PATTERN OF LANGUAGE DEVELOPMENT BEFORE AGE TWO : AN EXPLORATORY STUDY

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CERTIFICATE

Certified that this thesis entitled **"PATTERN OF LANGUAGE DEVELOPMENT BEFORE AGE TWO: AN EXPLORATORY STUDY"** embodies the results of a piece of bonafide research work carried out as part fulfilment of requirements for the degree of **DOCTOR OF PHILOSOPHY IN PSYCHOLOGY** of the University of Calicut by **Ms. LISA JACOB** under my guidance and supervision and that no part of the thesis has been submitted for any other degree.

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DECLARATION

I, **LISA JACOB**, hereby declare that this thesis entitled **"PATTERN OF LANGUAGE DEVELOPMENT BEFORE AGE TWO: AN EXPLORATORY STUDY"** has not been submitted by me for any Degree, Diploma, Associateship, Fellowship, Title or Recognition in this or in any other Institution. This work or any part of it has not been sent anywhere for publication or presentation purpose.

University of Calicut **LISA JACOB**

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TABLE OF CONTENTS

LIST OF TABLES

Chapter - I

INTRODUCTION

1.1 Statement of the Problem

1.2 Objectives of the Study

1.3 Methodology

1.4 Relevance of the Study

1.5 Structure of the Report

CHAPTER - 1

INTRODUCTION

"*Amma*"[1], my little baby called me one day. This was the first legible word from my boy. I was thrilled. Tons of joy, excitement and happiness all rolled into me. Undoubtedly, one of the happiest moments in my life. I didn't know why I was so delighted to hear my son's first word. A lot of questions aroused deep inside. "Is it because my son accepted his identity as a son? Is it that he accepted me as his mother? Is it because, he reciprocated to my love and care through his verbal expression? Or is it because he verbalized clearly?" When I pondered on this, I slowly realized the impact of the non-verbal and verbal communications between my little one and me.

From the day one I realized he was growing in me, I was a bundle of joy. That time he might had been a small life slowly taking shape in me, but for me, he was already visible, before my eyes - a cute little human being- my new companion. Then followed the days of enjoying with my 'unseen' companion. I called him *'kuttan'*[2] and introduced myself as his *'amma'*. While shopping, making a beeline through the racks of products, I picked up a Malayalam storybook. Later in the evenings, I used to read it aloud so that my *kuttan* may enjoy it. Thus he was familiarised with the *ambiliammavan*[3],

1 Amma-The malayalam equivalent of 'mother'
2 kuttan- a loving expression in Malayalam for a son
3 ambiliammavan- used in childrens' book, meaning Uncle moon

nakshatrakumaran[4], *tavalamaman*[5], *kakachan*[6], *sundaripuuvu*[7] etc, even before he was born. I too was eager to show him all these beaming with life , once he was born into this world. Ours was a 'musical' relationship. I used to sing to him lullabies and made him listen to almost all kinds of music, sometimes dancing softly to the tunes of it. At the end of the day, I would narrate the day's experiences to him, ending it with a sweet question, *" kutta, amma parayunnatu kelkunnile?"*[8]

Finally, when holding him in my arms, I could not take away my eyes from my baby who was crying swaying his arms and legs. But it did not take him much time to recognise his amma's voice. Whenever I used to sing to him that lullaby, as though responding to something familiar, his face would brighten up with a cute little toothless smile, blink his eyes, and would rapidly move his arms and legs as though dancing. On his cradle, we had hung a colourful wind chimes, with beads hanging from it. Whenever it moved, he would gaze at it with wide-open eyes and try to touch those danglers. For my *kuttan*, crying was a medium of conveying different feelings like hunger, pain, etc. But as a mother, I could understand the nature of his needs from the tone of his cry. This I believe was a result of my long-term interaction with him. Oil baths given to him by my mother were his first occasion of socialization. He was familiarised with the touch of his *ammama*.[9] Right after

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4 nakshatrakumaran- used in childrens' book, meaning star prince
5 tavalamaman - frog
6 kakachan - crow
7 sundaripuuvu - flower
8 "dear son, aren't u listening to your mother?"
9 ammamma - grandmother

the bath, she would hold him up in her arms and playfully swing him up and down calling him loving names. He will be smiling then.

About a month later, we started experiencing the development of verbal communication with him. It slowly began to manifest in uttering monosyllables. Pointing towards a thing, he would start cooing in sounds like "aaaa….eeeee.." etc which usually meant that he wanted to hold it . Although the variety of the monosyllables uttered were less, yet the sounds produced greatly differed in its pitch and loudness. These variations were an indication of his different needs. In this period his laughing and chuckling were becoming more intense. As months rolled by, his degree of socialization also increased. Often he would reciprocate to our words and actions by different gestures and sounds. He would chuckle, swing his arms and legs excitedly and will produce some happy sounds. His slightest attempt at uttering words would delight us and we would happily go on encouraging the child.

At about six months, he was able to produce various strings of syllables. My husband, at this time, used to engage in a special verbal exercise for our son. He would slightly bend close to his ears and spell some words repeatedly, in a certain fashion – "*ma..ma..ma..ma..ma..amma, pa..pa..pa..pa..pa..pappa"**, he would say. After such three to four repetitions, much to our joy, the child would soon start imitating those words. The linguistic lessons were not confined to that alone, but each time when we took him to the garden, we made sure to stop at the small plants and flowers

and tell him about the *'poovu'*[10], *'poombata'*[11], *'kakka'*[12], *'umba'*[13] etc. Grasping some of them, with his babbling tongue, he would say, " paa..paa.., ka…ka…", etc.

The former three stages were his stage of 'pre-verbal' speech. When he became 10-12 months old, there was a slow transition from babbling to true speech. After some days, words began pouring out of the baby. Earlier he used to address me in broken syllables like '*ma..ma.*', but one day , to my delight, he for the first time, correctly called me '*amma'*. This might had been the word to which he was most exposed. Formerly, he used to utter only 'ka' for '*kakka'*, but on a fine morning, seeing a crow, he clearly told," *kakka*", in a loud happy voice. He again turned his head to the crow and repeated the word '*kakka'* and turned towards me. Later on , he picked up the utterances of some words like '*pappa*[14]*, baba*[15]*, meemi*[16]*, ammama, vava*[17]*,… etc.* but some words with some variations. At this stage, he slowly developed gaze following. Whenever my sister turned her head to a certain thing after gazing into his eyes for some time, he would also slowly follow her gaze and shift his gaze to that direction. He also began to gaze at strangers. Now, he would strike at the wind chimes and listen to its sweet music with laughter and would happily repeat the action.

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10 poovu – flower
11 poompatta - butterfly
12 kakka - crow
13 umpa - cow
14 pappa – father
15 baba - ball
16 meemi - fish
17 vava - baby

The sudden burst of language in the child, I observed, was not just a one day's miracle. But there was a fascinating connection between the social and linguistic world suggesting that language acquisition was supported by pre-verbal interaction .When my *kuttan* faultlessly says '*amma*', '*pappa'*, *'kakka'*, it is a showing result of his interaction with his cultural and social environment, where my parents, husband and sister served as the various sources and our mother tongue, Malayalam, as the medium .

Every language is crouched in its culture. So, a child learning a language is becoming more knowledgeable about the culture to which he/she belongs. This does not account only to the Linguistics but also to the set of behavioural patterns and expressions typical to that language speaking community. Thus a child brought up in a Malayali society will be markedly different from one raised in an English society. The former might be addressing its mother ' *amma'*, while the latter '*mama*'. In both cases, it is undoubtedly, the cultural and social aspects playing the role in developing the child's language.

1.1 STATEMENT OF THE PROBLEM

The present study is entitled as "PATTERN OF LANGUAGE DEVELOPMENT BEFORE AGE TWO: AN EXPLORATORY STUDY"

1.2 OBJECTIVES OF THE STUDY

The primary objective of this research work is to study the pattern of language development of children below two years of age. The list of detailed objectives is given below.

1. To collect the first words uttered by children (nearly 10 words) and to go deep into the characteristics of these words with respect to:

   (a) age range of first word acquisition

   (b) frequency of occurrence

   (c) number of letters of the word

   (d) letters used

   (e) short and long sound forms of letters

   (f) meaning of the words

2. To collect words acquired by children of or below 18 months of age and to study the characteristics with respect to:

   (a) monthly norms of word acquisition

   (b) number of letters of the word

   (c) letters used

   (d) short and long sound forms of letters

   (e) transformation of letters

   (f) meaning of words.

3. To collect a sample of early sentences on or before 24 months and to:

   (a) Classify them with respect to meaning

   (b) Study the grammatical characteristics of sentences with respect to verb, tense, noun, gender, singular – plural, pronouns, use of negatives, adjectives and adverbs.

1.3 METHODOLOGY

The study, with an exploratory nature, adopted qualitative methodology. Longitudinal and cross-sectional methods are utilized in the study. A random sample of 42 children served as the subject of study. Each child is studied for a period ranging from four to nine months. Interviews with family members and direct participant observation by the researcher are the primary methods of data collection. Before collecting final data a pilot study was carried out. After the pilot study, data were collected in three phases. In the first phase, first words of 30 children are collected. In the second phase, data were collected from 25 children upto the age of 18 months. During the third phase, the attempt was to collect a representative sample of sentences before 2 years. The results are mainly analysed on a normative basis.

1.4 RELEVANCE OF THE STUDY

There is no dearth in studies which focus on the universal features and cross-cultural variations in language development. But such studies are extremely rare with respect to Indian languages. Most of the available studies share a linguistic orientation rather than a developmental orientation. Even

linguistic studies on the language of children are non existent in Malayalam language. Present study can be considered as an introductory attempt to understand the culture-specific and language-specific pattern of the development exhibited by the children of Kerala with respect to their mother tongue Malayalam.

1.5 STRUCTURE OF THE REPORT

This thesis report is divided into five chapters. The first chapter is the introductory chapter with the statement of the problem. The second chapter provides the theoretical and empirical review on the language development. The third chapter is devoted to the narration of the methods used in this study. Normative level analyses and the inferences derived from them are presented in the fourth chapter. The final chapter describes the summary of the methods and findings of the study.

Chapter - II

LITERATURE REVIEW

CHAPTER -2

LITERATURE REVIEW

This chapter is intended to provide an overview of the chief concepts applied in this study by reviewing the existing research and literature. The important areas dealt with in this regard are the conceptual, theoretical and empirical perspectives on language and language acquisition.

The first section of the chapter primarily deals with the concepts of language, which is followed by the description of the concepts of language acquisition. The third section is a detailed description about the different stages of language development such as the pre-linguistic stage, emergence of first word, and finally the combination of words. Fourth section deals with the variations in child language, followed by cross-linguistic variations in language development. The chapter ends up with a section formulating studies on Indian languages and features of Malayalam language.

2.1 LANGUAGE

Every human group uses language as a remarkably complex symbolic system of communication. According to Brown (1965, cited by Gross, 2005), language is a set of arbitrary symbols: 'which, taken together, make it possible for a creature with limited powers of discrimination and a limited memory to transmit and understand an infinite variety of messages and to do this in spite of noise and distraction.' Many definitions of language have

been proposed. Henry Sweet, an English phonetician and linguistic scholar, stated: “language is the expression of ideas by means of speech-sounds combined into words. Words are combined into sentences, this combination answering to that of ideas into thoughts”(Cited by Britannica,1967).

According to the U.S linguists Bloch and Trager (1942,cited by Britannica, 1967) “a language is a system of arbitrary vocal symbols by means of which a social group co-operates”.

The American Speech-Language-Hearing Association defines language as follows: (Committee on Language, 1983, cited by Hulit & Howard, 2006)

- Language is a complex and dynamic system of conventional symbols that is used in various modes for thought and communication;
- Language evolves within specific historical, social and cultural contexts;
- Language, as rule governed behaviour is described by at least five parameters – phonologic, morphologic, syntactic, semantic, and pragmatic;
- Language/learning and use are determined by the intervention of biological, cognitive, psychosocial and environmental factors;

- Effective use of language for communication requires a broad understanding of human interaction including such associated factors as non-verbal cues, motivation and socio cultural roles.

A number of considerations enter into a proper understanding of language as a subject:

1. Every physiologically and mentally normal person acquires in childhood, the ability to make use, as both speaker and hearer, of a system of vocal communication that comprises a circumscribed set of noises resulting from movements of certain organs within his/her throat and mouth. By means of this he is able to impart information, to express feelings and emotions, to influence activities of others and to comfort himself with varying degrees of friendliness or hostility toward persons who make use of substantially the same set of noises.

2. Different systems of vocal communication constitute different languages; substantially different systems of communication that may impede but do not prevent mutual comprehension are referred to as dialects. In order to describe in detail the actual different speech patterns of individuals, the term idiolect, meaning the speech habits of a single person, has been coined.

3. Normally, people acquire a single language initially as their first language, or mother tongue, the language spoken by their parents or by those with whom they are brought up from infancy.

4. Language is species – specific to man. Other members of the animal kingdom have the ability to communicate through voices, but the most important single feature characterizing human language, against every known mode of animal communication is its infinite productivity and creativity (Bloch and Trager, 1942, cited by Britannica, 1967).

To parents, children's first words are among the most exciting events in their development. Language opens up new, much more efficient ways to communicate. The parents can now hear some of what the child is thinking; they can ask a question or give an instruction and get a verbal response. Emerging language is one example of a general capacity for symbolic representation that is, the use of ideas, images, sounds, or some other symbol to stand for objects and events.

The capacity for symbolic representation appears during a major transition period the transition from infancy to childhood. This transition is called the toddler period because its coincides with the time that children learn to walk. The toddler period begins at roughly 12 months of age and extends to about age 30 months.

Because mastery of language is such an important accomplishment of the toddler period. Language is one of the most complex system of rules, a person ever learns, yet children in a wide range of different environments and clusters learn to understand and use their native language in a relatively short period. Their ability to do this, strongly suggests that human infants are prepared to respond to language environment and to acquire language skills.

The above definitions clearly point to the fact that language is a system of communication in which words and their written symbols combine in various regulated ways to produce infinite number of messages. Thus language serves a wide range of purposes for the developing child: It helps him interact with others, communicate information, and express his feelings, wishes, and views. Children can use language to influence other people's behavior, to explore and understand their environment by discussing it with others, and to escape from reality whenever they want through fantasy (Halliday, 1975). Language helps children to organize their perceptions, direct their thinking, control their actions, sharpen their memories, and even to modify their emotions. And, above all, language helps them learn new things.

An important part of children's language learning is the development of communicative competence. That is, they must acquire the ability to convey their thoughts, feelings, and intentions in an organized and culturally patterned way. This capacity for meaningful and understandable communication helps to maintain and to regulate human interactions (Haslett, 1997, cited by Hetherington & Parke, 2003). In addition, communication is, by definition, a two-way process; we send messages to others and receive messages from them. Thus, language requires us to both produce and receive communication. Not surprisingly, these two aspects of language are often referred to as productive language and receptive language.

Prior to 1976, linguists addressed the studies on language acquisition, primarily from the foreign languages like English, French and Chinese. But a

very few studies on language acquisition were conducted in Dravidian language like Malayalam. In this context this thesis tries to explore how children can acquire the basic rules or patterns of language development in Malayalam.

2.1.1 Origin of Languages

Several ancient people attributed the origin of language or speech to an important divinity, the ancient Egyptians to Thoth, the ancient Indians to Indra, the ancient Greeks to Hermes, and so on. According to the Biblical account in Genesis 'the whole earth was of one language' until the Lord punished mankind for having built a tower leading to the heaven with the confusion of languages or Babel.

Several modern scholars like the Italians Alfredo Trombetti and Carlo Tagliavani uphold the 'monogenetic' theory of language, according to which there was originally only one language, which in the course of time subdivided into main branches, secondary branches, linguistic families and individual languages. Other scholars, led especially by Friedrich Muller, have suggested the 'polygenetic' origin of language, according to which there were, from the beginning, many different linguistic families.

There are several theories regarding the origin of language.

i) The onomatopoeic theory is that Man's first words were imitations of natural sounds, particularly those made by animals

ii) The interjectional theory is that Man's first words were ejaculations based on strong emotions, such as pain, joy, surprise, and so on.

iii) The nativistic or 'echo' theory is that 'everything that is struck, rings' – there being an inner harmony between sound and sense.

iv) The gesture theory is that as Man acted with his body, especially with his hands and his facial expressions, 'his tongue followed suit without his knowing it'.

v) The naturalist theory, which asserts that language, was a spontaneous product of human nature.

The number of words produced by any of the first four theories represents a negligible part of the vocabulary of any language and certainly none of these theories would produce any grammar or syntax. The origin of language seems to be much more complicated and neither the study of the cultured languages, ancient or modern, nor the most primitive languages of today offers a sufficient explanation of their origin (Caxton, 1967).

Now we will consider the classification of language.

2.1.2 Classification of Languages

The numerous languages now spoken, or already extinct, can be classified either according to structural patterns or according to genetic relationship in linguistic families. There are 3 main categories of structural patterns. These are (a) 'isolating' or 'analytical'; (b) 'agglutinating' or

agglutinative'; and (c) 'flexional' or 'inflecting'. Very few languages, however, can be defined as purely isolating or agglutinative or flexional, we can only say that the one or the other type predominates.

(a) The 'isolating' 'analytic' category includes the numerous Tibeto-Chinese linguistic family and several Negro-African languages, the majority monosyllabic. Chinese, a monosyllabic language may be regarded as its type specimen. It does not contain terminations or other grammatical forms; each word is a concrete, unalterable block, and there are no external or internal changes to reveal what part it plays in the sentence. Every word whatever its place in the sentence-has an existence of its own and can be used in isolation.

(b) In 'agglutinative' languages the grammatical relationships are expressed by separable elements, which have no meaning on their own and thus cannot be employed in isolation, but are used as 'prefixes' or 'suffixes' or 'infixes'.

(c) 'Inflexional' languages include, at least in theory, the two most important linguistic families, the Indo-European and the Hamito-Semitic. In them, the words are inflected or modified internally and they possess grammatical endings (Caxton, 1967).

2.1.3 Components of Language

Children learn about the sounds, meanings, structures, and uses of language in specific contexts, and they learn all these things simultaneously.

However for purposes of analysis, scholars divide the study of language into five main areas: syntax, morphology, phonology, semantics, and pragmatics –the basic rule systems found in language.

1) Syntax

The form or structure of a sentence is governed by the rules of syntax. These rules specify word, phrase, clause, and order, sentence organization, and the relationships between words, word classes, and other sentence elements. Sentences are organized according to their overall function; declaratives, for example, make statements, and interrogatives form questions. The main elements, or constituent parts of a sentence are noun and verb phrases, each composed of various word classes or word types.

2) Morphology

Morphology is concerned with the internal organization of words. Words consist of one or more smaller units called morphemes. A morpheme is the smallest grammatical unit and is indivisible without violating the meaning or producing meaningless units.

3) Phonology

Phonology is the aspect of language concerned with the rules governing the structure, distribution and sequencing of speech sounds and the shape of syllables. A phoneme is the smallest linguistic unit of sound that can signal a difference in meaning. Phonological rules govern the distribution and sequencing of phonemes within a language; distributional rules describe

which sounds can be employed in various positions in words. Sequencing rules also address the sound modifications made when two phonemes appear next to each other.

4) Semantics

Semantics is a system of rules governing the meaning or content of words and word combinations. Categories allow language users to group similar objects, actions and relationships and to distinguish dissimilar ones. Semantics is concerned with the relationship of language form to our perceptions of objects, events, and relationship or to cognition and thought. The actual words or symbols used represent not reality itself but our ideas or concepts about reality. It is useful at this point to make a distinction between world knowledge and word knowledge: world knowledge refers to an individual's autobiographical and experiential understanding and memory of particular event. In contrast, word knowledge contains word and symbol definitions and is primarily verbal.

5) Pragmatics

Pragmatics is a set of rules related to language use within the communicative context (Bates, 1999, cited by Hetherington & Parke, 2003). That is, pragmatics is concerned with the way language, is used to communicate rather than with the way language is structured. Every speech utterance is called a speech act. In order to be valid, each speech act must meet certain conditions. Three general categories of rules concern alternation, co-occurrent constraint, and sequence. The alternation rules relate to the selection of linguistic forms. Rules for co-occurent constraint limit the forms that may be used when speakers assume roles or use another dialect.

Sequential rules regulate the use of certain ritualised sequences in various social situations.

The above section provides an overview of the primary components of language. Next we explore the process underlying language development described in terms of the sequences that children pass through as they learn to talk.

2.2 LANGUAGE ACQUISITION

The process of language acquisition is often described in terms of a continuum or process of gradual change, starting soon after birth at a point that precedes intentional communication and leading to the stage where children are able to use language in more complex ways, such as asking questions and indicating plurality. However, this process does not always proceed evenly. There are often growth spurts, when change is very rapid, as well as plateaus, when progress seems to slow and little change in skills is evident. Language development is also frequently described in terms of a sequential set of milestones, steps, or stages of achievement, such as ‘the pre-verbal stage’ or the ‘single-word stage’.

Language acquisition is the term most commonly used to describe the process whereby children become speakers of their native language or languages, although some linguists prefer to use the term language learning, and Halliday (1975) refers to the process as one of learning how to mean. Some of the theories of language acquisition are presented below.

2.2.1 Theoretical Approaches to Language Acquisition

The task of constructing a general theory of language development is hindered by the broad scope of “language” behaviour. A theory of language acquisition must explain not only why children say what they do, but also why they eventually speak like adults. This developmental perspective obviously presents researchers with additional concerns.

This section deals with the theoretical debates and frameworks that have influenced research on language development. They are organized into four main groups, the nativist, behavioural, emergentist, and interactionist approaches. The interactionist position is further subdivided into the cognition/language interaction approach and the social/language interaction approach.

2.2.1.1 Nativist approaches to language development

The nativist approach advocated by Chomsky, Fodor, and Pinker, was first introduced in the 1960’s. This approach has had, and continues to have, a profound influence on investigations of language development in typical as well as atypical populations. Although there are different variants of the approach, all include four key claims: (Abbeduto and Boudreau,2004)

1. The human brain is especially well designed to learn language and, thus, every child is born with the capacity to learn a language. The innate language component has been labeled a language acquisition device or LAD.

2. This capacity consists of a tacit or implicit knowledge of the properties common to all languages and of the constraints on the ways in which languages can differ. This “advance” knowledge leads the child to generate only a limited number of sensibly constrained hypotheses about the input language (eg., rather than relying on trial-and-error).

3. The child needs to encounter only a limited number of key examples in the input language to arrive at the necessary language-specific categories and rules. These key examples represent very basic “facts” about language and are likely to be available in virtually all environments. Thus, normal variations in children’s environments are unlikely to have much of an impact on language development.

4. The capacity to learn language operates in modular fashion, meaning it is tuned especially to processing linguistic representations and rules and requires little if any input from more general cognitive processes or other mental functions.

It is important to present two caveats at this point regarding the nativist definition of language, which is rather narrow compared with the skills and knowledge typically targeted in language development and intervention research. First, the nativist claims are intended to apply largely to learning the forms of language (ie., phonology and syntax). Although there are thought to be innate constraints on learning word meanings and on learning how to use language for social interaction, they generally are assumed to be fewer and more general. Second, nativist claims are restricted largely to the acquisition of language competence rather than language performance; ie., they are focused on knowledge of language forms abstracted away from the ways in which that knowledge is accessed and used in real-time, contextually sound acts of speaking and listening (Abbeduto and Short-Meyerson, 2002, cited by Abbeduto and Boudreau,2004).

