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A Social Cultural-Approach to Aphasia: Contributions from the Work Developed at a Center for Aphasic Subjects

Rosana do Carmo Novaes Pinto
State University of Campinas (UNICAMP),
Brazil

1. Introduction

Writing a chapter about aphasia from a social-cultural perspective is a great challenge, considering the respect gained by the huge amount of research guided by what we will be calling, in this work, "traditional approaches". We believe therefore to be relevant, before starting our discussion, to situate the *locus* of our work with aphasia – the field of Linguistics, more specifically the Discursive Neurolinguistics which has been developed at the Instituto de Estudos da Linguagem (IEL), Universidade Estadual de Campinas (UNICAMP), in Brazil. One of the main features that differentiates our research from the work developed in other centers in Brazil and abroad is its strong connection with linguistic theories, especially the ones developed in the second half of the 20th century, such as Enunciative Semantics, Pragmatics and Discourse Analysis, which strongly influence the way we approach theoretically and methodologically the aphasia phenomena. From a unique *locus*, we believe Linguistics may contribute to a better description and understanding of how language and its several functions and speech genres can be impacted by brain injuries, considering what has been learnt about normal functioning for almost a century of development of this field as a science.

According to Damico et al. (1999a), since the time of Jackson - in the end of the nineteenth century - researchers have employed various systematic procedures to obtain both descriptive (qualitative) and numeric (quantitative) data that reflect directly on aphasia approaches. In the authors' words: "Practitioners have created a number of theories and applications that are employed in hospitals, clinics, centers and classrooms on a daily basis"(Damico et al., 1999a: 651). They also point out that there have been attempts to consider the social handicapping conditions of neurological impairment and to employ additional research methodologies to obtain more authentic, functional and naturalistic data on aphasia. Various researchers have called for the application of qualitative research methodologies designed within the social sciences to assist the more traditional quantitative research approaches, in adding to our knowledge of aphasia and its impact in authentic settings.

Neurolinguistics – which has aphasia as one of its main objects - has been a field for confrontation and, sometimes, of conflict of theoretical and methodological paradigms of the sciences that constitute it: the Neurosciences and Linguistics (Morato, 2002). Although

these fields share many objects of interest, such as the relationship between brain, language and cognition, there are still many obstacles to a more fruitful dialogue between them. We could say that the main difference that usually puts them on opposite sides is the conception of *language,* which influences directly the methodology of research and also the way therapies are conducted with aphasic subjects. Another important difference is that neuropsychological researches carried out in most centers around the world mainly seek for correlations between brain (neural substrates) and linguistic structures, generating abstract models which are validated by quantitative and statistical methodologies. Individual variations are often discarded from these studies, usually with the excuse of not being statistically relevant. The use of advanced technology, such as neuroimaging, gives these studies even more status of scientificity in the beginning of the 21st century (Novaes-Pinto, 1999, 2009, 2010; Novaes-Pinto & Santana, 2009a; Novaes-Pinto & Santana, 2009b).

Despite all the technological advances that took place during the last century, Luria (1977) has stated that the approaches to aphasia in the late twentieth century did not differ significantly from those described by the classic neurologists. In his words: "Broca's and Wernicke's basic views have remained unchanged up to our time" (1977: 67). The basic concepts are still being used, without significant changes in modern neurology clinics and "although no one now takes the idea of separate centers of higher mental functions and their inter-connections seriously, no real attempts have been made to revise these tenets of classical Neurology" (Luria, 1977: 67).

The discussion presented in this chapter, therefore, is mainly based on the practices developed for almost thirty years of research in the field of Neurolinguistics at IEL – which started with the work of Coudry (1986/1988)[1], guided by socio-cultural approaches of brain and language functioning, which in turn led to the development of the main theoretical/methodological principles that also guide our work at the Centro de Convivência de Afásicos (CCA). The main purposes of this chapter is therefore to present and critically discuss (i) the theoretical and methodological frameworks of a social cultural approach, underlining its relevance to the research on aphasia and to the therapeutic work with aphasics; (ii) the choice for qualitative analysis, which is considered coherent with the socio-cultural theoretical/methodological principles; (iii) the concepts of *brain functioning* and of *language* which guide the academic research in the field of Neurolinguistics and, finally, (iv) the work developed with aphasic subjects at CCA, which we consider the *locus* where theoretical and methodological principles meet.

2. The theoretical/methodological framework of socio-cultural approaches to human phenomena

We would like to start this topic quoting the words of Freitas (2010: 8), according to whom "The social-cultural analysis is like a magnifying glass that broadens our view to the

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[1] In this chapter, we will refer to Coudry, most times, using two different dates, both related to the same work. The first one - 1986 – refers to the date when she defended her doctoral thesis, where she firstly exposed the theoretical-methodological principles of her work. In 1988, her thesis was published as a book: *Diário de Narciso: afasia e discurso* (Narciso's diary: aphasia & discourse). Since this is the first work in the field of Neurolinguistics in a discursive perspective, it is relevant for us to keep both dates with the reference. We will sometimes refer to the work as 1988 when we quote the author or recur to her data.

different aspects of reality in order to explain it, but also seeking ways to transform it". She also states that this approach can be assumed as *another form* (other than quantitative-statistical) of producing knowledge in Human Sciences, which allows us to focus on a phenomenon in its real context (Freitas, 1995, 2003, 2010) what is a strong reason to make it respected as scientific. The author also emphasizes the need to seek coherence between the theoretical frameworks that guide our research and the method chosen, which we point as one of our main worries when approaching aphasia or any other phenomenon in which human language is involved. Most researchers who are affiliated to social-cultural (or *historical-cultural* and yet *social-historical-cultural*) approaches were inspired by the work of Vygotsky, undoubtedly the most important reference in this field. This author dedicated a whole chapter *The problems of method* (Vygotsky, 1991) to this topic, where he assures that searching for a method is one of the most important requirements for the study and comprehension of human phenomena. In his words, "facing new objects of study means to create new methods of investigation and analysis", which we take as our role, as scientists.

Due to the very strong relationship between theoretical and methodological issues that guide social-cultural approaches, discussions on both topics will be addressed together in this chapter. It is relevant to mention that it would be impossible to present a deep discussion of all relevant aspects that compose what is subsumed under the label "social-approaches" or mention the contributions made along the twentieth century by authors who dedicated their whole lives to explain and defend their theoretical and methodological principles, going most of the time in the opposite direction of what is still nowadays considered relevance the scientific method". Therefore, we chose to present some issues we consider relevant to our discussion calling upon mainly Vygotsky (1987, 1991) and Luria (1973, 1976, 1977, 1986), authors that were of fundamental relevance to the work developed in the area of Neurolinguistics at IEL, since the first research done by Coudry (1986/1988), as we will see further on this chapter.

Vygotsky built his whole theory to explain the higher mental functions conceiving man as a *concrete* subject, situated and marked by the culture that surrounds him; an individual can only be constituted in collaboration with other individuals, in social interactions made possible by language. Strongly influenced by Vygotsky, Luria (1973: 30) reaffirmed that "higher mental functions are social in origin and complex and hierarchical in their structure and based on a complex system of methods and means". The systemic-dynamic approach to brain organization of higher mental functions developed by Luria, according to Kotik-Friedgut (2006), is a logical extension and development of the ideas of Vygotsky regarding his dialectical method to study psychological functions, which considers that nature influences man's development, but that also man, in turn, acts on the nature creating new natural conditions for his own existence through the changes he promoted.

Another important issue emphasized by Vygotsky was the need to understand *dynamic processes* (not products), their movements of transformation along the development of human activities, which is the reason his theories are known as "developmental psychology". A scientific enterprise has the role of *describing* and *explaining* a phenomenon, what is only possible finding its *genesis* and following its development along a certain period, paying attention to each and every change or individual variation that may explain its singularity. Assuming the historical-cultural character of the object of study and of the knowledge itself as a construction that is generated among the subjects, this approach is able

to confront the strict limits of objectivity. In other words, it characterizes a human vision of knowledge.

