crucial role in the social and interactional organization of an activity. The question here is how to think of *resources* in cases where forgetfulness, confusion etc. are difficulties resulting from a neurodegenerative disease of a known nature? We must recap what was previously said about the ecological perspective of disease-affected pathologies.

We can say that the manifestations linked with a mental state are imbricated and expressed within an interaction dynamics (i.e. at what time and in which sequential order a manifestation of difficulty, forgetfulness, confusion emerges); at discursive levels (i.e. which are the different discursive formulations that give visibility to a linguistic reference to mental states); in linguistic and interactional forms (particularly visible in terms of linguistic structure and interactional temporality as hesitation marks, uncertainties, pauses, repairs, repetitions etc.); and in multimodal forms (through gestures and the body).

Some final words on minimal gestures, the body, language and 'de mens'

The clinical and diagnostic investigations of Alzheimer's disease seek to provide clues on how cognitive decline can affect different dimensions of everyday life, such as language, social behavior, routines, chores or work tasks. The investigation of these activities for analytical purposes (i.e. separate investigation of language, memory, attention, or even specific linguistic levels or linguistic skills, for example) has been yielding some important findings, also validated by consolidated investigative protocols in the field of neuropsychological investigations. Likewise, an analytical decomposition in interactional terms also reveals the complex cognitive work performed by individuals, which illustrates what we do in our everyday life, dealing all the time with social, verbal and embodied actions.

However, when interacting, we are always immersed in a microecological orbit, in which various things happen at the same time as we speak. This "at the same time", i.e. this synchronous and simultaneous character of some actions, still seems to be an unexplored field in studies of interactions involving speech and gestures. The different things we do, under a magnifying glass (a microscope for social life, in the words of BUSCHER, 2005), reveal that all of us, individuals with or without diseases that impair our cognitive abilities, construct meaning from and assign symbolic value to a multitude of actions we perform when in face-to-face situations. That is exactly where, according to Godard in *Adieu au language*, we invent language, as stated in the introductory paragraphs of this text. All clues of everything involved in the construction

of meanings are first provided by the individuals engaged in that language, which is invented as the interaction is established, ideated by different levels of sharing of the cultural and socially situated functions of said clues.

In the case of investigations involving interactions with individuals in a state of cognitive loss, this type of analysis may help understand the role of the body in the interaction space, which persists, even when the cognitive decline is at advanced stages and verbal language is already absent. In other words, although the notion of absence of the mind is itself embedded in the name *dementia (de-mens)*, when we effectively turn to the concept of embodied cognition, we are invited to revisit a question that always seems to occur in human and social sciences investigations touching on the field of mental and cognitive diseases: what to do with the body when the mind is no longer present? Perhaps this question could be formulated differently if we set ourselves to consider the embodied form of language, interaction and cognition.

CRUZ, F. Interação corporificada: multimodalidade, corpo e cognição explorados na análise de conversas envolvendo sujeitos com alzheimer. **Alfa**, São Paulo, v.61, n.1, p.53-78, 2017.

- *RESUMO: Este artigo procura explorar, teórica e analiticamente, como construímos os espaços interacionais multimodalmente, ou seja, como uma ação (verbal ou não) é construída graças a uma ecologia (GOODWIN, 2010) de sistemas de signos, estruturalmente distintos entre si, mas intrinsecamente relacionados. Para isso, trazemos alguns referencias teóricos do campo dos estudos interacionais que concebem a interação social e a cognição humana de forma corporificada (embodied interaction, STRECK et al., 2011), como uma organização temporal, espacial, corporal e materialmente coletiva. Propomos essa discussão com base na análise de dois excertos de conversas envolvendo sujeitos com Alzheimer. Os dados analisados foram extraídos do corpus audiovisual DALI (Doença de Alzheimer, Linguagem e Interação). Inspiradas nas pesquisas em vídeo-análises (MONDADA, 2008; KNOBLAUCH et al., 2012), as análises trazidas permitem destacar o papel do corpo e dos gestos na construção de um espaço interacional. O enfoque analítico recai sobre os chamados gestos mínimos localizados no curso da interação e sobre os momentos em que é possível apontar uma sincronia entre a cadeia da fala e os gestos. Como potencial contribuição, a discussão promovida aqui procura refletir sobre uma infinidade de recursos cognitivos que são ou podem ser mobilizados e analisados na construção de nossa fala-em-interação.*

- *PALAVRAS-CHAVE: Interação corporificada. Patologias. Gestos. Vídeo-análises. Ecologia. Corpo. Cognição.*

REFERENCES

ALENCAR, R. Análise da conversação: uma proposta para a análise das práticas sociais. In: WEBER, S.; LEITHAUSER, T. (Org.). **Métodos qualitativos nas ciências sociais e na prática social.** Recife: Editora Universitária UFPE, 2007. p.59-71.