Research supporting the nativists approach has followed several lines. Slobin (1982) found that young children use subject-object word order, regardless of the order used by mature speakers of their native language, thus it may be a universal. Mc Neill (1966, cited by Bowerman *et al.,* 2001) argues that the LAD also allows children to presuppose the existence of grammatical closes, such as nouns, verbs etc, because these classes are common to all languages and are acquired relatively early in development. Molfese (1989, cited by Bowerman *et al.,* 2001) even found that infant's brains responded asymmetrically to language sounds versus non-languages sounds.

2.2.1.2 Behavioural approach

In the behaviourist view of language, imitation and conditioning account for language development. Proponents of this school of thought claim that children try to imitate the language they hear around them and pair the words and sentences they hear with environmental events. They receive social rewards such as smiles and other forms of approval for being increasingly correct in both pronunciation and meaning, and their initially babyish attempts at language eventually become replaced with appropriate adult forms. As is consistent with the behaviourist approach, the mental events which may accompany such responses are not included in this account of language development, because mental events are not open to direct observation. The basics of this theory are the stimulus, which may be an environmental occurrence such as the appearance of a cat and the expression of the word “cat” by an adult, and the response, the child’s attempt to imitate the word he or she hears. The process of forming such associations is known as conditioning. The associations formed between arbitrary verbal stimuli and internal responses are often cited as the source of word meanings. Classical conditioning is used to account for the interrelationship of words and word meaning.

Whereas behaviourists use the principles of classical conditioning to account for the child’s development of receptive vocabulary, additional learning principles must be applied to explain productive speech. Operant conditioning is the form of learning most often used to fill this role. Operant

conditioning concerns the changes in voluntary, nonreflexive behaviour that arise because of environmental consequences contingent upon that behaviour.

Clearly, behaviourists emphasize performance over competence. Eschewing the structure of language, behaviourists focus on the functions of language the stimuli that evoke verbal behaviour, and the consequences of language performance. The learning principle of reinforcement, according to the behavioural approach, plays the major role in the process of language acquisition.

2.2.1.3 Emergentist approach

Emergentism holds that the child's language learning is deeply and continuously embedded within language learning environment. Moreover from an emergent perspective, language acquisition is seen as a dynamically evolving process that can be represented as a distribution of probabilistic information. Emergentism also holds that the capacities that are involved in acquiring language are also those responsible for its real time use (eg. Mac Whinney, 1999; Marchman, 1997; Thelen and Smith, 1994; Seidenberg and Mac Donald, 1999). From this alternative perspective, language knowledge is no longer seen as resulting from abstract, context-free, deterministic grammatical rules, but is instead the result of the child's simultaneous integration of acoustic, linguistic, social and environmental cues within the context of real-time communicative interactions. Thus, as Mac Whinney (1999) notes, "emergentism" replaces the traditional opposition between nativism and empiricism with a new conceptual framework, explicitly

designed to account in mechanistic terms for interactions between biological and environmental process.

Two formalistic approaches that have been employed recently to characterize the predictions of the emergent account are connectionist modelling and dynamical systems theory. The goal of connectionist theory is to account for the seemingly rule-governed regularities exhibited by children learning language through a distributed network of connected processing unit (e.g. Elman, 1997; Marchman, 1997).

Principles of dynamical systems theory provide a second foundation for the Emergent account of language acquisition. From a dynamical systems perspective, complex behaviours, such as language, are seen as "softly assembled", emerging from the interaction between the intrinsic properties of the child and extrinsic contextual factors. Thus, principles of dynamical systems theory provide a theoretical account of the child's probabilistic language learning as embedded within the external language learning context at all times (Thelen and Smith, 1994, Port and Van Gelder, 1995).

Taken together, an Emergent view of language acquisition suggests that the child's acquisition of language is an evolving process that is the result of the interaction between the child's biological abilities to map statistical properties of the language input into a distributed representation and the characteristics of the language learning environment.

2.2.1.4 Interactionist approaches

Most modern theorists of the development of language take the interactionist view, recognizing that language is learned in the context of spoken language but assuming as well that humans are in some way biologically prepared for learning to speak. Interactionists are concerned with the interplay between biological and environmental factors in the acquisition of language. There are three basic types of interactive approaches.

i) Piaget's cognitive approach ii) Information Processing approach and iii) social interaction approach.

i) Piaget's cognitive approach

The cognitive theory of Jean Piaget has a number of important implications for the development of language. Most important is Piaget's assumption that language is not a separate innate characteristic, but it is rather only one of several abilities that result from even more basic, general changes in cognition (Bates and Snyder, 1985, cited by Bowerman *et al.,* 2001). The sequence of cognitive development, then, largely determines the sequence of language development.

Piaget (1975, cited by Bowerman *et al.,* 2001) states that the complex structures of language might be neither innate nor learned instead, these structures emerge as a result of the continuing interaction between the child's current level of cognitive functioning and his/her current linguistic, and non linguistic environment. This interactive approach is known as constructivism as opposed to strict nativism or empiricism. According to Piaget, the performance "limitations" provide some of the most useful data. Children's linguistic performance, including their errors, may reveal not only their knowledge of the structure of language, but also the structure of their knowledge. The cognitive constraints and abilities that determine linguistic performance are assumed to be the same ones that underlie the child's language competence.

According to Piaget, the child needs to complete, or nearly complete, the sensorymotor period (birth to approximately 18 to 24 months) prior to using language. This period of development is depicted as pre linguistic since

the child has not yet acquired the mental representational skills that are necessary for symbol usage. Words, because they can represent or stand for objects, events and properties, constitute the quintessential symbol. In Piaget's account, children in the sensory motor period understand the world only through direct sensation (Sensory) and the activities they perform upon it (motor). These children do not yet recognize the separate and continued existence of objects, apart from their own direct experience of them.

During the second year of life, children establish the concept of object permanence, understanding the objects have permanence and an identity apart from their own perception. If young children search accurately for an object after hidden displacements, then such behaviour is interpreted by Piaget as indicating that the children have formed a mental image or representation of the hidden object. Symbolic play in children also is seen by Piaget as utilizing mental representational skills and thus is related to language development as well.

Sinclair de Zwart (1969, cited by Bowerman *et al.,* 2001) argues that a child in the sensory motor period has no need for symbols to represent objects in the environment since the objects are either present, hence serving us their own represents, or they are totally absent and non existent for the child. Once object permanence is achieved, the child may begin to use symbols to represent objects that are no longer present, and these symbols become the child's first true words. In this view, then, object permanence is a necessary precursor for language.

Tomasello and Farrar (1984) suggested there is a close relationship between object permanence and relational word usage in early language acquisition. They concluded that relational words requiring the conceptualisation of the visible displacement of objects should emerge during stage 5, those involving invisible displacements of objects during stage 6, and those referring to more complex spatial displacements only later during the pre-operational period.

Smolak (1980) examined the relationship of object permanence and classification skills to receptive, as well as expressive, language development in infants between 0:9 and 1:3. Results indicated that object permanence, classification, and parent-child verbal interaction ratings were about equally related to language comprehension functioning. No prerequisite stage of object permanence functioning could be discerned. On the other hand, object permanence was more strongly related to language production than were classification and verbal interaction. Furthermore, it appeared that a minimum of stage five object permanence functioning was necessary prior to the onset of language production.

Gopnik and Meltzoff (1986) examined the relationship between semantic category and cognitive development. The results suggest that children acquire the word ‘gone’ after they solve simple invisible displacement tasks but before they solve serial invisible displacement tasks. They also show that children acquire success/ failure words after they use insight to solve the problem of the string but before they use insight to solve

more difficult means-ends problems. Children seem to acquire words that encode concepts they have just developed or are in the process of developing. These findings raise strong and specific links between the acquisition of particular types of meanings and particular cognitive achievements.

The work of Slobin (1979, cited by Bowerman *et al.,* 2001) further suggests that the acquisition of a particular productive morpheme (e.g: tense or plural as markers) follows the child's understanding of the semantic properties that the morpheme encodes.

Bates *et al.,* (1983, cited by Bowerman *et al.,* 2001) concluded that children use cognitively based meaning to decipher the grammatical code in their language. Indeed, early grammars based upon cognitive-semantic categories seem to be the strongest asset of the cognitive-interactionist approach .

In summary, the Piagetian approach views language as only one expression of a more general set of human cognitive activities. Proper development of the cognitive system is considered a necessary precursor of linguistic expression.

ii) Information processing approach

This paradigm is common in experiments on human memory, perception and problem solving. In essence, the human information processing system is a mechanism that encodes stimuli from the environment,

interprets those stimuli, stores in memory stimulus representations and result of operations on them and allows information retrieval.

Although there are several information processing approaches to language, we will focus on one of these, known as the competition model (Mac Whinney, 1999). This model emphasizes both structure and function in learning language.

There are two basic types of information processing. In serial processing, operations are performed one at a time, sequentially, whereas in parallel processing, multiple operations occur simultaneously.

More recent cognitive approaches assume that parallel processing underlines language. In parallel processing, networks of processors are connected such that operations or decisions proceed concurrently. These networks have come to be called parallel –distributed processors or PDPs (Rummelhart and McClelland, 1987). They consist of multi layered networks of connections that function to interpret linguistic input and generate speech. The way PDP network function allows predictions to be made, concerning the course of language development. According to the competition model, the rate at which a particular linguistic form is mastered is determined by the native of the form-function relations in that language system, and the way these relations are presented to children.

iii) Social interactionist approach

An advocate of the social interaction view, Jerome Bruner has proposed that the environment provides the language – learning child with a language acquisition support system, or LASS (Bruner, 1983, cited by Hetherington and Parke,2003). In contrast to nativists like Chomsky, whose concept of the LAD he parodies, Bruner emphasizes the parents' or primary caretakers' role as facilitators of language acquisition. During children's earliest years, parents support their development of language and their comprehension with several strategies. They monitor their child's apparent goals or intensions closely, and in general they try to modulate, correct, or elaborate their child's behaviour rather than specifically redirect it. "And they construct an internal model of their child's current preferences, skills, and world knowledge, which they continuously update and check" (Fischer and Bullock, 1984, cited by Hetherington and Parke, 2003).

We turn now to a series of techniques that adults use to facilitate language acquisition in their children. These techniques include playing nonverbal games, using simplified speech, and elaborating on and rewording children's own utterances to help them sharpen their communicative skills.

Playing Nonverbal Games;- Parents make some of their first efforts to "converse" with their children in early non-linguistic games. Children learn some structural features of spoken language, such as turn taking, from these games. And because these kinds of games involve regular, repetitive, and thus predictable behaviours, they may also lay a foundation for the systematic rule of language. At first young babies aren't capable of either initiating or

responding in “conversation”, to say nothing of taking turns, but parents help them learn this social skill by carrying more than their share of early dialogues and by waiting for pauses in the infant’s vocal or motor behaviour and then inserting an appropriate response. This supportive activity of parents may contribute not only to later give and take in conversation but also to social turn taking in play and formal games (Garvey, 1990, cited by Hetherington and Parke, 2003).

Using Simplified Speech**:-** Another part of LASS is parents’ habit of modifying their speech when they talk to infants and children. Typically, they use a simplified style, called infant-direct speech (also called *motherese),* in which they speak in short, simple sentences that refer to concrete objects and events and that often repeat important words and phrases. In this style of speech, parents also talk more slowly and in higher-pitched voices, enunciate more clearly, and often sentences with a rising intonation (Fernald, 1992, cited by Hetherington and Parke, 2003; Fernald & Morikawa, 1993, cited by Hetherington and Parke, 2003). The simplified grammar and syntax may help children learn the relationships between words and objects and may also give them some understanding of the rules of segmentation, that is, how speech is divided into words, phrases, and sentences. The acoustic variations can help highlight important words. And infants show a preference for infant-direct speech even when speech is in a non-native language. For example, even when English-learning infants listened to Cantonese, they still appeared to prefer infant-directed speech (Werker, *et al.,*1994, cited by Hetherington and

Parke, 2003). Kuhl (1997, cited by Hetherington and Parke, 2003) conducted a study of motherese in the United States, Sweden, and Russia and has suggested that parents everywhere emphasize three "primary vowels" – *ee*, *ah*, and *oo* – when speaking to their infants, that these vowel sounds are common to every spoken language in the world, and that hearing these sounds helps babies learn to distinguish major sound differences and makes it easier for them then to learn finer distinctions among vowel sounds.

Those who advocate the interactionist view hold that although the child is probably biologically prepared for learning language, there is also strong support for the role of environmental input in the child's development of language.

The above section gives an understanding of theoretical explanations for the processes involved in language acquisition. The next section will describe the stages that children pass through as they learn to communicate as a basis for understanding how children begin to talk.

2.3 STAGES OF LANGUAGE ACQUISITION

Like any ability a child's skill with language does not appear all at once but emerges in stages of development. The child proceeds through babbling, single-word speech, and two-word sentences, and then learns to elaborate and combine these primitive sentences. The field of language acquisition has studied the development of this sequential process in children learning a number of different native languages. The establishment of stages

of language acquisition is probably the best-known outcome of research on children's language.

Major stages of language acquisition are (i) the period of pre-linguistic development (ii) the period of first words and (iii) the period of word combinations. The detailed discussion of these stages of language development is set out below.

2.3.1 Pre-Linguistic Stage

This section is to conceptually clarify aspects related with pre-linguistic development such as emergence of auditory patterns, and of articulatory patterns.

The first year of child's life may be referred to as the period of prelinguistic development (Ingram, 1989). In the pre-verbal stage, as in language, expressive vocalizations may mark as two distinct kinds of functions: (a) those that express the infant's participation in interpersonal exchanges, and (b) those that reflect internal perceptual and cognitive processing during solitary activity – a kind of 'thinking' aloud' (Vygotsky, 1962; Papousek and Papousek 1981; Diaz and Berk, 1992, all of them are cited by Papaeliou and Trevarthen, 2006).

Lynch *et al.,* (1995) examined phrasing universal characteristics of human communication, in vocalizations produced by typically developing infants from age 2 months to age 12 months. Their findings showed that prelinguistic vocalizations were composed of a hierarchy of grouping

structure with internal cohesiveness, as reflected by acoustic characteristics and in adult perception capacities involve perceptual, linguistic and cognitive systems and are likely to be complex. A newborn begin life with a remarkable sensitivity to the acoustic cues that signify different basic elements of speech. The developmental achievements that allow infants to use the different kinds of information in the stream of speech in their elaboration of language - specific sensitivities are described below.

2.3.1.1 The emergence of auditory patterns

During the first year of life, the child goes through a complex set of experiences that lay down an extensive perceptual and motoric framework for the learning of the first words. On the perceptual side, the child actively encode the raw sound patterns of its native language, organizing these patterns into types and sequences. Eimas *et al.*, (1971) showed that the ability to detect the contrast between /b/ and /p/ is present soon after birth. Initially, it was thought that these abilities were innate components of a species-specific language gift. However, researchers soon showed that these abilities were shared with other mammals, such as chinchillas (Kuhl and Miller, 1978) and monkeys (Kuhl and Padden, 1983).

Given the fact that children do not yet understand the words they are hearing, their attentiveness to sound is all the more remarkable. Recent research shows that they are attending not just to the individual phonemes they hear, but even to longer-range patterns, such as syllabic sequences. For example, Saffran *et al.*, (1996) have shown that when 8-month-old children

listen to long sound sequences such as dabigogatanagotidabigo, they appear to pull out repeated sequences such as dabigo. They demonstrate this by tending to listen to these familiar sequences more than to similar new sequences.

Infants also demonstrate an early attentiveness to the prosodic characteristics of the language they are hearing. Soon after birth, infants tend to prefer sounds produced by their own mothers to those produced by other women (De-Casper and Fifer, 1980). Jusczyk and Aslin (1995) suggest that infants are able to detect, access and use fine phonetic detail to distinguish familiar from unfamiliar items. They also prefer their native languages to other languages (Moon *et al.,* 1993). These preferences are probably dependent both on the infant's ability to detect speaker-specific vocal characteristics and on the detection of language-specific prosodic patterns. Infants seem to be sensitive early on to the presence of international organization in the language they listen to. Using the sucking habituation technique, Mandel *et al.,* (1994) showed that 2-month-olds tend to remember word strings better when they are presented with normal sentence intonation, than when they are presented as an integrated lists of words with flat prosody. It appears that stressed intonation may have a particularly important role in picking up auditory strings. Jusczyk and Aslin (1995) have shown that children tend to pick up and learn stressed syllables above unstressed syllables. However, it also appears that syllables that directly follow after a stressed syllable are also well encoded (Aslin *et al.,* 1997). As a result, many of the first sound sequences recorded by the child consist of a stressed peak

followed by one or two further weak syllables. This pattern of sound learning has been discussed as a 'trochaic bias". However, it can also be viewed as emerging from the combination of a bias to track stressed syllables together with a linear sequence recorder that fire when a stressed syllable is detected.

Papaeliou and Trevarthen (2006) studied whether pitch patterns of pre linguistic vocalizations could discriminate between social vocalizations, uttered apparently with the intention to communicate, and 'private' speech, related to solitary activities as an expression of 'thinking'. The findings showed that pre linguistic vocalizations might serve both as means of purposeful communication and as a tool of thought. These are the functions later assumed by languages.

2.3.1.2 The emergence of articulatory patterns

During the first year of life, the infant's articulatory abilities also progress through radical transformations. The basic shape of these changes has been documented since the beginning of the century. We know that children's first vocalizations include the birth cry, the pain cry, the hunger cry, and the pleasure cry. These cries are tightly linked to clear emotional states (Lewis, 1936, cited by MacWhinney, 1998). By the age of 3 months, children begin a type of a social vocalization known as cooing. Around the age of 6 months, children begin a form of sound play that we call babbling. At first, babbling involves the sporadic production of a few simple sounds. These sounds include some strange sounds like clicks that are not found in the input. However, it is not true that each child babbles all the sounds of all the

world's languages. Nor is there much evidence for any tight linkage before nine months between the form of the child's babbling and the shape of the input language (Boysson-Bardies and Vihman, 1991), However, around 11 months, there is increasing evidence for a drift toward the segments and prosody of the target language (Levitt *et al.,* 1993), as the child begins to move into the period of the first words.

Opinions vary on whether there is a connection between babbling and speech. Jakobson (1968) proposed that there is a discontinuity between babbling and speech. He argued that the sounds produced prior to meaning had no relation at all, to those used once an infant attempted to produce words. Indeed, he even suggested that there was a period of silence between the babbling period and the onset of true word production in many children, and that this underlined the fact that one vocal production system was being supplanted by another. At the onset of word production, infants were believed to add sounds in a regular and systematic way, in essence filling out the structure of a formal phonological system.

More recently, it has been shown that infants do not stop babbling prior to beginning to speak. Furthermore, although the phoneme inventories used in babbling and speech may not be identical, careful transcriptions of children's production make clear that those sounds they can articulate well in babbling influence those they attempt to make when first producing words (Vihman and Miller, 1988).

The aim of the next section is to explain the ways in which the learning of the first words emerges from the linkage of auditory, articulatory, and conceptual systems.

2.3.2 The Emergence of the First Words

This section presents the emergence of the first words; it describes the characteristics of first words, the sound of first words, the first lexicon, the shape of vocabulary growth, meaning of first words and the theories of word meaning.

Many experts view the first word as the product of the pragmatic developments during infant communication. The first word is not merely the first step along the way to language; instead, the first word is recognized as the natural outgrowth of communication established through the gestured and vocal precursors that evolved throughout the preceding year. Infant's capacity to direct other's attention to objects of interest progressed through several abilities. Infants were first able to use head control and eye gaze to indicate an object of interest (visual reference). Later, reaching refined itself to include pointing and became an available means of directing attention (gestural reference).

The earliest gestures children use, typically beginning around 0;10, are deictic – gestures whose referential meaning is given entirely by the context and not by the form of the gesture (e.g. pointing at a doll to indicate a doll, holding up a bottle to draw another's attention to that object). At this early

stage, deictic gestures are a tool to refer to objects before they have words for those objects and, as shown in earlier work, children often produce deictic gesture for a particular object (point at dog) approximately three months before they produce the verbal label for that object dog (Iverson & Goldin-Meadow, 2005). In addition to deictics, children also use a second type of gesture-iconic or representational gestures. Unlike deictics, the form of a representational gesture captures aspects of its intended referent and its meaning is therefore less dependent on context (e.g. aping hands with the arms out to represent bird, holding a st-shaped hand by the ear to represent telephone) (Acredolo and Goodwyn, 1988; Iverson *et al.*, 1994). Importantly, Acredolo and Goodwyn (1988) found that the more representational gestures children had in their communicative repertories at 1;7, the larger their verbal vocabularies would be at 2:0, suggesting that there is a direct link between early gesture use and word learning.

In response to toddler's reaching and pointing, caregivers frequently offered the objects of interest and labelled them. This perhaps protected the model for infants' next behaviour combining a gesture and a vocalization to obtain objects and attention (Vocal reference).

In a study, Rodrigo *et al.*, (2004) have found that the younger children usually pointed alone or combined with a vocalization to objects placed within the boundaries of the visual field. The gestural and verbal deixis may serve for early verbal development and specifically, to the grounding of reference.

A study by Iverson and Goldin-Meadow (2005) revealed that gesture had a close relation to the children's lexical and syntactic development.

Finally the distinctive vocalizations that so often accompany gestures become conventional forms – the first words. Toddler's attempts at using conventional words are of huge significance. There is strong evidence that they are responding to the connection between speech and the objects, events and relations in their environment.

2.3.2.1 Characteristics of first words

During their first 14 - 15th months, infants learn to extract words from the speech stream, to recognize word forms they have previously heard, to associate words with objects, to understand the meaning of some words, and even to produce some words. Although infants select sounds and are capable of articulating when attempting to produce words, there are differences between babbling and speech. First, in the initial stages of word learning, children do not always produce correctly or consistently even sounds they have mastered in babbling. Indeed, children often eliminate, substitute, or mix the order of segments (e.g. Ferguson and Farwell 1975). Moreover, a child might substitute one word by a sound that she seemed unable to produce in a different setting, for example calling dog gog but calling truck duck (Gerken, 1994). This variability suggests that when learning words for first time, infants may not represent all the details found in adult speech. Indeed, it has been suggested that they may only represent sufficient information to contrast the words in their own lexicon (Menyuk *et al.*, 1979).

Buhler (1931, cited by Ingram, 1989) looked at the age of the onset of first word in production for 46 German children and found that it occurs around 10 months.

The obvious parallel between production and comprehension is striking. Stager and Werker (1997) showed that infants aged 14 months do confuse similar-sounding words in a word-object association task, which suggests that either not all the phonetic detail of the words is represented by the infant, or that the infant does not use it. Thus, both in the increasing of their babbling toward the end of the first year of life and in the inconsistency of phonetic detail in early word production, we see parallels to the functional reorganizations involved in speech perception and word comprehension.

2.3.2.2 The sound of the first words

Although the actual first words attempted will vary from toddler to toddler, they appear to share certain phonetic characteristics (Ferguson and Farwell, 1975). Phonetically, the early attempts at producing words consist primarily of a subject of the sounds produced in the child's later babbling repertoire. For the most part, front consonants are most common. These are combined in simplified syllable patterns, such as CV, VC, and CVCV. The CVCV utterances are typically reduplicated syllables in which the CV unit is repeated, such as bye-bye, mama, dada. And, as toddlers successfully produce their earliest words using these syllable patterns (CV, VC or CVCV), subsequent words added to their vocabulary tend to follow similar structure.

