

To

My PARENTS

3D - LANGUAGE ACQUISITION TEST (3D-LAT)

REGISTER NO.8401  
Geetha Herlekar

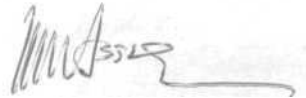
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CERTIFICATE

This is to certify that the Dissertation entitled: "3D - Language Acquisition Test (3D-LAT)" is the bonafide work in part fulfilment for the degree of Master of Science (Speech and Hearing), of the student with Register No. 8401



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## INTRODUCTION

(Tests for assessment of language acquisition in children constitute an essential part of the tools available for professionals interested in the remediation of childhood language disorders.

These tests are abundant in number. However, a clinician needs to make an appropriate choice, considering several factors of which a few important include age of the child, nature of the problem, the approach within which the test is based, ease of administration and economy it provides in terms of time, in addition to standardization, reliability and validity of the test.

Preschool children are often difficult to test and examine, in a formal situation because of the child's fear of the clinical situation. Even if rapport is built with the child, it is often difficult to get him to perform specific tasks, on a given test. Moreover, when a child's performance is required on a particular test, it is not always true that the child's performance is typical of his ability and usual behaviour at other times. Sometimes a child may be too shy, tired, ill, hungry or perhaps just awakened from a nap when tested, to show what he can actually do. These conditions could affect the test results adversely and change the outcome of the test.

These problems can be overcome and a fairly adequate picture of language development be obtained if developmental scales are

used to assess a child's abilities since the assessment procedures here would include either informant interview method or behavioral observations.

(It has been well documented in literature that language abilities unfold with age and the process of acquisition progresses through definite developmental stages.) On the basis of this information as to what abilities are acquired at different ages, many language development scales have been devised to assist in language assessment.

(It also becomes necessary to rely on information provided by an informant regarding a child's speech and language when the child is physically, mentally or emotionally handicapped and cannot be tested directly.)

Moreover, with new mandates to provide services to very young developmentally disabled children, the demand for developmental scales is even greater. We need to have a working knowledge of scales of this sort for early diagnosis and intervention strategies. They also provide an easier and quicker way of assessment and do not monopolize the time of the tester.

In language assessment procedures, it is also important that, the more recent developmental perspectives in the area of child language acquisition be considered. (Over the last couple of decades, the study of language acquisition has undergone rapid and drastic changes. We find a shift from vocabulary

measures to syntactic and more recently to pragmatic aspects of language usage which are being considered as the more fundamental bases for language behaviour development)(The use of tests with vocabulary measures now are no longer considered as adequate measure. of language development. A clinician therefore needs to consider in what way language is evaluated by a given test and whether it is appropriate.)

For the various reasons already discussed use of an informant interview tool is of immense help in evaluating language of the very young children.

(So far in our routine clinical testing we have been using scales such as "REEL" (Receptive-Expressive Emergent Language Scale, Bzoch and League, 1971) developed in other countries. But it is always preferable to develop a scale suitable to our own culture because issue of normality is crucial and it is culture bound as what is normal in one culture need not necessarily be normal in another. Hence a test needs to be developed on similar lines with normative data on Indian children.)

The language tests available with norms on Indian children are restricted in their use because they are language specific assess only syntactic abilities and moreover they cannot be effectively used for evaluating the very young children.

It is important that, we consider the current focus on pragmatic aspects and also cognitive influences, in our evaluation procedures of language, especially in nonverbal children who are being assessed for their symbolic capacities, (when based on the pragmatic approach our rehabilitative procedures can be geared towards teaching language usage to the child rather than mere vocabulary or grammatical rules. The cognitive abilities assessed will reflect to what extent language intervention will help the child.)

Hence an attempt will be made, in the present study to construct and standardise a test for assessment of language acquisition in young children through informant interview, based on data from recent literature evaluating language in social context i.e. based on a pragmatic model.

The test will evaluate language acquisition along 3 dimensions, namely reception, expression and cognition in normal children ranging from 9 months of age to 3 years)

#### Clinical Applications:

- The present study would enable assessment of young children who cannot be tested directly.
- Helps evaluate language as used in social context.
- Norms obtained here will be applicable to children of our culture and moreover the language used by the child will present no barrier.



- The test will permit evaluation of cognitive development along with language skills\*
- Normative data obtained on the test so constructed will aid in identifying the linguistically deviant children and also assess their level of performance in comparison to that of normals.
- Early identification is facilitated since norms for children as young as 9 months will be obtained. This would enable early intervention measures in terms of rehabilitation.
- The test can be used for studying language acquisition patterns in specific language deviant groups as the mentally retarded, hearing impaired etc.
- It will make possible examination of the relation among cognition, language comprehension and production skills in normal and in specific groups of language deviant children.

## REVIEW

The available literature on child language development provides valuable information for language assessment and intervention programs. We find that the clinical procedures in language disorders are influenced to a great extent by current theories of language. Hence a shift in focus of clinical assessment and intervention methods is seen, as new concepts and theories of language evolves.

(A review of the various language tests used for assessment shows that the language test constructed in a given period reflects the prevailing concepts of that period. For instance, several decades back, when language was defined primarily in terms of count and tally procedures, diagnostic tests consisted mainly of phoneme and vocabulary counts\* and measure of the length and number of utterances. These earlier methods in contrast with current approaches to language assessment, deem inadequate now since language is viewed much beyond the limits of vocabulary now.)

- Language tests and syntax: With the influence of Chomsky's theories between 1957 and 1965, emphasis shifted from vocabulary function to language structure. The language assessment, methods in late 1960s and early 1970s hence, reveal the powerful influence of Chomsky's views of the nature of language. For example, the tests constructed by Lee and Carrow are based on the transformational hierarchy of phrase structure described by Chomsky. These tests focus on the sentence as the fundamental unit, rather than

wards or phonemes and they attempt to probe the child's understanding and use of grammatical rule systems. Thus the language disordered child came to be differentiated from the nondisordered Child 1a terms of linguistic structure differences only and these differences become the focus of intervention.

- Language tests and semantics:- The interest in structure per se was short lived and in the years that followed, it became apparent that there is more to language acquisition than is contained in a pure theory of syntax. Bloom and several other investigators around the 1970s suggested that, the grammatic structures reflect semantic content and were based on them, and hence the semantic relations of words, needed to be developed before structures. The child's earliest attempts at communication reveals an awareness of the events that occur in the child's perceptual and cognitive world. Children observe the world in a context where agents operate on the environment and cause it to change and hence the semantic relations were viewed to be closer to the child's reality than do the categories of the strict grammarian. The environments language inventory constructed by McDonald in 1978, is specifically concerned with assessing semantic relations and many more tests have emerged in the last decade along this line. With this shift, language intervention programmes were developed to teach the semantic relations found in early language development such as agent-action and agent-object.

- Pragmatic aspects of language- Even more recently its being viewed by the language theorists that descriptions of structure

and semantics are insufficient to explain language, especially the very early communicative behaviours and cognitive abilities that might be considered to precede or to accompany linguistic behaviour. We find that from a concern to explore these aspects, the concept of language is further expanded.

Recent work as that reported by Halliday (1975), Dore (1975) Bates (1976) and Buvner (1978), shows that research has moved into the pragmatics of child language, the thrust apparently coming from dissatisfaction with approaches limited to syntactic or semantic considerations. (It was Halliday's research in 1975 that added a new dimension to study of child language within a pragmatic model which considers language usage.)

This recent emphasis stresses not merely the function of language but also the context in which language occurs. (According to Batis et al (1977) a complete account of language is needed to understand the fact that "language is a social event carried out by human beings in realistic communicative contexts") This refers to the environment in which utterances are used as well as listener variables as age, sex and relation of listener to the speaker. Environmental variables also include the physical, cultural and social setting in which speech occurs, ("so the tests constructed should evaluate language usage in addition to form and content")

The pragmatic measures are important to have them included in our language tests, since children may have command over a

number of pragmatic functions at a time when their vocabulary and syntax are quite limited. Ingram, for example has drawn together several lines of evidence to suggest a rapid expansion of the range of pragmatic functions during the one word and very early two word phases. Hence attention is being drawn towards testing these aspects and developing intervention programs to teach language within this framework.

