Generative Communication: a dialogue with Oliver Sacks[1]

Comunicação Gerativa – um diálogo com Oliver Sacks

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ABSTRACT

The study develops a dialogue with Oliver Sacks' study on deafness. The limit situation created by deafness offers acuity on characteristics of the communicational phenomenon. Some assumptions developed in previous texts are presented as angles for dialogue. In Sacks' book, which addresses the problem of deafness through a variety of viewpoints, the article selects observations and proposals that corroborate those assumptions or present themselves as challenges to reflection. From the dialogue between the basic propositions initially presented and the clues obtained in Sacks' study, the text draws inferences relating to the limit situation and derivations pertaining to the phenomenon in a broader perspective.

Keywords: Generative communication, deafness, sign language

RESUMO

O texto elabora um diálogo com o estudo de Oliver Sacks sobre a surdez. A situação-limite criada pela surdez oferece acuidade sobre características do fenômeno comunicacional. Algumas premissas desenvolvidas em textos anteriores são apresentadas, como ângulos para o diálogo. No livro de Sacks, que aborda o problema da surdez por uma diversidade de perspectivas, o artigo seleciona observações e proposições que ora corroboram aquelas premissas, ora são tomadas como desafios à reflexão. Do diálogo entre as proposições básicas inicialmente apresentadas e as pistas obtidas no estudo de Sacks, resultam inferências relacionadas à situação-limite e derivações pertinentes ao fenômeno em perspectiva mais abrangente.

Palavras-chave: Comunicação gerativa, surdez, língua de sinais

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INTRODUCTION: THE AXIS OF CONVERSATION

SEEING VOICES: A journey into the world of the deaf, by Oliver Sacks, offers a complex and diverse study of a limit situation with regard to human communication: the issue of deafness, inscribed in the cultural processes relevant to affected individuals. Sacks' neurological perspective is articulated to reflections of anthropological and linguistic order, stimulating pertinent inferences for communication – related to the interaction between deaf people and of these with the listeners.

The possibility of observing a language settling in, being learned and exercised, but also being created as the main interaction code in historical times, is what makes this work important for communication reflection. The sign language generation processes, starting from the lacunar state of the deaf person, offer clues and challenges.

As do neurologists – who apprehend regular processes about the brain and neurological system by observing non-ordinary situations –, we can study characteristics of the communication phenomenon from less frequent circumstances. The limit situations expose relationships that we do not realize clearly within *normal ranges* – where they are naturalized. The relations that occur not only may be seen by their uniqueness but also illuminate, by the contrast, the most usual relations, unveiling the logics underpinning them.

I approach the text by issues related to the communication phenomenon. As I seek to apprehend the inner logics of the book, at the same time I keep track of what complements my propositions, what corroborates them, but also what strains them. It is in this sense that I can claim this work as a dialogue.

CHARACTERISTICS OF COMMUNICATION: THE QUESTIONS I BRING TO THE DIALOGUE

I have argued about the interest, for the communicational knowledge, of unearthing characteristics of human communication from the processes of several orders in which the phenomenon is imbricated. In this approach, it is not important to seek great defining theories of what communication is, but to raise characteristics and aspects of the phenomenon in its functioning. It is from its diversity that increasingly broad perspectives will develop, as well as the perception of their scope of validity.

Contemporaneously, the communication drive, increasingly made explicit through history, eventually developed professions geared to activities recognized as *communication,* specializing tasks previously infused in the variety of human actions. Correlatively, we see the development of actionable technologies as vehicle and form for extended communication. But, even though mediatization is becoming the "interactional process of reference" (Braga, 2007), the communicational phenomenon has a much broader and widespread presence in all social processes. For this reason, human and social sciences have, as we know, included communication among their issues of interest, throughout the 20th century, which led to a diversified production of theories.

However, in all those sciences, the characteristics of the phenomenon remain imbricated in the proper questions of each one. By these views, phenomenon is restricted to two main perspectives: communication seen as an epiphenomenon of the variables that directly concern the science of approach; or as an intervening variable to be taken care of (possibly as a function of the practical consequences of its incidence). This does not make the provision of such knowledge less relevant, but calls for additional work so that we can go beyond the questions and hypotheses that are strictly relevant to the science in question.

For this reason, indeed, it is necessary to decide what to describe, to distinguish what can be ascribed to communication and what pertains to the most diverse social processes in which the phenomenon participates. Assuming that communication appears in virtually all human processes, it is understood that the goal of unearthing is not simple.

I have adopted two approaches in this respect. One of them corresponds to the studies of interface – in which, investigating any social process and using the knowledge and theories usually called for their analysis and interpretation, we must be attentive to the question: *what is there that is properly communicational?*

Another complementary tactic is that of cross-sectional approaches to various specialized fields. It is about perceiving communication processes that manifest themselves in a variety of *environments of knowledge,* modalized by them. It is about looking for characteristics that remain, despite the various modalizations.