Regarding the theoretical basis for CV affiliation in early syllables, the associations between dentals and front vowels and between velars and back vowels observed in English-learning infants and in some cross linguistic data seem to agree with Clements (1991) prediction of unified characteristics of the place features of consonants and vowels. In addition, some-place articulation of CV segments in early syllables and the overcoming of CV co-occurrence constraints in the developmental process support Browman and Goldstein's (1992, cited by Chen and Kent, 2005) concept of the differentiation and coordination of articulatory gestures. Both these theories assume that early syllables exhibit universal patterns of CV co-occurrence, which are governed by either phonological patterning or gestural control, and also that language specific CV association patterns that are free from universal constraint are acquired only later in development. However, except for the prominent association patterns found in several studies – dentals and front vowels –no systematic universal patterns of CV association can be identified from the diverse conclusions of counted data in previous studies.

Metsala (1999) summarised, that the development of phonological awareness might be related to the growth in children's vocabulary.

Davis and MacNeilage (1990) identified three major CV association patterns in both early words and concurrent babbling. (1) labials + central vowels(2) alveolar + high front vowels and (3) velars + high back vowels. The findings also reported that a strong association between labials and central vowels and a weak association between velars and back vowels.

2.3.2.3 The first lexicon

The term lexicon (or vocabulary) can refer generally to the total words belonging to a particular language. It might also indicate the total words an individual knows. Vocabulary has also been measured by counting the number of words comprehended. Words are clearly comprehended before they are spoken, and the number of words comprehended continues to be greater than the number of words produced all through language development and later life.

In a sample of 0:9 and 1:8 Benedict (1977) identifies, comprehension development began earlier (around 0;9) and reached the 50-word level (age1;1) earlier than production development and rate of word acquisition for comprehension was twice that of production; It indicates that comprehension precedes production for lexical development. The action is central to lexical development but is expressed differently in comprehension where action words are used to initiate actions, and production where non-action words accompany the child's actions.

Some difficulty in identifying the first words may stem from the difficulty in determining what it means to "know" a word. (Bloom and Lahey, 1978). Beyond simply responding to and producing a word, Bloom and Lahey (1978) defined five levels at which children might "know" a word. The beginning level is defined as knowing a word in its referential sense. In this level, a word simply refers to or stands for a particular object, event or relationship. Initially toddlers' production of 'doggy' refers to the particular

furry creature that lives at their house. Later, when toddlers produce ‘doggy’ in response to similar creatures in the neighbourhood, the word is known in the extended sense. Producing several words related by some meaningful context illustrates knowing words at a relational level. Eventually, in later developments, when the child responds to similarities among classes of stimuli, such as understanding that dogs are also animals, they demonstrate the categorical level of words. Finally, in achieving the meta linguistic level, children evaluate each word as a stimulus apart from its reference. This might be demonstrated when they note the number of syllables in a word or the fact that it rhymes with another word. Development through these levels is based on increasingly subtle relationships among stimuli and will develop only with appropriate experiences over several years.

Researchers have found that children had acquired words ranging from 22 to 50 words by the age of 18 months.(Smith,1926, cited by Ingram,1989; Nelson 1973, cited by Ingram,1989).

Now let us look at how fast does the first lexicon grow.

2.3.2.4 The shape of vocabulary growth

Researchers have often noted that the growth of the overall size of the lexicon does not follow a smooth linear trend. After the child has acquired an initial vocabulary of about 100 words, the learning of new words seems to progress more and more rapidly. This rapid rise in the size of the vocabulary, which has bee been called the vocabulary spurt (Bates and Carnevale, 1993;

Bloom, 1993), is more evident in some children than in others. However, Mervis and Bertrand (1994) and Dromi (1997) have shown that accurate detection of the timing of the vocabulary spurt may require following children well past the first 100 words. Mervis and Bertrand (1995) argue that the timing of the vocabulary spurt is dependent on the rate of cognitive development, with slower developers having a later spurt. They further claim that, before the beginning of the vocabulary spurt, children cannot pick up words through a few exposures. However, several experimental work by Woodward *et al.,* (1994) and Schafer and Plunkett (1997) has indicated that infants who have not yet gone through the vocabulary spurt are still capable of quick learning of new words in an experimental context.

Three accounts have been offered for the timing of the vocabulary burst and the causes of the burst. One account attributes the burst to the development of control over articulatory representations. Schwartz (1988) and Schwartz and Leonard (1981) have shown that young children tend to avoid producing difficult phonological forms. Once these output limitations are surmounted, the child is free to produce words that had been difficult to produce during earlier periods.

A second account (Mac Whinney, 1982, cited by Mac Whinney,1998) focuses on the role of syntactic patterns in the learning of new words. Often parents make extensive use of stable syntactic frames such as “Here’s the nice (toy name)” or “Show me your (body part name)”. Having learned these frames, children can quickly pick up a large quantity of new words in the

context of each frame. In this way, the vocabulary spurt could be dependent upon syntactic development. In fact, Bates *et al.*, (1988, cited by Mac Whinney,1998) reported a correlation of between .70 and .84 between lexical size at 20 months and syntactic abilities at 28 months. This level of correlation is exactly what is predicted by a model that views lexical learning as facilitated by the appearance of words in the context of well-understood syntactic frames.

In accordance with the Piagetian emphasis on cognitive determination of developmental stages, a third group of authors has attributed the vocabulary spurt to the underlying growth in those cognitive capacities (Bloom 1970; Gopnik and Meltzoff, 1987) that allow children to understand the meanings of new words. For example, one could argue that 14-month-olds are not yet ready conceptually to acquire the meanings of comparative adjectives, conjunctions, abstract nouns, speech act verbs and super ordinates. To be sure, very young children have not yet acquired complex relational concepts, such as the ones required to support the learning form like “nonetheless” “preamble” or “next Thursday” (Kenyeres, 1926, cited by Mac Whinney,1998). However, attempts to relate overall aspects of linguistic development to fundamental changes or shifts in cognitive development have seldom demonstrated strong linkages (Corrigan, 1979, cited by MacWhinney, 1998). Instead, it appears that the links between cognitive and lexical development are fragmentary and specific to particular fields (Gopnik and Meltzoff 1986).

Each of these three accounts is compatible with attempts (Bates and Carnevale, 1993; Van Geert, 1991) to model vocabulary growth as a dynamic system using logistic growth functions. The non-linear effects that emerge during the vocabulary spurt can be viewed as rising from the dynamic coupling of the lexical system with a quickly developing system of syntactic patterns, phonological advances or cognitive advances. As these various patterns develop, they feed in to vocabulary growth in a non-linear and interactive fashion, as growth in vocabulary leads to further growth in syntactic structures, at least during the several months of the vocabulary spurt.

The differences in rates of growth across toddlers may relate to various factors such as differences in experiences, and exposure to language. Differences due to socio economic factors, effects of maternal speech, care giving styles, and health related concerns, have been historically assumed to play a role in a broad way.

2.3.2.5 Meaning of first words

Markman (1989) and Golinkoff *et al.,* (1994) have emphasized that the child's search for word meanings is guided by lexical principles. For example, children assume that words refer to whole objects rather than to parts of objects. However, there is reason to believe that such principles are themselves emergent properties of the cognitive system. For example, Merriman and Stevenson (1997) have argued that the tendency to avoid learning two names for the same object emerges naturally from the competition (MacWhinney, 1989) between closely related lexical items.

Another proposed lexical principle is the tendency to focus on object names and nominal categories over other parts of speech. Gentner (1982) compared the relative use of nominal terms, predicative terms, and expressive terms in English, German, Japanese, Kaluli, and Turkish. Researcher found that in all five languages, words for objects constituted the largest group of words learned by the child. Werker *et al.*, (1998) found that infants 14 months old, but not younger could learn the association between two words and two moving object with only minimal exposure when the objects used were physically dissimilar and the words used were phonetically dissimilar.

Analysis of toddler's utterances according to the situation in which they occur also has led several researchers to distinguish several broad grammatical and semantic classifications among them. Nelson (1973, cited by Ingram,1989) in a detailed study of the first 50 words occurred by 18 children, found that words from several word classes, rather than one word class, are present from the beginning of language production while several word classes were present in the early productive lexicon. Over half of the words learned were general nominals or object words. The category of general nominals, the words for representing food terms were the largest class of words followed by animals. In addition, Nelson distinguished two broad classes of meaning in toddler's first words as either referential or expressive.

Referential words were composed of common nouns that primarily referred to objects, hence, the name of this class. In these instances, toddler's words merely pointed out objects of interest with no further significance. The

remaining words were classified as expressive words. These words appeared to have more social significance, expressing more than just the name of an object. Nelson also observed that the children themselves could be similarly classified according to their tendencies. Nouns of referential toddlers primarily indicated attention to an object. In contrast, expressive toddlers more frequently produced nouns as part of their social interactions.

In a longitudinal study, Hart (2004) stress that the size of the noun vocabulary that children learn may be the extent to which the children are matching not only the nouns but also the richness in nouns of the utterances their caregivers address to them.

Tomasello (1992) has argued that nouns are easier to "package" cognitively than verbs. Nouns refer to objects that can be repeatedly touched and located in space, whereas verbs refer to transitory actions that are often hard to repeat and whose contour varies markedly for different agents.

Bassano (2000) suggested that among nouns denoting animates, a notable frequency of proper names was found as early as the first period, during which they were used to refer to other members of the family, exclusively and repeatedly and then later animals. More abstract nouns referring to animates (animal, friend) were late and very infrequent. To conclude these findings, at the emergence of language, noun production is divided into object names and animate names.

Bloom and Lahey (1978), classified early single-word utterances as either of two large semantic categories, substantive and relational words depending on the words used and their intended meaning. Substantive words refer to specific entities or classes of entities that have certain shared perceptual or functional features. Examples include mama, dada, doggie, cup and hat. Relational words refer to several abstract relations objects might share with themselves or with other objects. Reflective relations (Bloom, 1973) represent a major group of early words that indicate the state of objects – their own existence, non-existence, disappearance, or recurrence. Also termed the basic operations of reference, they convey how the present circumstances "reflect" an object's status. Relations as expressed by words such as this, there, all gone, and number.

The remaining relational words express relationships that occur among objects. The first of these is action relational words. Beyond responding to object of interest, increasingly active toddlers are also inclined to talk about actions associated with these objects. In a related way, toddlers become more responsive to where things are-specially when they want them. This is expressed through location relational words that occur in response to the locations of objects or the direction of their movement.

Finally toddlers respond to individual features or attributes (size, shape, colour etc.) that distinguish one member of a class from other members. Attribution relational words occur, although not frequently in the

early lexicon to express individual characteristics such as big, little, funny, hot and dirty.

2.3.2.6 Child-based meanings

Several researchers have emphasized the extent to which the shape of the meanings of the first words is governed by a "child-based agenda" (Mervis, 1984, cited by Mac Whinney,1998). Children seem to be particularly interested in finding ways of talking about their favourite toys, friends, and foods (Dromi, 1997). They also like to learn words to discuss social activities and functions. In fact, Ninio and Snow, (1988, cited by Mac Whinney, 1998) have argued that the basic orientation of the child's first words and early grammar is not toward some objective, nominal, cognitive reality, but toward the interpersonal world involving people and social roles.

2.3.2.7 Over generalization and under generalization

We can refer to the formation of a link between a particular referent and a new name as "initial mapping". This initial mapping is typically fast, sketchy, and tentative. Most lexical learning occurs after the formation of this initial mapping. As the child is exposed repeatedly to new instances of an old word, the semantic range of the referent slowly widens. Barrett (1995), Huttenlocher (1974, cited by MacWhinney, 1998), and others have viewed this aspect of meaning growth as "decontextualizations". Harris *et al.*, (1988) have shown that the initial representations of words containing components that are linked to the first few contacts with the word is specific episodes or

specific contexts. Gradually, the process of generalization leads to a freeing of the word from irrelevant aspect of the context.

Those instances in which toddler's words extend beyond their conventional definitions are called over extensions. The "classics" include calling the neighbour's cat a *doggy*, calling a fork spoon, or calling the mailman *daddy*. Conversely, occurrences of toddlers over restricting words to particular contexts are called under extensions. For eg. a child who said car only when looking out the window at cars moving on the street below (Bloom, 1973).

Two primary patterns of over extensions have been identified. Chained associations occur when a word experienced in one setting is produced in subsequent settings based on similar features (Vygotsky, 1962). Chained association appear to be more prevalent during the earlier stages of vocabulary development, when toddler's experience in labelling objects is still limited. During this early period, word meanings may shift each time toddlers attempt a word. This might be influenced by their focus, the stimuli present, and their caregiver's feedback.

In contrast, wholistic associations occur when words are extended to items that share a greater number of similarities with the original referent. Wholistic associations become more common as toddler's word meanings and object concepts stabilize and approximate the adult model.

2.3.2.8 Theories of word meaning

The theoretical interpretations of children's early word meanings range over a wide spectrum representing a variety of psychological and linguistic approaches. A number of positions derive from Piaget's (1962, cited by Hetherington and Parke, 2003) account, which posited that first words represented verbal schemas essentially similar to other schemas of the sensory motor period. Although functionally related to true concepts, even the words used in the representational stage (2 to 7 years) were seen as preconcepts, without fixed and conventional meanings. For Piaget the first words are individual symbols rather than social signs, and thus their meanings are qualitatively different from those of the later developmental period.

Several hypotheses have been proposed to explain concept formation and word learning. These include the semantic feature hypothesis, (Clark, 1973) the functional core hypothesis (Nelson, 1974, cited by Bochner *et al.*, 1997), and prototype complex hypothesis (Bowerman, 1978,cited by Bochner *et al.*,1997). Each theoretical position assumes that the child organizes word concept in a certain manner based on recognition of certain aspects of the referent.

a. Clark's semantic feature hypothesis

Clark (1973) proposed a theory that emphasizes the role of perceptual features in defining classes of objects. Objects can be classified based on features such as shape, size, texture, colour and so forth. According to this theory, perceptual features most strongly influence the organization of children's vocabulary.

Gershkoff-Stowe and Smith (2004), examined children's attention to shape in a laboratory task of artificial noun learning. The results indicate that as children learned nouns early they also learned to attend to shape in the novel word.

This theory assumed that there exists a universal set of semantic primitives, and that these semantic primitives depended upon the human organism's interpretation and encoding of perceptual inputs. According to this account, the child extracts perceptual features from the examples named by a word, and uses those features to identify new referents of the label. At the level of first words, semantic features were identical to perceptual features. In this theory, the child initially attaches words to only one or two features of the word's referents, thus constituting a partial entry for the meaning of the word. The acquisition of semantic knowledge consists of the adding of features, of meaning to the lexical entry, for that word until the child's combination of feature in the entry for that word corresponds to the full adult meaning. Some have argued that certain over extensions are difficult to account for through the semantic feature theory. These include extensions involving imperfect exemplars (square bowls), quantitative or directional relationships (all gone, up) and functional similarities (Palermo, 1982 cited by Bochner *et al.*, 1997).

b. Nelson's functional core hypothesis

According to the functional core hypothesis proposed by Nelson, the child's concepts were formed on the basis of experience with object in

functional situations. Nelson extended the notion of function to include the actions of things, reactions of things and conventional uses of things. Evidence for the functional basis of concepts was seen in the kinds of things children chose to name, the vast majority of which were dynamic, not static, objects. Early studies showed the function of object to be a salient basis for categorization by infants. The course of concept formation was assumed to proceed from the identification of a single interesting object in a functionally important context; followed by identification of critical features for recognition and by attaching a word to the resulting concept.

While the hypothesis has appeal, it is difficult to find extensive use of shared function in child utterances.

c. Bowerman's prototypic complex hypothesis

Bowerman (1978, cited by Bochner *et al.,* 1997) proposed that toddlers might first base their understanding of a word on early experiences with an associated object. These early experiences form an overall model-a proto-type-that is representative of that category. As toddler's prototypes for a class evolve, their central concepts may alternate between emphasizing certain perceptual features or associated functions. It becomes a composite of the salient features and functions that accumulate with experience. The toddler's subsequent experiences with potential new members of that class are compared with this prototype to determine whether they belong and whether that word applies. Like the other theories, this perspective has appeal for explaining certain observations.

Thus, a review of the studies on the acquisition of first words among children can be seen as an important and complex step in the process of learning to talk. Around the first year, children begin to learn the words of adult language. The meanings and uses given for these words are at first very narrow, but their scope gradually broadens, guided by some early learning heuristics, which while generally helpful, seem to make certain content areas more difficult to learn. Each word acquires a range of different meanings, which may be related to each other by chains of associations or by similarities of functional or perceptual attributes. In the next section we follow children through their next great accomplishment – learning to put words together.

2.3.3 The Combination of Words

This section deals with the aspects related with combining words such as transition from single words, two-word combinations, acquisition of linguistic structure, the boot strapping problem, the central role of verb learning and the contribution of learner.

Through the first 18 months, children have normally passed a number of important communication milestones. This next milestone combining words – is significant in several ways. Putting words together is evidence of toddler's advancing motor coordination for producing longer, more phonologically complex syllable strings. Combining words reflects the cognitive ability that underlies perceiving and responding to relationships between objects or events. Behaviourally, it reflects toddler's cumulative experience of past consequences resulting from communicating their ideas

and intentions more effectively. Linguistically, combining words represents the appearance of grammar, the next level of conventional language behaviour. Of further significance is the recent finding that reaching this milestone generally requires some effort on the part of toddlers.

2.3.3.1 Transition from single words

Although one-word utterances will continue to occur toddlers normally begin to combine words into two-word utterances around 18 months of age. During this transition toddlers may struggle through trial and error to produce more than one word. Toddlers' transitional utterances appear to be attempts at expanding the character of their utterances toward multi word syntactic utterances. Some expand only the phonological nature of utterances where as others appear as efforts to combine meaningful elements (Dere *et al.,* 1976, cited by Bochner *et al.,* 1997). There are several types of transitional utterances.

Dummy forms:- Dummy forms are a transition phenomenon in which additional sounds or syllables are combined with a recognizable word. These additional syllables have no obvious reference; and their phonological characteristics are variable.

Empty forms:- Empty forms are still not recognizable as words, but they do evidence more consistent phonological structure. The same form is combined with different words as in 'mama', 'dada' (Bloom, 1973).

Reduplications:- Toddlers appear to expand the overall structure of an utterance called reduplication, which consists of a repeated word. They mimic the structure and rhythm of two-word utterances, but the additional word carries no additional meaning.

Pseudophrases:- Which consist of utterances that appear to be conventional two-word phrases for mature speakers (e.g, all gone, so big, no more). On the surface, these appear to represent more clearly.

Successive single-word utterances:- According to some analyses, multi-word utterances are acquired in two phases: a transitional phase, in which two single-word utterances are in close temporal proximity, and the two-word phase proper, in which two words are combined into a single utterance (Veneziano *et al.,* 1990). Following Bloom (1973), two-word utterances of the transitional phase have been called successive single word utterances (SSWUs). The difference between single-word utterances and SSWUs lies in the assumption that the latter form a semantic and pragmatic unit because the two-words elaborate on a single topic. In Bloom's terms, SSWUs are 'occurrence of single words in succession that are not conjoined, within the bounds of a single speech event, that is, single word utterances that share topic and context'.

D'Odorico and Carubbi (2003) found that word combinations with a semantic relationships, that is combinations in which the meaning of the utterance as a whole is different from the meaning of the two words separately, begin to be produced at the 100 – word level. In this phase,

supposed only one word carries the illocutionary force of the utterance so that the other word would be uninformative in isolation (e.g. not in not broken). Word combinations with two content words of equal semantic weight become frequent only at the 200- word level.

2.3.3.2 Two-word combinations

In the course of normal child development, the earliest syntactic constructions are to be observed at the age of about 18 months. For some children the age may be much nearer 1 year; for others, in excess of 2 years. These first sentences are just two words long. Early sentences are often called "telegraphic" because they lack function morphology. The characteristics, which seem to make observers feel that the words are united into a sentence, is that a single intonation contour spans both words. The two-word sentences of the 18 months old child may be regarded as genuinely containing two words because the component words occur independently and in other combinations.

The advent of two-word sentences is a momentous advance: it marks the beginning of duality of pattern in a child's linguistic productions (Halliday, 1975). Before this phase each meaningful utterance composed immediately of sounds. From this point onwards, each utterance is a sequence of words and the words are made up of sequence of sounds. Of course, some utterances will still be only one word long, but in principle there is now an intervening level of patterning between sound and meaning. Some hold that language begins with this big step, because the mediating level,

syntax, is often regarded as an important defining characteristic of human language.

The two-word stage is marked by the transition from grammatically unrelated word combinations to utterances that show first signs of grammatical organization by consistent use of word order or inflection. It is controversial how to characterise the relationship between the two words in the early, pre-grammatical stage, especially because utterances of different degrees of productivity and complexity co-exist. Braine (1963,cited by Osofsky,1987) took a structuralist point of view in his analysis of the syntactic distribution in early child language. He claimed that early multi-word utterances can be classified into a set of positional patterns. He called this pattern pivot grammar in which pivot words from a smaller set occurred in certain positions and were combined with open words from a larger set.

Toddler's two-word utterances also have been described as representing linear syntactic relationships (Bloom & Lahey, 1978). It was noted that overall meanings are carried by simple, linear combinations of a function word (eg. More, all gone, there) with a second word. Brown (1973) described the pattern as a formula, $f(x)$, where f represents a fixed value (the function word) and (x) represents any other word.

Tomasello (2000) emphasized that young children do not come to the task of combining words with 'abstract categories and schemas'. Instead their earliest combinations 'revolve around concrete items and structures'. These

specific words and phrases develop in their own way depending upon the individual child's experience.

2.3.3.3 Acquisition of linguistic structure

A fundamental question of child language acquisition is children's productivity with newly learned forms. In what sense are young children simply repeating what they have heard, and in what sense are they creating novel linguistic structures on their own? The question is important because productive/ creative uses of language imply that the child is operating with some kind of abstract linguistic structures in the form of categories, schemas, analogies, or rules. In nativist approaches to language acquisition abstract structures of this type are innately given, so that children's major task is to 'constrain' a tendency toward over-productivity (e.g. Pinker, 1989). In constructivist approaches, on the other hand, children begin more conservatively by repeating what they have heard. They come to use language more productively only as they begin to perceive patterns, and so to construct linguistic categories and schemas, in the language they experience (Van Valin, 1991; Bloom, 1991; Tomasello, 1992). Within the constructivist approach to language acquisition there has long been debate about the nature and degree of abstraction and productivity in children's early language, that is, whether they are operating with anything more general than the specific words and word combinations they have heard the adults use. In his classic study of children learning even different languages, Braine (1976,cited by Tomasello *et al.,* 1997) found much lexical specificity in children's early

word combinations, but he also found that children just beginning to combine words often used consistent positional patterns, with many of their semantically similar predicative words, for example, always using the predicates *eat* and *drink* before the other word in the utterance (e.g. *Eat juice, eat berries, Drink juice, Drink milk*). Braine hypothesized that some of these patterns were at least somewhat lexically general since semantically similar predicates often were learned at around the same age, and these predicates occurred in similar positions in their respective word combinations. The hypothesis was that children might be using semantic similarity (e.g. both eating and drinking involve ingestion) to construct some fairly low-level linguistic schemas that determine the positional arrangement of elements in word combinations.

