

Case Markers in Verbal Autistic Children

Rohila Shetty, Ph.D.

Associate professor
Dr. M. V. Shetty College of Speech and Hearing
Malady Court, Kavoor
Mangalore-575015
Karnataka
India
shettyro@yahoo.com

T.A. Subbarao, Ph.D.

Director
Dr. M. V. Shetty College of Speech and Hearing
Malady Court, Kavoor
Mangalore-575015
Karnataka
India
drtasr.slp@gmail.com

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Introduction

Autism is a name given to a set of neurodevelopmental disorders in which the communicative aspects and the interaction of a person with other people is impaired. Autism is a spectrum that encompasses a wide range of behaviour. The common features include impaired social interactions, impaired verbal and non-verbal communications, and restricted and repetitive patterns of behaviour. This aspect is reflected in the criteria given by the Diagnostic and Statistical Manual of Mental Disorders-IV (1994) and currently according to the DSM V (2013).

Autism is one of five disorders that falls under the umbrella of pervasive developmental disorders (PDD), a category of neurological disorders characterized by severe and pervasive impairment in several areas of development.

It is generally agreed that the cardinal symptom of the syndrome of infantile autism is a disturbance of language (Kanner, 1943; Creak, 1961; Rimland, 1964; Rutter, 1968- Cited in Ritvo., 1976). First, it is suggested that a precise characterisation of "Autistic Language" may be an aid in establishing a clinical diagnosis. As it now stands, some autistic children have such grossly

retarded speech that they present an initial problem in differential diagnosis between conditions such as mental retardation, congenital deafness and developmental aphasia.

Some reviews of the epidemiological work conclude that, of the host of symptoms shown by people with autism, many are not specific to autism. Hence, Wing and Wing (1971) found that, while more than 80% of the children with autism in their sample showed a preference for the proximal senses, this preference was also seen in 87% of partially blind and deaf children, 47% of subjects with Down's syndrome and 28% of normally developing children. Since features such as language problems, stereotypes and general learning difficulties can be found in other, non-autistic people, they cannot be primary causes of the specific problems faced by the individuals with autism (Jordan, 1999).

Research and statistics in America under the special education programme showed that between 1994 and 2005, the number of children in the age range between 6-21 years, receiving services for autism increased from 22,664 to 193,637 and that these numbers did not include all children with autism spectrum disorders (ASD's) because some children receive special education for a particular need, like speech therapy, and not for a classification of autism. Experts estimate that every 2-6 children out of every 1000 have autism. Currently the prevalence rate of autism in India is 1 in 250 (figure may vary as many cases are not diagnosed) and currently 10 million people are suffering in India. The government only recognized the disorder in 2001, till the 1980s, there were reports that autism didn't exist in India (Times of India, 2013).

In the past 30 years the prevalence of autism in India and the world has increased drastically. This is due to the increasing awareness of autism spectrum disorders and a lot of research work conducted on behaviour related to autism. However, very few studies have taken into consideration the language aspects as a cohesive unit and the differences seen in the language aspects of autism. In general the language and communication problems have been the primary problem. The United Nations definition of autism has language impairment, social impairment and flexibility impairment as the primary characteristics of the disorder. Delays in language development are generally noted in all autistic children. This delay is not a simple delayed model as observed in children with delayed intellectual abilities but is more complex.

Kamio, Robins, Kelley, Swainson and Fein (2007) examined atypical lexical/semantic processing in high-functioning ASD's without early language delay. The aim of the study was to observe whether the automatic lexical/semantic aspect of language is impaired or intact in this population. This study took 11 subjects with Asperser's Disorder(AS) or HFPDD-Not otherwise Specified(NOS) and age-, IQ-, and gender matched typically developing subjects and made them perform a semantic decision task in four conditions using an indirect priming paradigm. The observation was that semantic priming effects were found for near-semantically related word pairs

in the control group whereas this was not the case in the AS group. The findings further suggest similarities in the underlying somatic processing of language across PDD subtypes.

Nuske and Bavin (2011) showed that despite the spared structural language development in high-functioning autism, they showed communicative comprehension deficits and were able to make fewer inferences when compared to the group of typically developing children. Comprehension involves the integration of meaning: where global processing is required. The study also supports the weak central coherence theory and by incorporating this information it may explain the communicative problems of young children with autism and can be applied to the intervention programme development.

McGregor, Berns, Owen, Michels, Duff, Bahnsen and Lloyd (2012) considered five groups of children with the presence or absence of syntactic deficits and autism spectrum disorders(ASD). They were administered the vocabulary tests and provided sentences, definitions and word associations. It was noted that the children with ASD. who didn't have syntactic deficits demonstrated age appropriate word knowledge. The group with ASD and concomitant syntactic language impairments (ASDLI) performed similarly to peers with specific language impairment (SLI) and both these groups showed sparse lexicons characterized by partial word knowledge and immature knowledge of word-to-word relationships. The study shows that the behavioural overlap prove the strength of syntax- lexicon interface and points to the similarity in the ASDLI and SLI phenotypes.