In this article, however, I seek to explore a third alternative – the examination of limit situations that present special problems for the exercise of

D communication. These situations stress the communication processes involved so much that some characteristics can become more accurately visible than in *normal* situations – those with which we are so accustomed that they seem simply *natural.*

In order to dialogue with the perspectives offered by Sacks, I bring features of the phenomenon that have been explored in previous studies. Their alignment with those exposed by Sacks allows for corroborations and tensioning, enabling additional insights.

I assume that communication always involves a tentative aspect (Braga, 2010a). The communicational objectives of the participants may lead to very decisive and directing strategies. But there is always a trial-and-error margin. Communication is a human endeavor, with diverse individual and group trends that are articulated *in process.*

Through that reiterated trial and error, the communication process is exercised by the languages already available in the cultural context, but it also *generates* languages, when it does not find them ready. Strategies and rules are developed based on the perception of what works or does not work in the practice of interactions. These rules are transferred to other and other situations. This means that communication is not *solely* an attempt (as if it was random or never surpassed trial and error). It is also a sought-after result. Successful processes tend to be replicated, reinforcing the probabilities in favor of what is intended and enabling more educated attempts. Though always to some degree below certainty, this develops a dynamic: to the extent of effectiveness, the interactive rules gain strength and expand, while maladjustment makes them collapse – or become increasingly complex by the readjustments necessarily made.

Given that social reality is historical, our rule systems *(interactional codes)* are modified and replaced over time. Even because the code, always necessary, is insufficient. The adjustment between the rules and their practical exercise is done by inferences, required by the play between the aims of the participants and the occurrences of the surroundings. This process maintains the creative instability of the rules themselves (Braga, 2011).

To interact, human beings need something shared and something challenging for joint action. Given a common goal or the presence of goals in mutual tension, participants seek to articulate the differences that somehow *make problem,* which does not imply that communication necessarily seek consensus or that it is always negotiating.

This work of readjustment, invention, improvement of the rules, cannot be a task of the code itself, but of its use, which requires, beyond the exercise of *encoded* rules, skills to adapt these to the circumstances.

Since communication is required to culturally develop these rules, it cannot be an epiphenomenon of these. The possibility of – and the need for – social interaction must be ultimately based on the shared human processes of biological and non-cultural order. We assume that the starting point on which the communicational process is constituted is the articulation of two characteristics of the species. In the absence of an articulating instinct between *individuals* of the species (such as bees have, for example), we have, however, an instinctive ability for imitation and for inference. Since imitative reproduction is only approximate, inference directly composes the process (Braga, 2015).

Hence that constant tentative aspect, which is an essential part of common sense, but also of all interactional processes, although increasingly specialized.

COMMUNICATION AND LANGUAGE: WHAT I HEAR IN *SEEING VOICES*

Sacks studies the deafness situation – from birth or due to sickness in the early years of life – at various angles of knowledge, besides his neurological perspective. The concept of communication is not systematically developed, but it pervades all the reflections of the book. This reiterated presence makes it possible to organize references to the author in topics that, although they do not correspond to the structure of the book, favor their interpretation in a communicational perspective: codes; thinking and culture; language acquisition; language generation.

To make explicit the distinction between the exposition of Sacks' thinking (in which I seek to be true to the perspectives of the book) and my personal interpretations, the latter are italicized.

Codes

We are so accustomed to oral language as the basic way of communicating with one another that the impossibility of acquiring and using this code appears immediately as a dramatic cut of reality. Deafness, as a neurological impairment, is perceived essentially as pathology.

Oliver Sacks, however, offers information and reflections of historical and linguistic order evidencing the full meaning of sign language (SL). In the late

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1950s, SL was considered only as a sort of pantomime. But William Stokoe showed, in 1960, that sign language "satisfied every linguistic criterion of a genuine language, in its lexicon and syntax, its capacity to generate an infinite number of propositions." (Sacks, 2000: 62). A fundamental aspect of the characterization of SL as a true language is its ability to "propositionize" (Ibid.: 17).

Gestures do not only seek to represent the referred reality imitatively. Sign language "preserves […] both of its faces – the iconic and the abstract, equally, in complementarity" (Ibid.: 97). A gesture maintains iconic relations of reference; but it also involves rules and relationships between components. A "grammaticization of space" is developed (Ibid.: 162). As in every grammar, we find a system of rules, with possible restrictions and freedoms.

We point out that a recurring characteristic of every interactional system is to present among these possible freedoms that of *creatively counteracting its own rules in favor of expression and generation of meanings; or, adaptively, to address situations unforeseen in the system.*

As a gestural and, therefore, spatial code, SL constructs dynamic three-dimensional structures (Ibid.: 62). The elemental components of the language are organized by types of movements (of hands and body), by the configurations composed and by localizations in which the movements are performed.

