

REVIEW

Sign language acquisition and linguistic theory: contributions of Brazilian and North-American researches



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ABSTRACT

The conference, given by Prof. Dr. Diane Lillo-Martin (University of Connecticut), proposed to present the panorama of research on sign language (SL) acquisition, carried out in cooperation between North American and Brazilian researchers. The main objective was to reflect on how investigations in the field of SL acquisition show details concerning linguistic universals, in order to contribute to hypotheses and theories that are traditionally followed in previous studies about oral languages (OL). Topics of interest to the areas of psycholinguistics and studies in language acquisition were addressed, such as structural issues of SL – specifically about American Sign Language (ASL) and Brazilian Sign Language (Libras); effects of visual-spatial modality, the specificity of the process of language acquisition by bimodal bilingual deaf children and the implications of linguistic deprivation.

RESUMO

A conferência ministrada pela Prof.^a Dr.^a Diane Lillo-Martin (University of Connecticut) propôs-se à apresentação do panorama de pesquisas sobre aquisição de línguas de sinais (doravante LS), realizadas em cooperação entre pesquisadores norte-americanos e brasileiros. Teve como intuito

maior a reflexão de como investigações no domínio da aquisição de LS evidenciam pormenores atrelados a universais linguísticos, de modo a contribuir a hipóteses e teorias já difundidas em estudos anteriores com línguas orais (doravante LO). Em vista disso, abordaram-se tópicos de interesse às áreas de psicolinguística e estudos em aquisição de línguas, tais como questões estruturais das LS, especificamente de *American Sign Language* (ASL) e Língua Brasileira de Sinais (Libras); efeitos de modalidade visuo-espaial, especificidade do processo de aquisição de linguagem por crianças surdas bilíngues bimodais e implicaturas de privação linguística.

KEYWORDS

Language Acquisition. Grammar. Sign Languages.

PALAVRAS-CHAVE

Aquisição de Linguagem. Gramática. Línguas de Sinais.

Studies in language acquisition, regardless the theoretical aspect in which they are anchored, are still provoking investigations in view of the complexity of the gradual process of linguistic knowledge as mental representation. Indeed, the way deaf children acquire a SL can enrich this field, given the intrinsic characteristics of the visual-spatial modality, that can expand interpretations about linguistic universals that are independent from modality differences.

In this sense, in a review of studies previously carried out in cooperation between ASL and Libras researchers, Lillo-Martin addresses the issue by observing four linguistic phenomena in the context of deafness that can be contemplated in research on language acquisition in a formalist perspective: a) discourse focus structures, b) specificities of the typical pronominal system of the visual-spatial modality, c) bimodal¹ bilingual environment implications and d) cases of linguistic deprivation.

According to the researcher, when considering the theme for the conference, it is necessary to define some research observations to rely on. The first is the existence of possible similarities between sign and oral language acquisition processes, which allows identifying general evidence about the acquisition phenomenon.

Then, it is important to observe the effect of the visual-spatial modality in the acquisition of specific structures, both in cases of bimodal bilingual children, who acquire both a SL and an OL, and in cases of deaf children, who acquire (maybe not) a language in early childhood. Guided by these questions and in order to demonstrate the research practice on SL acquisition, Lillo-Martin

¹ The term 'bimodal bilingual' is used to designate children who simultaneously acquire a SL and a OL, that is the case of, for example, hearing children of deaf parents.

enriches her discussion with the examples of ASL focus syntactic structures, deictic signals with pronominal linguistic function and reflections on bimodal and bilingual environments and impacts of LS deprivation.

Based on previous longitudinal studies and on syntactic characteristics common to ASL and Libras, the researcher discusses the results of experiments applied with two American and two Brazilian children, speakers of ASL and Libras, about the acquisition of sentences with focus marking. Specifically, basic SVO word order structures and the existence of certain types of focused elements in initial or final positions, with or without reduplication, were observed.

The focus sentences in ASL and Libras are similar, and can be marked (a) *in situ*, in initial position (LILLO-MARTIN & QUADROS, 2008); (b) by duplication or (c) only in final position (NUNES & QUADROS, 2004).

- (a)² *I read book Jairo;*
- (b) *John can read can;*
- (c) *Mary go Spain finish.*

Indeed, different theories differently contemplate the acquisition of such constructions. However, in the research by Lillo-Martin e Quadros (2006; 2007; 2008), because they use the experimental approach, the authors point out two hypotheses. The first is that structures with reduplication, as in (b), and structures with only a final filled position, as in (c), correspond to the same underlying structure and the acquisition of these structures would occur simultaneously. The second hypothesis is that if such structures correspond to different projections, longitudinal differences could be perceived, since one would appear before the other in the child's early signaling.