ATKINSON, J.; HERITAGE, J. (Org.). **Structures of Social Action**. Cambridge: Cambridge University. 1984.

AUER, P.; COUPER-KULHEN, E.; MÜLLER, F. **Language in Time:** The Rhythm and Tempo of Spoken Interaction. New York: Oxford University Press, 1999.

BERNARDO, S. *Olha só*, *olha lá* na dêixis conversacional. **Cadernos do CNLF (Congresso Nacional de Linguística e Filologia)**, Rio de Janeiro: CiFEFiL, v.9, n.11, p.174-180, 2005.

BUSCHER, M. Social life under the microscope? **Sociological Research Online**, n.10, 2005. Disponível em: <http://www.socresonline.org.uk/10/1/buscher.html>. Acesso em: 12 nov. 2015.

CEKAITE, A. Shepherding the child: embodied directive sequences in parent-child interactions. **Text & Talk**, n.30, p.1-25, 2010. Disponível em: <http://liu.diva-portal.org/smash/get/diva2:298327/FULLTEXT01.pdf>. Acesso em: 25 set. 2015.

CLARK, H. H. **Arenas of language use**. Chicago: University of Chicago Press. 1992.

_____. Coordinating with each other in a material world. **Discourse Studies**, London, n.7 (4-5), p.507-525, 2005.

CLARK, H. H.; WILKES-GIBBS, D. Referring as a collaborative process. **Cognition**, Netherlands, n.22, p.1-39, 1986.

COUDRY, M. H. **Diário de Narciso**: discurso e afasia. São Paulo: Martins Fontes, 1996.

CRUZ, F. M.; MORATO, E. M. Os embates da memória. **Horizontes,** Itatiba: EDUSF, v.23, p.29-38, 2005.

CRUZ, F. M. **Linguagem, interação e cognição na doença de Alzheimer**. 312 f. Tese (Doutorado em Linguística) – Instituto de Estudos da Linguagem, Universidade Estadual de Campinas, Campinas, 2008.

_____. Verbal repetitions and echolalia in Alzheimer s discourse. **Clinical Linguistics & Phonetics**, London, n.24, p.848-858, 2010.

_____. Categorizations of patients diagnosed with Alzheimers: alternative membership categorization devices displayed by participants in talk-in-interaction. In: GRECO, L.; MONDADA, L.; RENAUD, P. (Org.). **Identités en interaction.** Paris: Éditions Lambert-Lucas, 2014. p.193-214.

_____. Beyond neurological structures: signs of Alzheimer's disease and other possible cartographies. **Pragmatics and Society**, n.6, v.2, p.240-260, 2015.

CULLEN, B.; COEN, R. F.; LYNCH, C. A.; CUNNINGHAM, C. J.; COAKLEY, D.; ROBERTSON, I. H.; LAWLOR, B. A. Repetitive behavior in Alzheimer's disease: description correlates and functions. **International Journal Geriatric Psychiatry**, n.25, p.686-693, 2005.

DREW, P. 'Open' class repair initiators in response to sequential sources of troubles in conversation, **Journal of Pragmatics**, v.28, n.1, p.69-101, 1997.

DREW, P. Is *confusion* a state of mind? In: MOLDER, H. T.; POTTER, J. (Org.). **Conversation and Cognition.** Cambridge: Cambridge University Press, 2005. p.161-183.

DUNCAN, S. Gesture, verb aspect, and the nature of iconic imagery in natural discourse. **Gesture,** Amsterdam, n.2(2), p.183-206, 2002.

DURANTI, A. **Linguistic Anthropology**. Cambridge: Cambridge University Press. 1997.

EDWARDS, D. **Discourse and Cognition**. London and Beverly Hills: Sage, 1997.

_____. Categories are for talking: on the cognitive and discursive bases of categorization. **Theory and Psychology**, n.1, p.515-542, 1991.

