

Case Report Relato de Caso

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# Keywords

Apraxia Body Language Language Music Language Therapy Apraxia of speech and language delay: the complexity of diagnosis and treatment of symptomatic children

Apraxia de fala e atraso de linguagem: a complexidade do diagnóstico e tratamento em quadros sintomáticos de crianças

# ABSTRACT

Apraxia of speech is defined as the inability to sequence the movements required for accurate articulatory production, traditionally involving a deficit in speech motor programming. Language clinicians often confront about speech inconsistency clinical cases, which raise questions concerning the differential diagnosis between apraxia and language disorders. Such problem often results in the difficulty to establish an adequate treatment decision. In this work, we discuss a clinical report in which both diagnosis and treatment raise questions about the apraxic speech condition in childhood. We start from the recognition that, in apraxia, it seems imperative to consider that the body to be considered is the one that surpasses its organic functions and structure. Clinical consequences are drawn from the premise that the human body is one whose ear can listen, and mouth can speak, i.e., the organic structure is a material realm open to the incidence of language and its "music", which creates the speaking body.

## Descritores

Apraxia Corpo Linguagem Música da Língua Terapia de Linguagem

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### RESUMO

Define-se apraxia de fala como a inabilidade de sequenciar os movimentos necessários a uma produção articulatória acurada, cuja explicação, tradicionalmente, é remetida a um déficit na programação motora da fala. Não é infrequente que clínicos de linguagem se defrontem com casos clínicos em que a inconsistência da fala coloca questões quanto ao diagnóstico diferencial entre apraxia e quadros considerados de linguagem. O reflexo desse impasse é observado na dificuldade em estabelecer uma direção de tratamento adequada ao problema apresentado. Neste trabalho, apresentamos o relato de um caso clínico em que tanto o diagnóstico quanto o tratamento mobilizam discussões a respeito da condição apráxica de fala na infância. Nas apraxias, partimos do reconhecimento de que o corpo colocado em evidência é aquele que ultrapassa sua configuração puramente orgânica. Consequências clínicas são retiradas da premissa de que o corpo humano é aquele cuja orelha pode escutar e a boca, falar, ou seja, é estrutura orgânica posta a funcionar de maneira especial pela incidência da música da linguagem a invocar o corpo falante.

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# INTRODUCTION

It is necessary to say from the beginning that in this article we discuss a very specific position: the one of a clinic that gathers and dedicates its work to individuals with speech symptoms, and therefore, has a theoretical commitment to the language and its manifestations. We refer to the Language Clinic, as formed in the Research Group of the Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq) "Acquisition Pathologies and Language Clinic"<sup>a</sup>.

We begin with a case discussed in a PhD thesis defense<sup>(1)</sup> that continues to question and raise current discussions. In it, we recognize problems experienced by language clinicians with the definition of diagnosis and confirmation of an appropriate treatment direction to face speech/language problems in childhood. That is because the many inconsistencies affecting the children's speech can be interpreted in two different ways: as praxis issues – traditionally understood as purely motor problems (non-linguistic); or as disturbances of the language – explained as exclusively symbolic.

Therefore, professionals of the area have worked to establish reference parameters to the differential diagnosis of small children with speech/language symptoms. That is the case of recent works that seek to define diagnostic markers "sensitive enough" to differentiate speech apraxia in childhood from clinical conditions such as language delay and phonological deviations<sup>(2)</sup>. A throughout reading of these studies reveals the difficult of completing the task, since there is no consensus among clinical researchers regarding the cutoff between the symbolic nature of speech and motor apraxia<sup>(1-3)</sup>.

In the speech clinical practice, we often face symptomatic manifestations that unravel individuals limited to clumsy articulatory gestures: paralyzed or facing visible effort to speak. In such condition, the speech is composed of mixed imprecise sounds and particular sound mass that overlaps itself, organizing sequences that disturb the interpretation, which can remain in a silent situation.

Dyspraxic or apraxic speeches<sup>b</sup> immediately affect the speaker and others' hearing, but also get attention. Listening is achieved

by disturbance of the phonic and prosodic composition of speech, which interferes in its interpretation. Such alterations also affect the syntactic-textual composition of the utterance. After all, even though the sound aspects predominantly affect the therapist hearing, the later shall not ignore the intricate correlation between the levels or constitutive linguistic components of all and every utterance. On the other hand, apraxia is highlighted by the acute presence of an evident body effort in the motor movements, articulatory attempts, imprecision and perseverance of speech movements. The description of the apraxic phenomenon refers to a speech that reaches both the speakers' ears and eyes. Apraxia does not involve only the speaker's body but also the listener's body. Surprisingly, although the speaker's body suffers, there are no difficulties in the control of the muscles involved in the speech production. Thus, it is worth asking what causes this intriguing situation, in which one controls the muscles involved in speech production but also loses this possibility definitely.

