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The Emergence of Early Words in Tamil Speaking Toddlers in the Age Range of 12 to 36 Months: A Cross-Sectional Study

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Abstract: Language development in children is amazing and it plays a vital role in a child's overall development. Children advances in their language from birth and it goes on from prelinguistic to linguistic content. The interesting part of language development are the early word productions, consisting mainly of protowords and true words which can be mentioned briefly as meaningless words but referring to something and meaningful clear speech utterances respectively. Hence there are limited studies which focused on early word productions in early linguistic period, the present paper aimed to investigate the protowords and true words in the typical developing Tamil speaking children. Eighty participants were included in four age groups ranging from <1 to ≥3 years for the study. Utterances were audio recorded and the data was analyzed using IPA. Statistical analysis shows there is a significant difference across age group as well as gender particularly in some groups. The results suggested that there was a decrement in production of protowords and increment in production of truewords as age advances. In gender comparison females are superior in producing protowords in the age of 1 year and truewords from 2 to 3 year group children.
Keywords: early words, language development, protowords, Tamil, true words.

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1. Introduction

The study of children's language acquisition is a field that comprises a large body of literature, dating back well over one hundred years (Ingram, 1989). Language development in children is amazing and it is a development that many parents really look forward to. Language development is a critical part in child's overall development. Children begin to develop language from birth, and their progress depends on warm and positive interaction in safe and stimulating environments.

A flow of conversation that responds to a child's interests and abilities is essential to their language and wider development (Tickell, 2011). 'Language' is a form of communication. It involves an organized system of signs and symbols that are used by a group of people to share meaning. It is an oral form involves the use of speech. Especially, for children, they can

communicate the meaning to another person using their own sounds (crying, laughing, cooing, gurgling), gestures and body language (Bochner and Jones, 2008).

During early childhood, children's ability to understand language at a more complicated level also develops, for eg., as age advances the child will be able to understand and differentiate syntactic and pragmatic structures as well as narration. Young children develop Illocutionary Intent, or the ability to understand that a sentence may have meaning beyond the exact words being spoken (Otto, 2006). Ingram (1976) described that the period of one-word utterances lasting from 1.0 to 1.6 years in which the child learns vocabulary, reaching approximately fifty words by 1.6 years. At birth, human infants tend to be attracted to the sound of the human voice, especially the voice of their mother (Lao, 2018). Communications which have produced by the infants during first year of life tend to be mostly nonverbal, which is named as "pre-linguistic", i.e, before emergence of words. Infants begin to babble by 3 to 6 months and it continues for several months. When they turned into seven months repetitive babbling capacity will be added to it where they repeat the same speech sounds again and again, e.g., papapapa. During this period infant learn to say "papa" or "dada" before "mama". For instance, between 7-10 months of age infants begin to display a preference for speech with normal pauses. And between 10-14 months of age infants increasingly coordinate their pointing and babbling (Lao, 2018). About 10 to 12 months of age children begins to speak their first words at a rate of about 8 to 11 per month. The rate at which they learn new words increases substantially to 22 to 37 words per month at their 18 months of age (Benedict, 1979; Bloom, 1998). And this is termed as the 'word spurt' or 'vocabulary spurt' (Bjorklund and Causey, 2017).

Some children begin their vocabulary or word spurt shortly after their first birthdays, and some don't start until age of two and even later (Mervis and Bertrand, 1994) and still there is some debate in word spurt over researches.

Between 10-12 months of age, infants begin to use protowords. Common examples of protowords are mama, dada, and baba. Protowords are different from repetitive babbling in at least two important ways. First, while repetitive babbling involves repeating sounds over and over again (e.g., babababababa), protowords are shortened, typically to 1-2 syllables. While it is clear that in repetitive babbling the infant is just producing sounds, once they use protowords they are more closely approximating speech. Second, babbling has no correspondence to objects in the world. Protowords, on the other hand, generally correspond to something concrete, e.g., mama for mother. Thus, each protoword is used to refer to the same object. Once protowords begin to appear infants make a transition from prelinguistic to linguistic communication (Lao, 2018).