EDWARDS, D.; POTTER, J. **Discursive Psychology**. London: Sage, 1992.

ERICKSON, F. The neglected listener: issues of theory and practice in transcription from video in interaction analysis. In: STREECK, J. (Ed.). **New Adventures in Language and Interaction**. Amsterdam: Benjamins, 2010. p.243-256.

FERRIS, S. H.; FARLOW, M. Language impairment in Alzheimer's disease and benefits of acetylcholinesterase inhibitors. **Journal of clinical interventions in aging**, n.8, p.1007-1014, 2013. Disponível em: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3739421>. Acesso em: 15 out. 2015.

FREUD, S. **Sobre a psicopatologia da vida cotidiana**. Rio de Janeiro: Imago, 2006 [1901].

GARCEZ, P. M. A organização da fala-em-interação na sala de aula: controle social, reprodução de conhecimento, construção conjunta de conhecimento. **Calidoscópio**, São Leopoldo: UNISINOS, v.4, n.1, p.66-80, 2006.

_____. A perspectiva da Análise da Conversa Etnometodológica sobre o uso da linguagem em interação social. In: LODER, L. L.; JUNG, N. M. (Org.). **Fala-em-interação social:** introdução à Análise da Conversa Etnometodológica. Campinas: Mercado de Letras, 2008. p.17-38.

GARCEZ, P. M.; BULLA, G. S.; LODER, L. L. Práticas de pesquisa microetnográfica: geração, segmentação e transcrição de dados audiovisuais como procedimentos analíticos plenos. **D.E.L.T.A**, São Paulo, n.30 (2), p.256-288, 2014. Disponível em <http://dx.doi.org/10.1590/0102-44507807364908145>. Acesso em: 07 out. 2015.

GARCEZ, P. M.; LODER, L. L. Reparo iniciado e levado a cabo pelo outro na conversa cotidiana em português do Brasil. **D.E.L.T.A**. São Paulo, n.21 (2), p.279-312, 2005. Disponível em: <http://dx.doi.org/10.1590/S0102-44502005000200006 >. Acesso em: 10 out. 2015.

GARFINKEL, H. **Studies in Ethnomethodology**. Cambridge: Polity Press, 1984.

GOFFMAN, E. A situação negligenciada. In: RIBEIRO, B. T.; GARCEZ, P. M. (Org.). **Sociolingüística Interacional.** Tradução de Pedro M. Garcez. São Paulo: Edições Loyola, 2002 [1964]. p.13-20.

GOFFMAN, E. **Ritual de interação:** ensaios sobre o comportamento face a face. Tradução de Fábio Rodrigues da Silva. Petrópolis: Editora Vozes, 2011 [1967].

GOODWIN, C. Forgetfulness as an interactive resource. **Social Psychology Quarterly,** n.50, v.2, p.115-131, 1987.

GOODWIN, C. The interactive construction of a sentence in natural conversation. Everyday Language. In: PSATHAS, G. (Org.). **Studies in Ethnomethodology**. New York: Irvington Publishers, 1979. p.97-121.

_____. Environmentally coupled gestures. In: DUNCAN, S.; CASSELL, J.; LEVY, E. (Org.). **Gesture and the dynamic dimension of language**. Amsterdam: John Benjamins, 2007. p.195-212.

_____. Action and embodiment within situated human interaction. **Journal of Pragmatics**, London, v.32. n.10, p.1489-1522, 2010a.

_____. Practices of Color Classification. **Mind, Culture, and Activity.** Philadelphia, n.7, p.19-36, 2010b.

GOODWIN, M. H. Participation, affect, and trajectory in family directive/response sequences. **Text&Talk,** n.26, p.515-544, 2006. Disponível em <http://www.sscnet.ucla.edu/anthro/faculty/goodwin/Goodwin_Participation_Affect_Trajectory.pdf>. Acesso em: 01 out. 2015.

GOODWIN, M. H.; GOODWIN, C. Gesture and coparticipation in the activity of searching for a word. **Semiotica**, 62(2), p.51-75, 1986.

HADDINGTON, P.; MONDADA, L.; NEVILE, M. (Org.). **Interaction and mobility:** language and the body in motion. Berlin: Walter de Gruyter, 2013.