With this question in mind, in this study we recognize that praxic disturbances of the speech affect a body that, even though is structurally well, does not work as expected. The main point is to recognize that in apraxias, the body in evidence is the one that surpasses the purely organic setting. It is the body that the ears can hear, and the mouth can speak, i.e., it is the organic structure that works in a special manner by the language incidence. If the body speaks, as Freud adverted<sup>(4)</sup>, the apraxic phenomenon exposes the relationship between body and language. This is our hypothesis in the discussion that sustains the debate in this clinical case; based on which we expect to contribute to the clinical questions regarding the diagnosis and treatment of children in the language clinic.

# **CLINICAL CASE PRESENTATION**

We report the case of a five years old girl, Amanda (fictitious name). She was referred to speech therapy service with complaints of "difficult speech"c. In the interviews, the parents indicated that she had developed as expected until the age of 7 months old, when she was hospitalized due to an infection. In the occasion, she suffered a cardiorespiratory arrest. The parent's memory of the hospitalization was sparse, "remembered just a few things" with imprecise information. Actually, this period was covered by oblivion. Also, Amanda's medical record, which was requested to the neurologist, could not be located at the hospital archives. In midst of this confusion, the parents noticed great changes in Amanda. According to them, the milestones reached until then regressed - but what scared them the most was her silence. The previous babbling, "attempt of first words", previously seen by the parents had disappeared. Amanda's behavior became agitated and strange (she stared fixedly to lights and smiled looking to a picture). She began to speak at 4 years old.

<sup>&</sup>lt;sup>a</sup> Research group initiated in 1997 by Maria Francisca Lier-DeVitto, in a CNPq Integrated Project at the LAEL-PUC-SP. In 2002, Lúcia Arantes became a co-leader. The group elaborations are, since then, widely recognized in the national and international scientific communities. Melissa Catrini, at Universidade Federal da Bahia, Juliana Marcolino-Galli, at Universidade Estadual do Centro-Oeste, and Glória Maria Monteiro de Carvalho, at Universidade Católica de Pernambuco, are expressive branches of this theoretical-clinical movement on the Language Clinic. In this work we begin from a case discussed in 2008 and 2014, in the scope of the Language Acquisition Project of the Latin America Linguistic and Philosophy Association, and in a PhD thesis defense in 2011.

<sup>&</sup>lt;sup>b</sup> The distinction between the two terms is not always clear. Some state that the prefix "the" in apraxia defines an inability of forming a motor sequence after the occurrence of an accidental injury or syndromic cases. In this situation, "dys" of dyspraxia would be related to a difficulty (and not inability) of forming a motor speech sequence. It is noteworthy that such comprehension is not common sense, but polemic. The attempt of definition of this difference is unconclusive.

<sup>&</sup>lt;sup>c</sup> Clinical evaluation performed with authorization of the Committee of Ethics in Research (CEP) of the *Pontificia Universidade Católica de São Paulo*, under protocol number 267/2010. The person responsible for the child signed an informed consent for analysis and publication of the data in scientific events/journals. The subject's name is fictional, respecting her anonymity.

The child was submitted to many medical evaluations and none of them defined an organic diagnosis that could justify the symptoms. In addition, she had not been referred anywhere until then. In the interviews, the parents asked about a possible speech apraxia. Therefore, it was not possible to ignore everything involving the girl and language.

When Amanda arrived, she spoke very little: minimum sound fragments, mostly vocalic (such as "i i a") and only as a replicate of what was told to her. In many occasions, these vocal fragments were alternated with head wiggles. Amanda was engaged in the activities performed during the session, when we noticed smiles in well sutied situations. However, the girl also showed moments of profound dispersion and strange behaviors. She would walk from side to side in the room and switched toys constantly. She did not respond to calls. There were sessions where she smiled for a long time in front of the mirror. Being there was not an easy task. The restroom trips were frequent, delays to enter the therapy room at the beginning of each session and to leave the room at the end of it. In many occasions, she threw toys through the window. Amanda used to run around the waiting room and became impatient and irritated easily. The mom said nothing could stop her.

In addition, we observed respiratory difficulties that led to problematic mouth breathing and drooling. We suggested the family change the consistency of the food offered, prioritizing food that require the use of the orofacial muscles, and referral to otolaryngological treatment.