At 10-13 months of age, the first real word is typically uttered. After the first word production children display expressive jargons at 14-18 months of age. Beginning of 18 months, after the appearance of the first words children begin to use holophrases. A holophrase is a single word utterance which is used to convey a more complex thought in a simple way. It is commonly accompanied by some sort of body language, such as pointing. Holophrases are also highly dependent on contextual cues. For instance, an infant may point at a nearby toy and say, "mine". Caregivers who are around will understand that what the child means. This has prompted many guests to claim that proud parents are overestimating the language skills of their infants who use holophrases (Lao, 2018). In an infant's second year of life, they spontaneously look at objects for familiar words, for eg., hearing the word 'bottle' and looking at a picture of bottle versus picture of another object.

This ability increases from 15 to 20 months of age (Fernald *et.al.*, 1998). Understanding words is faster in 2nd year of a child. Children of 12 to 17 months of age start to learn new words in a faster rate especially for receptive vocabulary rather than for their expressive vocabulary and hence it is proving that word spurt just begins to appear at the same age (Bjorklund and Causey, 2017).

Finally, simple sentences turn up between 16-24 months of age. These simple sentences typically contain 2-3 words. They sound a lot like telegraphs, which has prompted some researchers to refer to this as "telegraphic speech". For instance, a child might say something like, "Gimme dat", or "Mine ball", usually accompanied by relevant gestures (Lao, 2018).

True words are emerging phonetic combinations spurting in the child"s vocabulary abiding by phonologic principles of the language, wholly resembling the adult target and containing an inherent meaning. The age at which the first true words are pronounced, their form, and the rate at which vocabulary spurts usually varies from child to child (Ritgero, 2014).

A long-term study done by Bloom, Tinker, and Margulis (1993) where acquisition of a vocabulary of words have analyzed in 14 American-English speaking infants, followed from 9 months to about 2 years of age. They noticed the results in two categories as First Words (FW) and Vocabulary Spurt (VS). Six children who were 19 months or younger, produced first 50 word vocabularies where 39.7% of the words were object words, and 8 children who were older than 19 months where object words has reduced into 33.8%.

Kauschke and Hofmeister (2002) reported a longitudinal study where early lexical development, vocabulary growth, and vocabulary composition were obtained in thirty-two German speaking 2 to 3 year old infants. The results indicated that the vocabulary growth and its frequency increased with age. From age 1.1 to 1.9 the use of different words are increased in a non-linear fashion. At age 1.3 verbs and function words began to appear but in a linear fashion. At the second year of life, children started producing onomatopoeic words. By the age of 3 years, children made these sounds into trueword of that particular lexical item.

Conklin (2010) have divided protowords into three categories which includes the phonetically consistent form has a standard sound pattern, but is not referentially stable, nor based on adult language. The pre-word is phonetically consistent and referentially stable, yet not based on adult language. It is accurate in its categorization, according to adult model, yet the child has found an individual way of communicating meaning. The final word is phonetically and referentially stable, and it is based on adult language, which can be used in communication with supporting gestures and in daily routines.

A longitudinal case study was carried out on a Khurdish speaking male child following for 2 years from 9 months till 3 years by Yousofi and Ashtarian (2015) to find the occurrences of protowords and truewords. The child started producing protowords at the age of 13 months and he produced 28 protowords upto 30 months of age and 31 truewords upto the age of 29 months and the remaining utterances were holophrastic and adult-like utterances. The findings of this study revealed that the production of proto-words continued up to the age of 30 months with 53 % in the second year of life and 47 % in the third year of child' s life. The first true word at the age of 10 months (the word Babœ=daddy) with 6% from 9-12 months followed by his 31 % of true word production up to age 24 months. In Indian context studies, Reeny and Sreedevi (2015) conducted a study on the emergence of early word forms in Malayalam and Hindi speaking children in the age range of 10-12 months. They observed a

greater frequency of protoword productions as well as true word productions in Hindi as compared to Malayalam language. Protowords were found to exhibit a higher mean percentage as compared to that of true words in both the languages justifying the transition period from babbling to the first fifty word stage.