HWANG, J. P.; TSAI, S.-J.; YANG, C.-H.; LIU, K.-M.; LIRING, J. F. Repetitive phenomena in dementia. **International Journal Psychiatry Medicine**, n.30, v.2, p.165-171, 2000.

HERITAGE, J. **Garfinkel and Ethnometodology**. New York: Polity Press, 1984.

KASTRUP, V. **A invenção de si e do mundo**: uma introdução do tempo e do coletivo no estudo da cognição. Belo Horizonte: Autêntica, 2007.

KENDON, A. Gesture and speech: How they interact. In: WEIMANN, J. M.; HARRISON, R. P. (Org.). **Nonverbal interaction**. Beverly Hills: Sage, 1983. p.13-45.

KNOBLAUCH, H. Introduction to the special issue of *Qualitative Research*: video-analysis and videography. **Qualitative Research**, London, n.12, v.3, p.251-254, 2012.

KNOBLAUCH, H.; SCHNETTLER, B.; RAAB, J.; SOEFFNER, H. (Org.). **Video analysis methodology and methods:** qualitative audiovisual data analysis in sociology. Berlin: Peter Lang, 2012.

KRESS, G.; VAN LEEUWEN, T. **Multimodal Discourse**. London: Bloomsbury Academic, 2001.

LEVINSON, C.; ENFIELD, N. J. Introduction: human sociality as a new interdisciplinary field. In: LEVINSON, C.; ENFIELD, N. J. (Org.). **Roots of human sociality:** Culture, cognition, and human interaction. Oxford: Berg Press, 2006. p.1-35.

LIER-DE-VITO, M. F. A. F. Falas sintomáticas: fora de tempo, fora de lugar. **Cadernos de Estudos Linguísticos**, Campinas, n.47, p.143-150, 2005.

LOCKE, A.; EDWARDS, D. Bill and Monica: memory, emotion and normativity in Clinton's Grand Jury testimony. **British Journal of Social Psychology**, n.42, p.239-256. 2003.

LYNCH, M.; BOGEN, D. My memory has been shredded': a non-cognitivist investigation of 'mental' phenomena. In: MOLDER, H. T.; POTTER, J. (Org.). **Conversation and Cognition.** Cambridge: Cambridge University Press, 2005. p.226-240.

MARCUSCHI, L. A. Oralidade e letramento como práticas sociais. In: MARCUSCHI, L. A.; DIONISIO, A. P. (Org.). **Oralidade e Escrita.** Belo Horizonte: Autêntica, 2005. p.31-56.

MARLAIRE, C. L.; MAYNARD, D. W. 1990 Standardized testing as an interactional phenomenon. **Sociology of Education**. Washington, n.63, p.83-101, 1990. Disponível em <https://www.ssc.wisc.edu/soc/faculty/pages/DWM_page/PDF%20files/1990Maynard_Marlaire_Test.pdf>. Acesso em: 29 jul. 2007.

MONDADA, L. Describing surgical gestures: the view from researcher's and surgeon's video recordings. In: I International Society of Gesture Studies: *Gesture-The Living Medium*, 1, 2002. **Proceedings of the Gesture Conference**, Austin*:* University of Texas, 2002. p.1-10.

_____. Temporalité, séquentialité et multimodalité au fondement de l'organisation de l'interaction: le pointage comme pratique de prise du tour. In: FILLIETTAZ, L. (Org.). **Les modèles du discours face au concept d'action.** Genève: Cahiers de Linguistique Française*,* n.26, 2004.

_____. Using video for a sequential and multimodal analysis of social interaction: videotaping institutional telephone calls. **Forum Qualitative Sozialforschung / Forum: Qualitative Social Research.** Berlin, v.9, n.3, 2008. Disponível em: <http:// nbn- resolving.de/urn:nbn:de:0114-fqs0803390>. Acesso em: 02 out. 2015.

_____. Understanding as an embodied, situated and sequential achievement in interaction. **Journal of Pragmatics,** n.43, p.542-552, 2011.

_____. Garden Lessons: Embodied Action and Joint Attention in Extended Sequences. In: NASU, H.; WAKSLER, F. C. (Org.). **Interaction and Everyday Life:** Phenomenological and Ethnomethodological Essays in Honor of George Psathas. Lanham: Lexington Books, 2012. p.293-311.

_____. Coordinating mobile action in real time: the timely organization of directives in video games. In: HADDINGTON, P.; MONDADA, L.; NEVILE, M. (Org.). **Interaction and Mobility:** language and the body in motion. Berlin: Walter de Gruyter & Co, 2013. p.300-342.