We also noted gait motor dysfunction and difficulty to remain seated, which led to a neurology referral. The investment in Amanda also involved regular visits of the speech therapist to the school to participate in the elaboration of materials and discussion of adequate educational milestones according to her condition. Considering the subjective questions of the child, we suggested psychoanalytic evaluation and care. It is noteworthy that the articulation between different fields was welcomed by the parents and was gradual, being determined by the therapeutic process in the language clinic.

After the diagnosis period, the direction of the treatment was to "invite her to speak" using dramatization of stories told by the therapist with marked distinction of the characters voices, segmentation and accentuation of words parts in nursery rhymes, and paced cadence of the texts created (or not) in the therapy sessions.

The first effect of these procedures appeared with the incorporation, by the girl, of the prosodic aspects of the nursery rhymes that she initially responded by marking the time with her body, almost dancing. Then her voice was taken by the rhythmic cadence of the songs, even though no clear linguistic segment was recognized in the emerging sounds. The music, on the other hand, seemed to "hold" Amanda in the scene: she would look to the therapist and wait for the song to continue when the therapist interrupted. The girl started to sing a speech, even though, from the prosodic point of view, it was difficult to follow the song rhythm.

After, Amanda's speech began to penetrate the singing voice and to occupy the place before used by the body: "pointing" or shaking her head" in affirmative or negative in dialog situations. She presented changes in the accent, and unusual and unexpected significant compositions. In fact, Amanda's own speech phonic composition was being stranger (even though the speech was there!) in composed enunciated of alternation and crystalized articulations of sound substance ("balatá") e ("pórrtão"), resistant to changes. They remained unaltered in clinical interactions, in unintelligible sequences, which started to show differences, such as:

Segment 1: A. "bapapaquí ( ) point ( ) ti ( ) tatá di".

In enunciations like the previous, the same sound mass resolved in reiteration of oppositions p/b and t/d with the vowels /a/ and /i/. At this point, the hypothesis of speech apraxia got new attention. Amanda's speech composition showed signs positively pointing to such diagnosis (phonemic inconsistency, changes in accent and intonation). However, it was necessary to consider that the composition ratifying the apraxia hypothesis also pointed to an expression that the therapist frequently used during the sessions: "Passa aí (x)". The other's speech was present in Amanda's.

Thus, we chose to hold the initial treatment direction since it has led to important changes, specially the predominance of speech over gestures (Amanda was speaking more). The speech was not only responsive now, as Amanda started questioning and asking the therapist for things. We observed reformulations, indicating a change in her position in face of her own speech (Amanda seemed to listen to her own speech and the other's). In addition, her speech, which before was monotonous from a prosodic point of view, gained intonation contours and detached from the therapist speech – which she seemed to speculate in many moments.

The condition of speaker and Amanda's speech changed sensibly. She was able to sustain a narrative without structural support of the therapist, as seen below.

**Segment 2**: Amanda tells a story to the therapist, who writes it so they can both read it later.

- 1) *O bichinho deito na rua atropelô o carro ele*. (The little animal lay down on the street and was hit by a car);
- Bichinho foi no hopital, fez injetão e foi assim aconteceu. (The little animal went to the hospital, had a shot and that is what happened);
- 3) O bitinho tava i pá dele tomando um montis di remédio poque ele o carro atropelô ele ficô no meio da rua foi pro hopital, foi pra casa, o bichinho foi pra casa dele. (The little animal was taking a lot of medicines because he was hit by a car he was in the middle of the street went to the hospital, went home, the little animal went to his home);
- 4) *Uma menininha tava de novo deitada na rua*. (A little girl lay down on the street again);
- 5) *O carro tropelô minininha foi nu pital di novo tomo um monti de remédios igum, igual u bitinho*. (The car hit the little girl went to the hospital again took a lot of medicines like the little animal).

In addition to the paced reading of texts created (or not) by the therapist, the writing was also introduced in the clinical activities, by means of Amanda dictating narratives for the therapist to write. Even though the speech apraxia was present, the writing affected the orality and it became more solid, even though marked by the pathology effects: notable phonemic instability and prosodic speech and disarrangements of the syntactic-textual order (as observed in the previous segment) – which demanded the treatment continuity. However, everything pointed to the fact that the treatment direction was successful. Even questions linked to articulatory problems (motor/praxic), such as the reiteration of the sound oppositions, changed substantially.

It is noteworthy that Amanda's body also changed. The gait became more balanced than at the beginning of the treatment and the girl remained seated on the floor, holding on her crossed legs and with erect torso. Most importantly, she was able to remain connected to the clinical activities in the therapy session.