Whyte, Nelson and Scherf (2013) studied idioms, syntax, and advanced Theory of Mind (TOM) abilities in children with ASD and compared them to children with typical development (TD). Twenty-six children with ASD, ages 5 to 12 years, were yoked to individuals in each of two control groups of children with TD: one matched on chronological age and nonverbal IQ, and the other matched on syntax age-equivalence and raw scores. The children with ASD performed worse on idiom comprehension compared to the age-matched group with TD, they also showed comparable idiom performance to the syntax-matched group with TD. The advanced TOM abilities were related to idiom comprehension for children with ASD, but not for children with TD, above the contributions of basic language abilities.

Most of the above reviewed research is on basic aspects of syntax. More research is required to know more about the development and use of syntax in children with autism. Particularly the Indian context provides multiple opportunities and challenges in the area.

Shafna (2010) researched the grammatical aspects in Malayalam speaking children with ASD's across different age group and compared them with the group of typically developing children. The speech samples of 30 Malayalam speaking subjects and normals were obtained. The

study looked in to the age range of 4-5 years; 5-7 and 6-7 yrs, both for the typically developing children and children with ASD (5 sub in each group ,15 typically development children and 15 children with ASD) and they were analyzed grammatically. The children with ASD had poor score in Malayalam language test compared to the typically developing children in all the age groups for both expression and reception respectively.

Sen (2011) looked into the similarities and differences in linguistic characteristic between bilingual children with autism. There were 15 children (8 male and 7 female) in the age range of 4-10 years with diagnosis of mild to moderate severity of autism. The study concluded that bilingualism was not found to affect the language skills of children with autism.

Following international trend in research, in India the research attempts to establish diagnostic criteria (e.g. adaptation of childhood autism rating scale (CARS) in different Indian languages) and management practices (e.g. Communication DEALL (Developmental Eclectic Approach to Language Learning) - Karanth, 2001) have taken place. However the accessibility of such data to practicing speech language pathologists (SLP's) remains a problem. Sporadic attempts to describe echolalic behaviour, theory of mind have also taken place. The focus of research is usually the nonverbal aspects of autism. A severe dearth of studies on the verbal aspects of autism is observed.

The interest in the verbal language of autism can be clearly considered a trend in international research. In the Indian contexts too, noteworthy efforts to study syntax and pragmatics can be seen. However, many questions on phonology, syntax, semantics and pragmatics in subjects with autism need to be answered with index data.

Focus of the Present Study

The present study attempts to report on the case markers in a group of verbal autistic children

Aims of This Study

This study aims at obtaining language data in autistic children with the objectives of

1. Describing the case markers provided by 4-5-year old typically developing children based on caregiver –child interaction
2. Describing the performance on case markers by 4-5-year old mental age children with autism.
3. Comparison of the performance of the above two groups

Method Used

In the present study all the subjects were engaged in a play interactive context with the researcher. The 20-30 minutes of interaction was videotaped and later transcribed. The transcription method closely followed the methodology adopted by (Subba Rao, 1995), which itself followed guidelines provided LARSP (Crystal et al, 1976,1989). The transcribed sample was subjected to analysis for scans in the areas of phonology, morphology, syntax, semantics and pragmatics.

Ten typically developing (normal) school going children in the age range of 4-5 years were selected. The age group was selected because by 4 years one can expect reasonable verbal language expression that can be used for comparison.

Thirty children diagnosed as having autism from in and around Mangalore and Bangalore were taken in the clinical group. These children were observed to have been diagnosed with verbal autism based on the tests conducted by speech language pathologists and were confirmed from school records. Moreover the children with mental age range of 4-5 years are frequently found in special schools and programmes for autistic children. All subjects selected were expressing at least occasionally in phrases and simple sentences according to records.

Psychological assessment conducted by a school psychologist indicated the mental age as between 4 and 5 years of age for all subjects.

All the subjects had an expression of minimum phrase level and were considered as verbal autistic.

The data was collected by using toys and pictures. The sample collection was done based on the study done by (Subba Rao, 1995). The children were observed during play sessions with the caregiver/clinician. The duration of each session was about 20-30 minutes. During data collection care was taken to ensure that the children were comfortable in their surroundings, be it with the caregiver or the clinician. This was done so that appropriate elicitation of responses could take place. The initial 15 minutes comprised of spontaneous speech or free conversation. In the next 15 minutes elicited responses were obtained.

The subjects were all given the same activity materials. The session was video recorded using a Sony video camera (DCR-SR21E). The environment in which the recording took place was to a great extent quiet and was conducted in the institutions that specialised in dealing with children who had speech and language disorders.