Oliver Sacks also notes the full grammatical competence of SL by the possibility of rule manipulation (Ibid.: 87). Like any other language, it develops lexically and syntactically from the interactional goals and the need for things to be said.

The participants' interactive goals pull the code toward the sharing and the intended communicational actions. For this very reason, the adoption of significant elements is circumstantial. Although iconic elements can be more or less obvious (e.g., index and middle fingers pointed in a forward gesture, with the hand near the face, meaning look*), the propositional complexity is dependent on the circumstances of emergence and the tactics sought to say what is there to be said.*

Sacks' (2000: 12-23) historical account of the formal constitution of sign languages shows its centrality in the educational development of the deaf between 1770 and 1870 as a process of their formation and integration; and the regression of this educational policy between 1870 and 1970, in favor of oralism (lip reading and overcoming of dumbness). Only in the 1960s is there a resumption of valuation of sign languages, in Europe as in the United States.

This history tells a political clash between two codes. Sign language enables all the interactional uses, of development of thinking, of cultural development of

deaf communities – as well as the access to the universal culture, by reading[2]. The deaf oralism favors a *direct* integration into the hearing world – but at the cost of enormous effort of true training of a voice that is not monitored by the speaker himself and a painful attention addressed to the speakers' lip movement to guess their voice.

Oliver Sacks makes a comparison between the imposed oralism and the natural tendency of deaf young people to activate sign language (Ibid.: 27). In the first case, there is an insertion in the world of the speakers/hearers (Ibid.: 24). In the second case, a truly cultural production that accompanies the possibility of apprehension of writing.

What we have, therefore, in the referred alternation, are two different problems: communication within the deaf community; and a particular communication between them and the hearing majority. Without entering into the substance of this issue of preferential code policy, it is relevant, in our view, to note that the relevance of codes depends on the environments of use and above all – considering the aims of the participants – what can be done with them in interactional terms. The question of the cultural development of thinking becomes, then, a fundamental criterion.

Thinking and culture

Through reflections on sign language and different experiences of deafness, Sacks studies relationships between language and thinking, on the one hand, and language and culture, on the other (Ibid.: 5 et seq.).

A first (fortunate) situation is that of the deaf child whose parents are deaf – because then the integration between language, thinking and culture takes place spontaneously. The child relates to intercessors who master the code, the modes of thinking and the cultural framework correlated to his needs and the social and cultural goals they choose to take.

Sacks notes that "Deafness as such is not the affliction; affliction enters with the breakdown of communication and language." (Ibid.: 94). The great risk of prelinguistic deafness is the child to be left languageless (Ibid.: 8). In the circumstance of the deaf child having hearing parents and in particular socioeconomic environments, he will find an extraordinarily limited space for the development of language and communication, restricting the flexibility and range of thought (Ibid.: 7). This risk is amplified by the fact that less than 10% of deaf children have deaf parents (Hamm, 2008: 38).

[2] However, learning to read and write from the mastery of a sign language is complex because there is no correspondence correlated to that occurring between oral and written language. For the sign language user, writing is a second language, as distant as a foreign language (Hamm, 2008: 38).

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In the hearing world, we do not even notice this delicate conjunction between thought and language, in such a way that the two seem to be imbricated. The realization of its possible separation, in deafness, evidences at the same time the human relevance of its composition. Sacks observes that "if thought transcends language, and all representational forms, nonetheless it creates these, and needs these, for its advancement." (Ibid.: 147).

"A human being is not mindless or mentally deficient without language, but he is severely restricted in the range of his thoughts" (Sacks, 2000: 34). Thus, "dialogue launches language, the mind, but once it is launched we develop a new power, 'inner speech,' and it is this that is indispensable for our further development, our thinking." (Ibid.: 58).

I believe that "inner speech" is not only internalized code, but the communicational process itself – the voice of our interlocutors. Our inner dialogue corresponds to the pondering between different perspectives on what is perceived in the world and how we can act on it. It is because we can internally carry out this dialogue, negotiate with the voices of others, that we effectively create culture – the individual is inscribed in collective processes – which articulates the specificity of each one, one's difference, one's uniqueness, in the diversified set. We constitute, in the same gesture, our culture as a group and our identity as an individual. This process of articulation is what we can call communication.

The observation of deafness, when it leads to the disjunction between thought and language, is what allows us to understand – by the limit situation of separation – what communication realizes as an integrating process.

A manifest question for the researcher who turns to this type of limit situation in deafness is the realization that "neither language nor the higher forms of brain development occur 'spontaneously'[3]; they depend on exposure to language, communication and proper use of language" (Ibid.: 88). "To be defective in language, for a human being, is one of the most desperate of calamities, for it is only through language that we enter fully into our human estate and culture, communicate freely with our fellows" (Ibid.: 8).

