World Academy of Science, Engineering and Technology
International Journal of Cognitive and Language Sciences
Vol:6, No:10, 2012

Autistic Children and Different Tense Forms

Ameneh Zare, Shahin Nematzadeh, Shahla Raghibdoust, and Iran Kalbassi

***Abstract*—**Autism spectrum disorder is characterized by abnormalities in social communication, language abilities and repetitive behaviors. The present study focused on some grammatical deficits in autistic children. We evaluated the impairment of correct use of different Persian verb tenses in autistic children's speech. Two standardized Language Test were administered then gathered data were analyzed. The main result of this study was significant difference between the mean scores of correct responses to present tense in comparison with past tense in Persian language. This study demonstrated that tense is severely impaired in autistic children's speech. Our findings indicated those autistic children's production of simple present/ past tense opposition to be better than production of future and past periphrastic forms (past perfect, present perfect, past progressive).

***Keywords*—**Autism, Past, Persian Language, Present, Tense

I. Introduction

AUTISM is a complex developmental disability that typically appears during the first three years of life and affects a person's ability to communicate and interact with others.

Autistic children almost always begin to speak much later than normal. This seems to be a general consensus among other researchers, that autistic children simply develop language later, rather than developing in a different manner [1]. Some researchers [2] discovered that most likely children diagnosed with autism have no language growth until the age of three and are faced with difficulties. A great deal of research regarding the low IQ score of autistic children indicates the relationship of this low level to language abilities. However, Findings showed that a high IQ score is not necessarily a sign of high level of language and speech [3]. Almost half of autistic children are incapable of using language as a method of communication [4]. According to [5] a level of language abilities of these children are either dismissed or have stopped growing.

Speech in autistic children in comparison with normal children is distinctive in three aspects:1-The autistic children have more growth in their production abilities than their language abilities.2-they have more growth in words comprehension than grammatical comprehension.3-more growth in verbal abilities in comparison with verbal comprehension[6].

Ameneh Zare is a Ph.D. Candidate in the Department of Linguistics, Science and Research Branch, Islamic Azad University, Tehran, Iran. (Corresponding author, E-mail: a86.zare@yahoo.com).

Shahin Nematzadeh is now with the Department of Cognitive Linguistics, Institute for Cognitive Studies. (E-mail: snematzadeh@iricss.org).

Shahla Raghibdoust is now with the Department of Linguistics, Allameh Tabatabai University.(E-mail: neishabour@hotmail.com).

Iran Kalbassi is now with the Department of Linguistics, Center of Humanities and Cultural Studies, Iran.(E-mail: i_kalbassi@yahoo.com).

Although autistic speech was described as being grammatically correct, it was often reported that use of syntax was primitive and limited in forms [7]. This is highlighted by evidence that at high mean length of utterance (MLUs) there is an over estimation of index of productive syntax (IPS) as autistic grammatical constructs. Autism is a social disorder, meaning that a child with autism may be highly intelligent academically, but will always suffer difficulties in social environment [8]. Many autistic people have a surprisingly wide vocabulary, considering their low levels of comprehension and communication skills .The ability to name objects as an isolated skill doesn't indicate the development of communicative language. Indeed, the reverse may be the case [9]. Children with autism begin to develop normal speech, but then suddenly lose the acquired speech and fail to progress linguistically; this disappearance usually occurs between 18 and 30 months of age [10]. Some autistic children may be unable to speak, whereas others may have rich vocabularies and are able to talk about topics of interest in great depth. Despite this variation, the majority of autistic individuals have little or no problem with pronunciation. Most have difficulty effectively using language. Some researchers tested children with autism and they found that some autistic children have normal language skills whereas others performed significantly below chronological age expectations[11].Omission of certain morphemes in obligatory contexts was more frequent among children with autism ,particularly articles(a, the),auxiliary and copula verbs and children with autism were significantly less likely to mark past tense than were matched controls with Down Syndrome[12].

