Sentence repetition and language impairment in French-speaking children with ASD

Silleresi S.,[1] Tuller L.,[1] Delage H.,[2] Bonnet-Brilhault F.,[3] Malvy J.,[3] & Prévost P.[1]
[1-3] INSERM U930, Tours, France & Université François Rabelais de Tours,[3] CHRU de Tours, INSERM U930, Tours, France
[2] Laboratoire de Psycholinguistique, Université de Genève, Suisse

Considerable research has sought to identify which aspects of formal language are affected in children with impaired grammar and which tools are the best for detecting these difficulties. There is now consensus from work on SLI that linguistic complexity holds the answer to the first question, and that, for morphosyntax, sentence repetition (SR) is probably the most sensitive tool (Conti-Ramsden et al., 2001). We propose to report on a study which has attempted to put these two results together in the context of language development in children with Autistic Spectrum Disorder (ASD). We evaluated the performance on complex syntactic structures in French-speaking children with ASD via a particular type of SR task, the LITMUS-SR (Marinis & Armon-Lotus, 2015), which incorporates various levels of complex syntax. LITMUS-SR-French involves a set of 30 structures varying in terms of syntactic complexity (with and without embedded clauses and with and without syntactic movement). This task has already been shown to be a sensitive measure for detecting language difficulty, notably in monolingual and bilingual children with SLI (Tuller et al., 2014).

While communication deficits, such as impaired social interaction and restricted and repetitive behaviours, have been widely studied in children with ASD, much less attention has been paid to formal aspects of language, although delays on complex syntactic structures have been observed in a considerable proportion of this population (Durrleman et al., 2015; Janke & Perovic, 2015; Riches et al. 2010). Nevertheless, the nature of linguistic deficits in ASD remains unclear: while many children show a linguistic development similar to their typically developing age-peers, others seem to display deficits comparable to those found in SLI (Tuller et al. *in press*; Zebib et al., 2013), resulting in extremely variable linguistic profiles. We examined complexity of syntactic computation in ASD, with the aim of determining whether children with ASD behave analogously to children with SLI, in avoiding structures that entail more complex derivations and in making errors related to complex constructions.

We will report on results of a study of 18 monolingual 7- to 10-year-old French-speaking children with a diagnosis of ASD, compared to a group of 18 typically developing (TD) children and a group of 12 children with SLI, both consisting of 7- and 8-year-olds (Table 1). Results processed thus far show extremely low group means in the ASD (10/18 children processed) and SLI (12/12 processed) groups, while typically developing children (18/18 processed) performed at ceiling in all syntactic configurations (Table 2). However, whereas some children with ASD had performance like that of the TD group, no child with SLI did. Error analysis, notably regarding complex structures, shows two different patterns, illustrated in Table 3 by Complementizer omission and production of sentence fragments or no responses. The first error is quite frequent in the SLI group; it is also frequent in the ASD group, but affects only some of these children. For the second error type, the children with ASD displayed much higher rates than those in the SLI group.

Our study is in line with work suggesting the existence of an SLI profile for a subgroup of children within ASD and it shows the validity of sentence repetition as a marker

of syntactic deficits, also in this population. At the same time it highlights error types which may be specific to ASD, notably atypical pragmatic behaviours (repetitive responses, inappropriate answers) which could be directly linked to the central symptoms of the pathology. Given the efficacy of the LITMUS task in detecting the profile of impaired formal language, these heterogeneous results emphasize the necessity of a careful adaptation of the interpretation of results from the present tool when used with children with ASD.

Table 1. Participants ($N = 48$)

	Age Range	Mean age
ASD ($n = 18$)	7;8 – 10;11	9;5
SLI ($n = 12$)	7;1 – 8;7	7;9
TD ($n = 18$)	7;1 – 8;4	7;8

Table 2. General results: Mean production rates (SD) of identical repetition, production of target structures and production of grammatical sentences

	% Identical Repetition	% Target Structure	% Grammaticality
ASD ($n = 10$)	56 (32)	67 (26)	69 (26)
SLI ($n = 12$)	51 (21)	69 (20)	73 (20)
TD ($n = 18$)	96 (4)	99 (2)	99 (2)

Table 3. Complex Sentences: similarities and differences between ASD and SLI groups on error types (tokens and percentage of participants involved)

	Complementizer omission	Fragment + No response
ASD ($n = 10$)	14 (40%)	23 (60%)
SLI ($n = 12$)	34 (83%)	5 (16%)
TD ($n = 18$)	1 (5%)	1 (5%)

References

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