These are, then, the two faces of the language. On the one hand, it articulates with the thinking processes, enabling and stimulating the higher forms of brain development; on the other hand, it remits to culture.

The two processes stimulated by the presence of language are aspects of the same dynamic. The acquisition of language transforms thinking into culture. The difference in range between the isolated individual's idiosyncratic thinking (even if creative, open to the perception of the world, inquisitive) and thinking stimulated by the use of language is the result of a communication that completes *the species and the specimen beyond the genetic. That is, language is not important only for thinking (at higher operating*

[3] That is, they are not inscribed in the genetic code of the species as an instinct.

brain patterns) – it is important for thinking with. *Language, as an interactional device, not only enables the expression of my thoughts and* listening *(in the case of deafness, of course,* vision*) to the other's thought. It also enables – and, more than that, makes inevitable – the other's voice in me, whether this voice is auditory or visual.*

It is in this aspect that we can above all consider communication as an establisher of the human condition. As the instincts (which we certainly have, for a wide range and diversity of tasks) do not provide us with a genetic behavioral repeatability from individual to individual[4], the tensions of the difference and the effort of adjustment are assigned to communication processes, which produce our culture and the inclusion of thought in the cultural flows.

The other's voice is initially prelingual – but it creates the bridge for the emergence of the language, oral or gestural, enabling its acquisition. We can also say that the child's thought-perception is externalized and developed through interaction with the other.

[4] Which we find, in strong degree, in a variety of animals, such as social insects (bees, ants, termites).

Language acquisition

The normal acquisition of oral language is one that happens *in situation* – where the child has his inaugural world experiences articulated with the experience of language, which allows to organize this world in tune with *the other* (usually the parents), who already have command of the language. There is no proper teaching and learning of language in this acquisition – it emerges from the interaction.

Sacks refers to Vygotsky's perspective on language acquisition by the child: "[our senses] are 'natural.' One can develop motor skills, naturally, by oneself. But one cannot acquire language by oneself" (Ibid.: 49). Although some innate (genetic) capacity is required for the exercise of languages, "this ability is only activated by another person who already possesses linguistic power and competence" (Ibid.: 50).

This corresponds to saying that

the child has an independent experience of the world given to him by his senses, and it is this which forms a correlation or confirmation of the mother's language, and in turn, is given meaning by it. It is the mother's language, internalized by the child, that allows it to move from sensation into 'sense', to ascend from a perceptual into a conceptual world." […] "But the mother's words, and the world behind them, would have no sense for the infant unless they corresponded to something in his own experience. (Sacks, 2000: 50)

What we can call, then, the normal acquisition of language is this situational correlation between the direct experience of the child's world perception and a

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wider world brought by the words of someone who already commands and uses them in situation, producing meaning.

This acquisition situation does not occur as learning a code *to be used in certain circumstances; but rather takes place as a lived experience of sense-building through which the code sets in and, correlatively, makes itself operational, because it reveals as pertinent to those senses.*

What Oliver Sacks shows, then, is that the acquisition of sign language between deaf children and parents is identical to our learning the language code of oralism. It is certainly necessary for deaf parents to have language and its communicational use, so that things happen in this process of normality.

This is why prelingual deafness is a risky occasion. Sacks notes that deafness can be devastating, "The languageless deaf may indeed be *as if* imbecilic – and in a particularly cruel way, in that intelligence, though present and perhaps abundant, is locked up so long as the lack of language lasts" (Ibid.: 17, emphasis in original).

Deaf children born in a hearing environment, besides not having easily detected deafness, are eventually assumed to be mentally deficient – although their impeded reasoning is not due to lack of intelligence, but only to the barrier of access to culture due to lack of language – and lack of interactional conditions for acquiring or inventing that language.

Sacks studies cases of young people and adults who were deprived of that first language acquisition in situation. They are references to studies in the 19th and 20th centuries and to empirical observations by Sacks himself. He notes, in these accounts, "the special peril that threatens human development, both intellectual and emotional, if the healthy acquisition of language fails to occur" (Ibid.: 49).

With the deaf in such a situation, a subsequent acquisition of sign language may occur, distinct from the concomitant encounter between the world, language, and the other. The individual already has an experience of the world – idiosyncratic and poorly interactional, incomplete by lacking in sufficient intercessory communication processes – when he encounters an environment of sign language acquisition.

The limit situation that refers to communication is not, then, deafness itself – however much this condition actually brings difficulties to those affected by it. What we consider as a limit situation is the separation between the early experiences of the world and an activation of interactional competences, which should be correlated as a way of entering culture through the formation of a language.