In contrast to this view, other investigators have found that at least some children seem to combine words in ways that seem totally lexically specific, at least with respect to predicative terms (e.g. Bowerman, 1976,cited by Tomasello *et al.*, 1997; Tomasello, 1992). In a study of one English-speaking child's earliest word combinations, for example, Tomasello (1992) found that the possible semantic roles of this child's different verbs and predicate terms were differentially expressed and differentially marked at particular developmental periods, even in the case of predicates that were semantically very similar. This child's early verb morphology seemed lexically specific as well, as some verbs were used without any morphology, some verbs were used in the past tense only, some verbs were used in the

progressive aspect only, and only a few verbs were used in both past and progressive. Consistencies in positional patterns among this child's different predicates seemed to be due to similar positional patterns in adult language addressed to her (e.g. she heard eat followed by the item to be eaten and *drink* followed by the item to be drunk) not to a productive schema or rule. The possibility that this child might have used non-predicative words (e.g. nouns) in productive ways was not specifically investigated. The premise that grammatical development depends upon and emerges from the lexicon is key in several theories of early language development including the critical mass hypothesis (Marchman and Bates, 1994), the verb island hypothesis (Tomasello, 1992) and usage-based accounts of early grammatical constructions (Lieven, *et al.,*2003). Evidence in support of such 'continuity' theories relates differences in lexical knowledge among children to differences in the rate of development and nature of their early grammatical constructions. Bates, *et al.,* (1988) demonstrated that size of the lexicon at 1:8 was a strong predictor of mean length of utterance (MLU) itself at 1;8. More recent work illustrates that the size of the verb lexicon in particular holds a concurrent relationship to use and misuse of verb inflection and sentence building in languages as diverse as English (Marchman and Bates, 1994) and Icelandic (Thordardottir, *et al.,* 2002). The association between lexical and grammatical development is further illustrated in the lexical specificity of early uses of tense, case, determiners, and word order. (Tomosello,1992; Pine and Lieven,1997).

To date, the continuity between lexical and grammatical precocity has been addressed most directly by Thal, *et al.,* (1996) in a case study of two precocious talkers ages 1;9 and 1;5. One of the precocious talkers presented with an apparent dissociation between lexical and grammatical development with the latter lagging considerably behind the former. Upon closer analysis, the child was found to have a large proportion of verbs and grammatical function words in her lexicon – words that are critical to sentence building. The finding revealed that while memory limitations made for infrequent word combining, the child clearly had an early emerging grammar that was more commensurate with her lexicon than with her chronological age.

A study conducted by McGregor and Sheng (2005) also reported similar findings. Their finding revealed that the lexically precocious children were also grammatically precocious, having a greater representation of grammatical types and tokens and more advanced combinational language than their typical age matches. It suggests that 2 years olds, grammatical development is more tightly associated with the size of the lexicon than with chronological age.

Olguin and Tomasello (1993) examined lexical specific in children's early use of predicative terms. Children aged 2;1 four transitive verb for novel actions (e.g. catapulting) over a month-long period. The results show that where as children of this age might be able to combine newly learned verbs with other words in new ways, they do not do this on the basis of a category of verb, or a lexically general schema of agent-verb-patient, that

provides a generalized basis for ordering the elements of those combinations in conventional ways.

In contrast to these findings with newly learned verbs, Tomasello and Olguin (1993) found that when children in this same age range (2;0) were taught novel nouns in an analogous experimental paradigm, they used them productively in a number of ways. Children are able to use their newly learned nouns in productive and canonical ways because they are able to assimilate them to something like a category of noun-or, at least, in a category of object labels.

2.3.3.4 The "bootstrapping problem"

Syntactic regularities involve dependencies among classes of words. A child learning English learns that determiners precede their nouns; and that transitive verbs are followed by their objects. Learning syntactic dependencies requires identifying the categories over which they are defined nouns and verbs, determiners and tense markers; but these categories, in turn, are defined by their positions in phrase structure. Nouns and verbs cannot be identified based on sound or meaning; ultimately, these categories are defined by the roles they play in a grammar. This reveals the fundamental circularity of syntax acquisition: the child needs phrase structure to create grammatical categories, yet needs grammatical categories to learn phrase structure. The question of how the child breaks into this circle is the "bootstrapping problem" of language acquisition (from the expression "Pull yourself up by your own bootstraps")

Research in this area explores what relevant cues children can detect in the linguistic environment, and how they might use these cues to create grammatical categories. Three kinds of cues are distributional patterns, phonological cues, and semantic information.(cited by Fisher,2003)

1. Distributional learning

Grammatical categories are distributionally defined; children could begin by grouping words based on their occurrence in similar environments. Nouns and verbs occur with different function morphemes *(the, a, -s* vs. *is, can, -ing*) and in different sentence positions. Children could use inter correlations among these contexts to create grammatical categories (Maratsos, 1982, cited by Fisher,2003). Formal analysis along these lines is assumed in all theories of syntax acquisition, and it has the last word in syntactic decisions even in theories that give semantics a starring role in early identification of syntactic categories. One example that makes clear the need for distributional analysis is that of gender categories of nouns. The distinction between masculine and feminine nouns, in languages that have it, is notorious for its lack of semantic basis, yet children learn it as they do other grammatical categories.

Distributional information can be the location of the word in the sentence, phonological properties, or marker elements. Nearly all theories of language development emphasize the importance of distributional cues for segregating words and phrases into syntactic categories like noun, feminine or verb phrase. Gerken *et al.,* (2005) emphasized that learners can use

distributional cues to category structure, to the exclusion of referential cues, from relatively early in the language learning process.

This procedure has its problems, of course. The contingencies so useful in differentiating grammatical categories are relationships between open-class or function morphemes that co-occur with them. Without already knowing that contexts like *the* and *a* and affixed-s are important, children would have to look for these helpful correlations among an extremely large set of unhelpful ones. The computational intractability of this problem has prompted researchers to seek sources of constraint on the detection of distributional patterns. These include phonological and semantic cues to grammatical structure, as well as the architecture of learning mechanisms for distributional analysis.

Function morphemes, central to identifying grammatical categories, appear late in children's speech, but they influence children's comprehension much earlier. Even one-word speakers understand familiar nouns better when they are preceded by the determiner *the* rather than a misplaced function word (Gerken and McIntosh, 1993). Computational analyses of speech to children suggest that distributional similarity can be used to sort words into major grammatical categories (Cartwright and Brent, 1997).

Plunkett and Marchman (1991) suggested that distributional regularities between words and morphemes might play a more significant role in governing how the child starts to generate productive utterances than has previously been thought.

Hoff-Ginsberg (1985) examined the relationship between mother's speech and the rate of child syntax growth. The results suggest that there are multiple bases to the benefit of input to language acquisition. Children analyse the distributional properties of the speech they hear and may induce linguistic structure from the relationship between the structural properties of adjacent utterances in discourse.

There have been some notable attempts to study the learning mechanisms involved in distributional analysis in toddlers or infants, and to explore the constraints on these mechanisms. Slobin (1985, cited by Fisher, 2003) proposes perceptual operating principles that bias children's hypotheses, including a bias to attend to the ends of words or utterances. Some studies focus on infants' ability to detect structure in small artificial languages (Gomez and Gerken, 1999; Saffran *et al.*, 1996).

2. Phonological cues

Sentences have prosodic or intonational structure as well as syntactic structure; prosody defines domains within which phonological processes operate. Major prosodic boundaries in speech tend to align with syntactic boundaries, so that syllables that end major constituents are often lengthened, undergo more pitch change, and are followed by longer pauses relative to syllables within phrases. The view known as "prosodic bootstrapping" suggests that acoustic cues associated with large-scale prosodic boundaries in speech constrain the child's syntactic hypotheses (Morgan and Demuth, 1995, cited by Fisher,2003).

Peters and Stromguist (1996) suggests that perceptually salient prosodic patterns, including pitch contours, rhythm, and increased duration, may serve as ‘spotlights’ an any grammatical morphemes that are regularly associated with these patterns. Considerable evidence suggests that prosody structures speech perception and memory for infants as well as adults.

Sound also participates in grammatical categorization via probabilistic phonological similarity within grammatical categories. One of the best examples is the enormous difference in duration, pitch accent, inventory of consonants, and token frequency between open-class words and closed-class or function words. A first-pass distinction between open- and closed-class words could be made based on this perceptible difference and could constrain distributional analysis. Grammatical categories like noun and verb also tend to share within-class phonological similarity.

Behrens and Gut (2005) studied the interaction between the development of different types of syntactic structures and their prosodic organization using the data from a detailed production record of a monolingual German-learning boy. The findings revealed that the different types of two-word utterances undergo individual trajectories of prosodic (re-) organization, in part depending on the time course in which they become productive. It suggests that different types of multi-word utterances become prosodically fluent at different points in time. The result also shows that the variability of prosodic features such as passes and stress pattern is high at the onset of combinational speech.

3. Semantic cues

Another fundamental source of information for syntax acquisition is meaning. The value of semantics in grammatical categorization and phrase structure acquisition follows from the intimate relationship between form and meaning in language. Children have strong expectations about mappings between meaning and form. First, they assume that different forms have different meanings (Clark, 1987, cited by Fisher, 2003); this applies both to individual words and to phrase-structure patterns. This simple assumption permits children to use within-class similarity in meaning to help sort words into grammatical categories and to draw semantic conclusions from distributional evidence for category membership. Second, there are more substantive correspondences between syntax and semantics. Across languages, nouns refer to objects or more abstract entities, while verbs and other terms have relational or predicative semantics. Such abstract links between form and meaning, to the extent that they are universal, could be part of the child's endowment for language acquisition; given knowledge of meaning, the child could draw syntactic inferences; given syntactic information, she could draw semantic conclusions.

One account based on this hypothesis is "semantic bootstrapping" (Pinker, 1987; Grimshaw, 1981, cited by Fisher, 2003) which proposes a detailed set of innate semantic triggers that link words with the elements of universal grammar.

Grimshaw, (1981, cited by Fisher, 2003), argue that language learners are born expecting to find a set of syntactic categories in their language input. They are also born knowing how to link actual words that they encounter with these categories. Focussing for the moment on the categories noun and verb, the innate linking knowledge is in the form of an expectation that words referring to objects are nouns and that words referring to actions are verbs.

Tomasello *et al.,* (1996) studied children's early productivity with nouns and verbs. The results show that the children combined the novel nouns productively, with already known words much more often than they did the novel verbs by many orders of magnitude. Several children also pluralized a newly learned noun, whereas none of them formed a past tense with a newly learned verb. A follow-up study using a slightly different methodology confirmed the finding of limited syntactic productivity with verbs. Children are able to use their newly learned nouns in productive and canonical ways because they are able to assimilate them to something like a category of noun or, at least, to a category of object labels.

Armon-Lotem and Berman (2002) examined the first 20 verb-forms recorded for 6 Hebrew-speaking children aged between 1;2 and 2;1 and how they evolve into fully inflected verbs. Results showed that, children's initial use of verbs demonstrates that they still need to acquire considerable language-particular grammatical knowledge in order to encode such relations explicitly. This language particular knowledge demonstrates a clear pattern

of acquisition, in which aspect precedes inflectional, marking for gender, followed by tense, and then by person.

Parimala and Leonard (1989) investigated, the acquisition of verb inflections in Tamil, an agglutinating language in three 2 years old children. The findings revealed a high percentage use of verb inflections indicating tense, aspect, modality, person number and gender by all 3 children.

2.3.3.5 The central role of verb learning

Learning large-scale syntactic categories like ‘noun’ and ‘verb’ is only part of the problem. The syntax of a clause depends on smaller subcategories within these abstract categories. In particular, the verb in a clause determines what other phrases can occur in the sentence, and what their roles in the sentence will be. To some degree, this is predictable from verb meaning. Across languages, verbs that describe action on an object tend to be transitive, with actor subjects; those that describe object motion along a path are often intransitive, with the moving theme as subject. Cross-linguistically, robust patterns in how verbs’ arguments are linked with syntactic functions are reflected in various proposals for systematic linking of thematic roles (like agent and theme) and syntactic functions (like subject and object). Such links have played a major role in theories of syntax acquisition (Bloom, 1991; Gleitman and Gleitman, 1997; Pinker, 1987).

Tomasello (1992) argued that the child used plural-s and possessive-s markers on nouns starting at around 1;5 – 1;6 while fist contrastive marking

of verbs with the progressive-ing and past tense-ed endings appeared at 1;7 – 1;8 and 1;8 – 1;9 respectively, and were used sporadically thereafter.

The traditional approach to the role of verb learning in syntax acquisition has been essentially the semantic bootstrapping approach. If we assume that children can some times retrieve the semantics of sentences from extra linguistic context before learning the grammar, they could then use built-in links between semantics and syntax to impose syntactic structure on linguistic input. Knowing that a verb has an agent role in its semantic argument structure, for example, the child will conclude that the noun naming the agent is the subject of the sentence. By assuming that meaning is independently accessible and that linguistic forms are semantically predictable, main acquisition theories make meaning the primary "bootstrap" into syntax.

The syntactic bootstrapping theory also relies on tight links between verb syntax and semantics to drive language acquisition, but it questions the primacy of semantic information. Lexical-semantic organization varies across language; therefore, semantic representations are language-particular and cannot be assumed to be directly predictable from observations of events.

2.3.3.6 The contribution of the learner

The most striking evidence for the contribution of the learner to syntax acquisition comes from situations in which children receive impoverished linguistic input yet invent a syntax more systematic than the input should

support. Children do not simply duplicate the input they receive. Instead, they regularize, imposing new structure on noisy data, or they invent from scratch communicative systems that exhibit properties of conventional languages.

Children whose profound hearing loss makes learning a spoken language impossible, and who are exposed to no sign-language model, invent "Home Sign" systems (Goldin-Meadow and Mylander, 1998, cited by Fisher, 2003). Home signers create gestures that they combine into sentences. The parents' gestures do not exhibit the same structure. Apparently, children need not learn that there exists a fundamental distinction between nouns (argument terms) and verbs (predicate terms). Such basic aspects of linguistic structure may follow from the structure of human knowledge and the pressure of human communication (Goldin -Meadow *et al.,* 1996).

The above section gives an understanding of the accomplishment of producing two words integrated with a single intonational contour, is a major accomplishment. The reviews have suggested the relevant cues used by children to acquire the linguistic structure. The variations in child language will be detailed in the coming section.

2.4 VARIATION IN CHILD LANGUAGE

One of the most significant developments in recent work on child language has been the increasing number of studies which report the existence of individual differences; differences not only in rate of development but also in characteristic patterns of use and perhaps also in patterns of learning. This

section explains the important factors influencing the child's linguistic behaviour.

There are four broad groups of factors, which have, in various studies, been proposed as potentially causative influences of children's linguistic behaviour. Only one group is, strictly speaking, concerned about the attributes of the children themselves, those that might be described as biologically inherited intelligence, personality, learning style etc. The remaining three cover different aspects of the children's environment: long-term characteristics of children's social background; factors in the social and physical situation in which the children's linguistic behaviour occurs, and the style of linguistic interaction which provides the context for their acquisition and use of language. All except social background are suggested to have a direct influence on the child's linguistic behaviour.

2.4.1 The Effect of Situation

Situational variance is an important issue in its own right. Wells (1985) reports substantial differences in the relative frequency with which children used different utterance functions across 10 contexts of activity, from 18 months onwards. This variation is not at all surprising and, in itself, is chiefly of interest in underlining the importance of pragmatic considerations in early language use. However, if children also vary substantially the amount of time they habitually spend in different activities, we may expect to find this inflected in the differential frequency of particular forms and functions in their speech.

We may also find differences developing in their expectations about what language is chiefly used for, and perhaps, as a result, in the strategies they employ in acquiring it. Similar arguments could be advanced with respect to the status of the participants with whom the child habitually interacts. The most obvious contrast here is between adults and other siblings as the most frequent conversational partners, but we might also stretch the notion of status somewhat and distinguish between experience of the same adults in their different rules as caretaker, instructor or companion.

2.4.2 Inherited Attributes

Mc Gregor and Capone (2004) studied, genetic and environmental interactions in determining the early lexicon. The findings provide unique support for a dynamic, multi-factorial model of lexical development involving

the interaction of genetics, the biological environment, and the social environment.

a) Sex: - References to the superiority of girls with respect to almost all aspects of language development abound in the literature, although it is extremely rare to find such extreme differences as those reported by Ramer (1976), in whose sample of 7 children all the girls but none of the boys were characterized by a style of acquisition associated with rapid development McCarthy (1954, cited by Fletcher and Garmen,1979) emphasized that the vast accumulation of evidence in the same direction from a variety of investigators working in different parts of the country, certainly is convincing proof that a real sex difference in language development exists in favour of girls.

Templin (1957) suggests that when the performance of boys and girls is compared over the entire age range, girls tend to receive higher scores more frequently than the boys, but the differences are not consistent and are only infrequently statistically significant.

b) Intelligence: - Interpretation of the undoubted correlations between intelligence and linguistic development is seen reported in the studies reviewed by McCarthy (1954, Fletcher and Garmen,1979). Neither intelligence not language is a unitary phenomenon and developments in the two domains interpenetrate each other in an interactive way. This suggests that any effort to establish a global, unidirectional, causal relationship, in whichever direction, is almost certainly misguided. It seems much more

plausible, instead, to hypothesize a continuum of causality extending in both directions, on which observed correlations between particular tests and linguistic sub skills might be located.

c) Personality and learning Style: - These two potential sources of variation are considered together because they are almost certainly inter-related.

In the literature of first language learning, there is little reference to personality differences. In the face of it, there is a difference between an active, out-going child and a placid, retiring child will influence many aspects of the interactions in which they participate, and that this in turn will have an effect on the speed and ease with which they acquire the linguistic resources for interaction. Lieven (1978), notes that of the 2 children she studied, one was much more concerned in her use of language to attract her mother's attention while the other seemed to be more interested in talking about the objects and events around her. With respect to rate of development, on the other hand, there does seem to be quite strong evidence of a relationship between variation in style/route of development and rate of learning. 'Referential' children acquire their early vocabulary more quickly (Nelson, 1973, cited by Ingram, 1989); 'noun lovers' are six months or more ahead of 'noun leavers' in reaching the same MLU level (Horgan, 1980); children who exploit the full range of two constituent combinations on the way to control of the full SVC (Subject, Verb, Complement), structure acquire that control more quickly (Ramer, 1976).

2.4.3 Social background

Since the formal organization of language and the meanings and purposes it serves to communicate are learned chiefly through social interaction, it seems self-evident that this varies from one social group to another and there will be variation in children's language, which can be related to group membership. Research findings revealed that children from lower SES groups showing a developmental lag, frequently at a statistically significant level (Templin, 1957). Then under the influence of Bernstein's formulation of the class-code relationship, a difference in style of acquisition was introduced, the middle class being said to develop an exploratory and explicit use of language in contrast to the expressive and implicit use of the lower class (Bernstein, 1965, cited by Fletcher and Garmen, 1979).

Bernstein reformulated his theory in terms which made it clear that the codes regulated habitual performance and were not to be taken as a description of underlying 'competence' or if so, only of 'communicative competence' (Bernstein, 1971 cited by Fletcher and Garmen, 1979). The relative backwardness of many working class children who live in areas of high density of population or in rural areas may well be a culturally induced backwardness transmitted by the linguistic process. Such children's low performance on verbal IQ tests, their difficulty with 'abstract' concepts, their failures within the language area, their general inability to profit from the school, all may result from the limitations of a restricted code.

Tough (1977, cited by Fletcher and Garmen,1979) emphasized, children coming from differing home environments, had established different priorities for expressing meaning, and different orientations towards the use of language.

Cultural environment of a child is also having an important role in language development, language as a part of culture.

2.4.4 Experience of Linguistic Interaction

Given this emphasis on the social context of language acquisition, it is natural that attention should have come to focus more and more on characteristics of care taker's conversations with their children.

Borovsky and Elman (2006) explore how differences in linguistic experience can explain differences in word learning ability due to changes in the development of semantic category structure. More specifically they manipulate the amount of language impact, sentential complexity, and the frequency distribution of words within categories. In each of these simulations, improvements occurred in category structure.

i) Amount and type of conversational experience

The conversations in which a child participates simultaneously provide a model of the language to be acquired and an opportunity for him to try out his existing language system, in a context where shared experience makes it possible for his partner to provide for his partner feedback, that should be optimal for further acquisition. Variation in the amount of conversational

experience might be expected, therefore, to be related to variation in rate of development.

Marcos *et al.*, (2003) observed the communication sequences at 16 and 22 months and analysed in order to determine how the partner's joint communicative activity allows the sharing of intentions conveyed by gestural and/or vocal signals. The analyses suggest that the adult partner's interpretation of the child's intention depends on several cues; who is currently carrying out the activity and how, the child's age and, in some cases, already existing routines.

Kim *et al.*, (2000) studied the composition of the early productive vocabulary of Korean – and 8 English – learning children and the morpho-syntactic, semantic, and pragmatic characteristics of their caregivers input in order to determine parallels between caregiver input and early lexical development. Results showed that both Korean learning and English learning children acquired significantly more nouns than verbs at the 50-word mark. However, Korean children learned significantly more verbs than did English-learning children. Korean-speaking caregivers presented more activity-oriented utterances, more verbs, and more salient cues to verbs than did English-speaking caregivers. The study suggests that both general and language-specific factors shape the early lexicon.

ii) Qualitative differences in adult-child interaction

The systematic modification of adult speech to young children are progressively adjusted in response to the child's own development, as evidenced by his comprehension and production and by various aspects of his non-linguistic behaviour (Cross, 1977). Adults, in general, have a tendency to modify their speech when talking to young children. Cross (1978), investigated that the extent of modification that is of significance or, more precisely, the extent to which the modifications are 'finely-tuned' to the child's current stage of development. In a cross-sectional comparison of 'accelerated' and normally developing children, he observed that the accelerated group received speech that was more finely tuned to their linguistic level. The mothers of these accelerated children were both sensitive and responsive to the cues provided by their children. Through these kinds of early experiences, the infant gains knowledge of the requirements for dealing with communicative interaction and learns to use more sophisticated and conventional means to communicate (Bruner, 1981). Meadows *et al.*, (2000) indicated that the mother's ability to identify the infant's signals consistently as fundamental in the process of sensitive responding. Meins *et al.*, (2001) emphasize the appropriateness of maternal responses to infant's behaviour. Sensitive parental activity has also been considered to include maintaining infant's attention and motivation, simplifying the task appropriately to the infant's developmental level (Stevens *et al.,* 1998), and matching the intensity and temporal patterning of the parents' behaviours according to the infant's emotional states (Tomasello, 1995). Paavola *et al.*, (2006) state that maternal sensitivity was associated with early intentional communication-particularly

the use of communicative gestures, and also with symbolic behaviour and later comprehensive skills. The result also suggests that the effects of both maternal sensitivity and child characteristics on language development are likely to be specific rather than global.

Lacroix *et al.*, (2002) suggested that the forms and functions of maternal utterances were important predictors of child's language and cognitive development.

ICDH (2000) assessed the effects of quality of childcare on cognitive and language development. The more that childcare environments are characterized by caregiver-child interactions that are both supportive and verbally stimulating, the better children perform. These findings pertain to the first 3 years of life.

Nelson (1973, cited by Ingram, 1989) emphasized, the importance of matching between the strategies of mother and child at different stages of development. Taking the three dichotomous variables, match/mismatch between the child's cognitive structure and the semantic structure of the lexicon used by the adult, selection by the child of a referential/expressive hypothesis concerning the central function of language, and acceptance/refection as the mother's dominant feedback to the child's utterances, Nelson identified 8 interaction pattern and examined the relationship between these and rate of vocabulary acquisition. Match-referential-acceptance was found to be most strongly associated with rapid acquisition, and might be expected mismatch-expressive-reflection with

slowest acquisition. Of the 3 variables, cognitive-linguistic match/mismatch appeared to be most powerful in accounting for progress during the second year, but the parental feedback variable was considered to have the greatest long-term effects.

The above section attempted to review the major dimensions of variation in children's language behaviour and aid to evaluate the significances of other covering factors that have been proposed age possible determinants of differences between children in either rate or range of development. From the evidence considered it is apparent that there is a wide range of variation in the rate of development and probably also in the use of the linguistic resources that have been acquired.