II. Method

A. Participants

The study included 56 children with autism. The sample included 39 boys and 17 girls between the age of 6-12 years and were able to complete the experimental task described below. Children were diagnosed with autism using DSM-IV criteria. The diagnosis was based on the autism diagnostic Interview-Revised [13] and the Autism Diagnostic Observation Schedule [14] and confirmed by an expert clinician.

B. Instruments

Two standardized language tests were administered, including the PPVT, and the Repetition of Nonsense Words [15].Rice's Standard Language Test administered to elicit past tense forms and PPVT administered for dividing participants into three groups on the basis of their performance on the Peabody Picture Vocabulary Test III. Using the criteria that were adopted for defining language subgroups in autism [16]. Group 1: Normal children with PPVT 85 or over. Group 2: Borderline children with PPVT between 70 and 84. Group 3: Impaired children with PPVT below 70

C. Procedure

Participants were given opportunities to produce 20 different past tense forms and 15 present tense forms on different lexical verbs such as cook, write, come….There was an initial training example using the verb" cook". The experimenter gave the following instructions:" I have two pictures .I will describe the first one, and you tell me about the second picture." After placing the first picture in front of the child, the experimenter said:" Here is the girl cooking". Then the second picture was placed on the table, and the experimenter said:" Now she is done. Tell me what the girl did." If the child failed to produce the target verb, two prompts were given, including Tell me what she did to eggs" or "what happened? .The girl_____."If children didn't produce the target *cooked*, the experimenter modeled the correct answer on the training trial. Similar experimental task was administered for present tense too.

D. Scoring

Children's responses were scored as correct or incorrect. Incorrect scores were then scored with respect to the types of errors made.

III. Results

TABLE I
PARTICIPANT CHARACTERISTICS

Group	N	Age (Mean)	female	Male
Normal	18	9.27	5	13
Borderline	17	9.70	5	12
Impaired	21	9.23	7	14

TABLE II
PERCENTAGEOF CORRECT RESPONSES ON PAST TENSE

Group	Correct Response	Simple Past	Past Perfect	Present Perfect	Progressive Past
Normal	47.5%	74.44%	6.66%	62.22%	46.66%
Mean	9.5	3.722	0.333	3.111	2.500
SD	26.5	0.752	0.485	0.900	0.707
Range		5-3	1-0	5-2	4-1
Borderline	38.23%	61.17%	2.35%	52.94%	36.47%
Mean	7.64	3.059	0.1176	2.647	1.824
SD	22.1	0.556	0.3321	0.702	0.883
Range	88	4-2	1-0	4-1	4-1
Impaired	28.80%	49.52%	0%	44.76%	20.95%
Mean	5.76	2.476	0	2.238	1.048
SD	24	0.814	0	0.625	0.921
Range	88	4-1	3-0	3-1	3-0
Total	38.17%	41.71%	3%	53.30%	34.69%
Mean	7.63	3.23	.14	1.99	1.74

Table II presents the different scores of correct responses by the different language subgroups on the past tense task. Averaged across all the children more than half the responses were incorrect, and the most frequent error pattern was using periphrastic verb forms. Children's performance in Normal and Borderline groups was similar with respect to the proportion of correct responses.

They performed similarly in the simple and other verb responses too, but the Impaired group (28.80%) exhibited fewer correct responses in comparison with other groups. Findings indicate that autistic children in Normal group were better on past tense forms whereas the Impaired group were worse than either of other subgroups on past perfect tense as well as present Perfect &progressive tense forms.

The proportion of responses that were echolalic or classified as "no responses" by children in Impaired group was more than level of children in either Normal group or Borderline group.