At this point, we should focus the attention on issues related to methodology, arguing in favor of adopting *qualitative analysis* of aphasia phenomena, in order to be coherent with the theoretical principles presented above.

2.1 Qualitative analysis of interactive episodes: a coherent methodology choice within a social-cultural approach

In a social-cultural approach, the aim of qualitative research is understanding the meanings that are built and shared by individuals socially related (Freitas, 2010). According to Damico et al. (1999a), under the rubric of "qualitative research" there are a number of traditions of inquiry – bibliographic study, case study, conversation analysis, ethnography, historical methodology, among others that utilize numerous types of naturalistic data collection strategies: observation, interviewing, analysis of texts, etc. Qualitative research may be seen as an analytic paradigm, a set of systematic and interpretative practices "designed to seek answers to questions that stress *how* social actions and social experiences are created and sustained" (1999a:652). The authors claim that it is a complex research paradigm, with a long and well-established history. Sociology and Anthropology have used it since the early twentieth century to study the complexities of cultures, societies and interactional dyads, believing that "much of what we know and apply regarding such complex social phenomena as language and cognitive development has been gathered primarily through such qualitative research methods" (1999: 652) which, according to the authors, does not favor one single methodology over any other. The choice of data collection procedures and preferred methods of analysis depend upon the phenomena under investigation - the questions that are asked and the contexts of research - if we are to determine "what is going on". In other words, how a determined social activity is accomplished, what explains the reason this methodology is described as *qualitative* (Damico et al., 1999a).

The discussions we present under the title "qualitative research", in this chapter, are strongly influenced by the work of Brazilian linguists and educators who have developed critical analysis on the theme in both fields of investigation, among which we mention Corrêa (1996), Perroni, (1996), Ludke & André (1986), Góes (2000) and Freitas (1995, 2003, 2010). Concerning methodology in the field of aphasiology – and more specifically the adequacy of adopting qualitative analysis - we resort to a set of articles published by Damico et al. (1999a, 1999b), Simmons-Mackie & Damico (1999), Kearns (1999), Lyon (1999) and also works published by researchers of Discursive Neurolinguistics (Coudry, 1986/1988, 1996, 2002; Novaes-Pinto, 1992, 1997, 1999, 2004, 2007, 2008, 2009, 2011).

It is very common, in works developed on methodology, that the authors present a list of differences between quantitative and qualitative methods to justify their choice. We will bring up to the discussion only the points we believe that have a more direct relation with the research in Neurolinguistics. The first point to mention would be the search for objectivity, which is a major claim of quantitative methods, as already affirmed above, which influence researchers to keep distance from his object of study. As regards this aspect, Freitas (2010: 24) says that in Natural Sciences, the researcher is faced with a "silent object of the world that needs to be contemplated in order to be understood": the researcher studies

this object and *talks about it*. In Human Sciences, on the contrary, the object of study is man. In this case, the researcher cannot limit himself to a contemplative act, but has to *talk to him*, establish with him a dialogue. The traditional relation *subject-object* becomes therefore a relation *between subjects* in qualitative approaches. Also Simmons-Makie & Damico (1999) understand as well that the most relevant difference between both methods is that in qualitative methodology, the researcher's immersion in the process gives him the opportunity of taking a "learning role" and not merely a "testing role".

Perroni (1996) believes that experimental methodology, when applied to study human phenomena, is the one which more easily falls into the illusion of objectivity. She emphasizes that many researchers turn to the experimental method because of the alleged advantages that one would have to obtain information they could not reach only by observation. The other reasons would be the possibility of replicating an experiment to a great number of subjects - which would allow for statistical verification - and also the desire to generalize a concept or a process. In other words, it would be possible to take one subject as representative of a process. However, as affirmed by Corrêa (1996), data generated in experimental contexts cannot be in any way generalized to other subjects or situations because variables in a controlled test interact with other controlled variables in a non-controlled situation. Accordingly, the control of variables in experimental quantitative studies does not mean that the result is unquestionable. On the other hand, qualitative analysis allows that the categories emerge from data, rather than being imposed on them (Perroni, 1996).

Adopting a qualitative methodology, according to Freitas (2010), therefore, is a natural demand posed by socio-cultural approaches to any kind of phenomenon which interests Human Sciences: Education, Anthropology, Philosophy, Linguistics and so on, fields that have the interest to understand *how* things happen, rather than just stating that *they happen*. According to the author, many researchers reaffirm theoretically an affiliation to socio-cultural approaches, but use quantitative, statistical analysis to deal with data, with the excuse of giving the research a scientific status, which the author sees as a contradiction in most cases.

Following Vygotsky's methodological principles which have as purposes understanding the dynamics of a process, which is possible by finding its genesis and observing its development, trying to explain it, Góes (2000) assumes that the *microgenetic paradigm* is the most appropriate to account for data that emerge in real interactions among individuals, socio-cultural and historically situated. This paradigm is derived from the cultural anthropological matrix and implies the description or reconstruction of the analytic setting and the operating rules of a cultural group, guided by the conception of the world or conceptual framework of the investigated subjects. Góes explains that the paradigm is not called *microgenetic* because it refers to short duration events, but because it is oriented to "indicial details". It is *genetic* in the sense of being historical, by focusing on the movements that take place during processes and because it seeks to relate singular events with other plans of culture, social practice, circulating discourses, institutional spaces, etc. This concept, though, is fundamental to the analysis of aphasia data which emerge from interactions between aphasic and non-aphasic subjects, as it will be seen further on this chapter. In other words, the microgenetic analysis requires attention to the details of actions in interactive episodes and socio-cultural scenarios, resulting in a rich report of events. The author says

that this paradigm can be the unique method of investigation in a research or it can be linked up with other procedures to compose, for example, a case study.

Another relevant issue regarding qualitative approaches to aphasia is the choice for single-case studies, especially because there is a vast amount of case-studies carried out in the field of Neurolinguistics, which have helped to build and solidify the linguistic theories on aphasia. Miceli (2001: 658) emphasizes the contribution given by case-studies to neuropsychological research. In his words: "Much of the theoretical progress in the Neurology and Neuropsychology of aphasia results from the detailed study of individual aphasic subjects". According to the author, they have proved to be "a powerful heuristic tool in cognitive Neurology/Neuropsychology, and with time they have provided an impressive body of evidence, demonstrating the complex architecture of the linguistic system". Kearns (1999) believes that single subject methodologies are now widely accepted as a legitimate tool to investigate clinically relevant questions about aphasia. This author emphasizes that "many valuable lessons were learned as researchers favoring single subject designs worked towards full acceptance into the scientific community" (Kearns, 1999: 649), mentioning at least two of these lessons: the first – which he considers the most important - was that "we had to learn to discuss our methods and data within known scientific parameters". It was a hard work to make other scientists to understand, accept and respect our methods and results, which differed from researchers using group designs: "We had to learn that the burden of proof was on us", says the author. The second is, according to Kearns (1999: 650), that "Science is built on similarities, not differences and we needed to discover common grounds between traditions before our contributions could be accepted at face value".