Given the systemic identity between sign languages and oral languages, we can infer that a hearing child, removed from interactional possibilities, would be

in the same disjunctive situation. Indeed, Sacks relates this occurrence to the story of Kaspar Hauser (Ibid.: 41).

During the study that led to the book, Oliver Sacks met and accompanied Joseph, an eleven-year-old whose deafness had only been discovered at the age of four and had long been regarded as retarded or autistic. His testimony about the boy's behavior, in an early stage of learning in a school for the deaf, accurately illustrates the disjunction we are referring to: "He looked alive and animated, but profoundly baffled: his eyes were attracted to speaking mouths and signing hands – they darted to our mouths and hands, inquisitively, uncomprehendingly, and, it seemed to me, yearningly" (Ibid.: 32).

Having or not having a language is also related to social conditions. At a deaf school referred to by Sacks, in Fremont, children come from safe homes. Along with sign language, a deaf culture is developed (Ibid.: 47-48). In another school, Braefield, despite a corresponding intelligence, Sacks finds behavior "lacking spontaneity, confidence, social ease." (Ibid.: 46). In addition to deafness, social conditions have imposed on children "homes where parents cannot communicate with them […] where they cannot pick up basic information about the world" (Ibid.: 47).

Sacks shows yet another situation, referring to a study by Susan Scheller on the acquisition of SL as the first language by a 27-year-old man with prelingual deafness. Despite the extraordinary situation of facing such learning in adulthood[5], Ildefonso develops his linguistic and interactional competence. Sacks presents two hypotheses. One is that of "an unusual retention of neuronal plasticity" (Ibid.: 167). But he himself considers the second hypothesis more interesting: "the gestural systems (or 'home signs') set up by Ildefonso and his brother [equally deaf] […] could have functioned as a "protolanguage."" His linguistic competence would have been initiated within the critical period – and could then be triggered and developed "with exposure to genuine sign language many years later." (Ibid.: 167).

Sacks' second hypothesis can be complemented. In the very development of the signs set up by the two brothers, in their need for interaction, what happens is the exercise of a true communication. In the absence of a more advanced system of rules and of intercessors offering a transmitted culture, siblings develop a protolanguage *– which, however simple and limited its code elements, corresponded to an invention. The simplicity of the structure is compensated (in neurological terms) by the fact of being a construction, a creation between the two minds. It is about a communication not directed by an existing and*

[5] Neurologists indicate that there is a critical age for acquiring a language until the arrival of puberty. Even from as early as the age of 5, difficulties in fluency and grammatical competence occur if until then there was no language acquisition.

complex language – but a first, native language, generated by the communicational process.

Language generation

Sacks makes some observations that emphasize the interactional need as a basic dynamic for the development of a language. The Abbé Sicard asked himself at the end of the eighteenth century: "Why is the uneducated deaf person isolated in nature and unable to communicate with other men? Why is he reduced to this state of imbecility?" (Ibid.: 13). His own answer was that the absence of symbols to articulate ideas leads to a total lack of communication.

We must reverse the perspective: it is the absence of communication that makes both the acquisition of socially available symbols and the invention of codes required to convey situations of reality impossible.

The barrier to the development of intelligence evidences communication as a fundamental need of the species. The human being may perhaps have innate competences for language; but it is evident that, in the absence of communication, this possible innateness is inoperative. In any case, it seems equally natural what we perceive with the communication need: the pursuit of interaction between individuals and, therefore, of processes to interact.

Through Sacks' book, evidences appear of a spontaneous, *local emergence* of sign systems among deaf people, whether in the form of sign language, jargon or *native signs,* in different degrees of complexity. "The deaf generate sign language wherever there are communities of deaf people; it is for them the easiest and most natural mode of communication." (Ibid.: 20). It was the observation of native sign language by the poor deaf of Paris that led abbot L'Épée to found a school for the deaf in 1755.

"Prior to 1817, a deaf American traveling across the States would encounter sign dialects incomprehensibly different to his own" (Ibid.: 140). Contrary to a widespread belief in a universal sign language, what characterizes the local emergence of sign language is their connection to the circumstances of lived experience. Even the unification by country occurs only through coordinated systematizing efforts.

We infer that the gap poses a fundamental need to develop interactional systems for the exercise of communication. That proliferation in the emergence of languages and dialects is developed in tentative fashion, through interactional experiences consistent with what is sought to communicate. But among its conditions of possibility it is essential to meet an otherness where a minimum of sharing is present, where the meeting of perceptions is feasible.

The young deaf Massieu, who was educated by abbot Sicard, although initially ignorant of sign language, had its training streamlined by the native signs he had developed as a child in living with his five deaf brothers (Ibid.: 37).

Sacks refers to a testimony about a school for the deaf which emphatically adopted deaf oralism, refusing sign language to students. In the absence of adults, "signing flourished at the school, was irrepressible despite punishment and prohibition" (Ibid.: 11). Signing jargons there show as a local appearance of codes.