Another preliminary study was carried out by Reeny and Sreedevi (2019) on emergence of word forms in the early years of life in 20 Hindi speaking typically developing children in the age range of 8.0 to 12.0 months. They aimed to find out the appearances of early word productions after the stages of babbling. The results revealed that children from 6 months onwards produced early word forms such as protowords. There was an increased occurrences of protowords observed in children who are above 8 months resulted an increase in the emergence of early word forms. In the age group of 10 to 12 months there was an increment in both protoword and also trueword productions was introduced.

Developmental trends in early phonological and expressive vocabulary development, namely, protowords, holophrastic words and true words was tracked by Bharadwaj, Sushma, and Sreedevi (2015) in twenty four typically developing Kannada speaking toddlers between 12 to 24 months old. Results reported that findings of holophrastic and protoword productions in all the participants of the younger age group (12-18 months), with their frequency declining in the older age group (18-24 months). True word productions showed greater frequency in the older age group compared to the younger age group.

Across gender, studies reported by Bornstein and Haynes (1998) where 20 month old girls scored higher than boys in multiple vocabulary measures as reported by mothers' assessed by researcher as well as from observation. Gleason and Ely (2002) also reported individual domains and concluded that parents interrupt more to girls than boys. Parents' uses prohibitive like 'no', inner state words such as 'happy', 'sad', endearments like 'honey', 'sweetie', diminutives like 'doggie' to girls when compared to boys. He also observed that using diminutives for a longer period of time grabs child's attention and leads girls to produce more vocabulary and learn language sooner than boys.

Huttenlocher, Haight, Bryk, Seltzer, and Lyons (1991) reported that girls are more prone in acquiring new words at a progressively faster pace than boys at the 2-year vocabulary spurt which is independent of children's' exposure to vocabulary. They found a considerable relation between individual differences in vocabulary acquisition and variations in the amount that particular mothers' speak to their children. It reflected the parent effects on the child, instead child-ability effects on the parent or hereditary factors. They specified the statement that gender is an important factor in rate of vocabulary growth.

2. Methodology

It is known that one to three years of age is a critical period to develop language as well as the progression of phonological variables to meaningful words. Thereby this paper explains the early development of language especially development of protowords and true words in toddlers with age range between one to three years. There are no studies in Tamil language for early word productions (protowords and truewords) in age range of 1 to 3 years. Hence, it was essential to carry out a study on Tamil speaking children in the age range of 1 to 3 years.

2.1 Participants

Eighty typically developing Tamil speaking toddlers were considered for the study. The subjects were taken randomly from nearby homes, preschools or day care centers in

Kanyakumari District, Tamilnadu. They were further divided into four age group (Group I to Group IV) consisted of 20 participants (10 males and 10 females) in each group. Participants were included from monolingual families which had their primary language as Tamil. The children who were not exposed to Tamil as their first language were not preferred for the study. All the children were informally screened for history of medical, speech, language, hearing, cognitive and motor deficits. The children who were diagnosed as having speech and language delay or other motor or cognitive deficits were recommended for a follow up with a detailed speech & language evaluation for early intervention.

An Assessment Checklist for Speech and Language Skills, Swapna *et al.*, (2010) was utilized to check with normal development of receptive and expressive language skills of children. The children were selected from middle socio-economic status, identified through the revised version of NIMH scale, Venkatesan (2011) which is being mentioned in Appendix B. The qualifications of parents were minimum of 10^{th} Std. An adaptation of LEAP-Q (Language Experience and Proficiency Questionnaire) in the Indian context (Maitreyee and Goswami, 2009) was used to check language proficiency of the parents. Participants were included from monolingual native speaking Tamil families. Furthermore, children were selected after a brief parental interview to know whether speech and language stimulation at home are adequate/ inadequate. The purpose and the procedure of the current study were explained to the parents/caregivers/teachers through verbally. A written consent also obtained from the respective persons for the active participation of the children. Ethical Guidelines for Bio-Behavioural Research, AIISH (2009) was followed for the study.