Simmons-Mackie & Damico (1999) approach the problem of methodology in aphasiology from an ethnographic perspective[2], which the authors consider to be "useful for explicating the dynamics of social institutions and organizational practices, describing groups of people or understanding specific events or behaviors" (1999: 681). Instead of stating a specific hypothesis or an explicit research question, the qualitative ethnographic study begins by *loosely* identifying an area of inquiry – a behavior, a person, an event, an institution or a culture, which the authors consider as an "open-ended" approach. It precludes a priori hypotheses, predetermined categories or pre-decided questionnaires, which might bias discovery procedures (1999: 684). Simmons-Mackie & Damico also refer to ethnography as "wide-angle lens" that can be used in an attempt to understand "what goes on" when approaching a specific question. The goals of ethnography are "to interpret and to explain rather than to generalize or predict" (1999: 686). These concepts developed by the authors are very useful to understand the social practices developed at CCA and why many research – especially case-studies – emerge from the dialogical situations among aphasics and non-aphasics, as we will see ahead.

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[2] According to the authors, "ethnography is most widely identified with anthropology, where it was developed as a means of studying alien cultures – cultures about which information was insufficient to formulate specific hypotheses". Kirk and Miller (1986: 9, cited by Simmons-Mackie & Damico, 1999: 681) have described it as "a particular tradition in social science that fundamentally depends on watching people in their own territory and interacting with them in their own language, on their own terms".

The authors also touch another very important aspect regarding how to deal with the results of a qualitative research, which are not "objective", as expected in quantitative research. They defend the need of a "disciplined subjectivity", which involves external reviews, taking field notes during direct observation of an event; carrying out driven interviews; analyzing video and audiotapes and other objects related to the phenomena of interest such as diaries, reports, etc. It is also relevant to mention that Coudry (1986/188) had already proposed the use of these "objects" mentioned by the authors more than twenty five years ago. She developed case studies and also conducted therapeutic activities with the aphasics with the use of diaries, family album, activity notebooks, interaction with family members and the individuals' interests shown by the aphasics (sports, news, music, etc). We will go back to this issue later, when we describe the activities developed with aphasic subjects at CCA.

In addition to all these more technical instruments, Damico et al. (1999a) also consider "introspection" - the researcher's intuitions and experience with the object or event being investigated – as a powerful source of data. Therefore, the quality of the research lies in the knowledge, skill, practice, sensitivity and integrity of the investigator. In their words "In the hands of a responsible, knowledgeable scientist, ethnography provides the potential to enhance our information base and to expand our understanding of aphasia". The authors (1999a: 687) believe that although relatively new to communicative disorders, ethnography provides an interesting methodology for aphasiologists. It can help us to understand the phenomena "from the point of view of people with aphasia and their loved ones"; it can "reveal the meaning of behavior", instead of "evaluate behavior"; one might discover what a behavior means to an individual or why the behavior is manifested in certain situations instead of judging a certain behavior relatively to a norm. A very important issue of this qualitative approach is that the research design "unfolds as data are collected and analyzed resulting in a cyclical and flexible process". According to the authors, "the investigator collects, analyzes and verifies data, identifies phenomena of interest, then continues to collect and analyze data to progressively narrow the investigation and hone in on phenomena of interest." They claim that the unusual, repeated or patterned events or behaviors can often provide a focal point to narrowing investigation. In other words, "the investigator seeks to discover whatever emerges as important to the understanding of the phenomenon under study". Unexpected events or observations often provide a window into the phenomenon of interest. The unusual event tends to highlight what the investigator expects or considers normal. "This contrast between expectations and observations is one means of discovering new insights and exposing researcher biases and beliefs" (Simmons-Mackie & Damico, 1999: 683). In another article, Damico et al. (1999b) see this flexibility as a need of qualitative research at any specific time, which includes the ability to shift the methods of data collection, the focus of the research and to return to data collection even after analysis has started.

According to Simmons-Mackie and Damico (1999), the result of ethnographic research is "unavoidably a *narrative*" that describes and explains the phenomenon studied, that explains some event or behavior. In their words: "because of the narrative quality of ethnography, it is often difficult to extract key concepts or condense findings into a meaningful format for brief articles or presentations" (1999: 686). In order to convince the reader, "representative examples are chosen to breathe life into the story and enrich the

description" (…), which would help the reader accept them as representative of the events, as a possibility of seeing it through someone else's eyes. Hence, the authors conclude that qualitative research, contrary to what may seem, demand rigorous control and frequent verification; it consists of a continuous process in order to look for cases to contradict findings as well as evidence to support them. Results are not simply interesting observations; they are carefully verified cumulative outcomes negotiated across multiple sources and perspectives" (Simmons-Mackie & Damico, 1999: 685).

The authors affirm that although the researcher seeks neutrality, his thoughts, intuitions and perspectives are part of the research and cannot be put aside. Also for Freitas (2010) the text of the research – the narrative - is produced by historically situated subjects, in interaction with their socio-cultural environment, carrying a determined worldview and a particular value system. The research is a relation between subjects, therefore dialogic. The narrative of the researcher should not mute the researched individual, but restitute the conditions of enunciation and circulation that makes possible multiple possibilities of meaning. The researcher challenges the subjects investigated, question his/her answers, what allows him to have a glimpse of how they are affected by the interference of other individuals and also observe the psychological processes in their dynamics of transformation. (Freitas, 2010: 16).

Damico et al. (1999b) emphasize how important it is to investigate aphasia and its impact on the social and communicative actions of the individuals. He affirms that increasing numbers of researchers are employing various qualitative research methods to investigate aspects of the social life of individuals with aphasia and how they negotiate meanings in the different social circles because of – and in spite of – their disabilities and handicaps. In their article, the authors mainly discuss how conversation analysis[3] can be taken as a method to analyze the conversational abilities of individuals with aphasia considering what happens in authentic social dyads. Conversation represents the social situation in which most people do their talking and the absence of conversational success is a primary determiner of negative social stigma and handicap. Damico et al. (1999b: 670) emphasize that the studies "have highlighted the importance of collaboration within the conversational interactions of dyads that include an individual with aphasia and an individual without aphasia". Conversation is a collaborative operation by two or more participants; it is social and collaborative in character, placing attention on the dyad and not on the individuals. During conversation, utterances are produced in response to – or in relation to – a prior one, organized in a turn-by-turn sequential basis, which is not a mechanical structure. "In conversation analysis sentences are never treated as isolated or self-contained artifacts", but are oriented to "longer units of talk within the context under scrutiny and the interpretations" (Damico et al., 1999b: 671-672). According to the authors, problems created by aphasia are overcome by the interactants within the dyads and the adaptive strategies are guided by the conversational principle of sequential organization. "Aphasics are also encouraged to proceed to self-repair within a collaborative conversational process and they often do, which makes it evident that they preserve a communicative competence" (Damico et al., 1999b: 673). Examples of these conversational strategies will be given in the next topic.

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[3] According to the authors, Harvey Sacks was a pioneer researcher who paid attention to conversational structures, mostly influenced by the work of Goffman (1959, as cited in Damico et al., 1999b), author who investigated face-to-face interaction and ethnomethodology.

Before closing this session, we would like to report two research experiences which we believe would be good examples of the limits imposed by quantitative approaches to aphasia study and, mainly, how qualitative analyzes provide a better understanding of language, even in experimental contexts. The first experiment was carried out by Novaes-Pinto (1992), when the author was interested in evaluating grammatical judgments made by an agrammatic subject "P". At the beginning, the researcher tried to follow the authors' instructions to run the test (Linebarger et al., 1983, as cited by Novaes-Pinto, 1992), which was composed of 451 sentences, being 221 agrammatical, involving ten different syntactic English restrictions. The sentences should be recorded and played to the subject, who would have to answer "good" (if he thought the sentence was right, grammatical) or "bad" (in case he thought something was wrong or agrammatical). We adapted the test to Portuguese grammatical restrictions and started working with subject "P". We would like to call the attention to the following description given by the authors regarding the context of the experiment: The main investigator and the aphasic subject should be kept apart. According to Linebarger et al. (1983), the researcher (or assistant) controlling the tape-recorder could not access the answers given by the aphasic while another researcher (or assistant) would take notes of the answers given, and would not have access to the sentences played to the subject. These restrictions should guarantee the aimed objectivity.