-Language and cognition: simultaneous with the shift to pragmatics we find a renewed interest in the cognitive aspects of language also. (The pragmatic development is hypothesized to be the aspect of language most closely tied to cognitive development since in normal children the period of one-word utterances (between 12-20 months) coincides with major cognitive changes observed by Piaget) Since recent literature has frequently focus itself on the relationships between cognitive development and language acquisition, pragmatic measures because of their close association to cognition are more useful for investigating the relationship of language and cognitive development than are measures of vocabulary and syntax\*

The growing, interest in semantics and pragmatic factors in language acquisition has led people to take a closer look at the kinds of cognitive abilities children bring to the task of acquiring language and at the kinds of knowledge the child might have acquired prior to language acquisition. Brown and Slobin (1973) report that children display considerable consistency in the order

In which they acquire certain linguistic distinctions and this observation led investigators to look more closely at the cognitive basis for language acquisition. According to Lóbin stages in cognitive development are Universal and cognition sets the pace for language acquisition. However research in this area continues and no conclusive evidence has yet been arrived at.

We thus find that with constant accumulation of facts on language development through research there are consequent changes in theoretical constructs. The changing trends seen in language evaluation procedures in accordance with these was also reviewed. It is essential for a clinician to be alert and keep in touch with the literature in the field as well as with the specific tests available at any time, because the assessment devices of any given period are likely to seem inadequate or misdirected in the next.

We see that the shift has been from phonology to syntax and then semantics and even more recently we have moved into pragmatics to understand child language acquisition. Current approaches to language assessment should hence consider refinements in study of language acquisition offered by the literature on pragmatic and cognitive aspects and tests designed should be devised to reflect these present theoretical considerations which provide additional information to assess language within a broader framework.

Having reviewed the research in this area, a brief review of few of the different language tests will be taken up next, after discussing the use of these tests.

## Advantages of language tests:

The importance of using standardised tests for language assessment in children cannot be overlooked. The various advantages in giving a standardized test include the following:

- (It provides an objective measure of language,)
- (It enables comparison of the child's performance with that represented in the norms.) Test results are useful, for eg. in determining whether or not the child performs similarly to other children of the same age under a given circumstance.
- (Helps in quantitatively charting development and determining level of language functioning) or degree of deficit in language of children considered to be at risk for a language disorder.
- (It aids comparisons among one's own skilled areas and with that of other peers which aids in planning intervention.)
- (Provides a measure to determine to what extent an intervention program has benefited, in case of language impaired children.

However, a disadvantage of many language measures is that a majority of them focus on a particular level of language as lexical (vocabulary), phonological, syntactic, semantic etc. rather than language as a whole\* Review of the various language tests dealt with later will make this point clear. Hence the scores obtained here will not reflect the communicative effectiveness of any individual in the true sense. On the other hand, if prior to such tests complete communicative ability is evaluated using adequate tools of language usage, and a deficiency is found

at a particular level, then a detailed analysis at that level would be more useful both in terms of assessment and intervention.

### Review of different tests:

In the past few decades standardized tests and language development scales have been developed to assess language acquisition in children, some of these will be discussed here in brief. The tests are grouped according to the language level assessed by each. Group 'A' includes tests that measure syntactic aspect, 'B' includes those that measure semantic aspect and finally the last group 'C' consists of tests that assess pragmatic aspect in addition to syntax and semantic aspects of language.

### **I. TESTS FOR ASSESSING LANGUAGE DEVELOPMENT:**

#### **A. Syntactic Assessment:**

a) Test of Syntactic Abilities (TSA): (Ouigley et al, 1978).

This is an elaborate test of syntactic structures. It consists of a battery of 20 individual diagnostic tests, each containing 120 items selected from the diagnostic battery. The 20 individual tests of diagnostic battery cover 9 of the major structures of English, namely - negation, conjunction, determiners, question formations, verb processes, pronominalization, relativization, complementation and nominalization.

T.S.A. is both a criterion referenced and norm referenced test. It was initially standardised on profoundly deaf students. It is anticipated that the tests will be useful for diagnostic and



normative assessment of persons with language problem\* resulting from other causes.

The obvious short comings of this battery are the technique used for evaluation and the time it takes for administration (10 hours]

b) Carrow Elicited Language Inventory(CELI): (Carrow, E,1974):

CELI, is a diagnostic test aimed at measuring a child's productive use of grammar. This test provides a means of comparing a child's grammatical performance with peer performance and permits a determination of the specific grammatical structures that may be contributing to the child's inadequate test performance. It consists of one phrase and 51 sentences Which the child is asked to imitate\* It includes grammatical categories comprising articles, adjectives, nouns, pronouns, verbs, negatives, adverbs, prepositions, demonstratives and conjunctions, as well as plurals. The responses are audiotaped and then transcribed and classified according to grammatical categories examined. The main score derived represents the total number of errors made by child while the subscoree represent the errors within each category. A major assumption here is that an elicited imitation task can be used to gain a representative picture of a child's grammatical performance in an efficient and reliable manner. However a child's imitations may sometimes exceed spontaneous speech in grammatical complexity and for those children with repetition deficits due to reduced auditory processing skills, grammatical ability is underestimated.

B. Semantic Assessment:

a) Peabody Picture Vocabulary Test (PPVT): (Dunn, 1965)

The aspect of language measured is receptive vocabulary of standard English. It was primarily designed as an intelligence test.

It consists of 150 plates on each of which 4 pictures appear. The child has to point to appropriate picture on plate in response to stimulus word spoken by examiner. The test is untimed and well standardized. It is applicable to subjects in the age range of 2 years to 18 years. The test manual provides tables about mental age, IQ and percentile rank for different scores versus

However PPVT is a vocabulary test and therefore does not tell much about the child's general comprehension of language.

b) Denver Developmental Screening Test: (Frankenburg et al Revised 1975)

It is a screening tool to aid in the early detection of delayed development of language in young children.

It consists of 4 sections - Personal-social, fine motor-adaptive, language and gross motor skills. The bulk of the items in each section represent semantic knowledge with relatively few items pertaining to syntax. Test is administered with the parent present as well as the child. Child's performance on individual items is compared with that of normative data.

The reliability and validity of the test vary with the age of the child but are comparable with those of other developmental screening instruments.

C. Pragmatic Assessment:

- a) Utah Test of Language Development (UTLD): (Mecham, Jex and Jones, 1967).

The purpose of the test is to derive an overall picture of a child's language development as compared with his peers. Aspects measured include expressive and receptive language and conceptual development. It is applicable to children between the age range of 1.6 to 14.5 years.

The test consists of 2 sections - one an informant interview section based on the Vineland social maturity scale, the other a direct test requiring the child to perform such things as repeat digits, recite a story, reproduce geometric forms etc. It yields scores in form of language age. Internal reliability is high.

- b) Porch Index of Communicative Ability In Children (PICAC):  
(Porch, 1974).

The purpose of this test is to assess general communicative ability involving verbal, gestural and graphic skills. It measures the verbal and nonverbal communication aspect of language. It is applicable from preschool age to 12 years.

It consists of 2 batteries - basic (15 subtests) and advanced (20 subtests), which include a variety of verbal, gestural and graphic communicative tasks related to ten common objects which act as stimuli.

Extensive study and supervised practice in administration are required. Percentile scores are available for each subtest and modality, as well as for the entire test. Reliability, standardization and validity are not reported.