During the data collection period, which began when children were around 1 year and 6 months old (1; 06) and ended when they were around 3 years old (3; 00), the researchers were attentive to the continuous occurrences of these syntactic structures, observing possible statistical differences during the period in which they occurred. The results can be seen in the table below:

	Child	Initial	Reduplicated	Final
ASL-speaking children	Aby	1;09	2;01	2;00
	Sal	1;07	1;09	1;09
	Ana	1;06	2;00	2;01
Libras-speaking children	Leo	1;10	2;01	2;02

TABLE 1 - Results - first repetitions

Source: Based on Lillo-Martin e Quadros (2006; 2007; 2008)

² The examples listed from (a) to (c) are disallowed for the signaling of these sentences in ASL. According to the research, these possibilities are also seen in Libras.

Results show that the first hypothesis seems to hold true, besides showing the curious fact that marked focus structures appear early in the signaling of deaf children exposed to SL inputs. Structures with duplication and those with a focus phrase on the last position of the sentence are apparently not distinguished from the point of view of different underlying structures, being, therefore, acquired at the same time (from 1 year and 9 months).

In addition to the case of focus structures, Lillo-Martin highlights the way pointing signs and the use of spacial configuration, natural effects of the visual-spatial modality, have been contemplated. In fact, pointing signs are recurrent even in the course of communication among hearers and reflect pragmatic effects important to communicative efficiency; however, in SL, it is noticed that this resource assumes a fundamental linguistic function to reference, and can be identified as part of pronominal systems.

Thus, the problem posed for the acquisition process concerns the way in which deaf children start to recognize pointing signs with anaphoric / deictic functions, typical of the pronoun category.

It should also be considered that this issue is still not consensual among scholars in the area of description and acquisition of SL. While, on one hand, some researches do not consider pointing signs as pronouns (JOHNSTON, 2013), there are studies, on the other hand, that situate them as linguistic acts that can have both pronominal and non-pronominal properties (CORMIER *et al.*, 2013), and there are those that treat them as pronouns that exclusively distinguish the 1st person (MEIER, 1990).

The investigation of the acquisition of referential pointing also allows the resolution of some research impasses, since it may come to demonstrate how pronominal pointing is distinguished from the non-pronominal one.

In view of these issues, Lillo-Martin *et al.* (2018 - in progress) carry out an experimental study on the acquisition of this property, in order to investigate how it relates to the ASL deictic system. Before presenting their results, the authors address findings from the study by Demuth *et al.* (2006; 2009), which identified that English-speaking children, aged 2 to 3 years, would only point to people in very restricted contexts during their oral speech and never with anaphoric function – a distinguishing factor between hearing and deaf children.

The aforementioned study followed the same methodological protocol for the investigation of SL focus structures and they observed the behavior of pointing signs headed to (a) inanimate beings; (b) the 1st person; (c) the 2nd person and (d) the 3rd person.

Although the different speed rates with which deaf children acquired pronominal pointing, two important issues stand out for understanding acquisition. The first one is the fact that pointing at inanimate objects, a common resource for deaf and hearing people, emerges very early in communicative productions. The second one is, in the case of deaf children, the chronological order according to which pointing signs, listed from (a) to (d), appear in children's signs. Thus, according to the authors, it can be seen that the ASL pronominal system apparently presents an acquisition order and pointing at inanimate beings is the simplest form and therefore the first to be acquired.

Lillo-Martin also referred to the way bimodal bilingualism can impact language acquisition process of CODAS³ and deaf children with cochlear implants. The author approached the possibility of influences coming from the input of both the SL and the OL during the child's early production. She mentioned, for example, the results of several studies showing that North American CODA children tend to use interrogative sentences with the WH- pronouns in the beginning of the sentence, like they do in English, whereas non-bilingual deaf children, statistically speaking, tend to reduplicate the WH-pronoun more often, as it is expected in adults using ASL.

Lillo-Martin also addresses late language acquisition by deaf children. According to her, this is still a common problem, given that only 5% of deaf people are exposed to a SL as a L1, while the other 95% are just exposed to one when they go to school.

In an experiment with naturalistic data provided by two deaf children of hearing parents, the verbal agreement marking in ASL was analyzed in two contexts: (i) when involving the use of a personal pronoun and (ii) in sentences with locative arguments. The kids had not had early access to a SL and the study had the objective of identifying performance errors in the use of concordance verbs in these cases. Results showed that these individuals had high tendencies to present agreement problems, especially in the context that involved the use of pronominal pointing, whereas deaf children who had early acquired a SL showed minimal production errors (BERK, 2003).

In addressing such issues, Lillo-Martin showed how the study of SL acquisition proves to be a relevant source for explaining the nature of language, no matter possible modality differences. Also, she brought innovative factors for the understanding of how bimodality can glimpse studies on linguistic processing and contributed for the answer of different hypotheses about deaf people language acquisition process.

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