Since the moment we started explaining the test to the subject in order to be sure he had understood what he should do, we noticed something very interesting was going on. He was not judging grammaticality, as we thought he first was. Some examples can better illustrate how "P" was dealing with the test. One of the sentences was (i) "*The letter was full mistakes" (which is agrammatical because it lacks the preposition *of*). The subject answered that it was "bad". We could simply have taken his answer as *correct* and go on the next sentence. Instead, we decided to ask him "why" it was wrong and he answered "letter… mistakes, cannot". To make sure he was making moral judgments, we tested other sentences: (ii) "*The pilot the passengers was tired", for which he answered "wrong" and, when asked why, he gave the following explanation: "passengers can, pilot not". For the grammatical sentence (…) "The robber ran through the window", "P" said it was "bad" and for the sentence (iv) "*I would like Maza to win the lottery" (being Maza the researcher who had worked with him for many years)[4], he said "good", evidently. For agrammatical interrogative sentence, as (v) "Who is coming your house?", instead of saying "good" or "bad", he answered "nobody". It did not take long to understand that "P" was using pragmatic strategies to understand the sentences and choose his answers. We decided not to work with the test anymore. The task – which in the beginning was exclusively of metalinguistic nature – was transformed into a dialogical context. The "curiosity" led the researcher to challenge "P" about his answers, asking "why is it wrong?" or "why is it right?", which allowed to understand his difficulties but, at the same time, understand his solutions – how he was dealing with these problems, mainly with functional words.

The second experiment was carried out in a research center in the USA, by a trainee in Psychology, who was running several neuropsychological tests (pre-determined by the

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[4] We think that the alternatives given by the test "good" and "bad", written on cards where a smiling face and a sad face were drawn (procedures adopted by the authors), may also have influenced the kind of judgment he made.

responsible neuropsychologist). The purpose of one of the tests was to evaluate what is called "executive function", very relevant in the diagnosis of dementia or cognitive losses. The test consists of a list of related words (banana/apple; boat/car; friend/enemy, etc) from which questions such as "How are X and Y alike?" (How are cars and boats alike? How are bananas and apples alike?) are asked to the subject, being expected that he names categories: transports, fruit and so on. Different scores are given according to how precise the answer is (if the subject names the category correctly, if he only gives an attribute or if he does not answer the question). In addition to attributing numerical values to the answers, there is no other way to consider what the subject says during the task. Indeed, he is not encouraged to talk at al. He is just supposed to answer. An eighty-two year old man (NB) was being tested and the researcher (Novaes-Pinto, 2007) was present in the room, taking notes of all his answers and of the comments he made during the test. Some of his answers were truly intriguing, but they were all discarded by the examiner. There is no place in the answering sheet where his answers could be written down. After almost three hours of testing, the neuropsychologist received the statistical results of all his answers and never got to know the ones that were described below, which we believe would be of great help for the diagnosis: for the pair "*piano & drum*", he answered "they both make noise"; for "*orange & banana*", he gave a list of similarities: "same color, fruit, tropical, tasty, buy them in a grocery store". For the pair "*steam & fog*", he said: "basically the same; when the humidity is high, you can't see through"; for "*work & play*": "How do you make work into play? That should be the question! How are they alike? They can both be fun". We can notice that all his answers were motivated by the question: "How are X and Y alike". NB summed a very low score on the test. The most interesting answer of all, in which NB not only answers the question, but also shows himself and his social-cultural (political) values is when he is asked "how are *monarchy* and *democracy* alike", and he says: "they are both ruled by despots; both serve for controlling the people."

After giving these two examples, we would like to cite Canguilhem (1995), when the author says that abstract models result from statistics, but real individuals that we meet are usually far from these models, being precisely what guarantees individuality. It is undeniable that quantitative/statistical methodology has generated a wide range of scientific knowledge and is certainly the best way to approach a great amount of phenomena. However, when quantitative approaches, created to account for natural phenomena, started being applied to human sciences and to complex psychological functions – such as language, memory or behavior – many reductions were generated, especially because *ideal* parameters had to be created to represent a state or a behavior considered "normal". Lüdke & André (1986) criticize the idolatry for abstract models that are still the ones recognized as "the scientific method", saying that the accurate application of a model may reduce the complexity of a phenomenon to a simplified scheme of analysis, which can cause the sacrifice of understanding that phenomenon. Models can be applied mostly to explain *ideal cases,* which actually do not exist. The authors state that it is not simply the case of discarding quantitative experimental studies, but their limits should be recognized. Damico et al (1999a: 656) states that quantitative data is certainly legitimate and often beneficial in qualitative research, but it should be used in accordance with actual descriptions of the social phenomena (Kirk and Miller, 1986, as cited in Damico et al, 1999a).

According to Kearns (1999: 649), "perceived tensions or misunderstandings between researchers who utilize qualitative methodologies and their colleagues with a quantitative orientation may not be surprising, given the fundamentally different traditions, history and methods of these approaches". The author goes on, affirming that: "as we achieve success with our methods and traditions we may become intolerant of less familiar approaches to research".

3. Discursive neurolinguistics: aphasia in real social and cultural contexts

Earlier in this chapter we quoted Vygostky, when the author says that "facing new objects of study means to create new methods of investigation and analysis". Aphasia is certainly a new object of investigation for linguists, who started to study it only after Jakobson (1954) had called for their participation in the study of phenomena which involve the impact of pathologies on the language system and on its use. Another principle postulated, also already discussed, is that any research interested in a human phenomenon should investigate its genesis and observe the course of its development in order to understand the processes underlying what is visible. In the case of aphasiology, we would have to consider in the genesis of each single case the impacts of a lesion on brain functioning and all the variables which are present - the topography of the lesion, its depth and extension, the time post-on-set and its etiological nature (whether the subject had a stroke, a trauma, a tumor or whether it is a degenerative process, like in dementia). Together with these biological/organic features, however, there are also the social-cultural features that constitute the subject, usually discarded by traditional approaches, that we believe to have fundamental relevance to the study of processes.

The next item – 3.1. – will present the conception of brain functioning, mainly supported by some postulates formulated by Luria (1973, 1976) and Vygotsky (1991), Item 3.2. aims to address the main concepts related to language based on authors as Bakhtin (1986), Jakobson (1954), Franchi (1977), Coudry (1986/1988, 2002,) and Novaes-Pinto (1999, 2006, 2007, 2010).

3.1 Conception of *brain functioning* within a social-cultural approach

According to Luria (1973), issues related to the "working brain" are still in need of a better theoretical treatment. Concerning the same matter, but more directly related to aphasiology, Damasio (1997) summarizes the progress made in research during the so-called "decade of the brain" (1991-2000), stating that the great amount of findings cannot yet explain either individual variations between subjects and those observed in the production of the same subject, or the relationships of these individual variations with the social, historical and cultural facts that are constitutive of language and of human cognition. We believe that this fact pointed by Damasio is due to a mismatch between theoretical assumptions and methodological choices in traditional neuropsychological and neurolinguistic studies. One cannot seek to understand the real brain in action – its functioning – discarding individual factors and basing the discussion on abstract models. Differently from what we are calling "traditional", in this chapter, social-cultural approaches give individual variation and singularity a very relevant theoretical status that highlight the role of subjectivity – socially and culturally shaped – in the *understanding* of aphasic phenomena.