## II. LANGUAGE DEVELOPMENT SCALES:

The tests discussed earlier are of limited utility in testing the language skills of very young children and those children who cannot or, will not respond to direct testing methods. For these children who are not cooperative or difficult to test, the use of developmental scales provide the best means of assessment. Although children vary in their rate of language acquisition, order of acquisition of a large number of behavioral milestones in language seems to be invariant and quite universal across culture. Hence an assessment evaluating the acquisition of these, gives a reliable picture of a child's language. Assessment procedures he would include either informant interview regarding the child's language or behavioral observations.

Some scales that have been developed to serve the above purpose will be discussed in brief. They evaluate the language usage in addition to form and content i.e. pragmatic aspects are also evaluated along with syntactic and semantic aspects.

### a) Verbal Language Development Scale (VLDs): (Mecham, 1971):

This was designed to test the normal preschoolers, and children who have physical, emotional or mental handicaps and cannot be tested directly. It uses the informant interview

method of testing. The examiner asks some one who is familiar with the child to indicate the extent to which the child has developed each of several age appropriate communication skills. On the basis of the informants response to the description of the item, the examiner scores the item as passed, emerging or failed..

The test consists of 50 items arranged in ascending order of development from infancy through age of 14 years. More items are tested at ages 0-1, 1-2, and 2-3 years than at any of the older age levels. More than 2/3 of all items test speech skills. The remaining items test reading, writing or listening capabilities. The child's total score is compared to a language equivalent score.

The scores however are not very revealing and the scale is reported to have little utility as a language assessment device by Darley (1978).

b) Receptive Expressive Emergent Language Scale (REEL);  
(Bzoch and League, 1971).

This scale allows Children ranging from less than one month of age to 36 months to be evaluated. The informants are asked to report on a range of behaviours involved in expressive and receptive language development. Depending on the skills acquired a receptive language age and expressive language age are obtained separately. Using these, the language quotient is calculated.

However, the heavy emphasis on vocal aspects of speech limits its use with populations (like cerebral palsy and downs syndrome) whose speech production skills may be physiologically limited. As an initial screening instrument the REEL scale is easy to administer and yields potential points for later diagnostic testing in other children. But the validity of the age scores is highly questionable and Darley makes a strong recommendation that they not be used\*

### STUDIES IN INDIA\*

These will be discussed under two categories according to their type (A) Descriptive studies of language acquisition. (B) Tests for language assessment.

-A) Descriptive studies\*:- A number of these have been done in India with regard to child language acquisition. Majority of these have studied language development within a syntactic framework (Madhuri, 1982; Prema, 1979; Roopa, 1980, Sreedevi, 1976; Subramaniam 1978; Thirumalai, 1972 and Venugopal, 1981) in different age groups and languages. They do not provide a comprehensive profile of language at the different stages of acquisition though they reveal that there is an order in the stages of development evident in the language acquisition process. According to the current concepts the above studies give an incomplete account of language and its development for there is more to language development than only syntax or semantics.

B. Language Assessment Tests: The tests developed in India to assess language include the TPAK (Karanth, P 1980), TASK (Vijaya-Lakshmi, 1981); Syntax screening test in Tamil (Sudha, 1981); and Language Test in Kannada for expression in children (Kathyayin 1984). Each of these will be reviewed in brief below.

a) Test of Psvcholinquistic Abilities in Kannada: Karanth, P(1980)

The test evaluates phonology, syntax and semantic aspects of language within receptive and expressive modalities. It also has a section on discourse included in it. The test was initially designed in order to obtain a comprehensive sample for linguistic analysis of aphasic and schizophrenic language in Kannada. However, it is also applicable to children (of elder age group) to assess language acquisition. It provides both qualitative and quantitative assessment, at various linguistic levels\* A pattern of acquisition within the linguistic framework can be formulated. A hierarchy in terms of achievement can be established and intervention planned accordingly.

The test has limited applicability for assessing language in young children\*

b) syntax screening Test in Tamil (Sudha, 1981):

The purpose of this test is to assess the syntactic development in Children from 2-5 years age range and identify specific areas of syntactic deficits in language disordered children. It consists of 10 subtests which has an expression and comprehension

category and check on use of negation, determiners, WH questions Yes/No questions, person, adjectives, tenses, post position, comparatives superlatives and pronominal terminations. The test gives profiles for different age groups which show the development of grammatical categories with advancement in age.

c) Test for Acquisition of syntax in Kannada ((TASK))\*

(Vijayalakshmi, 1981).

This test assesses the syntactic aspects of language acquisition in Kannada speaking children between 1-5 years of age, through performance. It yields the acquisition profiles from one year through 5 years of normal language development. Its applications extend to linguistically deviant populations of any age. The test comprises of 19 subtests and 323 items in all. It tests the comprehension and expression of a wide spectrum of grammatical categories and sentence types. It is a power test (no time limit imposed for completion). Toys and pictures are used as complementary material to the test sentence.

6) A Language Test In Kannada for Expression in Children\*

(Kathyayani, 1984).

The purpose is to evaluate the use of various concepts in expression in terms of nouns, verbs, numbers, genders, tenses, place markers and persons. The testing materials consist of picture stimuli depicting daily activities and has 30 picture cards in all. It was administered to 30 normal children (5-8 year



range), 6 hearing impaired and 2 mentally retarded and the responses of these groups with respect to the categories mentioned are given. It gives no cut off point for differentiating the deviant, or scoring procedure as such for the test.

The review of the tests mentioned above, indicate that they are restrictive in the sense that - their application is limited to usage with children of a specific language.

- they assess only grammatical categories, and
- require child participation.

However many a times when the child is very young, uncooperated or is physically, mentally or emotionally handicapped it becomes necessary to rely on information provided by informant with respect to child's communicative behaviour since such a child cannot or will not respond to direct testing situations. A developmental schedule becomes important here to assess the language abilities of the child and check if he is in accordance with others of the same age.

Hence an attempt will be made in the present study to construct a test for the assessment of language in these children based on informant interview approach. The informant interview approach is selected as it is possible to evaluate very young children with this method and since it is language free.

The contents of the test will be based on a recent study by Vaidyanathan (1984) entitled "Verbal Environment in Early

Language Acquisition: A Pragmatic Approach. This gives an account of language development in children within a pragmatic framework. The study is based on the model given by Narasimhan (Modelling Language Behaviour, 1981). Language Development was studied here by observing the language interactions in 3 children (2 female and 1 male), from the age of 9 months to 33 months in one child, 12 months to 40 months in the second child(male), and 9 months to 37 months in the third child. The language behaviour in these children was observed over a period of two years covering a number of extended sessions wherein their utterances were taped and later transcribed. The study provides valuable information regarding language acquisition within a pragmatic frame work.

This source of data can be effectively put to use in the form of a questionnaire to elicit information on language behaviour in other young Children along the same lines to give a more complete account of language development and use. This will help validate the data collected by Vaidyanathan and also help ns in our assessment procedure\*.

## THE CURRENT STUDY - METHODS

(The present study was carried to design and standardize a test for assessment of language acquisition in children based on an informant interview approach.)

(The primary purpose of the test is to evaluate the language acquisition in young children between the age of 9 months to 3 years of age.) (The test will be applicable to children beyond 3 years of age when they show delayed language development to determine their level of acquisition in comparison with normal children,

The various problems encountered in testing children, and therefore the need for a test based on informant interview has already been discussed earlier. In this section, the method undertaken will be discussed. It will be discussed with regard to - construction of the test and - standardization procedure used to obtain normative data.

Test Construction:- The items selected for this test are based on the data collected by R.Vaidyanathan (1984) in the course of his doctoral study. This study on language development was within a pragmatic model given by Narasimhan, R. The items were drawn in consultation, with them and formulated into questions.

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+ Modelling Language Behaviour (1981).

(These items are grouped into receptive, expressive and cognitive section according to the aspect of language evaluated by each. Receptive section deals with the ability to comprehend spoken language that on expression checks the production aspect and the section on cognition checks, on activities involving 'thinking'.)