Under these circumstances, what we see – beyond the question of acquisition displaced from the normal situation – are communication processes which, despite the initial disjunction, lead to the generation of sign languages. Sacks notes that "the 'home signs' that Massieu developed, and that these isolated preschool children developed, are simple gestural systems that may have a rudimentary syntax and morphology of a very limited sort." (Ibid.: 150).

Not only children, "[adults] too will invent gestural systems […] by which they can communicate basic needs and feelings to their neighbors." (Ibid.: 152). On the other hand, these same language generators fail to "make the qualitative leap from such a gestural system into a complete, fully grammaticized linguistic system" (Ibid.: 150).

The linguist Derek Bickerton believes that complex creations need at least two generations. Sacks notes that successive generations are increasingly evolving a sign language. An example he refers to the language developed on Martha's Vineyard island. By the early twentieth century, the deaf came to compose 25% of the population, distributed across almost all families. The population became bilingual and deafness ceased to be considered pathological, being taken simply as a way of being in interaction.

This observation makes one see the process of creating a language as a historical phenomenon, which calls for successive levels of development. Starting from basic needs, preparation of "home signs", once these are established, the set-up codes undergo successive experiences, adapting to diversified needs, more subtle interactions, to meet more complex objectives. They thus become the sign languages. The system of rules develops from the previous shares: on basic feelings, only the perceived need is shared; at the second moment, the basic jargon is already shared. The strained exercise of the very rules is what effectively develops them, in the particular circumstances of their triggering.

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INFERENCES AND DERIVATIONS: RESULTANTS OF THE DIALOGUE

Communication does not appear in Sacks' book as *issue,* as an object of reflective investigation. It is not a problem to be solved – but a productive notion to grasp and clarify the issues arising in the study problem. Communication shows itself as a central aspect, an articulator of the processes studied by the author.

Sacks thus shows, by the simple use of the word, a whole range of characteristics, processes in which communication appears. Based on these characteristics and our punctual inferences, we can now make derivations on three aspects in which the limit situation enables broader interpretations.

Communication and language

The first aspect concerns the fundamental relationship between communication and language. Although Sacks' main focus refers to sign language and the interaction between deaf people, this perspective is related to the comprehensive process of human communication – for example, when it is about learning the oral language according to Vigotsky; or general processes of emergence of language (Chomsky, Edelman) and even systems beyond language (mathematical formulations, chess game). It makes one perceive, correlatively, connections between the generation and acquisition of sign languages and the general processes of human communication. We can therefore extend what we have learned about the limit situation, observing there general characteristics of the communication phenomenon.

Communication appears as the basis of the *process of language acquisition.* References to Vygotsky indicate the specificity of this acquisition, from a communicational articulation between the baby's perceptions and the systems already culturally organized, received through the interceding adult.

Communication also appears as a *process of language internalization.* We receive the cultural heritage of our social environment, first by the acquisition of language (already culture), which subsequently opens the way for all the other social processes and structures that characterize *our culture.* The other's voice in me, relating to the spontaneous perception of the otherness and the world (Merleau-Ponty, 2002), feeds our communicational capability.

Sacks also emphasizes the importance of the *use of language as a communicational process* that does not correspond only to the expression of thought,

but also to the listening of the culture. Indeed, language facilitates and directs the communication that uses it. This use, however, also affects the code.

We can say, therefore, that *the languages are transformed by the social communication* (Braga, 2010 b) – as a result of the uses, the search for how to express ideas and references to the world, and yet the inferences of adjustment to specific situations. Sacks notes that "sign languages are evolving almost explosively at this time" (Ibid.: 164). What he studies in the short term is what etymologists investigate in the long historical term.

Finally – and this is one of the main relationships corroborated by the book – we find *communication as a process of invention and development of codes.* Just like in the other relationships, the limit situation turns out to be illuminating of usual situations. An individual who does not have a language acquired in a normal situation to interact has no conditions to develop it alone. But as soon as he encounters a fellow in these same conditions, both perform together a viable communication only by perception, motor skills and the shared need. The anthropologist Yves Delaporte notes that "the moment of encounter with similar beings is featured in all life stories [of deaf people]"[6] he collected (2000: 390, our translation). This process results in a code to interact. From native signs to a complete language, in successive levels, communication is exercised as generative – which allows inferring that languages in general are developed in a similar pattern.