One of the most important concepts developed by the author, well explored today among neuroscientists, is the one that refers to the brain as a Complex Functional System – a term already crystallized in the field. Damasceno (1990) affirms the lurian model of neuropsychological functioning presupposes a dynamic, plastic system, which resulted from the social-historical evolution and from the internalized social experience of an individual. It also presupposes that each mental or psychical function be conceived as a complex functional system. These functions are not located in narrow and circumscribed areas of the brain, but result from the participation of cerebral brain structures operating together, each with its own particular contribution to the organization of such a functional system (Luria, 1986). In accordance with Luria, the American neurologist Oliver Sacks (1995) is one of the main opponents to the localizationist position nowadays. He criticizes what he calls a mechanistic Neurology, essentially conceived as a system of capacities and connections. He says it is necessary to develop a theory established out of new principles: "Our conception of nervous system as a type of machine or computer is radically inadequate and needs to be supplemented by more dynamic and vivid concepts" and also claims that "classical Neurology privileges schemes more than reality" (1997:18). In this context, we can also quote Mecacci (1984), who says that "science studies an average brain which, in fact, does not exist".

According to Kotik-Friedgut (2006), it is well established that culture has a considerable influence on brain development and functioning and that it is extremely important to understand "how environment and activity within a specific environment influence the systemic–dynamic organization of higher psychological functions" (2006: 44). Some basic cognitive abilities and their corresponding brain mechanisms are universal and inherent for all humans, independent of language and environmental conditions. However, the author emphasizes that different mediators and means may be developed, and in fact are, in different cultures.

Vygotsky's concept of *extracortical organization* of higher mental functions – developed later by Luria - seems to be particularly useful for the understanding of the cultural impact on the development of cognitive processes. It means that external artifacts (objects, symbols, signs), influence the systemic organization of higher mental functions. Higher forms of conscious activity are always based on certain external mechanisms[5]. These external aids or historically formed devices are essential for the establishment of functional connections between individual parts of the brain. By their aid, brain areas which were previously independent became components of a single functional system. According to Kotik-Friedgut (2006), this is one of the most important features that distinguish the functional organization of the human brain from an animal's. She reminds us that both authors - Vygotsky and Luria - had also a very special interest on the influence of education on the development of higher mental functions, with especial attention to the role of literacy for the development of all spheres of cognitive functioning. According to Luria (1973), as reading skills are acquired, phonological awareness (the sound–letter relationship) develops into a symbolic relationship. This is a process which leads to new functional connections between the brain regions serving these specific activities. In other words, new brain functional systems are developed *via* an external graphic symbol. After these links are established, written

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[5] An example given by Luria is the knot which we tie somewhere as a sign to remember something.

language[6] becomes a powerful instrument for further development and education, opening new ways of problem solving in different domains (Kotik-Friedgut, 2006). In case of a brain injury, evidently, these relations may be affected in a particular way, which explains the feelings and the difficulties that every aphasiologist experiments when trying to classify a case under static categories or syndromes: each case is a unique case.

Despite the knowledge the researchers have about the social and cultural influences on brain mechanisms (usually known in the field as *epigenetic influence*), there is a dissociation about their theoretical assumptions and the methodology to approach mental functions, such as language.

3.2 Language as a constitutive *activity*

In accordance with the social-cultural approach presented so far, language cannot be seen simply as an instrument of communication or of reasoning. According to Vygotsky, language shapes our understanding of the world and of the cultures. Franchi (1997)[7], a linguist who influenced in a very important way the neurolinguistics developed at IEL, described language as a constitutive activity. It does not only constitute the subjects, but also the language system (the *langue)* itself. Subjects continuously "work" on the language material resources (phonemes, words, morphemes, grammar rules) to produce their *discourse* (real utterances) within a determined social-historical-cultural background.

The research developed by Coudry (1986/1988) had, as one of its purposes, to confront traditional and hegemonic aphasiology, from a linguistic perspective, guided by enunciative and discursive theories. She has criticized traditional methodology of language evaluation and, even more strongly, the therapeutic follow-up oriented by a narrow conception of language. She argued that traditional neuropsychology reduces the complexity of language to the linguistic system, which is completely inadequate to account for the use of language as a social activity.

On one hand, Discursive Neurolinguistics had its foundation on socio-cultural approaches developed by Luria and Vygotsky, among others, who highlighted the relevance of the mediating role of language to the development of all the complex psychological functions – memory, perception, thought. On the other hand, its theoretical-methodological framework was also built by the contributions of Discourse Analysis, Pragmatics and Enunciative-Semantics, as well as by the studies of Language Acquisition in a socio-interactionist perspective, developed at IEL since the seventies.

On *Diário de Narciso: afasia e discurso,* the book published in 1988, Coudry analyzed most of the assessment tests available for researchers and clinicians and concluded that they were elaborated exclusively with the use of metalinguistic tasks which involved isolated linguistic units as phonemes, words, sentences, letters, syllables, etc, out of a real context of production. According to the author (1988: 7-9), the tasks usually included: repetition of phonemes or *monosyllabic* words (after the investigator or from a printed list); repetition of

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[6] Of course this concept would not apply to cultures with no written language. Oral traditions could be viewed as a way of acquiring literacy, other than by written materials.
[7] Carlos Franchi supervised Coudry's doctoral thesis (1986) and he has been, therefore, a very important reference in the area since then.

logatomes (non-words in the language, but which follow its phonological pattern); spelling and repetition of words; discrimination between minimal pairs; forming words from initial phonemes; naming objects orally or by written form; identifying an object among others in pictures; giving lists (months of the year, days of the week, etc), checking verbal fluency (through lists of names; animals, flowers or any other category within one minute); defining words given by the examiner; describing a picture; understanding simple or complex sentences; explaining proverbs; reading aloud (words, sentences or paragraphs); copying words or sentences; writing under dictation; etc. - composed exclusively by metalinguistic tasks[8] - aiming to reveal language and cognitive losses and deficits.

According to Coudry (1988: 9), "the success or failure of the aphasic subject in one or more of these tests serves as criteria to classify him into a type of aphasia". The author says that despite the statistical correlations that could be established by empirical studies among such symptoms and determined type of brain lesion, it is necessary to be careful about the classificatory procedures. She affirms that, for certain purposes, the tests could serve to the typological diagnosis. But, she assures: "only for the diagnosis". The fact that a symptom or a group of symptoms allows a classification does not explain the processes underlying a phenomenon. Besides, it does not provide clues for the reorganization of language, which only meaningful activities would provide.

Coudry (1986/1988), twenty-five years ago, had already given special attention to the processes that take place during a dialogical situation with aphasic subjects, guided by enunciative-discursive linguistic theories. She defended that dialogical interactions, with effective use of language, are the best *locus* to observe how aphasic subjects reorganize their language and develop alternative strategies in order to reach signification, despite what kind of aphasia he/she has and how severe the impairment is. Analysis of aphasics' utterances also allows inferring about language functioning in "normality" (which, in this context, means non-aphasic language).

The author defended that only longitudinal and qualitative approaches - which take into consideration what is preserved in the language system, as well the subject's pragmatic and discursive competence to deal with the impairments - can cast light on the complexity of aphasia phenomena. She proposed language-cognitive evaluation and therapeutic principles based on the effective use of language in social interactions. This theoretical-methodological framework gave origin to the activities developed at CCA (Centro de Convivência de Afásicos).