TABLE III
PERCENTAGE OF CORRECT RESPONSES ON PRESENT AND FUTURE TENS

Group	Correct Response	Simple Present	Progressive Present	Future Form	No Response
Normal	73.33%	94.44%	86.66%	38.88%	0.47%
Mean	11	4.722	4.333	2.056	
SD	27	0.461	0.594	0.725	
Range		5-4	5-3	3-2	
Borderline	57.25%	82.35%	74.11%	15.29%	2.01
Mean	8.58	4.118	3.706	0.765	
SD	31	0.600	0.588	0.752	
Range		5-3	5-3	2-0	
Impaired	50.47%	80%	60.95%	7.61%	2.72%
Mean	7.57	4.143	3.00	0.381	
SD	40.6	0.727	0.775	0.669	
Range		5-3	4-1	2-0	
Total	60.35%	85.59%	73.90%	20.59%	1.73%
Mean	8.98	4.32	3.66	1	2.15

The most frequent error pattern was using future tense. Children's performance in impaired and Borderline groups was similar with respect to the proportion of correct responses. They performed similarly in the simple present and other present tense responses, but the Normal group exhibited more correct responses in comparison with other groups.

Table III shows that autistic children in Normal group were better on present tense forms but the Impaired group were worse than either of other subgroups on future tense as

Well as progressive present forms. The proportion of responses that were echolalic, or classified as "no responses" by children in Impaired group was more than level of children in either Normal group or Borderline group.

Results show that there is a meaningful differences between N&B in past tense correct responses (normal M=2.42,SD=18/BorderM=1.91,SD=17)with $P<0.05$,$P=0.037$

as well as in present tense correct responses (normal M=3.70, SD=1.33/ Border M=2.86, SD=1.64) with P<0.05, P=0.005 but there is not a meaningful difference between B&I in present tense correct responses(Border M=2.86, SD=1.64/ impaired M=2.51,SD=1.74) with P>0.05,P=0.266 while there is meaningful difference in their past tense correct responses (Border M=1.91, SD=1.33/ impaired M=1.44,SD=1.21)with P=0.02.Statistical between-group comparisons confirmed that Impaired group performed significantly worse than Normal& Border subjects on different Persian tense forms.

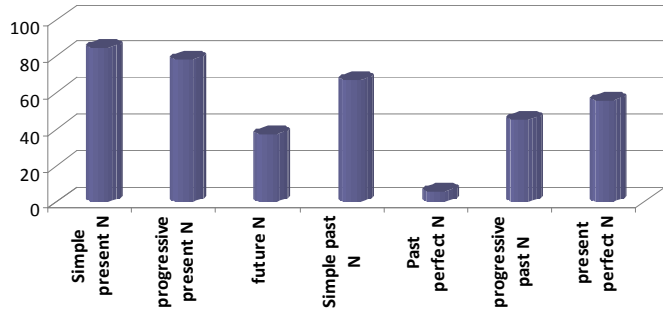

Fig. 1 The use of different tense in normal autistic children

As illustrated in figure 1, The N group performed virtually perfectly on both simple present (85.59 %) and progressive present (73.90 %) with the mean score of (79.74 %) correct responses but they obtained higher error scores for past tense forms.

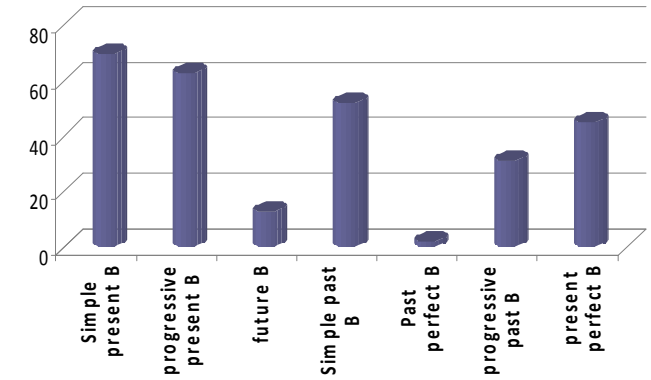

Fig. 2 The use of different tense in borderline autistic children

The B group did not exhibit any major problem with presents tense, whereas their performance of future tense was worse than that of N group and the B subjects managed to produce the past perfect tense in only 2.35% of all cases.