Regarding the results of the referrals made along the treatment, we observed that the otolaryngological intervention substantially improved her respiratory condition and the best functioning of her speech articulatory organs. The neurological evaluation did not reach a diagnosis and was therefore dropped. As for the psychoanalytic follow-up, the parents were more committed to the treatment, but the analyses were interrupted by several financial reasons throughout the process. Regarding school, at the same time she started dictating stories to the therapist, she also started trying to write her name. One more pathway opened.

### DISCUSSION

In the field of speech therapy, it is common that the application of descriptive apparatus on the patients' speech cover the clinical event. This position of the speech therapist in face of symptomatic speeches impairs his/her self-questioning on the singularity of this event since, logically, the "universal" descriptive instruments cover the event singularity that is frequently hygienezed<sup>(5)</sup>. In face of a clinical case in which speech apraxia is a possible diagnosis, the hegemony of the link between the problem and an exclusively motor deficit (motor programing of speech) impairs the patient's speech is seen as a manifestation that goes beyond the cognitive-motor behavior to be taught and modeled.

Speeches marked by distorted articulatory gestures evidence a body dysfunction, over which weights the expectancy of being naturally ready to adequately pronounce the narrative. It is an expectation that, in case of apraxias, is inevitably frustrating.

There is nothing of natural in the placement of the oropharyngeal tract to speak, as already taught by Saussure: "Men could have chosen gestures and employed visual images instead of acoustic images"<sup>(6:17)</sup>. The saussurian position means giving up on two preconcepts<sup>(7)</sup>:

- speech is oral in its nature;
- speeches are articulated to the body in such way that these correspond to the vocal apparatus.

Let's remember that, initially, speech and orality are not confused in Saussure. Speech corresponds to the speech plan of execution, as he says, and such execution may happen with the movement of other body parts – gestures, for example. There is something of subjective order in the execution of speech, which bursts in the body of a tongue, moved by itself, by the universal functioning and perennial of the *la langue* – "norm of all speech manifestations"<sup>(6:16-17)</sup>.

Many authors walked in this direction, such as Jakobson, Benveniste and De Lemos, who sustained that a speech presents the tongue structure and shapes the larynx and ear of a speaker. However, if the tongue is the determinant in the execution, they don't coincide integrally, as emphasized by Saussure in the known statement: "We can compare the tongue to a symphony, which reality does not depend on the manner in which it is executed; the mistakes made by the musicians that execute it do not compromise anything in reality"<sup>(6:26)</sup>.

The speech can, however, happen by many different body pathways. Yes, the organic matter is available/exposed to the language incidence, even though by another mean of phonation. Questioned by a body in which "something" surpasses the precarious motor condition, Vasconcellos can retrieve, in the limited (a)praxias of his patients, the presence of speech, even though they are not orally articulated. Looks and few gestures had the status of meaning and significantly addressed to the other<sup>(8)</sup>.

Let's admit that a body/flesh of a being "is given" – first condition of life. This fact is submitted to the genetic dictatorship. In case we also admit the presence of the significant chain, before the being been born, we can reach another place, trace new explaining ways. According to Bergès, "the baby is spoken even before its birth, he/she is a receptacle of the parents' speech on its regards, evocator of similarities, familiar language, origins of sexuation"<sup>(9:53)</sup>. After birth, the immaturity of the physical structures translates in the submission of the functions to the maternal care – guarantee of the newborn survival (the given structure). In addition to the care with hygiene, feeding and warming of the child, the mother imposes her position to the most elementary and automatic functions, such as cardiac, respiratory and digestive. Here, the imperatives refer to the temporality of these functions and notably to their rythms<sup>(10)</sup>.

Thus, corporal practices are impinged to the child body by the other, saying how and when to act, how to behave to eat, to defecate (control sphincters). Bergès affirms that mothers interfere in the child's primitive functions, imposing rules by which the body must function. And that is imposed on being a child. Thus, the maternal position on this newly arrived organism is determinant of the corporal structuring and subjective of the son/daughter.

The gears of the biological machinery are placed to function under the other's look. We know that the look, I this case, is not that of the Medicine. It is the spoken look, that talks, gives sense, that restricts and opens directions. In the theory position here adopted, the intersubjectivity is not a cause (dual relation between subjects), because it is in cause – *la langue* –, which is the source of the sense and meanings, builds and guides the seeing. In this sense, all the baby's manifestations are, since always, covered by a significant operation, which is marked by the touch, look, speech of those caring for the child – in the body of the speaker. Also, it is important not to ignore, as mentioned by the work of Cláudia Lemos: the mother is above all the other speaker, somebody already subject to the laws of the language functioning<sup>(11)</sup> – other submitted to an order "[...] anterior and exterior of the subject, [which] regardless determines it<sup>(12:282)</sup>. That's why the other, already captured by the order, has its word, gesture and look crossed by the idea that the son/daughter can comprehend and "give the credit of listening"<sup>(12:282)</sup>.