Codes & inferences

The second aspect for derivation is the multiplicity of "descriptive systems," which is related, in the book, to a review of the hypothesis of fixed distribution between the two brain hemispheres, in favor of "dynamic roles in dealing with cognitive tasks" (Ibid.: 82). The reference here, for Sacks, is the work of Elkhonon Goldberg and his colleagues. Goldberg would

> enlarge the domain of 'language' to one of the 'descriptive systems' in general. Such descriptive systems, in his formulation, constitute superstructures imposed on elementary 'feature detection' […] a variety of such systems (or 'codes') being operative in normal cognition. One such system is, of course, natural language; but there may be many others – such as formal mathematical languages, musical notation, games etc. (Ibid.: 83)

We make an initial repair – to consider that these systems are not only *descriptive* – just like a language is not only a reference in relation to the world, but also expresses feelings, formulates the imagined and, particularly, is performative. The very systems referred to (formal mathematical languages, musical

[6] In the original: "L'instant de la rencontre avec des êtres semblables à soi est le point d'orgue de toutes les histoires de vie."

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notation, games) more than describe, they enable special interactions about the world and between people. It is not, therefore, excessive to characterize them more precisely as *interactional systems*. The proposal confirms our perspective of *interactional devices*, constantly developed by social participants tentatively until being configured in stabilized modes (Braga, 2011, 2015).

On the perception that the human species produces a variety of *codes*, Goldberg gives attention to the productive mode – which involves two strategies: "It is characteristic of all of these [systems] that they are first approached in a tentative, groping way but later acquire an automatic perfection" (Ibid.: 83).

The dynamic distribution of these two processes is what would make the difference of action of the two hemispheres: not as distinction between specialized tasks (linguistic or by images; analytic or synthetic, sequential or simultaneous); but – for all kinds of tasks – two development stages:

> The right hemisphere's role, as thus conceived, is critical for dealing with *novel* situations, for which there does not yet exist any established descriptive system or code – and it is also seen as playing a part in assembling such codes. Once such a code has been assembled, or emerged, there is a transfer of function from right to left hemisphere, for the latter controls all processes that are organized in terms of such grammars or codes. (Ibid.: 83, emphasis in original)

It is important to distinguish between the two stages: one, experimental, tentative, which handles the novel and generates codes; and the other, in which processes already *grammaticized* are exercised by the automatism of the code. When the codes – first developed and then automatized – are triggered in unusual circumstances, the process has to be *returned* to the right hemisphere, for treatment of novel situations. As Sacks goes on to say, "[both hemispheres] are complementary, interacting; and between them they allow the mastery of new tasks" (Ibid.: 84).

A second repair is due here. We must not imagine that the processes of the two hemispheres are directly creators of interactional devices (even the "descriptive systems" referred to by Goldberg). This development is not only neuronal but communicational from the start, given the cultural processes and the internalization of the otherness. It is necessary that the biological competence has been fueled by the human encounter with their peers and with the changing nature – and in the historical sequence, with the technical apparatuses developed in and for human interaction. We should not, therefore, mistake the

brain processes for communication production – it is about, in the neurological system, only the innate skills of making abductive inferences and encoding. The brain is not a computer, neither does communication occur alone: it requires the meeting of specimens, similar in some basic aspects, although differentiated to the point where they cannot be articulated only *by instinct* . It is only at the time of the meeting that communication is able to occur, generating the social in the context of relationships, which are produced at once, enabling the development of interactional codes.

It is this process, moreover, that ensures the historicity of social relations: these are not directly produced by the human neuronal system, structured in the very long term. The interactional devices (Braga, 2011), as well as the codes and inferential trends that compose them have the plasticity and agility of random occurrences in the world.

It is easy to see the frequent occurrence of such a process in the specific situations studied by Sacks; but also in any interaction using oral and written language and other interactional systems. The very logic of these systems leads them to coping with practical or theoretical problems of the world. Which implies the probability of finding novel situations – that is, not yet contained in the range hitherto predicted for the code – resulting in constant adjustments and reinventions.

The genesis of language

The third aspect relates to the generative process of tongues and languages – sign, oral, written, or other "descriptive systems" (in Goldberg's expression).

Sacks refers to two hypotheses: either social interaction triggers only the language, which would be innate in the form of a deep structure "latent in the nervous system until kindled by actual language use" (Ibid.: 64); or the human mind creates "linguistic categories and relationships it needs, as […] it creates perceptual categories, without prior knowledge, in an 'unlabelled' world"(Ibid.: 165).

The issue is foundational for communication. The first alternative, to which Oliver Sacks refers Chomsky's theory, offers a deep linguistic structure as the basis and origin of the possible interaction between humans. Communication simply follows this innate structure, genetically given from the beginning. The social – enabled by the languages and, at most, activator of these, harbors directly on the biological. It is reduced, therefore, to what we previously called *poor communication* – which only meets standards determined elsewhere. Linguistic transformations would show as fluctuations of a *generative grammar* .