2.2 Data collection and analysis

Free play sessions of 1 hour with parent/ caretaker-child interaction were carried out in natural setup/homes/playschools/anganwadi of participants free from unwanted noise to evoke word-like responses from the toddlers. Toys were also used for the play sessions to elicit the response from children. Speech like utterances was recorded using Sony Mz322 voice recorder for all eighty participants. Non speech sounds, cooing, crying, gurgling, laughing and jargons were excluded from the recording. Speech utterances were then transferred to a VLC media player for analysis and transcription. Using broad and narrow IPA (International Phonetic Alphabet, 2015) utterances were transcribed and then the data (word like forms) was categorized as protowords and true word productions by using the following criteria given by Vihman and McCune (1994).

Table 1. Word like forms criteria

Determinative Context	Applies only to words with specific meanings easily identifiable in context.
Maternal Identification	Mother's identification of at least one instance of the form as a word.
Multiple uses	The child uses the word more than once.
Multiple episodes	Multiple uses are identified only in determinative contexts.

Percentage was calculated for each frequency of occurrences of protowords and true words based on the following formulae (Velleman, 1998).

i) $Pw = \frac{\text{Sum of occurrences of Pw}}{\text{Total number of utterances}} * 100$

ii) $Tw = \frac{\text{Sum of occurrences of Tw}}{\text{Total number of utterances}} * 100$

2.3 Data analysis

Non parametric tests were carried out for this study. Descriptive statistical analysis was carried out to determine the mean percentage of occurrences of protowords and truewords. To compare across the four age groups one-way ANOVA was used. To find the significance of protowords and truewords across age groups multiple comparisons of post hoc Tukey HSD test was also done.

3. Results and Discussion

3.1 Frequency of occurrences of protowords across age in Tamil speaking children

As we could see in Table 2 and Fig 1, the findings of the present study revealed that children who were in Group I (1.1 to 1.5 years), Group II (1.6 to 2.0 years), and Group III (2.1 to 2.5 years) produced more protowords when compared to Group IV (2.6 to 3.0). This suggested that as age advances the child's capacity to understand words increases, thereby, words which is meaningless fades off and truewords develops.

Children produced protowords which referred to verbs, nouns, family members, object names, referential style of lexical words at first age group, onomatopoeic words at second age group. Children started producing combination of two-words at the third age group which observed as protowords and it became meaningful in the fourth age group. These results of the present study are in consonance with the studies reported by Kauschke and Hofmeister, 2002; Reeny and Sreedevi, 2015; Reeny and Sreedevi, 2019; Bharadwaj *et al.*, 2015; Yousofi and Ashtarian, 2015, where increased protowords observed in younger age and declination occurred at the older age groups.

3.2 Frequency of occurrences of truewords across age in Tamil speaking children

Production of truewords also reported by statistical analysis and the results revealed that children who were in Group III (2.1 to 2.5 years) and Group IV (2.6 to 3.0 years) produced more truewords when compared to Group I (1.1 to 1.5 years) and Group II (1.6 to 2.0 years). As like the representation of the Table 2 and Fig 1, the finding of truewords suggested that as age increases the meaningful words production i.e, truewords got increased. This could be because of the excess language exposure of the parent/ caretaker interactions, peer-group interactions in playschools/ anganwadis'.

Especially there was an abrupt increase in the third age group compared with other three age groups and this was considered as vocabulary spurt. This is because of the emergence of meaningful two word phrases started at the age of 2 years. Hence, the abrupt increase.

Children started producing truewords from the age of 1.0 years itself, yet it is lesser frequent in first two age groups of Group I and Group II. The truewords observed from the current study are included more of calling family members such as /amma:/- mother, /appa:/-father, /ʈ̂ a:ʈ̂ a:/-grandfather, nouns such as animal names, common objects, toy names, basic needs such as /ʈ̲ □nI/-water, /tʃoru/-rice, etc differed from individual to individual, meaningful referential lexical words in the first two age groups from 1.1 year to 2.0 years.

Questions, narrations, negations, possessives were observed in the age group of 2.1 years and above. These findings supported by the studies reported by Reeny and Sreedevi, 2015; Reeny and Sreedevi, 2019; Bharadwaj *et al.*, 2015; Yousofi and Ashtarian, 2015, and vocabulary spurt studies reported by Bloom *et al.*, 1993; Kauschke and Hofmeister, 2002.

Descriptive statistical analysis of early word productions are listed in the table below.