According to the age at which various aspects of language emerge, they have been divided into nine age groups, which cover the age range from 9 months to 36 months. Each age group has a range of 3 months except for the last group which has a range of four months. 3 items each for reception, expression and cognition for every age group are selected. Appropriate examples are provided, where essential, to further clarify the question. Hence the test includes 27 items under each section i.e. reception expression and cognition with three items from these for every age group.

The test format thus arrived at is presented in the appendix. Since the test evaluates 3 dimensions of language acquisition - reception, expression and cognition, it is termed as '3D-Language Acquisition Test (LAT)'.

Standardization; This was essential to obtain normative data on the test constructed. It will be dealt here with respect to

- a) the standardization population
- b) age groups
- c) procedure used.

a) Standardization population: the subject population included 50 normal children between the ages of 9 months and 36 months, from the cities of Mysore, Bangalore and Hubli. All of them belonged to the middle socio economic group. The aether tongue or language used by the child was not considered since the test was meant for all language groups.

Only those children were selected who had no history of any complications, either prior to, at or after birth and were free from any known sensory or organic disabilities.

b) Age groups! Nine age groups were made and each age grouping covered a time span of 3 months except the last which covers 4 months. Table-1 below gives the various age groups and the number of children tested in each groups.

Table-1 Distribution of subjects.

| Group | Age range (in months) | No.of children | Girls | Boys |
|-------|-----------------------|----------------|-------|------|
| I     | 9 - 11                | 10             | 5     | 5    |
| II    | 12 - 14               | 10             | 5     | 5    |
| III   | 15 - 17               | 10             | 5     | 5    |
| IV    | 18 - 20               | 10             | 5     | 5    |
| V     | 21 - 23               | 10             | 5     | 5    |
| VI    | 24 - 26               | 10             | 5     | 5    |
| VII   | 27 - 29               | 10             | 5     | 5    |
| VIII  | 30 - 32               | 10             | 5     | 5    |
| IX    | 33 - 36               | 10             | 5     | 5    |
|       | Total                 | 90             | 45    | 45   |

c) Procedure: The parents of the children, or a close associate of the child (familiar with the child's behaviour) were interviewed

to obtain the data. They were told the purpose of the study in brief and about the kind of information that was required regarding their child for this.

The exact chronological age of the child was noted along with the date of birth. Items from the corresponding age groups were asked first and their performance on other items above and below was also evaluated. Responses were checked for two consecutive age groups above and below to that of the child. It was continued in the lower age groups till 2 '+' were recorded and in the higher ones till 2 '-'s were obtained within the age group.

The responses were recorded in the response sheet, the format of which is shown in the appendix. The response on an item was marked a 'plus' (+) when the informant indicated that the behaviour was established, a 'minus' (-) when it had not yet emerged and a 'plus - minus' (+) whenever the given language behaviour was only partially exhibited or inconsistently noted,

Depending on the age of the child the time required for evaluating varied between 10 minutes and 20 minutes for each child. The data for the entire sample was collected over a span of 2 months.

Statistical measures were then employed to analyse the data thus obtained. This will be dealt with, in the next section.

## RESULTS AND DISCUSSION

the 'SB-Language Acquisition Test' was constructed and the data for establishing norms was obtained on 90 normal children who belonged to the middle socio-economic strata and ranged from 9 months to 36 months of age. Nine age groupings were made and 10 children (5 boys and 5 girls) were tested within each age group, using the informant interview approach.

The data obtained was analysed using statistical procedures, the results of which are presented here.

i) Raw scores These were obtained by scoring the performance of every child on the test items. A credit of two points for a '+' one for '+' and zero for '-' were given and the total scores for each child on the test within each dimension (Reception, Expression and Cognition) was obtained. This was then used to determine the mean scores and standard deviations as stated below,

ii) Mean scores and standard deviations: The raw scores obtained by each child through the above scoring were cumulated to obtain a total for each age group along each dimension. Total scores for boys and girls of different groups were also found separately. The mean score for each group was then calculated from the total score.

The standard deviations, among the performance of Children of each group were also computed.

Table-2 represents this information for the whole group, along with the average age of the children tested in each age group. Tables 3 and 4 give this information separately for boys and girls.

Table-2 Mean and S+D. scores at different ages for the whole group.

| GROUP | Age range<br>(in months) | Average age<br>(in months) | R    | Mean scores |      |      | R    | S.D.<br>E | C |
|-------|--------------------------|----------------------------|------|-------------|------|------|------|-----------|---|
|       |                          |                            |      | E           | C    | C    |      |           |   |
| I     | 9-11                     | 10                         | 5.1  | 3.7         | 5.2  | 0.99 | 2.16 | 1.75      |   |
| II    | 12-14                    | 13.1                       | 12.2 | 11.3        | 12.7 | 2.66 | 3.06 | 2.79      |   |
| III   | 15-17                    | 15.8                       | 20.4 | 17.9        | 17.7 | 3.30 | 3.73 | 2.00      |   |
| IV    | 18-20                    | 19.6                       | 27.4 | 23.3        | 23.5 | 3.53 | 2.31 | 2.99      |   |
| V     | 21-23                    | 22.2                       | 37.4 | 30.8        | 33.3 | 4.20 | 4.98 | 4.52      |   |
| VI    | 24-26                    | 25                         | 41.5 | 35.6        | 39   | 4.32 | 7.79 | 5.33      |   |
| VII   | 27-29                    | 28.2                       | 46.7 | 43.1        | 43.5 | 2.31 | 3.03 | 2.59      |   |
| VIII  | 30-32                    | 31.3                       | 49.1 | 47.6        | 47.6 | 1.37 | 1.26 | 2.76      |   |
| IX    | 33-36                    | 34.7                       | 53.5 | 52          | 51.4 | 1.26 | 1.76 | 1.43      |   |

R - Reception; E - Expression; C - Cognition

SD - Standard Deviation



Table-3: Mean and Standard Deviation at different ages for Boys

| Group | (in months)<br>Age range | Average age | Mean scores    |                 |                | Standard Deviation |                 |                |
|-------|--------------------------|-------------|----------------|-----------------|----------------|--------------------|-----------------|----------------|
|       |                          |             | Recep-<br>tion | Express-<br>ion | Cogni-<br>tion | Recep-<br>tion     | Express-<br>ion | Cogni-<br>tion |
| I     | 9-11                     | 10.4        | 5.6            | 4.6             | 5.4            | 0.89               | 2.07            | 2.19           |
| II    | 12-14                    | 13.2        | 11.4           | 10.6            | 11.8           | 0.89               | 3.51            | 1.48           |
| III   | 13-17                    | 16          | 22.2           | 19.6            | 17.2           | 1.92               | 3.36            | 1.92           |
| IV    | 18-20                    | 19.5        | 26.6           | 22.6            | 24             | 2.97               | 2.50            | 3.16           |
| V     | 21-23                    | 22          | 36.8           | 30.4            | 33.2           | 4.96               | 6.56            | 6.30           |
| VI    | 24-26                    | 25.2        | 39             | 31.4            | 37.4           | 2.82               | 7.40            | 4.28           |
| VIII  | 27-29                    | 26.2        | 46.8           | 43.6            | 42.4           | 1.79               | 3.36            | 2.30           |
| VIII  | 30-92                    | 31.5        | 49.4           | 47.6            | 7.2            | 1.51               | 0.89            | 3.34           |
| IX    | 33-36                    | 34.5        | 53             | 51.2            | 50.6           | 1.73               | 2.17            | 1.51           |