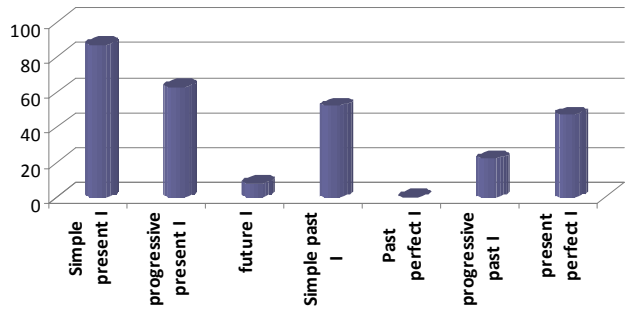

Fig. 3 The use of different tense in impaired autistic children

We obtained higher error scores for I group for different tense forms' correct responses than other groups.

IV. Discussion And Conclusion

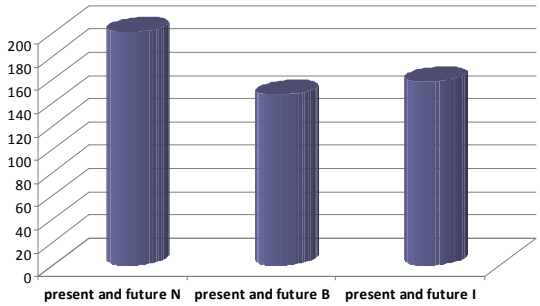

Fig. 4 Comparison of present & future tense production in all autistic children

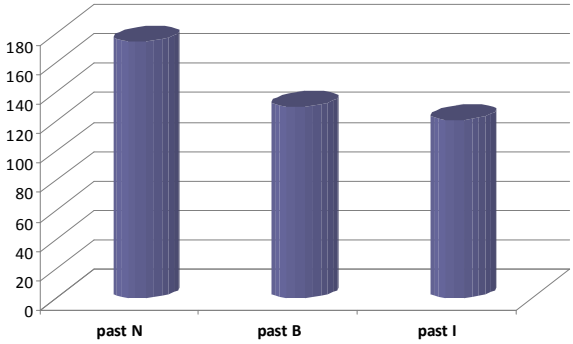

Fig. 5 Comparison of past tenses production in all autistic children

The goal of this study was to examine whether language impaired children with autism show difficulties in producing different tense forms. Our main findings were that all groups of children with autism showed high rates of error scores on past tense task. We also found some unique performance errors that reflected core autism deficit.

Autistic children failed to produce the required tense forms in 44% of all cases resorting to present forms instead. This suggests that present, past and future tense production was impaired in all autistic children groups.

In Persian, the simple past tense is not very common at least in the spoken language. Probably that's why past tense production in their speech is more impaired than present tense. In Persian in discourse context, future tense doesn't follow its grammatical rules (simple present verb stem" want" (xah) +verbal endings+ past tense verb stem of content verb) and Persian speakers tend to use present tense for future time reference and present tense encodes both present and future tense forms, which make it hard to interpret these error scores. Findings indicate that autistic's responses hierarchy for past tense can be described as follow:

Simple past tense< Progressive< Present perfect < Past perfect.

These results have strong correlation with the frequency of tense form's usage in that language. Simple past tense is less impaired and past perfect is the most impaired one.

These results show that tense forms with complex structures or those who need auxiliaries are more impaired than others in all autistic children groups. As simple past tense structure in Persian is simpler, without any auxiliary (verb stem+ verbal endings), autistic children's past tense comprehension and production was considerable in comparison with other past tense forms. Since present tense is very common in spoken language, autistic children had fewer difficulties in present tense production and comprehension. Furthermore, present tense structures are used for future tense in Persian language. This can be explained for its common usage. Another reason that past tense is impaired in comparison with other tense forms is that past tense spectrum is too wide in Persian to distinguish between different past tense by all autistic children groups.

Results from language ability task with Persian autistic children demonstrate that tense were severely impaired particularly in their production. These findings suggest that there is a meaningful difference between past tense and other tense forms (present and future) .Our results show that autistic children obtained higher error scores for past tense verbs than for present tense forms. The conclusion that can be drawn from this study is that they exhibited major problems with past perfect tense and their performance on past perfect was considerably worse than that of simple past tense with respect to its complex structure.