Table 2. Descriptive statistics showing Mean and Standard Deviation (S.D) of protowords and truewords across all four age groups

Early word Forms		Age Range (in years)							
		1.1-1.5		1.6-2.0		2.1-2.5		2.6-3.0	
N=80		Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
Proto-words	Mean (S.D)	33.2 (9.78)	63.10 (36.73)	26.30 (14.19)	43.90 (27.20)	36.30 (16.18)	37.10 (21.89)	10.00 (9.93)	18.30 (11.96)
True-words	Mean (S.D)	17.60 (11.62)	31.70 (22.70)	31.70 (25.98)	34.30 (27.67)	122.40 (45.88)	196.40 (58.44)	70.40 (29.83)	186.40 (65.40)

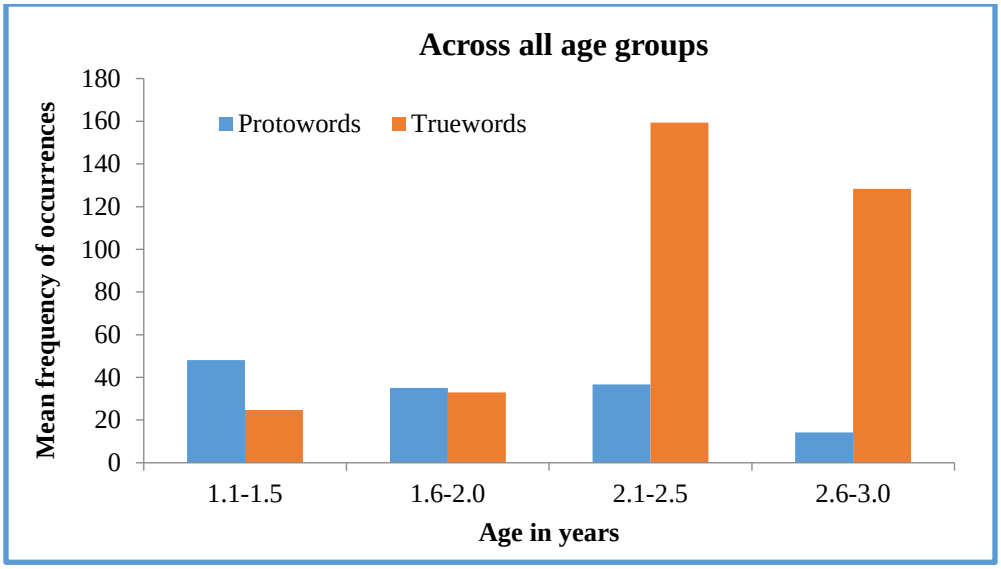

Figure 1. Represents protowords and truewords across age groups

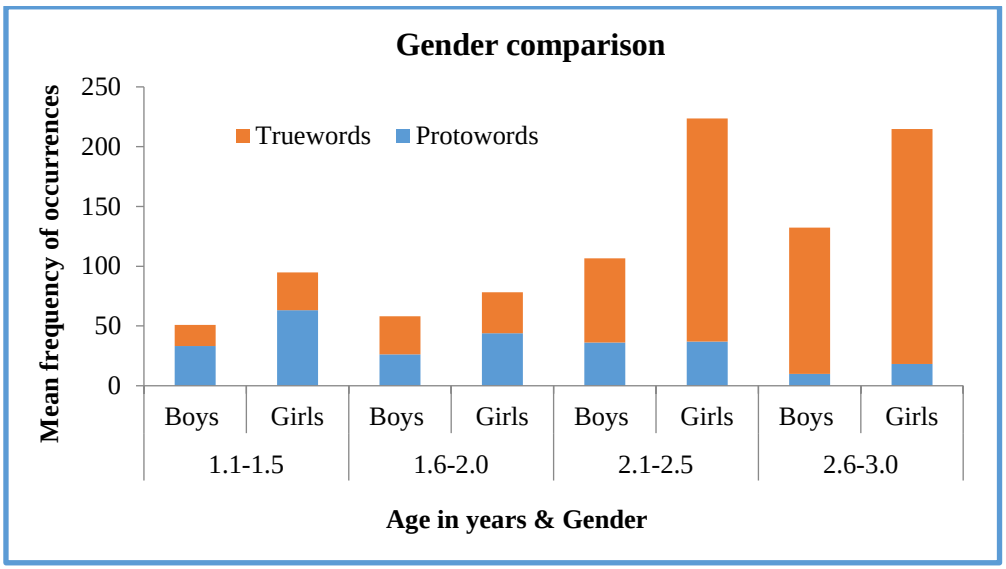

Figure 2. Represents protowords and truewords across gender

3.3 Comparison of gender among protowords and truewords

Across gender comparison, as seen in Table 2 and Figure 2 and also from the significant findings of Independent sample t-tests, the present study revealed that girls produced protowords compared to boys in Group I than the other three groups. Protowords were much lesser for both boys and girls in the older age groups which revealed that meaningless words

are fading off and truewords began. This is in line with study of Bornstein and Haynes, 1998 who reported that girls are more superior and they acquire language sooner than boys in producing first words.

Compared to boys and girls, girls produced more truewords in the older age groups of 2.1 to 2.6 years and 2.7 years to 3.0 years. This could be because of girls' shows higher interaction with family and society, expresses feelings and emotions more to parents than boys and girls are learning meaningful vocabulary sooner when compared to boys. Hence, there is a higher frequency production. This correlated with the study reported by Gleason and Ely, 2002.

4. Conclusion

The present study revealed the normal trend of transition of babbling to protowords and then to truewords in children with age range of 1 to 3 years in Tamil language. It provides information to the Speech Language Pathologists who are assessing children in this critical period. The reported findings in the development of early words can be used as a yardstick reference for the children who are facing difficulty in communication/ language development. In reference to this, the SLPs' can provide early intervention. This could also bring awareness for the parents and caregivers to find whether their children are in pace with the normal language development. Future research could focus on the development of early words in other Indian languages as well.