Table-4: Mean and Standard Deviation scores at difference ages for Girls

| Group | (in months) |             | Mean scores |            |           |           | Standard Deviation |           |  |
|-------|-------------|-------------|-------------|------------|-----------|-----------|--------------------|-----------|--|
|       | Age range   | Average age | Reception   | Expression | Cognition | Reception | Expression         | Cognition |  |
| I     | 9-11        | 9.6         | 4.6         | 3.8        | 5         | 0.89      | 2.05               | 1.41      |  |
| II    | 12-14       | 13          | 13          | 12         | 13.6      | 3.67      | 2.74               | 3.65      |  |
| III   | 15-17       | 15.5        | 18.6        | 16.2       | 18.2      | 3.58      | 3.56               | 2.17      |  |
| IV    | 18-20       | 19.6        | 23.2        | 24         | 23        | 4.21      | 2.12               | 3.08      |  |
| V     | 21-23       | 32.4        | 36          | 31.2       | 33.4      | 3.74      | 3.49               | 2.50      |  |
| VI    | 24-26       | 24.7        | 44.8        | 41.8       | 40.6      | 4.30      | 3.76               | 6.26      |  |
| VII   | 37-29       | 26.3        | 46.6        | 42.6       | 44.6      | 2.96      | 2.96               | 2.60      |  |
| VIII  | 30-32       | 31.1        | 48.8        | 47.6       | 48        | 1.30      | 1.67               | 2.34      |  |
| IX    | 33-36       | 34.9        | 54          | 52.8       | 52.2      | 0         | 0.84               | 0.84      |  |

Tahle-5: Coefficient of correlation(r) between average age and average scores

|             | Reception | Expression | Cognition |
|-------------|-----------|------------|-----------|
| Whole group | 0.88      | 0.88       | 0.88      |
| Boys        | 0.87      | 0.88       | 0.83      |
| Girls       | 0.87      | 0.88       | 0.76      |

iii. Coefficient of correlation; To determine the extent of relation between age and scores, the coefficient of correlation was obtained using the product moment method. The average age and the mean scores of each of the 9 groups were used to compute this. It was obtained for the whole group, boys and girls as separate groups for reception, expression and cognition. Table-5 gives these value

iv. The Mann-Whitney U Test was used to determine the sex different in scores. The mean scores obtained by boys in different age group were compared to that of girls. The 'U' values obtained were 40 for reception, 38.5 for expression and 38 for cognition. These values however indicated no significant difference between the performance of the 2 groups at all the three levels i.e. reception, expression and cognition.

v. Establishment of norms: This was done on lines similar to that of Denver Development screening Test (Frankenburg et al, 1975).

Initially the number of children in each group who passed each test item was calculated, from which the percent of children who passed each item was determined.

From these figures of the percent passing in each age group, a smoothed percent-passing curve was drawn for each item. On this curve the age at which 25%, 50%, 75%, 90% and 100% of the of the children who pass an item was determined.

Tables 6, 7, 8 present this information for reception, expression and cognition, (in page No.33, 34, and 35).

#### DISCUSSION OF RESULTS OBTAINED:

i) Aae vs scores: A linear relation between age and scores obtains on the test was seen. This is represented in graph where the mean scores obtained on the test by different age groups is shown; the scores being plotted at the average age of each group. (Fig- 1)

We find that in general with increase in age across different age groups, the scores obtained have also increased for all the 3 dimensions. The coefficient of correlation value of 0.88, obtained between the average age and scores also shows a fairly good correlation among these in the positive direction.

On comparing the scores on each dimension within an age group We find that, in initial groups (I and II), scores on cognition and reception are better followed by expression, though the differences are small. However from group IIIId onwards reception items fare better until the end (i.e. 36 months of age). Scores on cognition and expression show negligible differences, except at

TOTAL SAMPLE NORMS

Age (in months) when given percent of population pass items  
Reception:

| Items | 25%  | 50%  | 75%  | 90%  | 100% |
|-------|------|------|------|------|------|
| 1.    | —    | —    | —    | —    | 10   |
| 2.    | —    | —    | —    | 10   | 13.1 |
| 3.    | —    | 10   | 11.6 | 13.1 | 15.8 |
| 4.    | 11   | 11.8 | 12.8 | 14   | 19.6 |
| 5.    | 11   | 11.8 | 12.8 | 14   | 19.6 |
| 6.    | 10.6 | 11.4 | 12.6 | 13.1 | 15.8 |
| 7.    | 13.1 | 14   | 14.8 | 15.8 | 19.6 |
| 8.    | 10.1 | 14.5 | 15.6 | 18.2 | 22.1 |
| 9.    | 13.1 | 14   | 14.4 | 15.0 | 15.8 |
| 10.   | 15.5 | 17.3 | 19.4 | 21.0 | 22.2 |
| 11.   | 16.8 | 18.2 | 19.6 | 21.0 | 22.2 |
| 12.   | 14.1 | 15.1 | 16.3 | 18.5 | 22.2 |
| 13.   | 17.9 | 19.6 | 20.6 | 22.2 | 25.0 |
| 14.   | 14.9 | 16.6 | 18.6 | 22.8 | 28.2 |
| 15.   | 15.9 | 17.6 | 19.6 | 24.2 | 31.3 |
| 16.   | 19   | 20.5 | 21.4 | 22.2 | 25   |
| 17.   | 21.2 | 22.4 | 23   | 26   | 28.2 |
| 18.   | 20.3 | 20.9 | 21.7 | 22.9 | 25   |
| 19.   | 21.9 | 22.9 | 24.2 | 26   | 28.2 |
| 20.   | 22.8 | 23.9 | 24.8 | 26   | 28.2 |
| 21.   | 21.4 | 24.0 | 26.8 | 29.4 | 34.7 |
| 22.   | 23.8 | 26.5 | 28.8 | 30.2 | 31.3 |
| 23.   | 23.8 | 26.5 | 28.8 | 30.2 | 31.3 |
| 24.   | 23.8 | 26.5 | 28.8 | 30.2 | 31.3 |
| 25.   | 30   | 31.5 | 33.1 | 34.2 | 34.8 |
| 26.   | 32.7 | 33.5 | 34.4 | 34.8 | 35.1 |
| 27.   | 30   | 32.7 | 34.2 | 34.8 | 35.1 |

Expression:

| Item | 25%  | 50%  | 75%  | 90%  | 100% |
|------|------|------|------|------|------|
| 1    | -    | -    | -    | 11.2 | 13.1 |
| 2    | -    | -    | 11.3 | 12.4 | 13.1 |
| 3    | -    | 10.8 | 13.1 | 15.0 | 19.6 |
| 4    | 10.3 | 10.6 | 11.8 | 13.1 | 15.8 |
| 5    | 11.1 | 12.1 | 13.7 | 16.2 | 19.6 |
| 6    | 11.0 | 12.1 | 14.6 | 17.3 | 19.6 |
| 7    | 13.1 | 14.5 | 15.3 | 17.4 | 19.6 |
| 8    | 12.4 | 14.1 | 16.3 | 18.7 | 22.2 |
| 9    | 14.7 | 16.6 | 18.3 | 21.1 | 28.2 |
| 10   | 17.3 | 18.9 | 21.3 | 24.8 | 28.2 |
| 11   | 15.5 | 16.2 | 17.9 | 19.8 | 22.2 |
| 12   | 14.3 | 15.5 | 19.6 | 21.6 | 22.2 |
| 13   | 19.9 | 21.5 | 23.4 | 25.8 | 28.2 |
| 14   | 21.5 | 22.9 | 24.8 | 26.7 | 28.2 |
| 15   | 18   | 20.4 | 23.4 | 25.8 | 28.2 |
| 16   | 23.4 | 25.6 | 28.3 | 31.3 | 34.7 |
| 17   | 21.9 | 23.4 | 25.2 | 28.3 | 31.3 |
| 18   | 20.8 | 22.2 | 24.2 | 26.9 | 31.3 |
| 19   | 25.0 | 26.8 | 28.5 | 33.2 |      |
| 20   | 23.3 | 25.5 | 27.3 | 30.7 | 34.7 |
| 21   | 22.6 | 24.6 | 27.0 | 29.5 | 34.5 |
| 22   | 26.6 | 29.0 | 31   | 33.2 | 34.3 |
| 23   | 26.4 | 28.2 | 29.8 | 30.7 | 31.3 |
| 24   | 25   | 28.2 | 31.8 |      |      |
| 25   | 28.5 | 31.0 | 32.9 | 33.9 | 34.7 |
| 26   | 32.9 | 34.2 | 34.7 | 35.0 | 35.2 |
| 27   | 34.7 | -    | -    | -    | -    |