The Discourse Neurolinguistics, therefore, brings into the analysis of aphasia phenomena not only the language system (the *langue*) and how its formal levels (phonetical, morpho-

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[8] Within this perspective, we emphasize some limits of formal analysis to understand linguistic phenomena involved in pathologies, once they are mainly based on isolated units - such as words and sentences - focusing the basic linguistic levels: phonetic/phonological, lexical, grammatical. Directly or indirectly, the linguistic approaches known as *structuralism* and the *generative* grammar still have influenced most of the assessment tests used in scientific research and in clinical practice, often associated with quantitative and statistical methods. Although this formalistic approach may enlighten mechanisms involved in language processing for the development of theoretical models, it does not clarify important aspects of language functioning, which is relevant not only to describe and evaluate alterations, but also to provide satisfactory intervention.

syntactic, lexical) were impacted, but also semantic/pragmatic and discursive rules (i.e., who the speakers are, their social classes and roles, inferences and shared-knowledge, the discursive topics and speech genres, levels of formality, and so on). By doing so, the approach enables us to more satisfactorily understand how the brain damage disturbed language functioning, as well as other cognitive domains which are mediated by linguistic processes. The questions discussed so far partially explains why we have criticized most standardized evaluation instruments which are available and used worldwide in order to classify symptoms and syndromes, especially if there are no considerations regarding culture and the social use of language.

Coudry (1986/1988) sought to understand the processes undergoing aphasic's difficulties and the alternative strategies/processes they used in order to achieve what he/she desired to say, providing evidence of how the aphasic subject (re)organizes his utterances with the support of the non-aphasic's. The main strategies usually involve, in severe aphasia, repeating part of his interlocutor's utterance or even the whole utterance. Other times, it involves completing the other's utterances with a word or part of a word or doing it with the help of a "prompting". The example below can illustrate how data emerging from dialogic episodes may serve both aims: understanding the aphasic's difficulties with language and promoting therapeutic effects, once it encourages subjects to work hard on what is still preserved, resisting as a subject in social interactions. The context of the conversation is the following: Coudry (1988: 136-137) was showing "P" some pictures in a magazine. There was a picture of a car stopped at a gas station, by the gas pump, without the driver, and a man was cleaning the windshield with a tissue. In the transcription, "Inv" stands for investigator and "P" is the aphasic subject. The sign "[…]" is used to mark prolonged pauses; notes taken by the investigator are between parentheses. It is needless to say how difficult it is to translate aphasia data from one language to another. The structures of the syllables in Portuguese – and specially the phonological system – are very different from English. For this reason, we found it necessary to make some translation comments in footnotes.

Inv: - What is this man doing with the car?
P: - Gasoline.
Inv: - But he is not filling with gasoline!
P: - Glasses, right?[9]
Inv: - There is only one glass there, right?
P: - It is […] glasses.
Inv: - And what is he doing?
P: - Dust, dusts. (P makes a circular gesture with hands, representing the action of
        cleaning the glass with a tissue)
Inv: - What is he doing?
P: - […]
INV: - What is he doing?
P: - This… (P repeats the gesture of cleaning the glass)

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[9] In Portuguese, the word "glasses" is "vidros" (in the plural form) and it can be used to mean "windows" or "window glasses". The investigator, in the following turn, tells him that there is only one window glass that has been cleaned.

INV: - Right. Get a tissue and dusts its.
P: - Right. Right.
INV: - Clea (prompting for "cleaning")[10]
P: -   - […]
INV: - Clean (extending the prompting)
P: - peeling, clicking, cleaning[11]

Coudry analyzes this episode as a singular, privileged *locus* to convey meaning in collaboration with the aphasic. At the same time that meaning is negotiated between them, given that linguistic system is not transparent and pre-determined, she encourages the subject to keep working on the reorganization of his utterances, approaching the desired meaning the closest way he can. At the same time, she also accepts non-verbal attempts, as when he makes the gesture of cleaning the window, but also encourages him to go on and seek for the correct verbal form "cleaning". This insistence from the investigator, giving a prompting and extending it when necessary, leads the aphasic to work on the language resources which are still preserved. As P does not do this silently (mentally searching for the word), but, on the contrary, produces aloud all the forms that come during the process, it is possible for the researcher to infer about some aspects of the processes going on while he is trying to name. In other words, when P produces "peeling, clicking, cleaning", we get a glimpse of paradigmatic and syntagmatic operations at the same time – as we will see when we mention the work of Jakobson (1954).

Coudry calls our attention to the fact that "P" predominantly recurs to nominal forms when describing the picture – gasoline, glasses, dust - despite the questions made, which required an answer with a verb (What is the man doing?). This choice for nouns is typical of Broca aphasia, with telegraphic style production. Another relevant point brought by Coudry is the use of "s" in nominal forms (glasses, dusts). Contrary to a first impression that he could be using the plural form (that was why the investigator told him there was only one glass), the researcher attributes this presence of the morpheme "s" as a sign of his instability and difficulty when operating with the selection of the linguistic units. This process is also evident in other situations when Coudry asks similar questions with the structure: What is X doing?, and he answers with "soups", "stores", "rivers, rivers". It seems that the morpheme "s" is selected as a complement of the noun; it comes instead of another word, with another function in the utterance. The morpheme "s" does not come only attached to nouns, but also attached to verbs, as in "jumps, horses". When asked about what some girls were doing (in a picture of girls dancing samba, in Brazilian carnival), "P" answers: "sambanho. Samban… What is the name, my God? Sambanha, sambanhas, sambanhas. Sambando!" These utterances, again, could be considered "singular data" to the study of aphasia, given the explicit epi- and metalinguistic operations carried out by the subject, in order to achieve the correct verbal form: "sambando" (dancing samba). He produces, then, a paraphasic word

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[10] In Portuguese, the verbal form "cleaning" is "limpando". The investigator gave P the first syllable: "lim". As he did not "access" the word, she extended the prompting to "limpan", giving the first two syllables.

[11] In the translation we tried to keep the phonological similarities produced by P (piando, limando, limpando), which might have guided his search for the word – in this case it seems he was not guided by semantic similarities. This is the reason why we did not translate into English the verbs he used in Portuguese: "piando" and "limando", which means "chirping"and "polishing".

that mixes the target word (sambando) with the inflection for 1st person, singular form, in Portuguese (Eu *sambo*/I dance samba). After that, he makes a self-correction to "*samban*", then makes a short pause and produces a crystallized form: "What is the name, my God?", which also gives him some more time to reorganize his utterance and produces the sequences: "*sambanha, sambanhas, sambanhas*" – which also show his attempts within the verbal paradigm ("sambanha" - 3rd person singular: ela samba/she dances samba and "sambanhas" – 2nd person singular: tu sambas/you dance samba). Only after all these paraphasic productions he produces the right verbal form: *sambando*.

"P" has difficulties with verbal forms and with functional words, but, contrary to most theories of agrammatism, which describes this phenomenon in terms of "losses of functional categories and of verbal inflections", data from dialogical episodes help us to redefine the descriptions in terms of difficulties or alterations. Novaes-Pinto (1999) mentioned a dialogical episode when this same subject – P - produces the utterance: "*Ofélia, Olavo and I went to São Paulo for shopping*"[12], with all adequate prepositions and verbal forms. Kolk et al. (1985, as cited by Novaes-Pinto, 1999) refers to the so-called agrammatic subjects as "overgrammatics", given the creative ways they find to produce an utterance despite their difficulties with selecting and combining linguistic units. It is also possible to look at the phenomena and understand the complex interrelations among linguistic levels, such as how semantic and grammatical choices are oriented by pragmatic and discursive factors.

Jakobson (1954) has proposed linguistic explanations for aphasia and also a linguistic terminology in order to analyze data. He did not limit his theory to the language system – the code and its independent units – but also considered functional uses of sentences in communicative contexts, with several different functions: to communicate something to someone (not only a message, but also a feeling, a thought), to maintain social relations, to show social position, to manipulate a situation or someone, to convince people, and so on. He is therefore considered a functional structuralist. Based on the two different operations postulated by Saussure (1916): *selection* and *combination*, the author sought to explain the main difficulties present in two opposite types of aphasia: *agrammatism* and *jargonaphasia.* The first (agrammatism) would be produced due to the aphasic's problems to operate with the *combination* of linguistic units – on the syntagmatic axis. The subject would show, for instance, difficulties to combine words when trying to form a sentence -, what could explain a preference for a telegraphic style in this type of aphasia. In the second (jargonaphasia), the difficulties would be related to the *selection* of a specific unit among all the other possibilities offered by the language – on the paradigmatic axis - which could account for the vast quantity of paraphasias produced, leading to a jargonaphasia in severe cases.