2.5 CROSS – LINGUISTIC VARIATIONS

Cross-linguistic studies are essential for the identification of universal processes in language development, language use, and language breakdown. This section summarizes the results of comparative studies, demonstrating powerful differences across languages in the order in which specific structures are acquired by children.

2.5.1 Speech Perception

Human newborns are "citizens of the world" (Kuhl, 1985), able to discriminate virtually all of the sound contrasts (phonetics) that are used systematically by the world's languages .Nevertheless, preferential-listening studies have shown that newborn infants have already acquired a weak

preference for the sounds of their native language in utero (Jusczyk *et al.*, 1993), although the basis for this preference is still unknown. By 3 months of age, infants show selective preference for their own names, with discrimination of many detailed and language-specific phonotactic features following soon thereafter (Jusczyk, 1997, cited by Bates *et al.,* 2001), including a clear preference for the prototypic vowels of their native language by 6 months (Kuhl *et al* .,1992, cited by Bates *et al.,* 2001). Although such evidence for rapid learning of speech-specific structure was initially cited as evidence for the existence of a domain-specific "speech acquisition device" (Mehler *et al.,* 1988, cited by Bates *et al.,* 2001), recent demonstrations of rapid statistical induction in 7–8- month-old infants (e.g. Marcus *et al.,* l999, Saffran *et al.,* 1996), including results with nonspeech stimuli (Saffran *et al.*, 1997), have led some theorists to conclude that the infant brain is a powerful learning device that is capable of rapid learning from arbitrarily sequenced materials in any modality (e.g. Bates and Elman, 1996). Hence, the acquisition of speech contrasts in the first year of life may be a language-specific manifestation of domain-general learning mechanisms (Kuhl, 1985, cited by Bates *et al.,* 2001).

As a result of these findings, recent research in the development of speech perception has focused not only on the continued acquisition of language-specific preferences (Kuhl, 1994, cited by Bates *et al.,* 2001), but also on the corresponding suppression of phonetic contrasts that are not used systematically in the child's linguistic input (e.g. the process by which

Japanese infants lose the ability to hear “ra” versus “la”) (Werker & Tees, 1984). “Tuning in” to language-specific speech contrasts appears to be related systematically (and perhaps causally) to “tuning out” of phoneme contrasts outside child’s language, a process that begins around 8–10 months of age. The timing of this “linguistic xenophobia” is probably no accident because it co-occurs with the onset of systematic evidence for word comprehension. Indeed, such “learned inhibition” (which continues unabated for many years in a monolingual environment) may be at least partially responsible for the oft-cited observation that adults find it difficult to acquire a second language without an accent (McClelland *et al.,* 1999).

2.5.2 Speech Production

Despite ample evidence for the early acquisition of language specific contrasts in speech perception, we know relatively little about the emergence of corresponding contrasts in speech production. For most children, canonical or reduplicative babbling begins between 6–8 months, with short segments relatively immune to language-specific effects until the second year of life (Eilers *et al.,* 1993).

At first glance, the absence of language-specific effects on early speech production looks like evidence in favor of Jakobson’s classic proposal that speech development is governed by a universal markedness hierarchy (Jakobson, 1968), with all children everywhere displaying the same passage from unmarked (“easy,” universal) to marked (“hard,” language-specific) speech contrasts. However, careful descriptive studies of early phonological

development suggest instead that there are large individual differences among children (even within a single language) in the sounds they prefer for babble and early words (Vihman, 1986, cited by Bates *et al.*, 2001). Studies of the relationship between word comprehension and phonological production in the first two years of life suggest that children may start with "favorite phonemes" that are at least partially derived from the sounds that are present in their first and favorite words (Leonard *et al.,* 1980).

2.5.3 Word Comprehension and Production

We have learned a great deal in the past few years regarding cross-linguistic similarities and differences in early lexical development, due in part to the development and proliferation of new parent report instruments that are low in cost but high in reliability and validity (Fenson *et al.,* 2000). By tapping into parental knowledge, researchers have charted means and variations in word comprehension and production in children between 8–30 months of age, with instruments that are now available in more than a dozen languages [Afrikaans, American Sign Language, Catalan, Chinese, Croatian, Danish, Dutch, English (British and New Zealand), Finnish, French (Canadian), Greek, Hebrew, Icelandic, Italian, Japanese, Korean, Malawian, Polish, Sign Language of the Netherlands, Spanish (Mexican and Spain), Swedish]. These parental inventories rely on recognition memory rather than recall (using checklists of words that are among the first 600–700 to be acquired in that language), and they are used only within the age ranges in which parents can give reliable reports of newly emerging behaviors (e.g.

word comprehension can only be assessed with these methods between 8–18 months; word production can be assessed reliably between 8–30 months). Briefly summarized, two universal conclusions have emerged from this multinational effort: (*a*) Average onset times appear to be the same across languages for word comprehension (8–10 months) and word production (11–13 months); (*b*) huge variation in lexical growth is found in every language and appears to be equivalent across languages in shape and magnitude (e.g. a range from no word production at all to production of more than 500 words at 24 months).

Although cross-language similarities outweigh differences in these studies, a few cross-language variations have emerged (Caselli *et al.*, 1995). For example, Italian children appear to have larger repertoires of social words (including proper nouns and social routines) than their American counterparts. These differences reflect cultural contrasts, including the fact that Italian infants tend to live in closer proximity to an extended family (e.g. on average, grandma is the thirtieth word produced in the US norms but the fifth word produced in the Italian psycholinguistics norms). There are also small but significant differences in the order and shape of function word production between 16–30 months (slow and constant linear growth in Italian; a flat function followed by a nonlinear spurt in English), which may be related to structural contrasts between the two languages (including differences in the perceptual salience of grammatical function words).

A lively debate is currently underway regarding cross-linguistic differences in the order of emergence of nouns versus verbs. In a classic paper, Gentner, (1982) argued that nouns must always precede verbs in development because early verbs refer to evanescent events, whereas early nouns refer to solid and bounded objects, and because verbs tend to carve up reality in more variable ways from one language to another. This view has been challenged by Gopnik and Choi (1995) for Korean and by Tardif (1996,cited by Bates *et al.*,2001) for Chinese. Based primarily on analyses of free speech, these authors report that verbs are acquired early in these languages (often before nouns) because verbs are more salient: They appear in sentence-final position in Korean, a subject-object-verb (SOV) language, and both languages permit extensive subject and object omission, so that a sentence is often composed of a single naked verb. Gopnik and Choi also suggested that these differences feed into nonlinguistic cognition, resulting in better performance by Korean children on means-end tasks (which are related to verbs) and better performance by English children on object permanence tasks (which are related to nouns). This interesting proposal has been challenged by studies using diaries and/or parental report (for a review, see Caselli *et al.,* 1999) and by studies in which novel verbs and nouns are taught to American and Korean children (Au *et al.*, 1994). In those studies, the same familiar noun-before-verb pattern is observed in English, Italian, and Korean, despite sharp contrasts in linguistic structure and in the verb-noun ratios to which children are exposed. Caselli *et al.,* (1999) suggest that free-speech records may yield differences because they are sensitive language-specific

constructions that are high in frequency (i.e. what children like to do), whereas parent report yields a more representative estimate of the child's full lexical repertoire).

2.5.4 Development of Grammar

The most compelling evidence for cross-language variation begins between 18–20 months (on average), when grammatical development is finally underway. Ironically, early cross-linguistic work on language acquisition was based on the assumption that grammar (as opposed to phonology or the lexicon) would prove to be the bastion of language universals. Some secondary sources still claim that all children acquire language on the same schedule, in the same way, and this putative fact has led to further claims about a universal bioprogram that governs language acquisition in children as well as the emergence of new languages from pidgin codes (i.e. creolization) (Bickerton, 1984,cited by Bates *et al.*, 2001). In this scenario, all children (and all creoles) begin their linguistic careers with single uninflected words, followed by telegraphic combinations of uninflected words in ordered strings, with inflections and function words acquired only after this syntactic base has been established. None of these proposed universals have held up in cross-linguistic research.

Grammatical development does begin with something like a one-word stage in every language, but there are cross-language variations in the form of one word speech. For example, infant speakers of Western Greenlandic start out by producing little pieces of the large and complex words of their

language (in which a sentence may consist of a single word with 10–12 inflections). In other richly inflected languages (e.g. Turkish), children often produce inflected nouns and verbs late in the one-word stage, before they have produced any word combinations at all. Some of these inflected forms may be accomplished by rote, but when there are multiple examples in which the same word appears with several contrasting inflections, it seems reasonable to infer that some kind of productive process is underway.

Bassano (2000) indicated that early development of nouns and verbs in French from the perspective of semantic and grammatical development. Results showed that nouns clearly predominate over verb until age 1;8 at least, but that verbs are produced in the early stages. Concrete object names among nouns and concrete action verbs among verbs were found to be the most prevalent categories, but they were not the earliest to appear. Verbal grammaticalization seems to be related to the production of concrete action verbs, and noun grammaticalization to that of concrete object nouns. It suggests that both conceptual and grammatical packagings are important and interacting factors in noun and verb development.

However, as Braine (1976) was the first to report, there are striking differences across languages in the linguistic forms that 2-year-olds use to convey these meanings. Word order is rigidly preserved in some languages (especially English), but it varies markedly in others (Bates, 1976). English children produce a relatively high proportion of sentence subjects, compared with Italian children at the same stage (Valian, 1991). Telegraphic speech is

typical of some children, but even in English there are individual children who use a high ratio of pronouns and function words in their first word combinations (albeit with limited productivity) (Bates *et al.,* 1988). The entire system of case morphology appears to be mastered by Turkish children by 2 years of age, reflecting the exceptional regularity and phonological salience of Turkish inflections (Slobin, 1985, cited by Bates *et al.,* 2001). Finally, many so-called complex forms appear quite early if they are very frequent and used for common pragmatic purposes [e.g. relative clauses in Italian, which are 5 times as common in Italian 3-year-olds than they are in their English counterparts) (Bates and Devescovi, 1989, cited by Bates *et al.,* 2001) and passives in Sesotho, used very frequently by adults and acquired by 3 years of age by Sesotho children.

In fact, grammatical errors are surprisingly rare in early child grammars (Slobin, 1985–1997, cited by Bates *et al.,* 2001), despite the many opportunities for errors that are present in richly inflected languages. Tomasello (1992, 1998) has argued that this low incidence of error reflects a highly conservative approach to learning and generalization, a verb by verb and construction-by-construction approach in which under generalization is far more common than the oft-cited phenomenon of overgeneralization. The theoretical literature on grammatical development has focused on overgeneralization (e.g. overextension of the regular past tense, as in goed and comed), owing in part to the belief (now under challenge).

As a final point, recent evidence suggests that the single best predictor of early grammatical development comes from outside the grammar. That is, grammatical changes are tied in both rate and shape to vocabulary expansion (Bates & Goodman, 1997; Marchman *et al.,* 1991).

2.6 STUDIES ON INDIAN LANGUAGES

Studies on language development are extremely rare in Indian languages. Most of the available studies share a linguistic orientation rather than a developmental orientation. The investigator could collect some literature but as they do not match with the age period of children in my study, were not reviewed here.

Some features of Malayalam language are described below.

2.6.1 Features of Malayalam Language

Among the four well-known Dravidian Languages [viz., Tamil (Ta.), Kannada (Ka.), Telugu (Te.), and Malayalam (Ma.)]. Malayalam the majority language of Kerala, is the youngest because no record in this language is available before 9th century A.D. Malayalam Belongs to Tamil-Kodagu group of South Dravidian branch of Dravidian family. Tamil Is its closest relative. Even after Malayalam developed its characteristic and distinctive features, it continued to be called tamiz (Tamil). This fact is evident from Lilatilakam, the earliest work on Malayalam grammar and poetics, written in 14th century A.D. Later on the name was Malayalabhasa.

The name Malayalar appear to be name of the inhabitants of Kerala as they were people of mountainous country. Consequently the country inhabited by malay-al-ar came to be called malay-al-am. The name of the language they spoke was merely bhasa the language to them, to be more specific Malayalabhasa, the language of Malayalam country. By the end of 19th century A.D. this term came to be re-interpreted as the language called Malayalam. Thus the name of the country became the name of the language.

In addition to the usual regional dialect variations, Malayalam exhibits dialect variations related to caste and religion, particularly in vocabulary and phonology. Malayalam also exhibits diglossia, with a distinction between formal and colloquial varieties. Traditional order of Malayalam vowels, consonants and laterals are given in Table 2.1, 2.2 and 2.3.

Table 2.1

Order of Malayalam vowels

A	a	F	e
B	¡	G	®
C	i	sF	ai(/ay/)
Cu	¢	H	o
D	u	Hm	°
Du	£	Hu	au(/av/)
E	r(/ru/)		

Table 2.2

Order of Malayalam Consonants

	HmjvTyw (Labial)		HmjvTyZ´yw (Labial Dental)		Z´yw (Dental)		hÀÕyw (Alveolar)		aqÀ²\yw (Retroflex)		Xmehyw (Palatal Velar)		arZp-Xm-ehyw (Velar)		Total
kv]Àiw (Stops)	](pa)	–(ba)			X(ta)	Z(Èa)	ä(tta)		S(¶a)	U(·a)	N(ca)	P(ja)	I(ka)	K(ga)	11
alm-{]m-W-kv]Àiw (Asperated)	^(pha)	`(bha)			Y(Éha)	[(Èha)			T(¶ha)	V(·ha)	O(cha)	Q(jha)	J(kha)	L(gha)	10
A\p-\m-knIw (Nasal)		a(ma)				\(na)		³		W(¸a)		R(µa)		M(ºa)	6
]mÀiznIw (Laterals)								e(la)		f(½a)					2
{Xmkw (Trill)								d(ra)							1
{ZpX-kv]Àiw (Flap)								c(r̄a)							
LÀjw (Fricatives)							k(sa)	j(Àa)			i(¿a)			l(ha)	4
{]hmln (Continuant)				h(va)				g(a)		b(ya)					
Total															38

Table 2.3

List of Laterals in Malayalam

³ (n)
Ä (½)
¬ (□)
À (r)
Â (l)

Chapter - III

METHODOLOGY

CHAPTER -3

METHODOLOGY

This chapter describes the design of the study, detailed explanation of the stages of the study, sample selection procedures, data collection tools, and methods of data analysis.

3.1 ABSTRACT

The study aims at identifying the pattern of language development before two years of age.

Research Design

Qualitative – descriptive design is used. The study is exploratory in nature. Though longitudinal and cross-sectional methods are utilized, the results are mainly analysed on a normative basis.

Sample

A random sample of 42 children served as the subject of study. Each child is studied for a period ranging from four to nine months.

Tools

As information is collected through unstructured interview and observation, standardized tools are not used. The investigator prepared a personal data sheet and the format of parental diary.

Methods of Data Collection

Interviews with family members and direct participant observation by the researcher are the primary methods of data collection.

Analysis of the Data

Words and sentences used by children are first organised at an individual level on a monthly basis. Relevant data are then grouped together for normative analysis.

Analysis based on frequency, percentage, mean and mode are also utilized along with different qualitative techniques.

3.2 RESEARCH DESIGN

Qualitative – descriptive design is used. The study is exploratory in nature. Though longitudinal and cross-sectional methods are utilized, the results are mainly analysed on a normative basis.

3.3 SAMPLE OF THE STUDY

42 children of native Malayalam language were randomly selected for the study. The age range of the participants varied from 10 months to 19 months. Twenty children were studied from 10 months onwards, nine children were studied from 1 year of age, four children were studied from 13 months and 9 children were studied from 19th month onwards. Each child was studied for a period ranging from four to nine months. The details of each participant in the sample are presented in Table 3.1.

Table 3.1

Characteristics of the participants

Serial No.	Sex	Social Status	Religion	Locality	Family Size	Birth Order	Age at the start of data collection	Duration of study
1	M	Middle	Christian	Thrissur	Single	First	10 month	9 month
2	M	Middle	Christian	Thrissur	Single	Other	10 month	9 month
3	F	Middle	Muslim	Thrissur	Joint	Other	12 month	7 month
4	M	Middle	Christian	Thrissur	Single	First	10 month	9 month
5	F	Middle	Christian	Thrissur	Single	Other	10 month	9 month
6	M	Middle	Christian	Thrissur	Single	First	12 month	7 month
7	F	Middle	Christian	Thrissur	Single	First	10 month	9 month
8	F	Middle	Christian	Thrissur	Single	First	12 month	7 month
9	F	Middle	Christian	Thrissur	Joint	Other	13 month	8 month
10	F	Middle	Christian	Kozhikode	Single	First	10 month	9 month
11	M	Middle	Hindu	Kozhikode	Joint	First	10 month	9 month
12	F	Middle	Hindu	Kozhikode	Joint	First	10 month	9 month
13	M	Middle	Hindu	Kozhikode	Single	First	10 month	9 month
14	F	Low	Hindu	Kozhikode	Joint	Other	13 month	8 month
15	F	High	Christian	Thrissur	Single	Other	10 month	9 month

16	F	Middle	Hindu	Kozhikode	Single	First	10 month	9 month
17	M	Middle	Muslim	Kozhikode	Single	First	10 month	9 month
18	M	Middle	Hindu	Thrissur	Single	First	12 month	7 month
19	M	Middle	Christian	Thrissur	Single	First	10 month	9 month
20	F	Middle	Hindu	Kozhikode	Single	First	12 month	7 month
21	F	Middle	Hindu	Kozhikode	Single	First	10 month	9 month
22	F	Middle	Hindu	Kozhikode	Joint	First	10 month	9 month
23	F	Low	Hindu	Kozhikode	Joint	Other	10 month	9 month
24	M	Middle	Muslim	Kozhikode	Single	Other	13 month	6 month
25	F	High	Christian	Thrissur	Single	Other	10 month	9 month
26	F	High	Hindu	Thrissur	Single	Other	13 month	6 month
27	M	High	Muslim	Kozhikode	Single	Other	12 month	7 month
28	M	Middle	Hindu	Kozhikode	Single	First	10 month	9 month
29	F	High	Muslim	Kozhikode	Single	Other	10 month	9 month
30	M	Middle	Christian	Kozhikode	Single	Other	12 month	7 month
31	M	High	Hindu	Thrissur	Single	First	10 month	9 month
32	M	Middle	Hindu	Kozhikode	Single	First	12 month	7 month
33	M	Middle	Hindu	Kozhikode	Single	First	12 month	7 month
34	M	High	Christian	Kozhikode	Single	First	19 month	4 month
35	F	Middle	Muslim	Kozhikode	Single	First	19 month	4 month
36	F	Low	Hindu	Kozhikode	Single	Other	19 month	4 month
37	M	Low	Hindu	Kozhikode	Single	Other	19 month	4 month
38	M	Low	Hindu	Kozhikode	Single	First	19 month	4 month
39	F	Low	Muslim	Kozhikode	Joint	Other	19 month	4 month
40	M	Low	Hindu	Kozhikode	Single	Other	19 month	4 month
41	F	Low	Hindu	Kozhikode	Single	Other	19 month	4 month
42	F	Middle	Muslim	Kozhikode	Single	Other	19 month	4 month

3.4 TOOLS

As information is collected through unstructured interview and observation, standardized tools were not used. The investigator prepared a personal data sheet and the format of parental dairy. Personal data sheet, details regarding the family members, details regarding pregnancy, childbirth and infancy, and details regarding current language development are included. Parents were requested to keep a diary of the child for which a format was prepared by the investigator. Personal data sheet and this parental diary format are presented in Appendices IV and V.

3.5 DATA COLLECTION

Before collecting final data a pilot study was carried out. For the pilot study 10 children were selected randomly with age differing from 10 months to 2 years. The objectives of the pilot study were:

1. To obtain an overall preliminary perspective regarding different stages of language development.

2. To familiarize the researcher with different techniques of data collection.

3. To identify problems and issues which may arise during the process of data collection.

The output of pilot study was very significant. Some of the major points realized by the researcher during this phase of study are summarized below.

1. For the successful collection of data co-operation from the parents is the most important factor. For building a smooth rapport, parents should be convinced about the purpose of the study. They should be made aware that the purpose is not to identify the limitations and problems of their child.

2. Questions regarding past need not be succeeded. Memories of the parents need not be a reliable source of data. So for studying acquisition of early words, children of that age have to be selected.

3. Requesting a parent to keep a diary of daily events is far more effective than asking them question afterwards. Investigator also had to keep daily records of each child whenever she meets them with all minute details.

4. It is very difficult to copy the pronunciation of child in a written form, so more care is needed.

5. It is always better to verify the written words and observation of the researcher with the parents. Similarly reports of the parents have to be cross-checked and verified whenever possible.

6. For obtaining meaningful data, the attachment/ relationship with the child is very crucial. Children will freely talk to the researcher or to

other persons if only they feel free and friendly with the stranger. Such a close- relationship building is the corner stone of the study.

7. In short, the researcher understood the basic care, which has to be adopted for generating valid and reliable data. She became more thorough in the measures that have to be used for creating situations for the generation of data, recording of data and for the verification of data.

After the pilot study, data were collected in three phases. Each phase pertains to a particular objective of the study. In the first phase, first words of 30 children were collected. As the words were organized on a monthly basis, the first 10 to 13, words were collected from each child. Children were visited at least three times in a month. First visits were more frequent and more time consuming. Information from the mother was the primary source of data. The investigator attempted to cross check and verify them. After writing each word, the mother verified it with respect to pronunciation, context and assumed meaning. The children at this age were very inconsistent in that pronunciation, context and meaning may change from time to time. So some sort of approximation was essential at this stage. Whenever the mother has a difference of opinion, the information was re-checked. The collected individual information are grouped together for a normative analysis.

For the second objective, data were collected from 25 children up to the age of 18 months. Large amounts of individual differences were observed here. Children became a little more consistent during the stage. During this

phase, direct data from children became the primary source. Mothers supplemented the information thus gathered. Here the joint activity of researchers/ and mother in the verification of facts became very important. The investigator feels happy to state that mothers turned researchers during this phase of data collection. They gave many new insights and questions. During these two phases the investigator attempted to collect all the words the children have acquired. The investigator could not say whether the attempt was fully successful or not.

During the third phase, the attempt was to collect a representative sample of sentence (or simply word combinations) before 2 years. From the second phase, it was evident that children may start using word combinations by the age of 17 months, even though most of the children started it later. Further, it also became evident that children started using preparatory words for sentences including the use of verbs and modification of nouns. For this third phase, investigator collected sentences from 18 children. The primary source of data was the interaction of the researcher with the child. Almost all the sentences the child was speaking during the visit were noted down. Each written sentence was shown to the mother for the verification of structure and meaning. After 22 months investigator stopped data collection having felt that the sentences are becoming more complicated and that they could not be considered as early sentences.

Even though the data is rich enough to carry out a longitudinal individual analysis, such a time consuming effort is not attempted in the

present work. Many of the fundamental questions of language development can only be answered through such an analysis. Hopefully, the investigator plans to make an effort in that direction in the immediate future.

3.6 ANALYSIS OF THE DATA

Words and sentences used by children are first organized at an individual level on a monthly basis. Relevant data are then grouped together for normative analysis. Analysis based on frequency, percentage, mean and mode are also utilized along with different qualitative techniques. Further details of the methods of analysis will be presented along with the result in the next chapter.

Chapter - IV

RESULTS AND DISCUSSION

4.1 Acquisition of Words before the Age of 1½ Years

4.2 Analysis of Word Combination

CHAPTER – 4

RESULTS AND DISCUSSION

This chapter is divided into two sections. The first section deals with the detailed analysis of words spoken by the children before the age of 1½ years. The second section, drawing evidence from the analysis of word combinations, attempts to summarise the characteristics of early sentences.