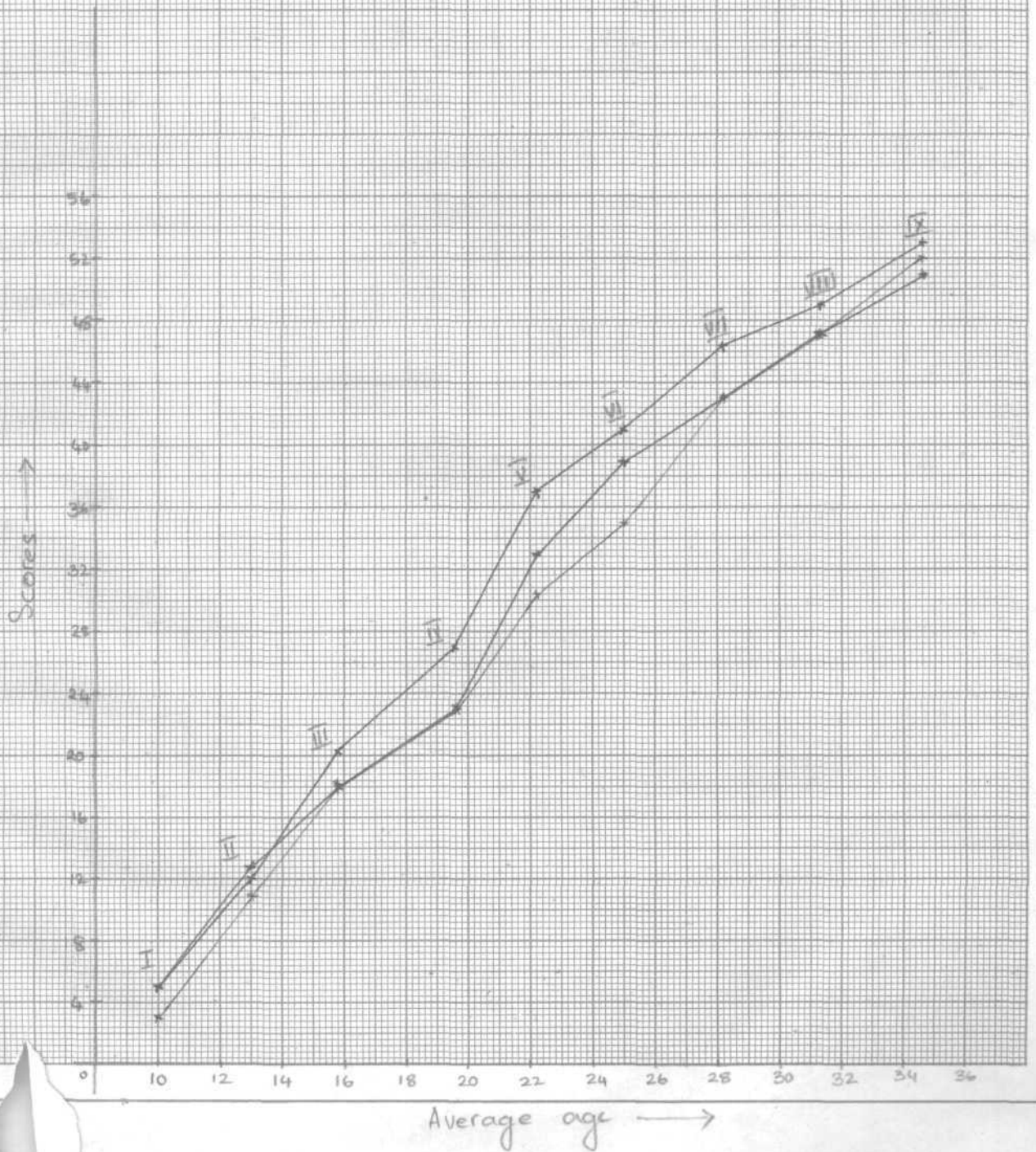
**Cognition:**

| Item | 25%  | 50%  | 75%  | 90%  | 100% |
|------|------|------|------|------|------|
| 1    | -    | -    | -    | -    | 10   |
| 2    | -    | -    | -    | -    | 10   |
| 3    | -    | 10.8 | 13.3 | 14.8 | 15.8 |
| 4    | 11   | 12   | 13   | 14.2 | 16   |
| 5    | 10.4 | 11.3 | 12.1 | 12.6 | 13.1 |
| 6    | 10.9 | 11.8 | 13.1 | 15.5 | 19.6 |
| 7    | 11.6 | 13.1 | 14.9 | 17.7 | 22.3 |
| 8    | 13.1 | 16.1 | 19.1 | 20.8 | 22.3 |
| 9    | 11.6 | 13   | 14.5 | 15.4 | 16   |
| 10   | 16.3 | 18   | 19.1 | 20.6 | 22.3 |
| 11   | 16.3 | 19   | 19.8 | 22.5 | 25.  |
| 12   | 17.0 | 18.6 | 20.5 | 22.5 | 24.6 |
| 13   | 18.9 | 20.5 | 21.5 | 23.8 | 28.2 |
| 14   | 18.9 | 20.5 | 21.5 | 23.8 | 28.2 |
| 15   | 20.2 | 21.5 | 22.6 | 26.0 | 31.3 |
| 16   | 24   | 25.8 | 28.2 | 31.5 | -    |
| 17   | 20.8 | 22.2 | 24.4 | 28.2 | 34.7 |
| 18   | 22.2 | 23.8 | 24.4 | 26.7 | 32   |
| 19   | 20.8 | 22.6 | 25.5 | 28.2 | 31.3 |
| 20   | 24   | 26.5 | 31.4 | 36   | -    |
| 21   | 21.2 | 23   | 26.6 | 29.4 | 34.7 |
| 22   | 24.5 | 28.4 | 30.1 | 30.9 | 31.3 |
| 23   | 24.5 | 27.5 | 29.6 | 30.6 | 31.3 |
| 24   | 22.6 | 27.2 | 30.3 | 31.0 | 31.3 |
| 25   | 31.0 | 33.6 | 36.0 | -    | -    |
| 26   | 20.5 | 32.4 | 34   | 34.7 | 35.4 |
| 27   | 33.8 | -    | -    | -    | -    |

Fig.1.

Performance of children of different age groups on reception, expression and cognition.

— Reception  
— Expression  
— Cognition





the groups V and VI, where cognition scores exceed that of expression.

When the scores obtained on the 3 dimensions are compared, it is seen that the reception scores are more deviant, in the positive direction from the expected for the groups between III and VIII. Perhaps this difference is seen because the items on reception were formulated on the basis of the speech sample. Since receptive abilities precede expressive abilities, these receptive items are probably more suitable for a younger age group.

Considering the variability in performance of the whole group we find that the standard deviation values have gradually shown an increase in all dimensions up to the VI age group and then a gradual fall. The middle groups from III and VI seem to be highly variable in their performance. This may be because, the rate of acquisition here is faster and the maximum amount of acquisition of language is found in this period, though the process of acquisition continues in later age groups. A large variation is seen in terms of performance because of the individual differences in the process of acquisition. More uniform scores are reflected in the first and last group since deviation is smaller here. In the first group the language has just started emerging and only a limited number of items are performed by all and hence scores are almost the same. Considering the last group, most of the items are acquired by all children, hence uniformity in scores is noticed again.

ii) Sex vs Scores: The Mann Whitney test used to determine this relation, showed no significant difference between the overall performance of boys and girls. Hence the norms applicable to the group as a whole, was calculated. No separate norms were given for boys and girls.