Jakobson recognizes that most real cases would be placed along the line, between the two extreme ends of the axes. His model cannot be seen as a static one. On the contrary, it has to be interpreted as a dynamic model because these two operations - selection and combination - are interdependent. Coudry (2002) affirmed that each of the axels have a projection on the other. Jakobson's explanation for aphasia has been useful for research in the field of Neurolinguistics, mainly because it substitutes, most of the time, the classical aphasia classifications and overcomes many classical dichotomies. It is possible hence to understand

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[12] Utterance in Portuguese is even more complex from the perspective of its grammatical construction: "Olavo, Ordalia e eu fomos a São Paulo fazer compras no shopping".

phenomena as word finding difficulties, production of paraphasias (literal or semantics), frequent repetitions and pauses, hesitations, telegraphic speech style, perseverations, among others, in different kinds of aphasia and different severity degrees, from the perspective of language functioning, along the process of producing or understanding it. It also allows us to have a glimpse of how linguistic difficulties could be related to other functional processes as attention, memory, perception, logical thinking, problem solving, etc. All these variables are present, at the same time, when language is used in communication contexts. This short explanation of Jakobson's theory can justify the fact that many aphasiology researchers have recurred to his model. We should also remember that a great amount of Luria's reflections on language functioning was based on Jakobson's explanations of the hierarchical organization of language units and of the operations of selection and combination. Luria (1986) says, regarding word selection, that a word not only generates the indication of a given object (the referential function), but also, inevitably, leads to the appearance of a series of additional links, including elements which are somehow similar. The word "garden" can involuntarily evoke, for instance, the words *trees*, *flowers*, *bench*, *meeting*, or even *potato*, *onion*, *shovel*, etc. Thus, the word becomes a link or the central node of a whole network of images, evoked by connotative words. One who speaks or listens to a word, contains, inhibits this whole network of images evoked, in order to choose the immediate or denotative meaning (Luria, 1986, p.35). According to Luria (1986: 37), the semantic field is shown with all evidence in the phenomenon widely known in the literature as "word finding difficulties", present in several kinds of aphasia. The data presented in item 4 will illustrate this conception about the process of selecting a word in aphasia.

Bakhtin - one of the most important references in social-historical-cultural approaches, who also inspires our reflections in Discursive Neurolinguistics - postulates that words are not acquired as if they were in a dictionary. We learn linguistic language resources – as words - in dialogic contexts. Meanings are related to language functioning and not to isolated units. Bakhtin strongly criticized the structuralism of Saussure, which is based in abstract units and the author postulated "utterance" as the *real unit of communication*. All his theory of language is founded on the principle of dialogism[13].

While traditional perspective mainly privileges abstract models, social-cultural approaches considers language as a very complex activity developed by subjects within social and cultural contexts, contributing more properly to describe and explain not only the changes and the losses produced by the brain lesions (the *deficits*), but also to our understanding about how aphasics develop (or may develop) alternative strategies (verbal and non-verbal) to continue "in the language" and, therefore, preserve their subjectivity and identity.

4. The activities developed at CCA – when theory meets methodology

We start this topic with the following passage quoted from Lyon (1999: 689): "We must broaden our therapeutic contexts to include the dynamics of family and community and to

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[13] We have been using some of the concepts proposed by Bakhtin (1986, 2010) - such as *speech plan* or *speech will* and *responsive comprehension*, among others – to analyze data which emerge in dialogic episodes with aphasic subjects. Though, it will not be possible, in this chapter, to describe these concepts and their relation to language functioning in social-cultural approaches. For further references regarding this topic, see Novaes-Pinto (1999, 2007, 2011).

rejuvenate disrupted life processes that seemingly stand in the way. As such, aphasia treatment should not be a process of a person, but of people. It should not be a process of *just* language and communicating repair, but of facilitating purpose and meaning in life and strengthening ties with others in those natural life contexts that matter the most". Lyon's words could briefly summarize the purpose of the work developed at CCA, created in 1989, fruit of a partnership between IEL (Institute of Languages Studies) and FCM (Medical Sciences Faculty), which aimed to help aphasics to face the new conditions imposed to them by aphasia. Located at IEL, CCA is a locus for the interaction among aphasic and non-aphasic subjects: researchers, professors, families, therapists, under-graduate and post-graduate students (Coudry, 2002). CCA is, therefore, an institutional alternative that aims to integrate aphasics in their social groups. It is relevant to say that researchers, mostly students who are still in their process of formation, participate in the meetings helping with the video-recording and also making the diaries of each meeting, interacting with aphasics during coffee-breaks or other activities. In individual sessions they follow the aphasics therapeutically, in general, in dyads formed by a linguist and a speech therapist. This kind of participation is the best way to prepare them to become qualitative researchers. Damico et al. (1999a) claim that the beginners in researcher must gain extensive hands-on experience to learn many of the nuances of research strategies: "It requires more than just book knowledge; most scientists have learned the necessary skills in kind of on-the-job training in the field or through an apprenticeship system" especially because qualitative research is open and flexible, as said before, what also makes it more demanding in terms of time and effort.

There are, nowadays, three groups that reunite around 12-15 aphasic subjects each, coordinated by the tree professors who are responsible for the area of Neurolinguistics at the institute[14]. The groups are very heterogeneous regarding the types of aphasia and severity. We do not classify the subjects according to etiological causes, nor according to oral or written production/understanding difficulties. We believe this heterogeneity is constitutive of human relations and our experience with the aphasic subjects has shown that this is, in fact, what mostly enriches our interactions. During the meetings, dialogic situations take place among non-aphasics and aphasics, who are encouraged to talk about several themes (their lives and families, national and/or international news they have read or seen on TV, the results of soccer championships or other sports, argue about politics, etc.). Lately we have been using internet to search for news, pictures, videos, songs and so on, usually motivated by what they want to see or discuss. The activities usually involve the use of different speech genres (argumentation, poetry, proverbs, letters, journalistic language, charges and all kinds of narrative including autobiographic, fables, jokes and so on). By doing so, at the same time they expose their linguistic-cognitive difficulties – as everyone has a turn to talk expressing an opinion, bringing up something to share with the group – and they are oriented/helped in order to (re)organize language, memory, attention. This way, aphasics recognize themselves as subjects who have something to say, despite the limits imposed by the pathology.

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[14] The coordinators are, at present: Maria Irma Hadler Coudry, Edwiges Morato & Rosana do Carmo Novaes-Pinto.

All the sessions (individual and group meetings) are video-recorded and the utterances are afterwards transcribed (discursively or phonetically, depending on the type of aphasia and the specific needs of each research) or described, when the meaning was approached by a non-verbal strategy. Data are analyzed according to the microgenetic paradigm formulated by Vygotsky, described earlier in this chapter. This methodology – which Damico et al. (1999a) recognize as being "intensive and laborious work"[15] - evidently, influences the theorization about language in normal and pathological states and, at the same time, indicates productive ways for conducting adequate language therapies, centered in meaningful activities.

In order to illustrate the work developed, we brought some data which were extracted from longer dialogical episodes. On the first one, which occurred in the beginning of April, 2007, the aphasic subject "OJ" was asked to tell the group why he had been absent from CCA for more than a month. In this context, "Irn" stands for the *investigator* and "OJ" for the *aphasic*.