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On the second alternative, Sacks refers to Gerald Edelman by asking "whether any innate or rule-bound basis is needed for language development at all" (Ibid.: 165) – a perspective which then gives precedence to the communicational practice as generative. In this case, society depends on the biological in a much more indirect manner – being generated and developed by the encounter of othernesses, in which innate competences are exercised creatively in differentiated ways.

The fact that the development of a language depends on human interaction (as shown in Sacks' study) is evidence that we have no innate linguistic structures. Or, at least, it makes irrelevant the issue between the triggering hypothesis and that of the creation in situation, for *nothing happens* without the social practice. Thus, the second hypothesis, more clearly adaptive, imposes itself as an investigative angle and as main heuristic for the study of communication.

Sacks swings, in the book, between these two tendencies, to finally confess:

to being emotionally attracted to a Chomskian, or Cartesian, or Platonic idealism, to the notion of our language capacities, our powers of intellectual apprehension, all our perceptual powers, being innate […] but my observations of language acquisition, and of all developments in the individual or the species, tell me a much undtidier story. (Ibid.: 178)

Sacks' own reflection, although referring to the limit situation, is directly generalizing. Language appears only in concrete situations and according to the patterns of the situation – whether for acquiring an existing language, or for producing language or innovations/derivations of available language – according to the needs, the characteristics of the context, and the objectives of the participants.

CONCLUSION

We have seen how the limitations resulting from the absence of language hinder more developed cultural processes. Everything shows that communication skills are originally developed by the articulation between different individuals, in the family, community or tribal group. When this is delayed, the "moment of encounter" mentioned by Yves Delaporte is set as the emergence to the life in culture. Examples are where the deaf get in touch – between siblings, at school, in the village, by chance. It is not mandatory that the speaker has and offers an already established language – the encounter with someone with similar competences and limitations gives sufficient conditions for language generation. The

exercise of their motor skills shows in the form of the gesture that seeks interaction, enabling a communication even in the absence of previously developed codes.

If even in the delayed encounter – and therefore in particularly unfavorable conditions – the human being is a code generator by engaging into interaction, most certainly he will be in the favorable interactions articulated with the early experiences of the world and perception.

The search for communication seems to be natural, related to various independent competences: perception of the world, motor abilities and a mimetic competence[7] intertwined with inferential competences.

The circumstantial disjunction of the limit situation (hopefully corrected by a posterior encounter) appears as the negative correlate of the most usual situation – of joint development between our mimetic-inferential competence and the interaction with others. The characteristics of communication that become so explicit in the limit situation are therefore the same ones that are present (maybe less dramatically) in the most regular process of sociation.

There is only one way to relate particular gestures and their combinations with the meanings given: by a tentative process, in which sensations, desires, fears and perceptions of the world, surpassing their idiosyncratic state, seek equilibrations by collation. The trial and error allows adjustment of sounds and gestures, to express *approximately* the same between the participants. The idiosyncratic becomes otherness by an approximate attempt of communicational order.

Human differentiality is an adaptive advantage: where a specimen fails in his attempt, another may succeed. Diversity also favors the plasticity of processes – according to the moment and type of situation to be faced. We can assume as a specificity of the human being his communication capability articulated to the differences between specimens.

This adaptive advantage implies, however, the need for a substitute process in the absence of articulation by instinct, which would establish a predefined behavior for all specimens (or certain types of specimens). The genetically processes predetermined by instinct are discarded by the same evolution that produces variety. For this not to become, conversely, a strong disadvantage for the survival of the species, due to the difficulty of concerted actions, the modes of articulation should be *negotiated* between the differentiated specimens – leading to the necessarily plastic definition of articulating modes, depending on the adaptive *preferences* defined by circumstances.

[7] Corresponding to what Gabriel Tarde (1993: 53) considers as an "instinctive imitativeness" of the human being.

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It follows that the communicational phenomenon replaces the standardizing instinct and complements the individual differentiality, allowing the generation (of cultural rather than biological order) of articulating codes – with greater flexibility than that of genetic codes. The species-specific is not properly to activate codes – but to *generate codes*, replaceable according to the pressures of the social and natural environment.

We stated, at the beginning of this article, that communication occurs in a historical social reality. We can now extend that proposition by the evidence that the very communicational phenomenon, as we understand it here, appears as a driving force of the historicity of the social process. Faced with novel situations, human beings in interaction can generate codes for re-articulation of their behavior. These, once incorporated, are spontaneously activated in relevant situations – until new situations arise, demanding a remake or complexification. The inferential work, however, is constant – not only for the generation and acquisition of codes, but continuously, for adjustment to the specificity of interactional episodes.

As the observation of the limit situation informs us, a prerequisite for the production of codes is the feasibility of relationships in otherness. The risk taken by deaf children, with its devastating consequences if they are not in a favorable context for learning or invention of sign languages, shows at the same time the generative potential of communication and the continual need, in the human environment, of ensuring favorable conditions for its flowering. M

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