4.1 ACQUISITION OF WORDS BEFORE THE AGE OF 1½ YEARS

This section presents the results of the analysis of words spoken by the children before the age of 1½ years. Analysis has been carried out in two parts: collection and analysis of first 10-13 words acquired by each child and the analysis of further / rest of the words acquired by children before the age of 1½ year. The analysis helps to enhance the study of the structural and semantic aspects of words acquired by the children in their early stages of life, as it is the main thrust of the study.

4.1.1 Analysis of the First 10-13 Words of the Children

The results of a group-wise analysis of the characteristics of the first 10-13 words of each child can be seen under this section. For this purpose first words acquired by 30 children during each month were collected. Due to the fact that the collection is being made on a monthly basis, the number of

words could not be made uniform. That's why first 10-13 words of each child were taken in to consideration for the analysis.

Age of first word acquisition of these 30 children is presented in Table 4.1. As shown in the table, the age range of first word acquisition is 10-13 months with on an average of 11.1 months. This finding is in tune with the findings of Buhler (1931, cited by Ingram, 1989) who studied the onset of first word in production for 46 German children .She found that the first words in production occur around 10 months. The analysis shows that the first words differ qualitatively from other linguistic utterances in terms of pronunciation, meaning and the context in which the word is learned and used. The first word is generally a two letter word containing the letter "a' (ma) carrying the meaning 'mother'.

Table 4.1

Age of First Word Acquisition

Age of first word acquisition	Frequency
10 months	12
11 months	8
12 months	6
13 months	4
Average age 11.1 month	

The study shows the fact that 9 children mastered at least 10 words by the age of 15 months, 16 children by the age of 16 months and five children by the age of 17 months. Hence the average age is 15.9 months. The frequencies of words that the children mastered 10,11,12 and 13 words are

7,8,8 and 7 respectively. And thus a total of 345 words were attained. The list was shortened to 108 words by eliminating repeated words. These words in their alphabetical order are presented in Appendix I and the table highlights the fact that following words are most frequent: A½ (mother, 20), ämä (bye-bye, 18), A½½ (grand mother, 17), hmh (other children and dolls, 15), tX¯ (elder brother, 14), A¯ (father, 12),]m¸ (uncle 10,food,1), D¼ (cow, 8), amaw (food, 7), Xm¯ (elder brother, 7), and C¼w (water, 6).

In the subsections 4.1.1.1 and 4.1.1.2, this list of 108 words is analysed for structural and semantic aspects in the respective order.

4.1.1.1 Structural analysis

The structure of words is analysed by considering,

a) Number of letters

b) First letters

c) Letters used –vowels and consonants

d) Changes of consonants by adding vowel sounds

e) Short and long sound forms of letters

4.1.1.1.1 Number of letters

Out of 108 words, 88 words have two letters and the rest 20 have three letters.

4.1.1.1.2. Analysis of first letters

Table 4.2 presents the analysis of first letters of 108 words. 58 words start with vowels. Of these, the sounds "A' (a) and "B' (¡) are most dominant with a combined frequency of 33. The letters "C' (i), "D' (u) and "F' (e) have frequencies of 11,10, and 4 respectively .Out of these 58 words 54 start with short vowels. This is in line with the findings of Irwin (1943, cited by Ingram, 1989) who found that vowel-like vocalization are much more frequent than consonant like ones at the onset of first word acquisition.

Out of consonants "a' (ma, 10), "]' (pa, 9) "N' (ca, 6), "X' (ta, 5), "_' (ba, 4) and "I' (ka, 4) are most frequent.

Table 4.2

Analysis of First Letter

Vowels			Consonants		
Sl. No.	**Letter**	**Frequency**	**Sl. No.**	**Letter**	**Frequency**
1.	A (a)	29	14.	I (ka)	4
2.	B (¡)	4	15.	N (ca)	6
3.	C (i)	11	16.	ª (µµa)	2
4.	Cu (¢)	0	17.	U (da)	1
5.	D (u)	10	18.	X (ta)	5
6.	Du (£)	0	19.	Z (Èa)	1
7.	F (e)	4	20.	] (pa)	9
8.	G (®)	0	21.	_ (ba)	4
9.	sF (ai)	0	22.	a (ma)	10
10.	H (o)	0	23.	b (ya)	1
11.	Hm (°)	0	24.	e (la)	1
12.	Hu (au)	0	25.	h (va)	3
13.	Aw (am)	0	26.	f (½a)	2
			27.	ä (¶¶a)	1
	Total	58			50

4.1.1.1.3 Analysis of letters

Table 4.3 shows the frequency analysis of consonants used in 108 words. Vowels appear only as first letter or in combination with consonants. Different forms of the letter "]' (pa) is most frequent (36), there after the letters "a' (ma, 27), "N' (ca, 23), "X' (ta, 20), "b' (ya, 11), "I' (ka, 7), "ª' (µµa, 6), "_' (ba, 6), and "h' (va, 6) are dominant.

Table 4.3

Analysis of Consonants

Letter	Frequency	Letter	Frequency	Letter	Frequency	Letter	Frequency	Letter	Frequency
I (ka)	1	Nm (caa)	2	ª(µµn)	4	«(¶¶a)	1	Xm(t¡)	2
Im (k¡)	3	sN (ce)	1	ªn(µµi)	2	U(da)	1	Xn(ti)	1
¡ (kka)	2	No (ci)	1			Um(d¡)	1	tX(t®)	2
¡p (kku)	1	tN (c®)	2					¯(tta)	6
		¨ (cca)	6					¯m(tt¡)	6
		¨m (cc¡)	1					¯n(tti)	2
		¨n (cci)	8					¯v(tt)	1
		s¨ (cce)	1						
		¨p (ccu)	1						
Total	7		23		6		3		20
Letter	Frequency	Letter	Frequency	Letter	Frequency	Letter	Frequency	Letter	Frequency
Z(Èa)	1	] (pa)	2	_(ba)	3	¼(npa)	2	a(ma)	2
Zm(È¡)	1	]m(p¡)	2	_n(bi)	1	¼n(npi	1	am(m¡)	4

						)			
		]p(pu)	1	s_(be)	1	¼w(npam)	2	an(mi)	3
		s] (pe)	1	_u(bau)	1			ap(mu)	1
		t] (p®)	2					ta(me)	1
		t]m(p°)	1					av(m)	1
		¸(ppa)	13					aw(mam)	1
		¸m(pp¡)	3					½(mma)	12
		¸n(ppi)	2					½n(mmi)	1
		¸v(pp)	7					½w(mmam)	1
		¸w(ppam)	2						
Total	2		36		6		5		27
Letter	Frequency	Letter	Frequency	Letter	Frequency	Letter	Frequency	Letter	Frequency
b(ya)	3	e(la)	1	hm(v¡)	3	f(½)	1	ä(¶¶a)	2

bm(y¡)	2	em(l¡)	1	hp(vu)	1	fp(½u)	1	äm(¶¶¡)	1
bn(yi)	1	tem(l°)	1	hv(v)	1	Å(½½)	1		
bv(y)	2	ev(l)	1	Æv(vv)	1	Åp(½½u)	1		
t¿ (yye)	1	Ãw(llam)	1			Åw(½½am)	1		
t¿m(yy°)	1								
¿w(yyam)	1								
Total	11		5		6		5		3

When we consider different forms of each consonant, these forms occur by adding a vowel sound to a single or a double consonant. This analysis is carried out in Table 4.4.

From the Table, it is clear that most of the forms are at least attempted by children through A (a), B (¡), C (i), D (u), Aw (am) and G (®) are most frequent.

Table 4.4

Analysis of Different Forms of Consonants

		Total
A (a)	l, ¡, ¨, ª, «, U, W, ¯, Z,], ¸, _, a, ½, ¼, b, e, f, ä (ka, kka, cca, µµa, ¶¶a, ·a, µa, tta, Èa, pa, ppa, ba, ma, mma, npa, ya, la, ½a, tta)	19
B (¡)	lm, Nm, ¨m, Um, Xm, ¯m, Zm,]m, ¸m, am, bm, em, hm, äm (k¡, c¡, cc¡, d¡, t¡, tt¡, d¡, p¡, pp¡, m¡, y¡, l¡, v¡, ¶¶a)	14
C (i)	¨n, ªn, ¯n, ¸n, _n, an, ½n, ¼n, bn, en (cci, µµl, tti, ppi, bi, mi, mmi, npi, yi, li)	10
Cu (¢)	No (c¢)	1
D (u)	¡p, ¨p,]p, ap, hp (kku, ccu, pu, mu, vu)	5
Du (£)		0
F (e)	sN, s¨, s], s_ (ce, cce, pe, be)	4
G (®)	tN, tX, t], ta, t¿ (c®, t®, p®, m®, yy®)	5
sF (ai)		0
H (o)		0
Hm (°)	t]m, t¿m, tem (p°, y°, l°)	3
Hu (au)	_u (bau)	1

Aw (am)	½w, ¸w, ¼w, aw, ¿w, Ãw (mmam, ppam, npam, mam, yyam, llam)	6

4.1.1.1.4 Analysis in terms of short and long vowel sounds

In Malayalam language, letters in words can be categorised in to short vowel sounds (‘Laghu’) and long vowel sounds (‘Guru’). The vowels "A' (a), "C' (i), "D' (u), "F' (e), "H' (o) are short and "B' (¡), "Cu' (¢), "Du' (£), "G' (®), "Hm' (°) are long. For consonants, if they are combined with short vowels they are considered as short vowel sounds and if they are combined with long vowels they are called long vowel sounds. Further if a short vowel sound is followed either by a compound letter or the sound ‘o’ it becomes long.

In our list of 108 words, 88 are two letter words. Table 4.5 presents the frequency analysis of two-letter word with respect to short and long vowel sounds. There are 4 possibilities

1. Short vowel, Short vowel
2. Long vowel, Long vowel
3. Short vowel, Long vowel
4. Long vowel, Short vowel

From the Table, it is evident that the fourth possibility ie, long vowel, short vowel is most frequent. This category has 71 out of 88 words. The most infrequent category is the third one ie, short vowel, long vowel with the frequency of only 1. The first possibility has a frequency of 5 and the second

one has a frequency of 11. The first letter of a two-letter word is most probably a long vowel with a frequency of 82 out of 88. Similarly, the second letter is most probably a short vowel with a frequency of 76 out of 88.

The category long vowel, short vowel can be further subdivided. The second letter can either be a compound letter or a single letter.

So there are 3 possibilities:

1. Short vowel, compound letter
2. Long vowel, compound letter
3. Long vowel, single letter

From the Table, it is clear that the frequencies of each category are in the same order as the categories themselves. The frequencies are 36, 20 and 15 for respective categories. Fifty-six out of 71 words end with a compound letter. Out of 88 two-letter words, 65 words end with a compound letter. This finding is in line with the findings of Jusczky and Aslin (1995) who emphasized that children tend to pick up and learns stressed syllables above unstressed syllables.

Therefore we can expect that the first letter of a two-letter word will most probably be a long vowel sound with a probability over 0.93 (82/88). The second letter will most probably be a short vowel with a probability over 0.86(76/88). The last letter will most probably be a compound letter with a probability of .73 (65/88).

Table 4.5

Analysis of Two Letter Words

Short vowel, short vowel	Long vowel, long vowel	Short vowel, long vowel	Long vowel, Short vowel			
			Short vowel, compound letter		Long vowel, compound letter	Long vowel, single letter
A_n(e¶¶ala)	A¸w(appam)	Atem(alo)	A¡ (acca)	D¸v(upp)	B¸(¡ppa)	Bbv(¡y)
Ibn(kayi)	At¿m(ayyo)		A¨n(acci)	D¼(unpa)	B¸n(¡ppi)	Nmbv(c¡y)
__(bab)	A¿w(ayyam)		A¨p(accu)	D½(umma)	B¸v(¡pp)	Imbn(k¡yi)
anb(miya)	AÅw(a½½am)		A¨(acca)	D½n(ummi)	Im¡ (k¡kka)	UmU(d¡da)
A_(wba)	C¼w(inpam)		A«(a¶¶a)	DÆv(uvv)	Nm¨n(c¡cci)	Xmb(t¡ya)
	D¼w(unpam)		A¯(atta)	F¸v(epp)	No¨n(c¢cci)	ZmZ(d¡da)
	]m¸w(p¡ppam)		A¸(appa)	F¨n(ecci)	tN¨n(cecci)	ama(m¡ma)

	s_Ãw(bellam)		A¸n(appi)	F¨(ecca)	tNä(cetta)	amap(m¡mu)
	a½w(mammam)		A½(amma)	sN¸v(cepp)	ªª(µµaµµa)	amav(m¡m)
	_u _u(baubau)		At¿ (ayye)	]¸ (pappa)	Xm¯(t¡tta)	taa(m®ma)
	amaw(m¡mam)		Aä(a¶¶a)	]p¸v(pupp)	tX¯(t®tta)	bmb(y¡ya)
			Cª(iµµa)	s]¸v(pepp)	tX¯n(t®tti)	eme(l¡la)
			C¸(ippa)	a½(mamma)	Xn¯n(titti)	hmh(v¡va)
			C¼(inpa)	anª(miµµa)	]m¸(pappa)	hmhp(v¡vu)
			C¼n(inpi)	fpÅp(½u½½u)	t]¸v(p®pp)	aman(m¡mi)
			C½(imma)	fÅ(½a½½a)	t]m¸v(p°pp)	

			CÅ(i½½a)	F¯(etta)	ämä(¶¶¡¶¶a)	
			C¯(itta)	_¯v(batt)	Im¡p(k¡kku)	
					t]¸ (p®ppa)	
					ªªn(µµaµµi)	
Total 5	11	1	36		20	15

Analysis of the structure of 20, three-letter words shows a uniform pattern: long vowel, long vowel, short vowel. Further, the second letter of all the words is a compound letter. The third letter of all words except one is also a compound letter.

In short, the analysis shows that long vowel, short vowel is the most common structure of early words of children. In addition, a long vowel sound is added before this two-letter word if the number of words is three. Further, most of the letters other than first letter tend to be a compound letter.

4.1.1.2 Semantic analysis

This section mainly concentrates on the analysis of 108 words with respect of meaning. As a preliminary note, self-referenced words are extremely rare. One major category of words is in relation to identification of important persons in the immediate environment .The following relationships appeared in this category: mother, father, grandmother, grandfather, elder brother, elder sister, uncle and aunty. The frequency analysis of these person-related words is presented in Table 4.6. The frequency in the table represents the number of children out of 30 who has used some words to represent the particular meaning. For instance, all 30 children used some words to represent the meaning mother. Five words are utilised for this "A½' (amma, 20), "C½' (imma, 5), "a½' (mamma,3), "A½½' (ammamma,1), "D½' (umma,1). Out of 108 words, 43 can be categorized as person / relationship oriented words.

Table 4.6

Analysis of person-related words

A½ (Mother)		AÑ³ (Father)		tN«³ (Elder Brother)		ap¯Èn (Grand Mother)		A½mh³ (Uncle)		ap¯-Ñ³ (Grand Father)		tN¨n (Elder Sister)		A½-bpsS A\pP¯n (Aunty)		Specific Names	
Word	Frequency	Word	Frequency	Word	Frequency	Word	Frequency	Word	Frequency	Word	Frequency	Word	Frequency	Word	Frequency	Word	Frequency
A½	20	A¯	12	F¯	1	D½½	1	]m¸	10	A¨n¨v	1	tN¨n	1	taa	1	A_n	1
a½	3	B¸	2	tNä	2	A½½	17	t]¸	2	A¨m¨	1	Nm¨n	4	aman	1	A¨p	1
C½	5	A¸	6	tX¯	14	A½ª	1	ama	4	A¨s¨	1	tX¯n	2			F¨	1
A½½	1	]¸	4	Xm¯	6	ama	2			A¸¸	6	Xn¯n	1			hmh	15
D½	1	C¸	3			A¨½	1			A¸m¸	1	Xm¯	1				
		UmU	1			A¸¨n	1			A¸¨	1						
										]¸m¸	1						
										]m¸	1						
Total	30		28		23		23		16		13		9		2		

Next major category is food related words. Table 4.7 presents food related words. Most of the children (27) used some words to denote the general meaning ‘food’. Similarly 16 children used some word to denote water. Five children used words for tea. Further several specific food items are verbalized each by one or two children. It has to be noted that the meanings may not be exact. All possible errors of concept learning like over generalisation, under generalization, misconception etc. can be expected here. The researcher is not at all sure about the correct meaning of these words as used by children. A particular meaning is considered on the following grounds:

1. The spoken word has some resemblance with an actual word.
2. Children used this word appropriately with the attached meaning at least in some occasions.
3. Parents consider that the particular word has this meaning.
4. Parents report that the word has been originated to represent this meaning.

Table 4.7

Food Related Words

Meaning of food		Water		Other food items	
Word	**Frequency**	**Word**	**Frequency**	**Word**	**Frequency**
]m¸w	6	C¼w	6	F¨n	2
]m¸	1	D¼w	1	C¯	1
amaw	7	s_Ãw	2	A¸w	2
ama	1	AÅw	2	A¸m¯n	1
amap	5	A¿w	1	A«	1
a½w	3	fpÅp	1	A¡	1
amav	2	fÅ	1	anª	2
B¸n	1	eme	1	C¼n	1
ªª	1	C¼	1	CNmb	1
				Nmbv	1
				Xmb	1
				ZmZ	1
				bmb	1
				B¸v	1
	27		16		17

Table 4.8 presents the category of ‘other’ words. There are some words to refer to familiar birds and animals like crow, cow, dog, cat and cock. The meaning cow is represented by two words: "C¼' (3) and "D¼' (8). The words for dog, cat, and cock are generated from their sounds: "_u_u' (5) for dog, "__' (7) for cock and "anb' (1) for cat. The original Malayalam word for crow is "lm¡'. This word is correctly used by three children.

Dress and ornaments constitute another possible category. Five children have words for chappal: "sN¸v' (1), "F¸v' (1), "s]¸v' (3). The meaning dress is attached with two word "D¸v' (1), and "]p¸v' (1).

Children used some utterances to refer the social -active words like bye-bye, hai and kiss. Eighteen children used the word "ämä' to represent the meaning of bye-bye. Three children used the word "D½' for meaning of kiss and three children used "Bbv' for hai.

Few words are used by the children to indicate their needs like urination, elimination and sleeping: ie "No¨n' (1), C¨n¨n (1) for urination "A¸n' (1) for elimination and "hmhp' (2) for sleeping. There are five children who used the word "DÆv' to represent the meaning of flower.

A small number of words were common objects and some other words were also included in the category of ‘other’.

Table 4.8

The Category of 'Other' Words

'Other' words					
Word	**Frequency**	**Word**	**Frequency**	**Word**	**Frequency**
C¼	3	]p¸v	1	At¿	1
D¼	8	s]¸v	3	Bbv	3
_u_u	5	ªªn	1	A¸n	1
anb	1	_¯v	2	C¨n¨n	1
Im¡	3	t]¸	2	No¨n	1
Ibn	1	t]m¸v	1	Cª	1
Imbn	1	Atem	1	hmhp	2
__	7	D½	3	DÆv	5
D¸v	1	ämä	18		
F¸v	1	At¿m	1		
sN¸v	1				

From the analysis it became clear that the verbs were completely absent in the early stages of language acquisition of the children. The nouns were predominated over verbs in children's first word utterances. Among these children's nouns the proper nouns are the largest category. One of the supporting study was conducted by Gentner in 1982. According to him, children's early words in six languages did not provide evidence of any cross-linguistic differences, and suggested that the initial predominance of nouns was universal and language-independent. Gentner's natural partitions hypothesis states that the difference between nouns and verbs is primarily based on a pre-existing perceptual – conceptual distinction between concrete concepts such as persons or things and predicative concept of activity change-

of-state or causal relations. Nouns are conceptually simpler, more basic, more tangible and easier to grasp by children than verbs.

The noun-verb asynchrony was challenged by the studies conducted by Choi and Gopnik in 1995. It reported that the Korean children use more verbs earlier than nouns.

4.1.2 Further Words Learned Before 1½ Years

This is the continuation of the analysis of first 10-13 words of the children. Table 4.9 presents normative data of acquisition of words up to 1½ years.

Table 4.9

Normative Data of Word Acquisition

Age	Up to 12 months	13 months	14 months	15 months	16 months	17 months	18 months
Number of children studied	33	33	33	33	33	27	25
Range of number of words	0-2	0-3	0-4	0-6	1-9	1-12	1-20
Cumulative range	0-2	0-4	0-8	0-13	1-22	2-35	3-52
Average number of words acquired	1	1.12	1.78	3.24	4.81	7.51	10.36
Cumulative number of words	1	2.12	3.9	7.14	11.95	19.46	29.82

From the table it is evident that the field of language acquisition exhibit vast amount of individual differences. This can be seen in the age of first word acquisition, speed of language learning and the number of words

acquired. There is one child who has acquired the first word during 16th month. That child acquired only two more words even by eighteen months. At the same time there is a child who could acquire 52 words by the age of 1½ years. This discrepancy poses series problems for any kind of normative data. This analysis also shows that children acquired 29.82 words at the age of 18 months. For a fuller understanding a frequency table of number of words acquired by 25 children by the age of 1½ years is presented in table 4.10. This finding has to be compared with the reports of Smith (1926,cited by Ingram, 1989) and Nelson (1973, cited by Ingram, 1989). Smith found that children had acquired 22 words at the average age of 18 months and Nelson suggested that it was about 50 words.

Table 4.10

Number of Words Acquired by 25 Children by the Age of 1½ Years

Range of words	Frequency
0-4	1
5-9	2
10-14	1
15-19	2
20-24	2
25-29	1
30-34	6
35-39	5
40-44	2
45-49	1
50-54	2
Total	25
Mean	29.82
Median	32.42

As far as the number of words is concerned, longitudinal data are available in the case of 25 children up to 18 months. A total of 745words were acquired by these children. After excluding repeated words and the words utilised in the prior analysis of first words (presented in section 4.1.1), a total of 192 words are remaining which are listed in alphabetical order in Appendix II.

Some details about the sample have to be noted. The number of cases that was utilised for the analysis of first words was 30. Out of this 8 cases are dropped in this analysis. Fresh data of 3 cases are added. So the sample size of this analysis is 25.

The words presented in Appendix II are relished for the structural and semantic aspects.

4.1.2.1 Structural analysis

The structure of words is analysed by considering,

a) Number of letters

b) First letters

c) Letters used – vowels and consonants

d) Changes of consonants by adding vowel sounds

e) Short and long sound forms of letters

4.1.2.1.1 Number of letters

Out of 192 words, 144 words, have two letters; 43 words have three letters and the rest have four letters.

4.1.2.1.2 Analysis of first letters

Table 4.11 presents the analysis of first letters of 192 words. 59 words start with vowels. Of these the sounds "A' (a) and "B' (¡) are most dominant with a combined frequency of 34. The letters "C' (i), "D' (u), "F' (e), "G' (®) and "Hm' (°) have frequencies of 11,3,5,1 and 5 respectively. Out of these 59 words 41 start with short vowels. Here the children have learned to produce the vowels "G' (®) and "Hm' (°) which was not occurred in the earlier first word utterance period. The vowels "Cu'

(¢), "Du' (£), "sF' (ai), "H' (o), and "Hu' (au) were not found in the first letter of 192 words.

Among the consonants "]' (pa, 33), "N' (ca, 18), "I' (ka, 15), "_' (ba, 14), "h' (va, 13) are most frequent. The letters of "P' (ja), "c' (ra), "k' (sa), "l' (ha) and "d' (ra) are the new additions to the earlier list.

