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The representation of some space components in children with high-functioning autism and normal Persian-speaking children's narrative discourse: predicates and spatial ground

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1. Introduction

Autism is one of the most common neuro-developmental disorders that can influence an individual's cognitive and linguistic abilities. Since it is necessary to make use of both cognitive and language abilities in narrative discourse, autistic individuals face a challenge in narrative production and comprehension. Therefore, the present study aims to investigate the space domain, as one of the inseparable components of each narrative, and in a broader context, narrative discourse in children with high-functioning autism and normal Persian-speaking children. To this end, the representation of some components of space such as predicates (including static, active, active-accomplishment, and semelfactive) and spatial grounds (including nouns and pronouns) in the narrative discourse of children with high-functioning autism and normal children was studied based on Hickman (2004) and Roberts, Barjastefc Delforooz and Jahani's classification (2009).

2. Materials and methods

In the current research, 20 male children with high-functioning autism disorder (chronological age of 7 to 11 years) and 20 normal male children (chronological age of 7 to 11 years) participated and produced some narratives. These narratives were based on "Horse" and "Cat" stories given by Hickman (2004). The representation of predicates including static, active, active-accomplishment, and semelfactive and spatial grounds including nouns and pronouns was investigated. The collected data

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were first studied and described according to the predicates and spatial grounds as given in Hickman (2004) and Roberts, Barjaste Delforroz, and Jahani's (2009) classifications. Then, they were analyzed using Mann Whitney U test. In the end, the significant difference of each component was identified.

3. Results and discussion

The research findings indicate that in the "horse" story there was a significant difference between children with high-functioning autism and normal children in the representation of the static, active, and active-accomplishment predicates. However, there was no significant difference in the representation of the semelfactive predicates. Similarly, in the "cat" story, there was a significant difference in the representation of the static, active, and active-accomplishment predicates, though the difference was insignificant in the representation of the semelfactive predicates. Accordingly, in the sum of these stories, there was a significant difference between children with high-functioning autism and normal children in the representation of the static, active and active-accomplishment predicates, and there was no significant difference in the representation of the semelfactive predicates.

Table 1 indicates the mean and significance level in the use of types of predicates in children with high-functioning autism and normal children's narratives

Table 1.
Mean and significance level in the use of predicates in the narratives of children with high-functioning autism and normal children

Predicates in "Horse" and "Cat" stories	Children	Number	Mean	Deviation	Mann Whitney U test	
					Frequency	Sig.
Static	Autistic	20	4.05	3.83	83.5	0.001
	normal	20	8.35	5.55		
Active	Autistic	20	9.35	4.23	84.5	0.001
	normal	20	16.05	7.85		
Active-Accomplishment	Autistic	20	1.65	1.46	135	0.043
	normal	20	3.30	2.61		
Semelfactive	Autistic	20	0	0	200	0.9
	normal	20	0	0		

As to spatial grounds, the findings of this research showed that in the "horse" story there was a significant difference between children with high-functioning autism and normal children in the representation of pronouns. However, there was no significant difference in the representation of nouns. On the other hand, in the "cat" story, there was a significant difference between children with high-functioning autism and normal children in the representation of the pronouns. However, there was no significant difference in the representation of nouns. Therefore, the findings displayed that in both stories there was a significant difference between children with high-functioning autism and normal children in the representation of pronouns, and there was no significant difference in the representation of nouns.

Table 2 shows the mean and significance level in the use of spatial grounds in children with high-functioning autism and normal children's narratives.

Table 2.
Mean and significance level in the use of spatial grounds in the narratives of children with high-functioning autism and normal children

Spatial Grounds in "Horse" and "Cat" Stories	Children	Number	Mean	Deviation	Mann Whitney U test	
					Frequency	Sig.
Nouns	Autistic	20	2.80	4.52	168	0.398
	Normal	20	2.70	2.12		
Pronouns	Autistic	20	0.55	1.31	74/5	0.0001
	Normal	20	2.25	2.14		

4. Conclusion

The results of the present study confirm that there is a significant difference between children with high-functioning autism and normal children in the representation of the static, active, and active-accomplishment predicates. Indeed, children with high-functioning autism, compared to normal children, used a smaller number of static, active, and active-accomplishment predicates. This displayed a significant difference between the two groups in representing predicates under study. Generally, they described and narrated fewer situations and events. The findings of this research are in line with the findings of Fallahi et al. (2012), Sobhani-rad et al., (2013), King et al. (2013) and Norbury et al. (2014).

Besides, the research results revealed that there was a significant difference between these two groups in representing spatial grounds. Narratives of children with high-functioning autism contained fewer pronouns than those of the normal group. In conclusion, the results demonstrated that there was a significant difference in representing space components between high-functioning autism and normal groups. In other words, normal children's narratives contained more spatial components. The findings of the present study are in line with the findings of Mojahedi Rezaeian et al., (2018), Mojahedi Rezaeian et al. (2019), and Miri et al. (2020). In addition, the findings of this research are consistent with Schwartz's (2017) statement that using deictic terms, and especially personal pronouns, is difficult for children with high-functioning autism.

Keywords: narrative; space; predicate; grounding; children with high functioning autism disorder; Persian language