OJ: January. Fourteen. Six o'clock.
Irn: Six in the morning or evening?
OJ: evening
Irn: So, what happened?
OJ: Pain. Pain. Hard pain!
Irn: Pain… where?
OJ: Chest. Cold. Very cold! Hospital. São Sebastião do Paraíso.
Irn: Who helped you?
OJ: Maria José.
(OJ shows the scars in the arm and in his breast)
Irn: And then? Was it necessary to have a surgery?
OJ: Tomorrow. Ribeirão Preto (OJ makes a gesture rolling his indicator finger, which in Portuguese means "after")
Irn: Ah, ok. Next day you were taken to Ribeirão Preto!
OJ: Right!

Despite the telegraphic style – indeed, most of his utterances were produced with a single-word – OJ tells his story with the close collaboration of his interlocutor (Irn). Also his gestures, showing that his arm veins were used in the heart surgery, orient the group towards his narrative. It is evident that the linguistic resources are limited to him and he is not able to say everything he wishes – what Bakhtin (1986) calls the "wholeness of the utterance". The subject explores the linguistic resources he still has in order to get closer to what he wants to mean. When he says: "Tomorrow, Ribeirão Preto", he makes use of

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[15] Damico et al. (1999a) justify this by saying that qualitative research requires more personal and intensive effort from the principal researcher, who has to examine the phenomenon of interest in great detail to understand how it works, focusing on procedural affairs. The collected data must be transcribed and then carefully analyzed in minute detail to discover objects and items of significance. It may take hours on the collection, transcription and analysis of a data sample that might run only 15 minutes in length. In general, the qualitative researcher must perform most of the required tasks and much of the labor cannot be assigned to an assistant.

sentence order and of a gesture, which led the investigator to infer correctly: "Next day you were taken to Ribeirão Preto". Both the aphasic and his interlocutor have to mobilize shared knowledge to be able to carry a conversation, as in "normal language" – i.e. in non-aphasic contexts. The main difference is that the aphasic subject depends much more on his partner in order to produce his utterances and achieve his "speech will", another concept formulated by Bakhtin.

A second example with the same subject allows us not only to understand his strategies to produce meaning, but also the processes underlying his search for words. We were using the pictures which constitute the Boston Naming Test (Goodglass & Kaplan, 1985). "OJ" should name the "pyramid". Knowing that the investigator lives in Piracicaba and that she knows that he lives in São Sebastião do Paraíso, he looked firmly at her and said: "Me, São Sebastião do Paraíso… You?". He did not answer "pyramid", which was the target word. But his utterance makes it possible to infer that the word was at "the tip of the tongue" (TOT), considering he wanted the investigator to be sure that he knew the word. He went right to the point, because Piracicaba has the same two syllables which start the word "pirâmide". We consider this data as a perfect illustration of inferential processes made by both interactants and a singular data for theories which aim to explain word access, lexical selection, phonological representations, the TOT phenomenon, etc.

Next data also occurred when we were working with the Boston Naming Test talking about the pictures. Again, the word was "pyramid". Irn is working with the aphasic subject MS:

MS: mhm..... (MS points to the picture)

MS: tchananana.... (MS starts moving as if he were dancing) ah ah... it is.....

It is:... ah... no... ah::: mummy (points to his head) no… (still pointing to the head) (both laugh)… it is…. (laughters)

 Irn: It has to do with "mummy"... let's say they are on the same movie... (laughters) Is "mummy" the only word that comes?

MS: Yes.....

Irn:..Ok. When that thing is around... (pointing to the picture of the pyramid).

MS: sphinx!

Irn: No... But it is so interesting what you are doing! Mummy… sphinx! (Irn looks for the picture of a sphinx, which is also in the Boston Naming Test). I should not be doing this with this test! (laughters)

MS: mummy... (looking at the picture of a sphinx)

Irn: No... ..

MS: No... No... (points to the sphinx)... It is... It is...

Irn: What did you say first? You had said mummy first...

MS: Yes... and... sphinx.

Irn: OK. Sphinx.

MS: It is.... mhm....

 (Irn shows again the picture of the pyramid). What is the name? (Irn gives a syntagmatic prompting)

Irn: The.... "tararã" of Egypt (using a non-word filler as a gap he would have to complete)

MS: The... the... four mummies of Egypt... ((laughters)

(MS laughs and Irn tries another strategy, encouraging MS to complete the sentence)
Irn: I am crazy to go to Egypt to see the ….
MS: the... the falls, no…. (laughters).
Irn: The.. py... (giving a prompting with the first syllable)
MS: the pyramids.
Irn: ok... that's incredible... sphinx, mummy, all come at once, but not the word you were searching for…

This is also a very interesting episode, considering it is evident how MS is working on the semantic possibilities to select the target word. We notice, by the presence of many self-corrections, that he knows the word produced is not the one he wished to produce. We were not worried about scoring his naming activity, evidently. We were interested in understanding what kind of search he was making. We saw that the subject "P", in order to achieve the target word "cleaning", produced other words based on phonological similarities. All the words produced by "MS", otherwise, were semantically related. We are still investigating those processes, considering that both subjects have very reduced speech production, with telegraphic style. Another interesting fact happened when the investigator provided a syntagmatic clue to the subject, saying: "the…tararã… of Egypt" and he said "the four mummies of Egypt", filling the gap again with a semantic paraphasia. This happened again with another prompting: "I am crazy to go to Egypt to see the…" and he says: "the… the… falls…" A microgenetic analysis allows us to consider that this production might have some relation with the fact that MS had been an international tour guide for many years. The "pyramids of Egypt" and "the falls of…" could have what Luria calls emotional relations, as we have seen above, which is also a pragmatic relation.

The social-cultural approaches to brain and language functioning associated with longitudinal and qualitative studies are, therefore, the guidelines to our research on aphasia, since they offer valuable concepts and tools to a better understanding not only of language disorders, but also of what is still preserved, despite the subjects' brain damages or degenerative processes.

5. Final discussions

Considering the discussion presented along this chapter, we would like to end it with a few considerations about the social-approaches to aphasia which, in addition to contributing to the scientific understanding of the phenomena, aims to help the aphasic to continue acting as a social individual, developing alternative strategies to communicate effectively despite their very severe difficulties.

Lyon (1999) says that the option for a qualitative methodology has to do with "which forms of science will ensure our right and role to partake in a healthcare system where *proven* therapeutic worth means little outside the context of helping patients live productive, pleasurable, full and healthy lives". According to the author (1999: 689), clinical constructions and solutions will not endure – no matter how good, valid or accurate - unless "the living of life is measurably and decisively better for those who we treat".

Lyon (1999) proposes what he considers to be "a *dramatic shift from our traditional focus –* moving from prescriptive, therapist-directed language remediation to co-facilitated, interactive services in natural settings that empower patients and families to find their own routes, resources and solutions toward productive and enjoyable lifestyles". It involves building and reinforcing interdependency in life system rather than simply targeting functional independence in the injured party. He claims that we must do our work well, efficiently and sure that what remains after our efforts was critical to restoring harmony in life.

This has to do, according to Freitas (2010), with procedural and ethical aspects of doing research in the humanities, which, in turn, are reflected in the relationship between researcher and researched. In other words, investigation in Human Sciences should be seen as a "meeting among subjects".

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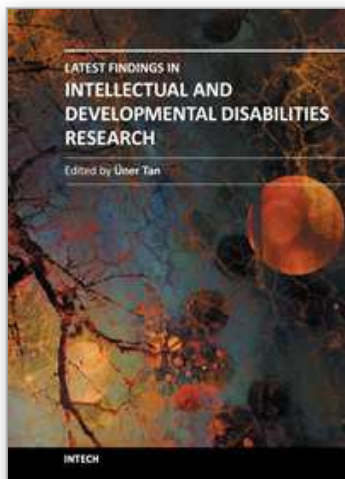
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