However on comparing the scores obtained by boys and girls of different age groups (refer to scores from Table 3 and 4), on reception, expression, and cognition respectively – a significant difference in performance is found only between the period of 22-28 months where the girls have performed better. Perhaps some amount of lag is noticed within this period since the rate of acquisition in girls is faster. However the difference is made up since the boys catch up by 28 months and no difference in performance is noticed again.

iii) Order of acquisitions The norms presented in tables 6, 7, 8 give the average ages at which 25%, 50%, 75%, 90% and 100% of the children can perform the given items for each section i.e. reception, expression and cognition separately.

A hierarchy of the original items in terms of the average age at which 90% of the children perform these, shows the following order of acquisition.

-For reception:-

1, 2, 3, 6, 4, 5, 9, 7, 8, 12, 10, 11, 13, 16, 14, 18, 15, 17, 19, 20, 21, 22, 23, 24, 25, 26 and 27.

- For expression:

1, 2, 4, 3, 5, 6, 7, 8, 11, 9, 12, 10, 13, 15, 14, 18, 17, 21, 20, 23, 16, 19, 22, 25, 26, 24, 27

- For cognition:

1, 2, 5, 4, 3, 9, 6, 7, 10, 8, 11, 12, 13, 14, 15, 18, 17, 19, 31, 23, 22, 24, 16, 26, 20, 25, 27.

Considering this hierarchy, if items are grouped according to the age grouping made earlier, we find the following number of items within the given 27 in the various groups for reception, expression and cognition..

| Group        |       | No.of items |    |    |
|--------------|-------|-------------|----|----|
|              |       | R           | E  | C  |
| 1            | 9-11  | 2           | 1  | 2  |
| 2            | 12-14 | 4           | 2  | 2  |
| 3            | 15-17 | 2           | 2  | 1  |
| 4            | 18-20 | 2           | 2  | 1  |
| 5            | 21-23 | 6           | 2  | 4  |
| 6            | 24-26 | 4           | 3  | 3  |
| 7            | 27-29 | 1           | 4  | 4  |
| 8            | 30-32 | 3           | 3  | 4  |
| 9            | 33-36 | 3           | 4  | 2  |
| Total items: |       | 27          | 25 | 25 |

R - Reception,  
E - Expression,  
C - Cognition.

we find that only 25 items are covered under expression and cognition because the last 2 items (according to the new hierarchical order) under each of these dimension, do not obtain a 90%

response within the age range covered. The maximum percentage of Children who pass these items and the age at which this is obtained is given below:

| <u>Item</u>      | <u>Max.</u> | <u>%pass</u> | <u>Age</u>  |
|------------------|-------------|--------------|-------------|
| 24E <sup>+</sup> | 85%         |              | 34.7 months |
| 27E              | 25%         |              | 31.7 months |
| 25C <sup>+</sup> | 75%         |              | 36 months   |
| 270              | 25%         |              | 33.8months. |

These items obtain a 90% response at an age beyond the age range covered in this study and hence the age at which it is acquired by 90% of children is not determined. Since it is seen that the items are not equally distributed across the age groups, the norms are not given age group wise, though the items were grouped in that manner. To maintain equal number of items across different age groups, items from those groups with greater than 3 can be eliminated and those age groups with lesser than 3 items should be provided with additional items. so as to have a constant of 3 items for all groups. The revised format can then be checked over a large sample.

iv) Norms: The norms obtained on the present test (Table 6, 7, 8) can be used in routine clinical evaluation until further modifications are made and standardized on a larger population.

The test items should be administered till 2 consecutive failures are obtained and item numbers noted. The items failed on the test by a child can be checked with the given norms on

- +E Expression
- +C Cognition

each dimensions. If a child fails an item which 90% of normal children of his age pass, then a delay in language development can be assumed. The age level at which the highest item passed by the child, obtains a 90% score may be taken as an individual child's language age. However in view of the fact that a linear order is not strictly seen in the given items\* such a process may have to await further revisions. Then along the three dimensions – a receptive language age, an expressive language age and a cognitive language can be determined separately.

The test would help evaluate the language of children along the dimension of reception, expression and cognition, and comparisons of how they perform as against their peers can be made. A language deviant child can be identified and his performance on the different dimensions would facilitate in planning intervention techniques.

However it should be noted that the norms obtained are based on a relatively small sample as the data could not be collected on a larger sample because of the time constraint. The reliability of the test could not be established for the same reasons. Hence the test needs to be standardized on a larger sample and the reliability needs to be determined.

## SUMMARY AND CONCLUSIONS

The objective of the present study was (i) to validate the data obtained on 3 children in terms of language acquisition (Vaidyanathan, 1984), on a larger population and (ii) to obtain normative data for the same population for use in evaluation of language acquisition in young children.

3D LAT was constructed for this purpose and it was standardized on a sample of 90 children between the range of 9 months to 36 months of age. Nine age groupings were made and 10 children (5 boys and 5 girls) were tested in each age group using the informant interview approach.

The results obtained indicate that the data obtained on the 3 children is true of the general population also. However the internal order of few of the items shows some variation and this factor needs to be taken into account. While the test is standardized on a larger sample.

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APPENDIX - A

3D LANGUAGE ACQUISITION TEST

GROUP-I      Age 9-11 months

Reception

1. Does the child point to or indicate in some way when an object is named?  
eg. Where is the light? Where is Fan? (When object within immediate reach)

2+ Does he comprehend simple commands such as "way, bye bye"?

3. Does he mime when an action is named?  
eg. Mow does a ear go?

GROUP-II      2-14 months

4. Does he point to named body parts?

5. Does he point to himself when asked questions such as 'Whose shirt is this'?

Expression:

1. Does he point to and name father and mother sometimes?

2. Does he ask for desired things by pointing, stretching hand or sometimes accompanied by 'give'?

3. Does he say 'finished' to signify completion of action (eating)?

'a.

4. Does he express need by saying 'give' or naming the object eg. bikki?

5. Does he begin naming objects, animals, eatables etc?

Cognition

1. Does he engage in somewhat structured play?  
eg. Hide and seek; throwing/kicking ball accompanied by much vocalization but no verbalization.

2. Does he make attempts to sing? (vocalise tunefully)?

3. Does he begin playing with dolls with vocalization and some verbalization?  
Eg: Getting it to sleep, 'Powders its face'.

4. Is he interested in looking at picture books? Does he pretend to read verbalizing name words, papa, mama, etc.

5. Does he show increased activity in manipulating objects?  
a. Turning on the radio  
b. Picking up a shoulder bag and swinging it on shoulder?

6. Does he follow simple commands that require action or verbalization on his part? eg. Good, Bye, bring(your) shoes, sing a song (child says a-a-a)
6. Does he describe an event by naming the person involved along with some action? eg. 'Daddy' + waving of hand(to indicate daddy has gone out)
6. Does he show better structured dance movements in play? eg. Ring-a-ring-a-roses.

GROUP-III Age 15 to 17 months

7. Does he respond appropriately to 'where' question eg. Where is mama? -taa-  
-taa, where is papa?  
Office (Object not within immediate reach)
7. Does he make appropriate animal and vehicle noises when asked?
7. Does he identify familiar voices by naming the individual concerned?
8. Does he understand 'who and what' questions? eg. who/what is this? what is in the bottle? Medicine.
8. Does he repeat when asked to repeat?
8. Does he see inflection of himself in mirror or spectacle and utter his name?
9. Does he understand instructions like 'call mummy', wash your face, bring a plate.
9. Does he signify disappearance with one - two word utterance? eg+ papa gone
9. Is he interested in using a pencil/pen for more sustained scribbles on paper walls.