Case Markers

In Kannada case system, various suffixes are added to the noun stem to indicate different relationships between the noun and other constituents of the sentence. In this scan genitive, accusative, dative, locative, instrumental and vocative case markers were selected for analyses. The examples are as follows.

The genitive case: Indicates possession and is usually marked with /-a/, but sometimes also with /-da/. In colloquial speech sometimes no genitive case marker may be seen. Examples:

/kelsa/ 'work' + /-da/ 'genitive' - /kels(a) da/ 'of work'
/huduga/ 'boy' + /-a/ 'genitive' - /hudug(a)na/ 'boys'
/mane/ 'house' + /-a/ 'genitive' - /manea - mane: - mane/ 'of house'
/u:ru/ 'town' + /-ina/ 'genitive' - /u:rin(a)/ 'of the town'

The accusative case: is used to indicate that a noun is an object of the action of a verb. The basic marker is /-anna/, added to the nominative stem. Egs:

/mara/ 'tree' + /-anna/ 'accusative' - /maravanna - mara:na/ 'tree(acc.)'
/appa/ 'father' + /-anna/ 'accusative' - /appananna - appan/ 'father(acc.)'

The dative case: The dative case is used for many purposes. Commonly it is used when a noun is the goal of a verb of motion or when a noun is the recipient of 'benefaction', such as when something is given to someone or something. Examples are:

/kelsa/ 'work' + /-kke/ 'dative' - /kelsakke/ 'to/for work'
/u:ru/ 'town' + /-ige/ 'dative' - /u:rge/ 'to the town'
/annan/ 'elder brother' + /-ige/ 'dative' - /annan(i)g(e)/ 'to the elder brother'

The Locative case: The locative case is used to express location, lack of motion, containment ('in'), and instrumentality. The common marker is /-alli/. Examples:

/marad/ 'tree' + /-alli/ 'locative' - /mardalli/ 'in the tree'
/da:ri/ 'way' + /-alli/ 'locative' - /da:riyalli, da:ri:li/ 'in/on the way'
/nan/ 'I' + /hattira/ 'locative' - /nanhatra/ 'by/near/on me'

The instrumental case/ablative case: The common case marker is /-inda/. Sometimes /-alli/ is also used. Examples:

/marad/ 'wood' + /-inda/-alli/ 'ablative'

- /mardinda/maradalli/, ‘by means of wood, out of wood’
/ka:lu/ ‘leg, foot’ + /-inda/-alli/ ‘instrumental’
- /ka:linda/ka:lalli/ ‘with the leg/foot’
/bas/ ‘bus’ + /alli/ ‘instrumental’ - /bassalli/ ‘by bus’

The vocative case: It is used with rational nouns to indicate a calling or summons. Common vocative suffixes are /-ee/ or /-aa/. Examples:

- /hengasu/ ‘woman’ + /-ee/ ‘vocative’ - /hengse:/ ‘(Hey) woman!’
- /huduga/ ‘boy’ + /-aa/ ‘vocative’ - /hudga:/ ‘(Hey) boy!’

Results

Table 1 indicates that the reference group used genitive case (eg.neladame:le)(on the ground) , dative case (eg./sna:nakke/ (to bathe)); and locative case (/tatte:li/ (in the plate)). Less frequently seen case markers were instrumental (/ka:lalli/ or /ka:linda/ (with the leg)); accusative (/brasanna/ (brush)); and vocative case (/sa:r/ (sir); /unkal/ (uncle)) in the reference group subjects.

The verbal autistic subjects have demonstrated a decreased use of case markers. The dative (ke, ge) and locative (alli) case markers are used by more than 50% of the subjects.

| Sl. No | Parameter | Reference group N=10 (4-5yrs) | | Verbal autistic group N= 30 (MA 4-5yrs) | |
|--------|-------------------|----------------------------------|-------|--|--------|
| | | | % age | | % age |
| 1 | GENETIVE CASE | 10 | 100% | 7 | 23.33% |
| 2 | ACCUSATIVE CASE | 2 | 20% | 10 | 33.33% |
| 3 | DATIVE CASE | 10 | 100% | 23 | 76.66% |
| 4 | LOCATIVE CASE | 10 | 100% | 20 | 66.66% |
| 6 | INSTRUMENTAL CASE | 6 | 60% | 10 | 33.33% |
| 7 | VOCATIVE CASE | 2 | 20% | 10 | 33.33% |

TABLE 1: Showing the presence of case markers in reference group and verbal autistic subjects (clinical group)

The fig 1 compares the performance of reference group and verbal autistic groups. Here consistently lesser usage of case system by the verbal autistic children as compared to the reference group of subjects is observed.