REFERENCES

[1] K .Tuchman & I . Rapin," The influence of premorbid language skills and behavior on language recovery in children with verbal auditory agnosia," Child Neurology., vol.15,no.4,pp.36-43,2000.
[2] P . Howlin, S . Goode, J . Hutton, & M. Rutter, "Adult outcome for children with autism," Child Psychology and Psychiatry., vol.45, pp.212-229, 2004.
[3] B . M . Prizant. & J . F. Duchan, J.F," The functions of immediate echolalia in autistic children," Speech and Hearing Disorders., vol.46, pp.241-249,1996.
[4] U. Frith," Emphasis and meaning in recall in normal and autistic children," Language and Speech., vol.2, pp.29-38, 2003.
[5] C . Jarrold,J . Boucher, & J. Russel, "Language profiles in children: - methodological implications," Autism., vol.1,pp. 57-76,1997.
[6] W . Fay & A . L. Schuler. Emerging Language in Autistic Children. Baltimore: University Park Press,1980.
[7] L . Wing, & J . Gould,"Severe impairments of social interaction and associated abnormalities in children: epidemiologic and classification," Autism and Developmental Disorders., vol.9, pp.11-29, 1979.
[8] U. Frith,"A new look at language and communication in autism," Disorders of Communication., vol.24, pp.123-150,1989.
[9] L . Schreibman, Autism. Thousand Oaks, CA, US: Saga Press, 1988.
[10] M . Kjelgaard, & H . Tager-Flusberg," An investigation of language profiles in autism: Implications for genetic subgroups, "Language and Cognitive Processes., vol.16, pp.287-308, 2001.
[11] G . Bartolucci. & S . J . Pierce," Cross-sectional studies of grammatical morphemes in autistic and mentally retarded children," Autism and Developmental Disorders., vol.10, pp.39-49, 1974.
[12] H . Tager-Flusberg," A psychological approach to understanding the social and language impairments in autism," International Review of Psychiatry., vol.11,pp.325-334,1999.
[13] C . Lord, M . Rutter,& A. LeCouteur," Autism Diagnostic Interview-Revised: A revised version of diagnostic interview for caregivers of individuals with possible pervasive developmental disorders," Autism and Developmental Disorders., vol.24,pp.659-668,1994.
[14] C . Lord, S . Risi, L . Lambrecht, E. H. Cook, B . L. Leventhal, P. C. Dilavore," The autism diagnostic observation schedule-generic: A standard measure of social and communication deficits associated with the spectrum of autism," Autism and Developmental Disorders., vol.30, pp.205-223,2000.
[15] M . Korkman, U . Kirk,& S . Kemp. NEPSY:A developmental neuropsychological assessment. San Antonio, TX: Psychological Corporation, Harcourt Brace, 1998.
[16] M . L. Rice, K. Wexler, J . Marquis,& S . Hershberger," Acquisition of past tense by children with specific language impairment," Speech Language & Hearing Research., vol. 43, pp. 1126-1145.

Ameneh Zare was born in Shiraz, Iran. She received the B.D. in the Department of English Translation from Shiraz Islamic Azad University. She received her M.A. in General Linguistics from Takestan Islamic Azad University in 2006. Her dissertation title was" Morphophonemic Study of Shirazi Dialect". Now she is also a lecturer in Department of linguistics, Science and Research Branch, Islamic Azad University, Fars, Iran.

Shahin Nematzadeh is an assistant professor in linguistics Department, Institute for Cognitive Science Studies, Tehran, Iran. She got her Ph.D Degree from Tehran University in 1994. She also received the M.A degrees in the departments of General Linguistics, Sociology, and Political &Social Science from Tehran University.

Shahla Raghibdoust is an assistant professor in Linguistics Department, Allameh Tabatabai University, Tehran, Iran. She has Ph.D. Degree and Post-doctoral research in Neuropsycholinguistics. She got her Ph.D. from Ottawa, Canada in 1999.

Iran Kalbassi is a professor in Linguistics Department, Center of Humanities and Cultural Studies, Tehran, Iran. She got her Ph.D. Degree from Tehran University in 19972.