Table 4.11

Analysis of First Letters

Vowels		**Consonants**	
Letter	**Frequency**	**Letter**	**Frequency**
A (a)	22	I (ka)	15
B (¡)	12	N (ca)	18
C (i)	11	P (ja)	1
Cu (¢)	0	S (¶a)	5
D (u)	3	X (ta)	9
Du (£)	0	\ (n)	7
F (e)	5	Z (da)	1
G (®)	1	] (pa)	33
sF (ai)	0	_ (ba)	14
H (o)	0	a (ma)	10
Hm (°)	5	c(¯r a)	1
Hu (au)	0	e (la)	3
		h (va)	13
		k (sa)	1
		l (ha)	1
		d(ra)	1
Total	59		133

4.1.2.1.3 Analysis of letters

Table 4.12 presents the frequency analysis of consonants used in 192 words. In different forms of the letter the highest frequency were observed for "]' (pa, 51). The next frequently used consonants were "N' (ca, 47), "\' (na, 37), "S' (ta, 31), "X' (ta, 29), "a' (ma, 24), "b' (ya, 24), "l' (ka, 24), "h' (va, 19), "e' (la, 18), "_' (ba, 15), "¼' (npa, 12), "W' (¸a, 11), and "ä' (¶¶a, 9). Other consonants "§' (´´a), "¤' (µµa), "P' (ja), "Z' (da), "c' (ra), "k' (sa), "l' (ha), "f' (½a)and "d' (ra) were used rarely. The consonants "§' (´´a), "P' (ja), "W' (¸a), "\' (na), "c' (ra) and "d' (ra) were newly acquired letters.

Some absences have to be mentioned here. The following letters are totally absent: "J' (kha), "O' (cha), "T' (¶ha), "Y' (Éha), "^' (pha), "L' (gha), "Q' (jha), "V' (·ha), "[' (Èha) and "`' (bha). These strong sounds are found to be very difficult for children. The letters of the middle category ie., "K' (ga), "P' (ja), "Z' (da), "U' (·a) and "_' (ba) are used less frequently by children. Out of these five letters "_' (ba) is more prominent and "K' (ga) is totally absent. The first and last categories are prominent. In the first category, order of prominence is the following: "]' (pa), "N' (ca), "S' (¶a), "X' (ta) and "l' (ka). In the

last category "a' (ma) and "\' (na) are very prominent while, "M' (´a), "R' (µa) and "W' (¸a) are used very infrequently. Use of double letters is very common. The following are used: "¡' (kka), "§' (´´a), "¨' (cca), "ª' (µµa), "«' (¶¶a). Though rare, two different letters are combined in some cases, for eg: "' (´·a), "©' (µµcha), "â' (n¶a), and "¼' (npa).

Some special absences are worth mentioning. The following laterals are totally absent: "³' (n), "Â' (l), "À' (r), "Ä' (½), ¬ (). The only lateral, which is present, is ‘o’ (am) (like "lw', kaam).

Table 4.12

Analysis of Consonants

Letter	Frequency	Letter	Frequency	Letter	Frequency	Letter	Frequency	Letter	Frequency
l(ka)	4	§(´´a)	1	N(ca)	1	sP(je)	1	S(¶a)	2
lm(k¡)	4	§n(´ni)	1	Nm(c¡)	3	Pq(j£)	1	Sm(¶¡)	1
ln(ki)	1			Nn(ci)	4	ª(µµa)	2	Sn(¶i)	3
lp(ku)	3			Np(cu)	1	©v(µc)	1	So(¶¢)	1
slm(ko)	2			Nq(c£)	1			sS(¶e)	2
tlm(k°)	1			sN(ce)	1			tS(¶e)	1
lw(kam)	1			tN(c®)	2			Sv(¶)	1
¡ (kka)	2			tNm(c°)	3			«(¶¶a)	8
¡n(kki)	1			¨(cca)	6			«m(¶¶¡)	3
¡p(kku)	1			¨m(cc¡)	1			«n(¶¶i)	3
¡q(kk£)	1			¨n(cci)	10			s«(¶¶e)	3
t¡m(kk°)	2			¨p(ccu)	4			t«(¶¶®)	1
¡v(kk)	1			t¨(cc®)	1			t«m(¶¶°)	1
				¨v(cc)	7			«v(¶¶)	1

Total	24				47				31
Letter	Frequency	Letter	Frequency	Letter	Frequency	Letter	Frequency	Letter	Frequency
W(¸a)	1	X(ta)	5	Zm(d¡)	1	\(na)	6	] (pa)	4
Wn(¸i)	1	Xm(t¡)	5			\m(n¡)	5	]m(p¡)	12
Wm(na)	1	Xn(ti)	1			\n(ni)	1	]p(pu)	3
(¸·a)	4	Xo(t¢)	1			s\(ne)	1	]q(p£)	3
n(¸·i)	2	tX(t®)	1			\v(n)	1	s] (pe)	2
o(¸·¢)	1	Xv(t)	2			\ w(nam)	2	t] (p®)	3
v(¸·)	1	Xw(tam)	1			¶(nna)	5	s]m(po)	2
		¯(tta)	5			¶m(nn¡)	2	t]m(p°)	4
		¯m(tt¡)	2			¶p(nnu)	1	ss] (pai)	1
		¯n(tti)	3			¶n(nni)	1	¸(ppa)	4
		¯v(tt)	3			¶v(nn)	2	¸m(pp¡)	2
						´n(nti)	2	¸n(ppi)	5
						s´(nte)	1	¸p(ppu)	1
						t´(nt®)	1	¸q(pp£)	1
						´v(nt)	1	t¸m(pp°)	1

						sâ(n¶e)	2	¸v(pp)	2
						âv(n¶)	1	¸w(ppam)	1
						ân(n¶i)	2		
Total	11		29				37		51
Letter	Frequency	Letter	Frequency	Letter	Frequency	Letter	Frequency	Letter	Frequency
_(ba)	4	a(ma)	1	¼(npa)	5	b(ya)	3	c(̄ra)	2
_m(b¡)	3	am(m¡)	5	¼m(np¡)	2	bn(yi)	9	cn(̄ri)	1
_n(bi)	3	an(mi)	5	s¼(npe)	1	bv(y)	7	cv(̄r)	1
s_(be)	1	ao(m¢)	2	¼p(npu)	1	¿ (yya)	2	cw(̄ram)	1
t_(b®)	1	ap(mu)	1	¼v(np)	1	¿m(yy¡)	1		
ss_(bai)	1	sa(me)	1	¼w(npam)	2	bp(vu)	1		
_v(b)	1	ta(m®)	1			bw(vam)	1		
_p(bu)	1	½(mma)	4						
		½m(mm¡)	2						
		s½(m	1						

		me)							
		t½(mm®)	1						
Total	15		24		12		24		5
Letter	Frequency	Letter	Frequency	Letter	Frequency	Letter	Frequency	Letter	Frequency
e(la)	4	h(va)	6	km(s¡)	1	fn(½i)	1	dm(ra)	1
en(li)	1	hm(v¡)	2	lm(h¡)	1	fp(½u)	1	dv(r)	1
tem(l°)	3	hn(vi)	2			Åw(½½am)	2		
ev(l)	7	ho(v¢)	1						
Ã(lla)	2	hp(vu)	1						
Ãn(lli)	1	sh(ve)	2						
		th(v®)	3						
		hv(v)	1						
		Æv(vv)	1						
Total	18		19		2		4		
Letter	Frequency								
ä(¶¶a)	4								
än(¶¶i)	1								
äv(¶¶)	4								
Total	9								

When vowels are combined with consonants we get different forms of consonants, which are tabulated, in Table 4.13. All the forms are present except "Hu' (au). The forms "A' (a), "B' (¡), "C' (i), "D' (u) and "F' (e) are most frequent. In long vowel forms "B' (¡) is very frequent while others are less frequent.

Table 4.13

Analysis of Different Forms of Consonants

		Total
A (a)	I, ¡, §, ¨, ª, S, «, W, , X, ¯, \, W, â], ¸, _, a, ½, ¼, b, ¿, c, e, Ã, h, ä (ka, kka, ´´a, cca, µµa ¶a, ¶¶a, ¸a, ¸·a, ta, tta, na, ¸a, n¶a, pa, ppa, ba, ma, mma, npa, ya, yya, ¯a, la, lla, va, ¶¶a),)	27
B (¡)	Im, Nm, ¨m, Sm, «m, Xm, ¯m, Zm, \m, ¶m,]m, ¸m _m, am, ½m, ¼m, ¿m, hm, km, lm, dm, ä (k¡, c¡, cc¡, ¶¡, ¶¶¡, t¡, tt¡, d¡, n¡, nn¡, p¡, pp¡ b¡, m¡, mm¡, np¡, yy¡, v¡, s¡, h¡, ra, tta)	21
C (i)	In, §n, Nn, ¨n, Sn, «n, Wn, n, ¯n, \n, ¶n, ân, ¸n, _n an, bn, cn, Ãn, hn, fn, än, Xn (ki, ´´i, ci, cci, ¶i, ¶ti, ¸i, ¸·i, tti, ¸i, ¸¸i, tti, ni, nni, n¶I, ppi, bi, mi, yi, (¯i), lli, vi, ½i, ¶¶i, ti)	22
Cu (¢)	No, So, o, Xo, ao (c¢, ¶¢, ¸·¢, t¢, m¢)	5
D (u)	Ip, ¡p, ¨p, ¶p, µp,]p, ¸p, ap, bp, hp, fp, ¼p, Np (ku, kku, ccu, nnu, ndu, pu, ppu, mu, yu, vu, ½u, npu, cu)	13
Du (£)	¡q, Pq,]q, ¸q, Nq (kk£, j£, p£, pp£, c£)	5
F (e)	sN, sS, s«, s¯, s\, s´, sâ, s], s_, sa, s½, s¼, sh, sP (ce, ¶e, ¶¶e, tte, ne, nte, n¶e, pe, me, mme,	14

	npe, ve, je)	
G (®)	tN, t¨, tS, t«, t´, t], t_, ta, t½, th (c®, cc®, ¶®, ¶¶®, n¶®, p®, b®, m®, mm®, v®)	10
sF (ai)	ss], ss_ (pai, bai)	2
H (o)	sIm, s]m (ko, po)	2
Hm (°)	t¡m, tNm, t«m, t]m, t¸m, tem (kk°, c°, ¶¶°, p°, pp°, l°)	6
Hu (au)		0
Aw (am)	Iw, ¡w, Ww, Xw, \w, ¸w, cw, Åw (kam, kkam, ¸am, tam, nam, ppam, ¯am, ½½am)	8

4.1.2.1.4 Analysis in terms of short and long vowel sounds

From the list of 192 words, 144 are two letter words. Table 4.14, presents the frequency analysis of two-letter word with respect to short and long vowel sounds. There are 4 possibilities.

1. Short vowel, short vowel
2. Long vowel, long vowel
3. Short vowel, long vowel
4. Long vowel, short vowel

From the table it is evident that the fourth possibility ie, long vowel, short vowel is most frequent. This category has 119 out of 144 words. The

most infrequent category is the third one ie, short vowel, long vowel with the frequency of 5. The first possibility has a frequency of 12 and second one has a frequency of 8. This analysis also indicates the first letter of a two letter word is most probably a long vowel with a frequency of 127 out of 144 words. Similarly the second letter is most probably a short vowel with a frequency of 131 out of 144 words.

The category long vowel, short vowel can be further subdivided. There are three possibilities.

1. Short vowel, compound letter
2. Long vowel, compound letter
3. Long vowel, single letter

All possibilities have almost equal frequencies (41,41,and 37 respectively). Out of 119 words 82 ends with a compound letter. Out of 144 two-letter words, 85 words end with a compound letter.

Therefore, we can expect that the first letter of a two-letter word will most probably be a long vowel sound with a probability of 0.88 (127/144). The second letter will most probably be a short vowel with a probability of 0.90 (131/144). The last letter will most probably be a compound letter with a probability (85/144) of 0.59.

Table 4.14

Analysis of Two Letter Words

Short Vowel Short Vowel	Long Vowel Long Vowel	Short Vowel Long Vowel
ASn (a¶i)	]¸w (pappam)	AXm (at¡)
_bp (bayu)	t_Ww (b®nam)	AXo (at¢)
FsS (e¶e)	ss_ ss_ (bai bai)	Aao (am¢)
Infn (ki½i)	am\w (m¡nam)	]Xw (patam)
sImS (ko¶a)	s_Åw (be½½am)	hbw (vayam)
Ipfp (ku½u)	th\w (v®nam)	
sImX (kota)	tImtIm (k°kk°)	
Xcv (ta r̄)	shÅw (ve½½am)	
__v (bab)		
_bn (bay)		
NpXn (cuti)		
]ph (puva)		
12	8	5

Long Vowel, Short Vowel					
Short Vowel, Compound Letter		Long Vowel, Compound Letter		Long Vowel, Single Letter	
A¶n(anni)	s«s«(¶e¶¶a)	B¨n(¡cci)	\m´n(n¡nti)	B\(¡na)	hmsh(v¡ve)
A¶v(ann)	X¯(tatta)	B«n(¡¶¶i)	]m«(p¡¶¶a)	B\n(¡ni)	th\(v®na)
A¼(anpa)	]än(pa¶¶i)	B¯v(¡tt)	]m¸n(p¡ppi)	B_n(¡bi)	kmbv(s¡y)
C¨(icca)	s]¶v(penn)	Bân(¡n¶i)	]m¸p(p¡ppu)	Ban(¡mi)	lmbv(h¡y)
C©v(iµc)	s]m«n(po¶¶i)	G(e¸·a)	]m¼p(panpu)	Bc(¡ ī a)	tNmbn(c°yi)
Cn(i¸·i)	s]m«v(po¶¶)	Hmt«(°¶¶®)	]mä(p¡¶¶a)	Bcn(¡ ī i)	Zmbv(d¡y)
C¶(inna)	_¨v(bacc)	Hm¸v(°pp)	]mäv(p¡¶¶)	Hmbn(°yi)	]m\v(p¡n)
Cs¼(inpe)	_nÃn(billi)	Im¡v(k¡kk)	]q¨v(pucc)	Imdv(k¡r)	temen(l°li)
C¿w(iyya)	a´v(mant)	Iq¡p(k£kku)	t]¸n(p®ppi)	Nmb(c¡ya)	]mbv(p¡y)
CÃ(illa)	X¨n(tacci)	Nm¨p(c¡ccu)	t]ms«(p°tte)	Sohn(¶¢vi)	\mbv(n¡y)
D¼v(unp)	ap´n(munti)	No¨v(c¢cc)	_m¨v(b¡cc)	«mbn(¶¶¡yi)	BsS(¡¶e)
F§n(e´´i)	cv(ī a¸·)	Noä(ci¶¶a)	ta(m®¸·a)	\m\(n¡na)	t_mbv(b°y)
Ft´(ent®)	h¨p(vaccu)	tN¯(c®tta)	th(v®¸·a)	\mb(n¡ya)	]qhp(p£vu)
I«n(ka¶¶i)	hn(va¸di)	dm¨n(r¡cci)	Nm¨(c¡cca)	]m\(p¡na)	hohn(v¢vi)
an¨n(micci)	hÆv(vavu)	Xm¯n(t¡tti)	tN«(c®¶¶a)	]qhv(p£v)	
sN«(ce¶¶a)	X¼(tanpa)	¨ms´(cc¡nte)	tNm¸v(c°pp)	t]mSn(p°di)	
Ip¨p(kuccu)	_nân(bin¶i)	Pq¨v(j£cc)	amª(m¡µµa)	t]mbv(p°y)	
Ip¸(kuppa)	D¸(uppa)	Sm«(t¡¶¶a)	\m¶(n¡nna)	t]mbn(p°yi)	
N¨(cacca)	C½n(immi)	tS«(¶e¶¶a)	Nq¨v(c£cc)	_m_p(b¡bu)	
Nn¨v(cicc)	I¨p(kaccu)	Xm¯v(t¡tt)	an«(mi¶¶a)	amsa(m¡me)	
Nn¶p(cinnu)		tX«(te¶¶a)		ame(m¡la)	
				aoan(m¢mi)	
				tembn(l°y)	
41		41		37	

Table 4.15 presents the frequency analysis of 3 letter words. Out of 192 words 43 were 3 letter words. Five categories are present:

1. Long vowel, long vowel, short vowel (ghuru ,ghuru , lakhu)
2. Long vowel, short vowel, short vowel (ghuru ,lakhu , lakhu)
3. Short vowel, long vowel, short vowel (lakhu , ghuru , lakhu)
4. Long vowel, short vowel, long vowel (ghuru , lakhu , ghuru)
5. Long vowel, long vowel, long vowel (ghuru , ghuru , ghuru)

Among this category the first possibility were found to be most commonly used by the children. This category has 34 out of 43 words. In this category, the middle letter in all words except one is a compound letter. The last letter in 22 words out of 34 is a compound letter. As the number of four letter words is very less, structural analysis has not been carried out.

Table 4.15
Analysis of Three Letter Words

Long vowel, long vowel, short vowel		Long vowel, short vowel, short vowel	Short vowel, long vowel, short vowel	Long vowel, short vowel, long vowel	Long vowel, long vowel, long vowel
A½s½(ammamme)	]m¸m¨n(p¡pp¡cci)	A§s\(a´´ane)	Aanª(amiµµa)	]p¯lw(puttakam)	]m¯mcw(p¡tt¡ram)
A½m½(amm¡mma)	]m¸m¯n(p¡pp¡tti)	A¼Sv(anpa¶)	Aan¶(aminna)		
A¨¨(accacca)	]pä¼(pu¶¶anpa)	s]¨nev(peccil)			
At½sâ(ammen¶e)	ss]t¨«(paichetta)	t]¸Xv(peppat)			
A¼m¨n(anp¡cci)	_n¡äv(bikka¶¶)	temeev(l°lal)			
B¸n¨n(¡ppicci)	hoev(va¸·¢l)				
C¼mbn(inp¡yi)	hmhmhp(v¡v¡vu)				
C¿½ (iyyamma)	At¸m¯v(app°tt)				
F¡ (ekka¸·a)	Cääv(i¶¶a¶¶)				
F«me(e¶¶ala)	_mäv¶(ba¶¶nna)				
Hmt«m¨(°¶¶°cca)	A«mbn(a¶¶¡yi)				
Hm¸n¨n(°ppicci)	A½mbn(amm¡yi)				
l¡ns«(kakki¶¶e)	hm¸n¨n(v¡ppicci)				
A¿me(ayy¡la)	D½n¨n(ummic				

	ci)				
Xm¯m¯(t¡tt¡tta)					
Xmt¡mev(t¡kkol)					
Imt¡mev(k¡kkol)					
Nn¨nev(ciccil)					
\¶mS(nann¡ta)					
\¶mSn(nann¡¶i)					
Total 34		5	2	1	1

4.1.3 General Observations Regarding Early Transformational Rules in Language Acquisition

As presented in sections 4.1.1 and 4.1.2 children acquired a total of 300 words (after excluding repetitions) by the age of 18 months. Out of this, there are 5 four-letter words, 63 three-letter words and 232 two-letter words. These words can be classified as follows.

1. Real words without any modification
2. Words that are modified by parents but not altered by children
3. Different kinds of modification of real words
4. Words that are created by children and / or if it is a modification, the investigator and parents fail to understand the real word.

The frequency distribution of this classification is presented in Table 4.16. Nearly 20% of words do not require any kind of modification by children. Some (7%) words are modified by parents for making the words more comfortable to children. Children find it difficult to reproduce correctly the other set of words.

Table 4.16

Frequency Table of Words with and Without Modification

Modified Words	Number of Letter			Total
	2	3	4	
Real word	48	9	3	60
Words modified by parents	14	7	0	21
Words modified by children	145	44	2	191
Created words	25	3	0	28
Total	232	63	5	300

When we consider the words modified by the children, three kinds of modifications are observed.

1. Lopa : The modified words does not contain all the elements of real word. This loss may be either letters, forms of letters or sounds.

2. Agama : The modified word contains more elements than the real word.

3. Adesha : It is a mixture of ‘lopa’ and ‘agama’. So that some elements are missing and some other elements are extra.

Frequency distribution of the modifications is presented in Table 4.17

Table 4.17

Modification of Words

Modified Words	Number of Letter			Total
	2	3	4	
Lopa	40	20	0	60
Agama	5	1	0	6
Adesha	100	23	2	125
Total	145	44	2	191

The category ‘agama’ is extremely less and the category ‘adesha’ is maximum. The Table implies that if a modification is needed, children use either ‘lopa’ or ‘adesha’. ‘Lopa’ is the simple mechanism of omitting difficult parts of the word including all laterals, difficult consonant letters, vowels associated with consonant letters or different letters forms. Letter omission is more observed in the case of three letter words.

The category ‘adesha’ includes a mixture of three processes:- addition, subtraction and replacement. In some cases tone and form of original word is kept intact but letters are changed. In some other cases even the tone and form are changed. For example in our study, there are 100 two-letter words showing ‘adesha’. In the case of 35 there are change in letters without change in tone and form. In this category in 13 cases first consonant letter is changed; in 15 cases second letter is changed; in 7 cases both letters are changed. Change in tone and form occurs when vowels, either alone or with consonants, are added, subtracted or substituted. Out of 100 ‘adesha’

modification of two letter words 65 show change in tone and form. The major modification in this category occurs by replacing other vowels by either "A'(a) or "C'(i). One major observation regarding the replacement of consonant letters is that those letters, which are rarely used by children, are generally absent even in real words. If there are such letters, parents usually make the modification. This doesn't occur in some words, which are English in origin and are related with technological advancement. Examples include fan, switch, fridge, bulb, bus, autoriksha, TV. Etc. For all other things and animals, which are surrounded in the environment of a child, there are simple words with simple letters, which can be directly used by children. This process occurs due to the natural process of the evolution of the spoken language. If some words are difficult, parents make the modification. Children find difficulties in speaking English and technological words not only because they are strange, difficult and complicated, but also are not at all modified by parents.

4.1.4 Semantic Analysis

In this section the words acquired by 25 children before 18 month are analysed with respect to their meaning. As explained in section 4.1.2, a total of 300 words are obtained for analysis after excluding repetitions. In the first subsection meanings conveyed by children are analysed with respect to frequency. In the second section, these 300 words are reduced and classified according to their meaning.

4.1.4.1 Most important meanings conveyed by children

Which are the important concepts for which children have words? For answering this, frequency analyses of meanings, which are conveyed by at least 6 children, are presented in Table 4.18. It has to be remembered that different children may use different words to denote the same meaning. This list of 28 meanings represents the most important concepts of children for verbalization at least in Kerala. Out of 28 words, 25 are nouns and 3 are verbs. Most of the nouns can be classified into one of the four categories.

i) Words representing a relationship

ii) Names of animals and birds

iii) Names of familiar objects

iv) General and specific words representing food and food items

This is in line with the findings of Bassano (2000) who suggested, that among nouns denoting animates, a notable frequency of proper names was found as early as the first period, during which they were used to refer to other members of the family, exclusively and repeatedly and then later animals. To conclude these findings at the emergence of language, noun production is divided in to object names and animate names (mostly proper names).