GROUP-IV Age 18 to 20 months

10. Does he comprehend questions querying action of agents in pictures? (Responds either by naming the action baby talk form - or more often by miming eg. what is this man doing - bathing (BT form).
10. Does he ask for objects using 'where' eg. 'where ball?'
10. Is he increasingly moving away from baby talk to more standard forms of vocabulary?

- |   |   |  |
|---|---|--|
| <p>11. Does he comprehend questions concerning habitual behaviour of named agents? Responds with one word answers, eg. what does mummy cook-Chappati.</p> | <p>11. Does he use possessor/possession relationship eg. mummy chappal</p>                | <p>11. Does he remember past events in which he was a participant and respond to queries about details? eg. where did we go yesterday.</p> |
| <p>12. Does he comprehend questions (attributes) of objects, responds with one word answers eg. How does this coffee feel?-Hot.</p>                       | <p>12. Does he use more kinship terms eg. aunt, uncle, elder sister and proper names?</p> | <p>12. Does he comprehend one/many distinction? Does he count 1-2-3 as a response to 'How many(counts), but not used meaningfully).</p>    |

GROUP-V Age 21 to 23 months

- |   |   |   |
|---|---|---|
| <p>13. Does he comprehend grammatically more complex 'who' questions? eg. who gave the medicine? who brought the dress for you?</p> | <p>13. Does he ask questions regarding names of objects involved in action. eg. What are you reading.</p> | <p>13. Does he remember part event and respond to queries appropriately eg. who is in the town? Younger sister.</p>   |
| <p>14. Does he understand questions regarding object manipulation eg. Will you comb Daddy' hair?</p>                                | <p>14. Does he use future tense to describe events?</p>   | <p>14. Does he involve in role switching games as 'mother/father'? eg. Plays using toy cooking set? Pretends to prepare tea/coffee for others. Pretends driving, going to office etc.</p> |
| <p>15. Does he understand when asked to say something? eg. Did you say 'thank you'.</p>   | <p>15. Does he make assertive negative statements? eg. you must not do that, Don't touch that.</p>        | <p>15. Does he involve himself in more structured and imaginative play? eg. talks over the telephone pretends to hide things.</p>   |

GROUP-VI Age 24 to 26 months

16. Does he comprehend questions with case markers and respond appropriately? eg. whose is this? Ramya's what happened to Vinod? Vinod has pain in the ear.

17. Does he comprehend 'where' questions and respond using words/suffizes indicating spatical relations? eg. where is he playing? in the water. Where's the book? On the table.

18. Does he comprehend 'How' questions and aspect evaluating its quality, eg. How was that? It was nice/good/bad etc.

GROUP-VII Age 27 to 29 months

19. Does he comprehend 'how' question and respond giving the cause? eg. How did you get hurt? I feel like this

20. Does he comprehend 'what are you going to do' and answer correctly? What are you going to do? I am going to write.

16. Can he initiate conversation by asking a question, drawing attention to something in a book? eg. what is this? Did you use, he is wearing a cap?

17. Does he use past and present tense in sentences to describe events?

18. Does he use some prepositions and adverbs? eg. up, down, behind, later, afterwards.

19. Does he use 'if-then' construction eg. if the eyes hurt, they will put medicine

20. Does he express ability in ability to do something-also queries this aspect of others Eg. Can't you detect) I can't do it. The baby is not standing.

16. Does he use sophisticated tools? Eg. Pasting a paper, making arrow with paper, use scissors etc.

17. Does he use basic colours? as blue, green red.

18. Does he exhibit social knowledge? - knowing about holidays for people at home talks about letters, reprimands dolls to buy things have to go to a shop etc.

19. Does he involve in pretended role switching activities in an extensive way? eg. mends cloths (shirt button) cleans utensils, washes cloths, involves in repair work (Hammering etc.)

20. Does he join blocks and make configurations like chair, table? or build house with bricks, in sand etc.

GROUP-VIII Age 27 to 29 months

21. Does he comprehend 'why/what for' questions and respond giving reasons? eg. What do you want the pen for? I am going to write.
21. Does he produce a sequence of instructions to get agent to perform task? eg. I am going out. You get up. Put on your cheppals
21. Does he imitate the mannerisms of others? eg. wears spectacles like teacher. Imitates baby crying

GROUP-VIII Age 30 to 32 months

22. Does he comprehend questions of all types of and respond negatively? eg. What did you eat? Nothing. who is there? No one.  
Why did you bring this?  
I did not bring it.
22. Does he use conversation increasingly to describe fant-sized events? eg. what I there I will.....When I am big.....
22. Does he exhibit the concept of reasoning while making statements? eg. Won't take bath. Have fever I am hungry, I want to eat.

33. Does he comprehend 'how many' question and respond by counting? How many? two (Use is meaningful)
23. Does he involve himself in conversational episodes over a longer period and with greater self assurance? Eg. Child- I want sweets  
Mother - When we go to the market we will buy some.  
C - when shall we go?  
M - In the evening  
C - How shall we go -bus or walk?
33. Does he exhibit the concept of reasoning while asking or responding to questions? Eg. Why don't you want that? It fell down. It is dirty?

34. Does he comprehend 'why' question quering reasoning and give correct answer? why is the eye burning? You applied medicine. did not you?
34. Does he ask 'why' questions asking for reasons? eg. why are you pouring with the pipe? Why don't you want this?
34. Does he talk about people in their absence? eg. Where is papa? When will he come back?

GROUP-IX Age 33 - 36 months

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25. Does he comprehend questions imaginary situations? eg. What will you do if it rains when we go out?

26. Does he comprehend 2 or 3 sequential verbal instructions? eg. to write 'E' draw one long line and than draw 3 short line.

27. Does he comprehend descriptive statements about objects/individuals? eg. who stops the buses and cars on the road? Who teaches you in school?

25. Does he demonstrate ability to imitate dramatically others behaviour including speech? eg. Imitating mother scolding the child or imitating the teacher in class.

26. Does he make use of complex sentential constructions. Eg. what shall I do if my top gets spoilt?

27. Does he use time relationship terms such as 'next year'?

25. Does he exhibit the concepts of job and salary? eg. If one goes to work, will give salary.

26. Does he plan about the future? eg. Talks about schooling.

27. Does he ask questions about language usage? eg. Asks for equivalent meanings in another language that he knows or asks for help in expressing a particular thing.  
How do I say...correctly.

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APPENDIX-B

Format of the response sheet used in the current study.

Name.....

Age:              Date of birth                                  Sex F/M

Father's name .....

Age:                                  Occupation

Mother's name.....

Age:                                  Occupation

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Problem:                                  Language:

Brief History of Problem:

Hearing loss                                  MA                                  IQ

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SCORING SHEET

| Age*<br>range | Item<br>No. | R | E | C | Remarks |
|---------------|-------------|---|---|---|---------|
| 2-11          | 1           |   |   |   |         |
|               | 2           |   |   |   |         |
|               | 3           |   |   |   |         |
| 12-14         | 4           |   |   |   |         |
|               | 5           |   |   |   |         |
|               | 6           |   |   |   |         |
| 15-17         | 7           |   |   |   |         |
|               | 8           |   |   |   |         |
|               | 9           |   |   |   |         |
| 18-20         | 10          |   |   |   |         |
|               | 11          |   |   |   |         |
|               | 12          |   |   |   |         |

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|       | R   | E | C | Remarks |
|-------|-----|---|---|---------|
| 21-23 | 13. |   |   |         |
|       | 14  |   |   |         |
|       | 15  |   |   |         |
| 26-26 | 16  |   |   |         |
|       | 17  |   |   |         |
|       | 18  |   |   |         |
| 27-29 | 19  |   |   |         |
|       | 20  |   |   |         |
|       | 21  |   |   |         |
| 30-32 | 22  |   |   |         |
|       | 23  |   |   |         |
|       | 24  |   |   |         |
| 33-35 | 25  |   |   |         |
|       | 26  |   |   |         |
|       | 27  |   |   |         |

\* inmonths.