



Case Report

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Communication Problems in Children with Asperger's Syndrome: How Do They Solve Them?

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Abstract

Background: Asperger's Syndrome (AS) is considered a developmental disability included in autism spectrum. Although how much social communication is affected is one of the core criteria for diagnosis, the whole language uses' description of AS in non-English speakers is too scarce and, because of this, obtaining an early diagnosis represents a very difficult task.

Aim: Compare how AS Spanish speakers children and their neurotypical peers (TD) solve communication problems in different conversational exchanges.

Method: 10 children were assessed; 5 diagnosed with AS and 5 typical developmental (TD) paired with them in age and sex. They were interviewed and assessed in some language tasks. The exchanges were orthographically transcribed and analyzed considering the sequences in which communication problems appeared.

Results: The total frequency of communication problems was not significantly different (AS=29.17%; TD=22.56%); differences were observed when considering each task. The most significant difference observed occurred during interviewing and storytelling tasks.

Conclusions: Results obtained showed that the most significant difference observed in AS Spanish speakers occurred in interviewing settings. This contribution could be fruitful not only as a diagnosis criterion but also as a possible resource for clinical intervention.

Keywords: Asperger syndrome; Communicative problems; Clarification requests; Social cognition; Child language

Introduction

In the last decades, linguistic exchanges have been mainly defined as cooperation activities that are rooted in social cognition abilities [1,2]. Cognition abilities are a complex set of mental operations, displayed in all social interactions which include processes such as understanding of other people's intentions and actions [3,4]. Their basis is found in human and cultural spaces designed for promoting joint and coordinated actions [5]. The particular and social characteristics of these spaces shape the development of these social cognition abilities [5,6]. Particularly, communicative abilities could be seen as a component of these cognitive abilities [7]. Gülich & Kotschi [8] conceive the linguistic and textual formulation as a problem-solving process [9] in which speakers and hearers cooperate and negotiate meanings in order to solve communicative problems. When children play in different conversational settings, they identify and solve different

communicative problems and, by doing this, they internalize different cultural and pragmatic rules and discursive and linguistic forms as a symbolic device to solve social cognition problems [10]. Some of the most frequent communicative and social problems that children face in conversational settings are clarification requests. These requests consist in an explicit or conventional request to a conversational partner (usually the previous speaker) to review a previous statement [11]. When a child has to solve a clarification request, he has to pay attention to the request, understand it clearly, recognize its type in order to think and formulate an adequate answer via a specific linguistic procedure [10]. Asperger Syndrome (AS) [12] is considered a developmental disability included in autism spectrum [13]. It has been characterized with some constant and deep breakdowns on social interaction and behavioral patterns associated; some researchers consider these patterns as correlated to failures in cognitive flexibility

[14]. Although how much social communication is affected is one of the core criteria for diagnosis [15], the AS whole language uses in non-English speakers is too scarce and, because of this, obtaining an early diagnosis represents a very difficult task. We believe that comparing and describing how AS children solve the identification and resolution of clarification requests as a social cognition task could tell us much more about how executive functions (i.e. monitoring, cognitive flexibility, planning, decision making, inhibition) develop in AS subjects than measures of the traditional standard assessments.

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10 children were assessed; 5 diagnosed with AS and 5 typical developmental (TD) paired with them in age (M: 9;2 range: 5-15) and sex (8 boys and 2 girls), living in Buenos Aires, Argentina and belonging to Middle Class. None of them had any language disorder or other pathologies detected. They were interviewed and assessed in two language tasks: storytelling and retelling [16]. The exchanges were orthographically transcribed and analyzed considering the sequences in which clarification requests appeared. The tasks were recorded in audio and orthographically transcribed. In each transcription, the clarification requests were identified considering: problematic statement - clarification request - formulation procedure. These sequences usually occupy more than 2 conversational turn takings. The transcription and analysis were performed by 3 codifiers with an 80% of agreement. Some descriptive statistics analysis were performed (relative frequencies, mean and correlations) Only the results in relative frequencies will be shown.

Results (Table 1 & 2)

Table 1: Communicative problems considering total amount of turn takings.

	Total Turns	Turns Taking Occupied by CP	Number of CP	Frequency of CP
AS	1025	299	55	29.17%
TD	727	164	33	22.56%
Total	1752	463	88	51.73%

AS: Asperger Syndrome Children; TD: Typical Development Children; CP: Communicative Problem

Table 2: Frequencies of communicative problems per task

	Total Communicative Problems		Interview	Storytelling	Retelling
	Number	Turns Occupied			
AS	55	299	83.51%	11.11%	5.38%
TD	33	164	50.32%	43.31%	6.37%

AS: Asperger Syndrome Children; TD: Typical Development Children

Discussion

At a first glance AS children show more CP in their conversational exchanges than their TD peers, but if we consider

the total frequencies according to the length of conversational exchanges the results do not illustrate significant differences between both populations. The main cause is that AS children display longer exchanges than their peers. The differences in CP's emergence appear when we consider each conversational setting. These results could be attributed to the particular characteristics of each adult-child conversation. In fact, the emergence of CP not only show misunderstandings, but also, they display the possibilities of each participant to settle the control. In all the sequences analyzed, when the adult acted as the interviewer, he was mostly responsible for asking clarifications. The interview elicited is a Semi-Structured conversation [10] in which the monitoring rests mainly on the adult, whereas in the storytelling task the child tells what happens in a sequence of images and in the retelling task the child retells a previously listened story. In the retelling no differences were found between groups. However, the performances differ in interviews and in storytellings. It seems that during storytelling tasks, TD children present more problematic expressions (i.e. confused and vague references) than AS children. However, during interviews, AS children show problems when setting the referents to give continuity to the story and when providing cues to improve the overall comprehension. Some of the problems found were difficulties on syntactic formulation, sudden topic change, extremely perseverance of topics, introduction of unknown referents and abruptly loss of them. In TD interviews these problems were found in a very low frequency, and only in younger children. In conclusion, AS children evidence problems when they have to handle mutual knowledge [7].

Conclusion

This preliminary result indicates that language uses and social cognition- in our case, conversational settings- are deeply interrelated. The communicative problems described seem to indicate how much interrelated are the cognitive profiles of Children with Asperger and some social tasks such as their abilities to negotiate and control conversational settings. Finally, we believe that these results indicate that some tasks (i.e. Semi-Structured interviews) that are better candidates for early AS diagnosis than experimental settings, always taking into account the community interaction rules [10,2].

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Conflict of Interest

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