MORATO, E. M. (Org.). **A semiologia das afasias:** perspectivas linguísticas. São Paulo: Cortez, 2013.

NORRIS, S. **Analyzing multimodal interaction:** a methodological framework. London: Routledge, 2004.

OCHS, E. Transcription as theory. In: OCHS, E.; SCHIEFFELIN, B. (Org.). **Developmental pragmatics.** New York: Academic Press, 1979. p.43-72.

OSTERMANN, A. C. A ordem interacional: a organização do fechamento de interações entre profissionais e clientes em instituições de combate à violência contra a mulher. **Alfa Revista de Linguística,** São Paulo: UNESP, n.46, p.39-54, 2002.

OSTERMANN, A. C.; OLIVEIRA, M. C. L. **Você está entendendo? Contribuições dos estudos de fala-em-interação para a prática do teleatendimento**. Campinas: Mercado de Letras, 2015.

PÁL PELBART, P. Inhuman Polyphony in the Theatre of Madness. **Afterall:** A Journal of Art, Context and Enquiry. Chicago, n.36, p.20-29, 2014.

PASQUIER, S. Le corps chez Goffman: quel statut du corps dans la réalité sociale; quelle réalité sociale au-delà du corps?, **Revue du MAUSS permanente**, 2008. Disponível em: <http://www.journaldumauss.net/./?Le-corps-chez-Goffman>. Acesso em: 28 set. 2015.

POLLOCK, K. Maintaining face in the presentation of depression: constraining the therapeutic potential of the consultation. **Health***,* London, v.11, n.2, p.163-180, 2007.

POTTER, J. Discursive social psychology: from attitudes to evaluations. **European Review of Social Psychology**, n.9, p.233-266, 1998.

SACKS, H. An initial investigation of the usability of conversational materials for doing sociology. In: SUDNOW, D. (Org.). **Studies in Social Interaction**. New York: Free Press, 1972. p.31-74.

_____. **Lectures on Conversation**. Cambridge: Blackwell, 1992.

SCHEGLOFF, E. A.; GAIL, J.; SACKS, H. The preference for self-correction in the organization of repair in conversation. **Language**, Washington, n.53, p.361-382, 1977.

SILVEIRA, S. B.; GAGO, P. C. Interação de fala em situação de conflito: papéis interacionais do(a) mediador(a) em um audiência de conciliação no PROCON. **Revista Intercâmbio**, n.14, 2005. Disponível em: <http://revistas.pucsp.br/index.php/intercambio/article/view/3936/2586>. Acesso em: 01 out. 2015.

STIVERS, T.; SIDNELL, J. Introduction: multimodal interaction. **Semiotica**, Berlin/New York, n.156 (1/4), p.1-20, 2005.

STIVERS, T.; ENFIELD, N. J.; BROWN, P.; ENGLERT, C.; HAYASHI, M.; HEINEMANN, T.; HOYMANN, G.; ROSSANO, F.; RUITER, J. P.; YOON, K-E.; LEVINSON, S. C. Universals and cultural variation in turn-taking in conversation. **PNAS-Proceedings of the National Academy of Sciences of the United States of America**, n.106 (26), p.10587-10592, 2009.

STREECK, J.; GOODWIN, C.; LeBARON, C. **Embodied Interaction:** language and body in the material world. New York: Cambridge University Press, 2011.

STREECK, J. Ecologies of gesture: Action and interaction**.** In: STREECK, J. (Org.). **New Adventures in Language and Interaction**. Amsterdam: John Benjamins, 2010. p.221-240.

TE MOLDER, H.; POTTER, J. (Org.). **Conversation and Cognition.** New York: Cambridge University Press, 2005.

TEN HAVE, P. **Doing conversation Analysis:** a practical guide. London: Sage Publications, 1999.

_____. Reflections on transcription. **Cahiers de praxématique.** Montpellier: Presses Universitaires de La Méditerranée, n.39, p.21-43, 2002.

TOLEDO, S. A. **Deligny, Fernand Œuvres**. Paris: L'Arachnéen, 2007.

TOMASELLO, M. **Origins of human communication**. Cambridge: MIT Press, 2008.

_____. **Why we cooperate.** Cambridge: MIT Press, 2009.

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