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APPENDIX
Occurrences of Protowords and Truewords in IPA

Age Groups	Protowords (Pw)	Truewords (Tw)
1 to 1.6 months	/pa:pu/-toy, /□ʈ □/-toy, /vUIka:/-asking for mobile, /vIU/- leave, /□□/, /vIa:i:/, /ʈ a:ʈ a:/-asking, /ʈ a:ja:/, /jajI/, /□m□m/, /tujI/, /ʈ a:ʈ i:/-grandma, /Inʈ a:/-asking for help, /□mm□/-mom, /□jo/, /ja/, /a:/, /□I/, /jaja:I/, /□/, /m/-Yes, /n□/, /□v□/, /Ija:/, /ke/, /□ŋa:/, /ven□/-no need, /□va:/-mom, /eI/, /□ma:elI/, /ḿe/, /□pə/, /ba:/-flower, /la:/, /va:/-flower, /Uva:/-flower, /a:Io/, /va:vaI/, /oi:/-Hen, /□ʈ i:/-amma, /a:va:/-amma, /Ina:/, /ba:/-ball, /Inʈ ə /-no, /ʈ a:/- head, /tʃoa:/-rice, /b□ʈ i/-egg, /ʈ Iʈ o/-dosai, /pItʃUpi:/-big mom, /□ʈ a:/-sister, /b□tʃ/-bus, /vUtʃ/-switch, /a:ʈ i:/-net, /b□I/-mat, /□ʈ Ika:/-rope, /Ilə/-leaf, /b□tʃ/-book, /b□tʃ/-bike, /lIk□bUtʃ/- leaf, / □mba:/-mom, /ba:I/-ball, /ba:Itʃ/-bike, /ba:tʃ/-car, /ə i:/-carrybag, /ka:/-leg, /potʃa:/-dosa, /tʃotʃo/-dosa, /pa:pa:/-bottle, /pa:pU/- stick, /va:pa:/-dad, /te/, /na:/, /□ńa:/, /□d□I/-beat, /m/-Yes , /dʒ □/, /tfe/, /tʃItʃI/-chithi, /□d□e/, /□motʃ□/-went there, /ledʒe/-Hallelujah, /□m□/, /tʃI/, /potʃa:/-gone, /Iŋe/-here, /□ŋe/-there, /potʃ□/-gone, /□I/-calling, /□tʃI/-beat, /Iŋa:/-here, /h□/, /tʃ□/, /pUnp□/, /□tʃU/, /□p□p□pebə/, /□m□m/, /□va:/, /□va:ku:tʃa/, /tʃ□/, /□kko/, /bUtʃa:/, /au au/-bow bow, /pepe/, /d□I/-dog, / ʈ a:I/, /ʈ a:ta:/, /m/-yes, / ʈ o/-	/□mma:/-mom, /□ppa:/-Dad, /pa:pa:/-toy, /ʈ anI/-water, /p□pa:/-Dad, /va:vo/-lullaby, /ha:I/-hai, /□ntI/-aunty, /ʈ a:ʈ a:/-grandpa, /ma:ma:/-uncle, /ba:ba:/-calling hen, /pa:ti:/-grandma, /p□tʃi:/-Bajji, /Ila:/-no, /□nna:/-brother, /pa:I/-mat, /m□ŋI/-monkey, /b□k/-bag, /Iŋə/-here, /ba:tIl/- bottle, /pa:pa:/-Baby, /□ŋ□/-There, /ta:ta:/-Waving tata, /ni:/-You, /tʃi:/-Yuck, /In□a:/-Giving, /ka:ka:/-crow, /tʃerI/-cherry, /nIla:/-moon, /Inna:/-take it, /ma:mI/-aunty, /ka:pI/-coffee, /baI/ /baI/-bye-bye, / tʃu:/-shoe