Since birth, the mom demands that the baby responds to her and she supposes a demand on him/her ("Oh, you are cold"; Oh! You're hungry"; Oh, you are crampy"). In face of such considerations and observations, affirms Bergès: "In the child, the symbolic comes first, since the symbolic preexists in the language and lineage, in the language and lineage"<sup>(10:301)</sup>. Following this logic, one more step is needed. If the symbolic matrix incises over the organism, which occurs in two dimensions: the speech and the music (which does not come from speech), i.e., the symbolic arrives by the voice music and summons the body, even before it can vehicle the speech<sup>(9,10)</sup>. The language "pause us [...] its music"<sup>(13:9)</sup>.

Didier-Weill highlights that the gift to become humans is given by the maternal voice's music, received by the infant as a song. This song initially summons the subject to come – it is the call for life that boosts it into a direction. It is the musical summoning that arrives before the phonemic for the child and imposes a rhythm to his/her body. If the man's gift is passed by the music that summons him, it is also passed by the one who gives him name, since "[...] being is being nominated [...]"<sup>(14:95)</sup>.

When listening to the maternal speech, the sonorous universe of the melody captures the baby in the temporal game of continuity (melodic) and discontinuity (speech segment), which places him/her in parentheses – constrained by the law of language. Hearing the mother's voice, the baby is confronted at the same time with the continuity of the vowel sound flow and with the discontinuity printed in the speech by the cuts of the consonants that suspend the vocalization<sup>(14)</sup>.

These are the two times of the symbolic law: the first refers to the voice and the second to the infant's radical confrontation with the other. From the side of the voice, the singing sound has seductive power and, as a result, they end "[...] falling pieces of the mother's speech [...]" end up<sup>(15:43)</sup>. The child, in turn, by collecting these pieces, maintains a kind of private language between himself and his mother. However, it is mermaid singing, because singing "[...] carries within itself the rules of language and they force private language [...]"<sup>(15:43)</sup> to submit to linguistic functioning, to the laws of language.

To articulate speech, the child must lose his voice and it is at this time that he is captured by the tongue. The language not only takes the voice, it takes the whole body. The melody of the maternal voice pushes the organism to work, blindly engaging it in a linguistic functioning. But language imposes restrictions and limits. Thus, the vocation is on the side of the signifier – the incidence of phonic distinction, inserted by the consonant marking in the continuous sound of the vowel, is what imposes the symbolic law – the implantation of the signifier in the body<sup>(7)</sup>.

We understand that precisely because the musical invocation is not outside or beside a language, the structure of a language, Amanda's direction of treatment has gained movement and efficiency. Resuming Amanda's story, even noting the presence of praxic speech disorders, the therapist did not adopt the direction of traditional treatment in the field of speech therapy (which would lead her to perform articulatory and proprioception exercises). The bet was made on the strength of the "mermaid song". The choice was defined by listening to speech and the theoretical affectation of this notion of body, proper to the Language Clinic.

In Amanda's treatment, we adopted the song path: she was sung to, we sung with her, and Amanda progressed; started to initiate dialogic sequences; syntactic compositions emerged, the girl rehearsed telling situations that had happened to her and writing emerged as a possibility for her to say and tell herself. In summary, the treatment set the body to dance to the rhythm of this double musical and significant invocation, that is, in this game of continuity and discontinuity that invades us with the song.

# CONCLUSION

In this paper, we sought to present the testimony of a clinic that, being of language, goes in the direction of sustaining a commitment to the singularity of the symptomatic manifestations of speech and to the speaking subject. In Amanda's case, the clumsy gestures that apraxia summons put the body of the speaking being on the scene. In this sense, what the report of this case teaches us is that the apraxic symptom of speech does not hide the dependence of the articulation of organic functioning on language. In fact, it is in the gesture of speech that it manifests itself. The motricity is embedded in the word and it is this path that made the clinical music the incidence of language in the speaking body.

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### Authors contributions

*MC* - project design, data analysis and interpretation, article writing and critical review of the intellectual content, and final approval of the version to be published; MFLV - project design, data analysis and interpretation, article writing and critical review of the intellectual content, and final approval of the version to be published.