Table 4.18

Important Meanings Conveyed by 25 Children before 1½ Years

Sl. No.	Word & Meaning	Frequency	Sl. No.	Word & Meaning	Frequency
1.	A½ (Mother)	25	15.	tkm¸v (Soap)	15
2.	AÑ³ (Father)	24	16.	ap¯-Ñ³ (Grand father)	14

3.	`£Ww (Food)	24	17.	DSp¸v (Dress)	14
4.	tN«³ (Elder brother)	22	18.	ämä (Bye-bye)	12
5.	A½m-h³ (Uncle)	22	19.	ao³ (Fish)	12
6.	]ip (Cow)	22	20.	_kv (Bus)	11
7.	shÅw (Water, Tea, Milk)	21	21.	tImgn (Cock)	12
8.	ap¯Èn (Grandmother)	19	22.	aq{Xw (Urine)	10
9.	hmh (Baby)	18	23.	t]¸À (Paper)	9
10.	]«n (Dog)	18	24.	t]mbn (Went)	9
11.	sNcp¸v (Chappal)	18	25.	A½mbn (Aunty)	9
12.	Im¡ (Crow)	17	26.	tX§ (Coconut)	8
13.	]qhv (Flower)	17	27.	th (Don't want)	8
14.	tN¨n (Elder sister)	17	28.	t]\ (Pen)	7

4.1.4.2 Classification of words according to their meaning

As explained in section 4.1.2, a total of 745 words are acquired by 25 children by the age of 18 months with an average of 30 words. These words are reduced to 300 words after excluding repetitions. Excluding repetition in meaning can further reduce these 300 words. Hence, a list of 132 meanings is obtained. This list of words can be classified into nouns, verbs and other words. Most of the words in 'other' category are preparatory words for sentences. Out of 132 words 102 are nouns, 10 are verbs and 20 are included in the 'other' category.

The category of nouns can be further classified into:

1. Words representing a relationship or specific names of persons: 24
2. General and specific words for food items : 19

3. Familiar objects: 32
4. Birds and animals: 12
5. Vehicles: 5
6. ‘Other’: 10

The words included in the last category are: aq{Xw (urine), A¸n (Stool), Hm^okv (office),]m«v (song), Dd¡w (sleep), D½ (kiss), AkpJw (pain/disease), ASn (beating), cv (two), ssZhw (God).

There are 10 verbs out of 132 words which are listed below: ämä (bye-bye), t]mbn (went), Im«n (beaten), FSp-¡ (don’t take), Cd§n (came down), ISn¨p (bit), Ipfn¨p (bathed), ImW-WnÃ (not seen), s]m«n (broken), h¨p (kept); it has to be noticed that most of the verbs are first learned as past tense. The other two tenses are extremely rare.

The ‘other’ category contains 20 words including modifications of nouns [for eg., At½sâ (mother’s)], words indicating directions [for eg., Ahn-sS (there), Xmg¯v (down)], question forms [Fhn-sS (where), Ft´ (what)] and positive and negative markers [thWw (want), th (don’t want), CÃ (no), CXm (this)].

To conclude:

1. Most of the words, children learn before 18 months are nouns for representing relationships, food items, objects, birds and animals and

vehicles. One absence has to be specifically noted: Self-referenced words and body parts are extremely rare. Needs are generally not verbalized.

2. The period before 18 months is generally described as sensory – motor. With respect to language acquisition, this period is predominantly sensory in nature. Words for food items and toys can be described as sensory-motor. Almost all other nouns can be described only as sensory. Most of the words represent something 'out there' in the external environment.

4.2 ANALYSIS OF WORD COMBINATION

This section presents the results of the analysis of early sentences spoken by children before the age of 2 years.

After acquiring a preliminary set of words children gradually learn to use sentences. This process starts with single word sentence. During the initial period children convey the meaning of a sentence by a single word. It has to be noted that the same word may be used in different contexts with different meaning. The next stage is learning to use word combinations.

The data collected for the analysis of acquisition of words up to 18 months show that at least some children start using two word combinations during 17^{th} month. In our data out of 18 children two (10%) have started using two word combinations during 17^{th} month, three children started during 18^{th} month. So we can conclude that only 25% of children can be expected to use two word combinations on or before 18 months of age.

As we have already observed, most of the words before 18 months are nouns. For learning to use sentences it is essential to learn more verbs. Further, the rules for combining words have to be mastered. In Malayalam language words have to be modified in several ways in forming a combination. Nouns have to be modified with respect to the number of person, gender and vibhakthi. Verbs have to be modified with respect to tense, the affective mood of the sentences etc. More number of adjectives and adverbs have to be learned which are generally rare before 18 months. Further, more number of pronouns and self-referenced words are essential. All of them imply that, learning such sentences is not at all an easy task. It appears that conceptual and cognitive development is a pre-condition of acquiring language. Acquisition of grammar necessitates the understanding of concepts like time, place, direction, amount, number, gender etc. This section attempts to analyze these psychological concepts along with the linguistic aspects as evident in the early sentences of children.

The investigator could collect 530 word combinations (either two words or three words) from 18 children, which are representative of early sentences. The investigator has visited several times during a month and arranged the data on a monthly basis. Most of the sentences are collected directly from children when the researcher was present. Some are secondary data collected upon based on the discussions with parents. The sentences of each child can be considered as a random sample of all sentences used by that child, during that stage. All of them could not be called sentence. Some are clear phrases, some are indicative of sentences but verb is missing but only implied, and some are clear sentences. Now onwards, all of this are referred to

as sentences instead of word combinations. This list of sentences can generally be classified into five.

1. Those which express a need, a request or a wish of the child.
2. Those which are related with playing.
3. Those which express an emotion or self reference.
4. Those which are descriptions of other persons, objects or events in the environment.
5. Those which have a question format.

These sentences are presented in Appendix III.

4.2.1 Category I: Those which Express a Need, a Request or a Wish of the Child

Approximately 27% of the sentences (146 out of 530) express a need, a request or a wish of the child. Common forms are:

a) Those having an object and a verb [for eg., shÅw thWw (want water), Xmt¡mev Xm (give the key)].

b) Along with an object and a verb a specification of 'to me' is added [for eg. F\n¡v Nmb thWw (I want tea)].

c) Along with an object and a verb a specification of other person is added [for eg. A½ ama thWw (mother, want food), tN¨osâ s]³ thWw (want sister's pen)].

d) Verb and a specification of other [for eg. At½ Dd-§Ww (want to sleep)].

e) Self reference and a verb [for eg. Rm\v InÃ (I haven't seen), F\n¨v thWw (I need)].

f) Without a stated verb but implied [for eg. AÑ½ Ipän (grandma lock), A½½]¸Sw (grandma pappads)].

A category of verbs which are called defective verbs in Malayalam grammar (verbs without specific tense forms) are common in this category. For eg. thWw (want), th (don't want), Dv (yes), AÃ (no), CÃ (no).

This category can be subdivided as follows

a) Sentences related with eating and drinking

b) Sentences related with daily routines (like brushing, bathing and sleeping)

c) Sentences related with objects

d) Social sentences mainly representing going and coming

4.2.2 Category II: Those which are Related with Playing

About 15 % of sentences (79 out of 530) are related with playing. Even though these sentences are related with play, using the words representing objects for playthings is very less, (examples include ball, key, umbrella, bat, balloon and elephant). Many sentences do not have even an object: a verb +

either a self-reference or the reference of another person. Interestingly, some sentences have two verbs like Fgp-Xn-bn«v Xcmw (will give after writing), IpSn-¨n-«v hcmw (come after drinking).

4.2.3 Category III: Those which Express an Emotion or Self-reference

Roughly 12% of the sentences express an emotion or self reference (65 out of 530). In this category, exclamatory sentences, sentences which express emotions like fear, pain, happiness and surprise and sentences which stress 'my' aspect are included. Examples.

a) Exclamatory: \Ã `wKo-tÃm (beautiful), lmbv]q¼mä (hai butterfly)

b) Pain: Rm\v hoWp-t]mbn (fell down), A½ ASn¨p (mother bit me)

c) Fear: ama XÃpw (uncle will beat), Fs¶ Ip¯-W-XmXv (biting me)

d) Happiness: In¡n-fn-bm-h-Wp-v (giggling)

e) Surprise: F{X-sImSbm]mdsW (how many umbrella's flying)

f) Self stress: \m\v {_jv (my brush), s]m¶qsâ Ipdn (ponnu's vermilion), Fsâ Nm¨ (my grandpa).

4.2.4 Category IV: Those which are Descriptions of Other Persons, Objects or Events

In this category, events in the environments are focused. It could be description of a object like hf CXm- (here bangles), Ipt«ymÄsS _kv (kids

bus), of a person like AÑ-t]m-bn (father going), A½ Xn¼m-t]m-bn (mother going to wash), A½ Nmcn Dt¯mfp (mother wear saree); and reference of places like D¡q-fnev t]mbn (going school). This is the largest category having nearly 37% (198 out of 530) of the sentences.

4.2.5 Category V: Those with Question Format

Nearly 9 % of the sentences (47 out of 530) are in the question format. Out of 18 children 15 have used sentences in a question form. For that, children have either utilized typical question words or modified verb in to a question format. Typical question words include: F´m (what), FhnsS, Ft´y (where), F¸gm (when), Bcm (who) and F{X (how much). Modification of verbs include: Dtm (its there?), thtWm (want?), ht¶m (came?), Itm (seen?), AS-¡-tWm (close?). Most common typical words are ‘where’ and ‘what.’

Regarding classification of sentence it has to be remembered that these categories are not mutually exclusive. Overlapping occurred in several cases and considering the stress of the sentence the investigator has put it into one or other category. Regarding the grammatical structure of the sentences, most of the sentences are grammatically correct. Regarding pronunciation, though they show improvement over prior words they are not still satisfactory. Several kinds of errors and adjustments are observed. Further characteristics of sentences are discussed in the next section.

4.2.6 Characteristics of Sentence

In this section the list of 530 sentences are analysed with respect to verbs, nouns and modifications of nouns, use of pronouns, use of adjectives and adverbs, use of words for calling others, use of negatives, use of exclamatory words and use of words for direction and place are analysed.

4.2.6.1 Verbs and tense forms

Though it may start quite earlier learning of verbs is one of the most important events of language development during the second half of second year. Out of 530 word combinations nearly 20% are phrases without having verbs, nearly 10% verbs are not used but implied, nearly 40% of sentence do have verbs but are defective in that there are no tense forms for these verbs. The remaining 30% of sentences have verbs it may even happen that there are two verbs in a single sentence (one partial and one full). Without considering differences in terms of tense forms and pronunciation nearly 47 verbs are used. Out of 46 verbs 32 are ‘Sakarmaka’ (verbs which can be used with a predicate) and the remaining 14 are ‘akarmaka’ (verbs which can be used without having a predicate). The list of these verbs are presented in Table 4.19.

Table 4.19
List of Verbs

Sakarmaka		Akarmaka	
1.	Xn¶pl (eat)	1.	tldpl (climb)
2.	lpSn-bv¡pl (drink)	2.	Cd-§pl (climb down)
3.	lfn-bv¡pl (play)	3.	Ccn-bv¡pl (sit)
4.	hc-bv¡pl (draw)	4.	\nev¡pl (stand)
5.	]Tn-¡pl (learn)	5.	tlÄ¡pl (hear)
6.	sXmSpl (touch)	6.	Dd-§pl (sleep)
7.	\pÅpl (pinchs)	7.	lc-bpl (cry)
8.	sR¡pl (crush)	8.	t]mhpl (go)
9.	DuXpl (blow)	9.	hcnl (come)
10.	ASn-¡pl (beat)	10.	lfn-bv¡pl (play)
11.	t\m¡pl (look)	11.	anpl (talk)
12.	]d-bpl (tell)	12.	hogpl (fall)
13.	Dm-¡pl (make)	13.	s]m«pl (break)
14.	aq{Xw Hgn-¡pl (urinate)	14.	ld-§pl (rotate)
15.	A¸n CSpl (eliminate)		
16.	]nSn-bv¡pl (catch)		
17.	]Ãv tXbv¡pl (brushing)		
18.	Xncp-¼pl (wash)		
19.	Xpd-¡pl (open)		
20.	AS-¡pl (close)		
21.	Xcpl (give)		
22.	slmSp-¡pl (give)		
23.	CSpl (wear)		
24.	DSp-¡pl (wear)		
25.	FSp-¡pl (take)		
26.	lSn-bv¡pl (bite)		
27.	hm§pl (get)		
28.	Snhn shbv¡pl (on the TV)		
29.	]Tn-¸n-¡pl (teach)		
30.	]mdpl (fly)		
31.	]äpl (happen)		
32.	hnfn-bv¡pl (call)		

These verbs are surely used in a particular tense. Early verbs are usually learned in past tense. Past tense and present tense are very common in

children sentences but future tense is comparatively low. Out of 18 children all of them have used past tense and present tense but only 6 children have used future tense.

Though these tense forms are learned by children, it doesn't imply that children have acquired a concept of 'tense'. It only means that children have learned a verb in a particular tense. We can be sure about the mastery about the concept of tense only if a child uses the same verb in different tense forms. This phenomenon was not observed in our present sample except in rare cases. With respect to two verbs (t]mhp-I þ going, hcpI þ coming). This phenomenon has been observed. Five children have used 't]mbn' (gone) and 't]mh' (will go). Two children have used 'h¶p' (came) and 'hm' (come).

Though some early traces of tense forms, which can be inferred from the meaning of a sentence in a particular context, the investigator infers that, the concept of tense and the related concept of time is not formed at this stage of development. Some vague ideas regarding immediate past and immediate future may be evident. Child does not appear to go beyond that.

In the review of literature, we have observed that a controversy exists regarding the dominance of nouns and verbs in children's early vocabulary with respect to different languages. We have ample evidence to conclude that, in Malayalam language, nouns predominate over verbs.

A frequency analysis of verbs is also carried out ‘t]mbn' (went) is the most frequent verb which appears in 56 sentence and used by 17 out of 18 children. A list of 15 verbs and 6 defective verbs are presented in table 4.20. which are used by two or more children. The verbs ‘t]mhpI' (going) ‘hcpI' (coming), ‘Xcpl' (giving), ‘hogpI' (falling), ‘ASn-¡pI' (beating) and ‘hm§pI' (buying) seem to be most prominent verbs.

Table 4.20

Frequency analysis of Verbs

Verbs		Frequency	Defective Verbs		Frequency
1.	t]mbn (went)	17	1.	thWw (want)	12
2.	hoWp (fell)	8	2.	Dv (have)	7
3.	Xm (give)	8	3.	th (no)	5
4.	hm (come on)	8	4.	sIm (give)	4
5.	ASn¨p (bet)	5	5.	CÃ (no)	4
6.	hm§n (bought)	5	6.	BWv (yes)	4
7.	t]mh (will go)	5			
8.	]än (happened)	4			
9.	Dd-§Ww (feel asleep)	3			
10.	Xn¶p (ate)	2			
11.	h¶p (came)	2			
12.	tIdn (climbed)	2			
13.	Iodn (tore)	2			
14.	ISn¨p (bit)	2			
15.	IpSn¨p (drunk)	2			

4.2.6.2 Modification of nouns

In Malayalam language nouns are modified in relation to gender (male, female) number of person (singular, plural) and ‘vibhakthi’. With respect to

gender, children at this age do not show any understanding of gender. With respect to number of persons singular words are common and plurals are extremely rare. Out of all the sentences and phrases only 6 plural words do appear [\½Ä (we), R§Ä (us), \ap¡v (for us), hmh-I-fv (kids), BÄ¡m-cv (peoples), Bfp-Ifv (peoples)]. Five different children have used these words.

Nouns can also be modified by adding 'Vibhakthi' to them – a concept very similar to 'preposition' in English language. Children exhibit understanding 'vibhakthi' and they start using at least some of them. The most common form is 'Sambathika Vibhakthi' for eg. 'Fsâ' (my) 'AÑsâ' (father's), 'tN¨osS' (sister's). Some other forms used by children are

i) Prathigrahika Vibhakthi (for eg. G«-s\, tams\)

ii) Adarika Vibhakthi ('in') [for eg. _ÊnÂ (in the bus), kvIqfnÂ (in the school)],

iii) Uddeshika Vibhakthi [for eg. F\n-¡v (for me), tN¨n-¡v (for sister)].

4.2.6.3 Use of pronouns

Out of 18 children four did not use any kind of pronoun. Twelve children have used self-reference pronouns. Out of these, three children have used the word ‘Rm³' (I) and variations of ‘Rm³' [Fsâ (mine), F\n¡v (for me)]. Four others have used names (A½p: Ammu, tam³: Mon, s]m¶p«n: Ponnutty). First person plural pronoun [R§Ä (us)] is used by only one child. Three children have used second person pronouns [\o (you), \nsâ (yours)]. Out of which one is plural. Third person pronouns [Ah³ (he), AhÄ (she), AhÀ (they)] are not used by any child. General pronouns for indicating objects (AXv þ that, CXv þ this or it) are used by a children; plurals in this category are absent. Though the children gradually get familiar with pronouns, gender related and plural pronouns are observed to be rare.

4.2.6.4 Adjectives and adverbs

Out of 18 children 13 have used some words to refer to adjectives and 2 have used some words for denoting the adverbs.

4.2.6.5 Words for calling other

In Malayalam language, modification of words are essential for calling others. Out of 18 children 11 have used such modifications.

4.2.6.6 Use of negatives

Half of the children in our sample have used at least some kind of negatives. The most common words are "th' (don't want), "CÃ' (no) and 'AÃ' (no) Sometimes these negatives are added with verbs. For eg. 'In-Ã' (haven't seen), "t]mWn-Ã' (will not go), "sImSp-¡q-e' (will not give), "anq-e' (will not speak), "In«q-e' (will not get), "F¯qe' (may not reach), "sXmS-' (don't touch), "FSp-¡-' (don't take), "IpSn-¡-' (don't drink) etc.

4.2.6.7 Exclamation

Out of 18 children seven have used some kind of exclamation. Words include 'Imbv' (hai), "At¿m' (ouch!), "Hu' (wow), "A¼-S' (ha), "Bbv' (hai), "F{X' (how much), "\Ã ckw' (beautiful).

4.2.6.8 Words for direction and place

Out of 18 children 10 have used some kind of words to represent the places such as tPmen-¡v (for job), Hm¸n-¨n (for office), D¡p-foev (to school) etc. Very few children have used the words for denoting directions like ChnsS (here), AhnsS (there), tase (up), etc. It indicates that the second half of the early word combination period children develop slightly the concept of place and direction.

To conclude this analysis children start using two word combinations during 17th month. At the beginning of this early sentence acquisition period, they may not really be saying two-word sentences. Often they appear to be

expressing two separate ideas, one after the other. These sentences can be generally classified into five, those which express a need, a request or a wish of the child, those which are related with playing, those which express an emotion or self-reference, descriptions of other persons, objects or events, those with have a question format. The use of verbs and some of the linguistic structures are also acquired before the age of two years. Children's language appears to be grammatically correct even at this stage.

Chapter - V

SUMMARY AND CONCLUSION

5.1 Objectives and Methodology

5.2 Major Findings

5.3 Suggestions for Further Research

CHAPTER - 5

SUMMARY AND CONCLUSION

This chapter is organised into three sections. The first section gives an overview of the research, such as objectives formulated, and the methodology adopted. In the second section there is a summary of the results analysed. The last section identifies some further relevant research that could be carried out in the light of the findings from this research.

5.1 OBJECTIVES AND METHODOLOGY

The primary objective of this research work is to study the pattern of language development of children below two years of age. The list of detailed objectives is given below.

1. To collect the first words uttered by children (nearly 10 words) and to go deep into the characteristics of these words with respect to:

   (a) age range of first word acquisition

   (b) frequency of occurrence

   (c) number of letters of the word

   (d) letters used

   (e) short and long sound forms of letters

   (f) meaning of the word.

2. To collect words acquired by children of or below 18 months of age and to study the characteristics with respect to:

   (a) monthly norms of word acquisition

   (b) number of letters of the word

   (c) letters used

   (d) short and long sound forms of letters

   (e) transformation of letters

   (f) meaning of words.

3. To collect a sample of early sentences on or before 24 months and to:

   (a) Classify them with respect to meaning

   (b) Study the grammatical characteristics of sentences with respect to verb, tense, noun, gender, singular – plural, pronouns, use of negatives, adjectives and adverbs.

The study, with an exploratory nature, adopted qualitative methodology. Longitudinal and cross-sectional methods are utilized in the study. A random sample of 42 children served as the subject of study. Each child is studied for a period ranging from four to eleven months. Interviews with family members and direct participant observation by the researcher are the primary methods of data collection. Before collecting final data a pilot study was carried out. After the pilot study data were collected in three phases. In the first, phase, first words of 30 children are collected. In the

second phase, data were collected from 25 children up to the age of 18 months. during the third phase, the attempt was to collect a representative sample of sentences before 2 years. The results are mainly analysed on a normative basis.

5.2 MAJOR FINDINGS

The major analysis in the study was normative. The analysis is mainly divided into two parts; analysis of words and the analysis of word combinations. The findings are summarized below.

5.2.1 Analysis of Words

1. The age range of first word acquisition is 10-13 months with an average of 11.1 months.

2. Children had mastered at least 10 words by the average of 15.9 months.

3. At the onset of first word acquisition period children frequently used the primary vowels of A (a), C (i) and D (u).

4. At the onset of first word acquisition period children frequently used the consonants of a (ma),] (pa) and N (ca).

5. Long vowel, short vowel is the most common structure of a two-letter word used by children in their early word-learning period.

6. The last letter will most probably be a compound letter.

7. Children had acquired an average of 30 words at the age of 18 months.

8. The nouns were predominated over verbs.

9. The laterals are totally absent during children's early word-learning period. The only lateral, which is being used, is 'o' (am) like 'lw' (kaam).

10. Most of the words children learn before 18 months are nouns for representing relationships, food items, objects, birds and animals and vehicles. One absence has to be specifically noted: Self-referenced words and body parts are extremely rare. Needs are generally not verbalized.

11. The period before 18 months is generally described as sensory – motor. With respect to language acquisition, this period is predominantly sensory in nature. Words for food items and toys can be described as sensory-motor. Almost all other nouns can be described only as sensory. Most of the words represent something 'out there' in the external environment.

12. When we consider the words modified by the children, three kinds of modifications are observed; lopa, agama and adesha. If a modification is needed, children use either 'lopa' or 'adesha'.

5.2.2 Analysis of Word Combination

1. Early sentences of children can generally be classified into five; those which express a need, a request or a wish of the child; those which are related with playing, those which express an emotion or self reference, those which are descriptions of other persons, objects or events in the environment; and those with have a question format.

2. Early verbs are usually learned in past tense. Past tense and present tense are very common in children's sentences but future tense is comparatively low.

3. Though some early traces of tense forms can be inferred from the meaning of sentence in a particular context, the investigator infers that, the concept of tense and the related concept of time are not formed at this stage of development. Some vague ideas regarding immediate past and immediate future may be evident. Child does not appear to go beyond that.

4. With respect to gender, children at this age do not show any understanding of gender. With respect to number of persons, singular words are common and plurals are extremely rare. Children exhibit some understanding of 'vibhakthi' and they start using at least some of them.

5. The use of pronouns, use of adjectives and adverbs and the use of negatives are also observed in the early sentences of the children.

5.3 SUGGESTIONS FOR FURTHER RESEARCH

1. There is a need to carry out a longitudinal individual analysis. Many of the fundamental questions of language development can only be answered through such an analysis.

2. The findings emerged from this study indicates the important concepts conveyed by children in their early period of language development. Further fundamental research has to be carried out with an orientation derived from developmental psychology. How children learn the meanings of words. There is a need to encourage the potential interaction of conceptual representations and linguistic systems in the process of language acquisition.

3. During the early period of language development children mostly used nouns and after that children started to speak preparatory words for sentences such as noun modifications, verbs, adjectives, adverbs, pronouns and question forms etc. hence there is a need to study the variety of word acquisition during this transition period.

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