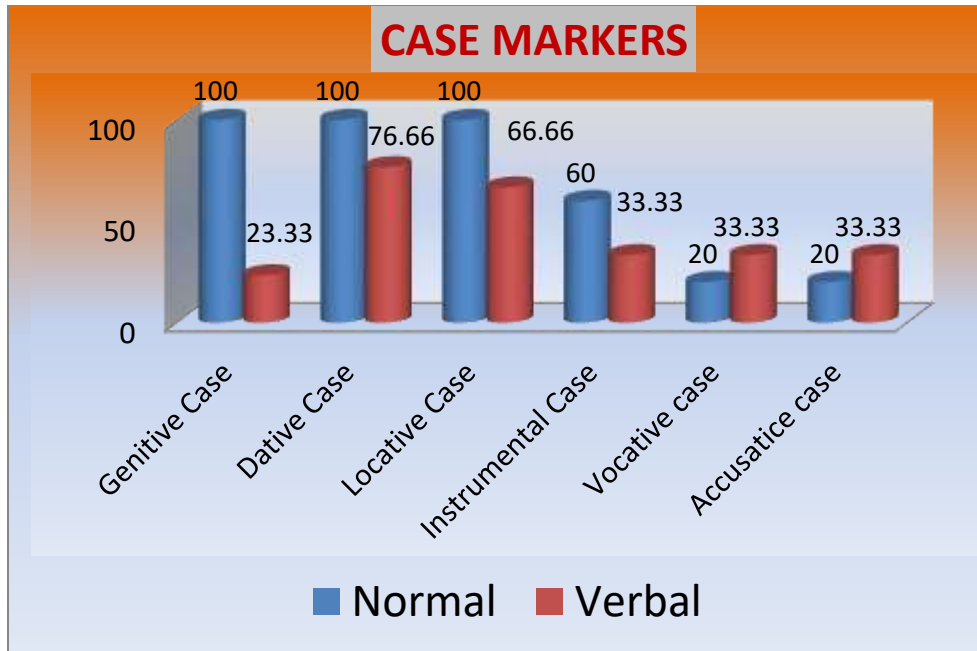


Fig 1: Shows the comparison of the performance of the reference group and the verbal autistic groups

Table 1 and figure 1 suggests that the verbal autistic subjects were found to consistently use case markers to a lesser degree than normal subjects, except in accusative and locative cases.

The case markers that were used by majority of children were dative (/ge, ke/). All other varieties were used in less number by the subjects.

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References

Jordan, R. (1999). The Nature and Definition of Autism. In J. R, *Autism Spectrum Disorders* (p. 15). U.K: David Fulton Publishers.

Kamio, Y., Robins, D., Kelley, E., Swainson, B., & Fein, D. (2007). Atypical Lexical/Semantic Processing in High-Functioning Autism Spectrum Disorders without Early Language Delay. *Journal of Autism and Developmental Disorders*, 37 (6), 1116-1122. 10.1007/s10803-006-0254-3.

Kanner, L. (1944). Early Infantile Autism. *Journal of Pediatrics*, 25, 211-217.

Karant, P. (2001). Retrieved from <http://www.communicationdeall.org/>

McGregor, K., & Bean, A. (2012). How Children with Autism Extend New Words. *Journal of Speech, Language and Hearing Research*, 55 (1), 70-83.

Nuske, H. J., & Bavin, E. L. (2011). Narrative Comprehension in 4–7-Year-Old Children with Autism: Testing The Weak Central Coherence Account. *International Journal of Language and Communication Disorders*, 46 (1), 108–119.

Sen, M. (2011). Language Abilities in Bilingual Children with Autism (CWA). *Journal of All India Institute of Speech and Hearing*, 30, 146-159.

Shafna. (2011). Agrammatism in Malayalam speaking Children with Autism Spectrum Disorders. *Unpublished Masters Dissertation*, University of Mysore, Mysore.

Subba Rao, T. A. (1995). A Comprehensive Analysis of Language in Mentally Retarded Children. *Unpublished Doctoral Thesis*, University of Mysore, Mysore.

Times of India. (2013, April 2). *Autism is not a Disease*. Retrieved July 18, 2013, from <http://timesofindia.indiatimes.com/>: http://articles.timesofindia.indiatimes.com/2013-04-02/ahmedabad/38216941_1_autism-society-autistic-person-autistic-child

Whyte, E. M., Nelson, K. E., & Scherf, K. S. (2013). Idiom, Syntax and Advanced Theory of Mind Abilities in Children with Autism Spectrum Disorders. *Journal of Speech Language and Hearing Research*. Retrieved from http://jslhr.asha.org/cgi/rapidpdf/1092-4388_2013_12-0308v1. doi:10.1044/1092-4388(2013/12-0308)

Wing, L., & Wing, J. K. (1971). Multiple Impairments in Early Childhood Autism. *Journal of Autism and Developmental Disorders*, 1 (3), 256-266.

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