	throw, /aU/, / tʃa:la:/, /□ţ □I/, /ja:a:/, /□ja:a:/, /a:/, /a:a:/, /əne/, /ən/, /□m m e/-mom, /mmaI/- toy, /ka:/- parrot, /□ţ a:/-aunty, /ba:baU/-goat, /ka:kU/- cow, /□□eI□o□0/- Hallelujah, /a:vaU/-come, /ma:ɸ i:/- fish, /ka:/-cup, /n□nnI/-water, /n□n□/-dont want, /m□m□/-want, /ja:ja:/- don't want, /ba:ba:/-dad, /tʃItʃI/-key	
1.7 to 2.0 months	/v□leotʃU/-gone for work, /bIk□t/-biscuit, /pota:/-parotta, /ʃ/-fish, /□□□i:/-daddy, /ka:ka:tʃ/- i ate, /ţ a:ni:/-give, /a:ni:/-aunty, /vItʃ/-fish, /□ţ e t/-apple, /□ţ e/-phone, /u:tʃI/-feed me, /m□na:/-dont want, /□kkU/- lift, /□ppi:/-puppy, /n□na:/-don't want, /kok□nUm/-should give, /mu:li:/-cap, /Ukə/-book, /ku:lə/-school, /neI/-dog, /da:/-dog, /mUta:/-chocolate, /vIɸ ə /- whistle, /gu:/-goat, /□ni:/-squirrel, /ba:ţ ə /-duck, /ma:m□/-mango, /Ɛp □/-yuck, /vƐla:la U/-will play, /p□nU/-fan, /ţ i:/-chithi, /ʃa:ɸ a:/-name, /ɸ a:ɸ a:/- name, /Ik/-its there, /a:ma:tʃI/-orange, /□na:kU/-it's there, /tʃeje/-feather, /UanɸIkU/-broken, /ţ a:/- tea, /ţ a:pU/- bangle, /mi:mi:/-fish, /kUtʃen/-drank, /ţ a:tI/-grandma, /ţ □ţ I/- dog, /vIţ ə /- duck, /ƐndU/-two, /ma:m□m/-mango tree, /Iţ □pa:/-uncle	/t□nnI/- water, /pUtə/-puttu (breakfast), /vi:tUkU/-to home, /p□nd□m/-snacks, /tʃIpsU/-chips, /p□rota:/- parotta, /kondU/ /po/-take and go, /bommə/-toy, /na:n/-I, /edUţ U/ /poven/-i will take it and go, /ən□ke/-mine, /venUm/- i want it, /tʃa:pta:/ -if you eat, /ka:t ʃ □fever, /v□rUm/-will come, /□ŋ□/ /pa:pom/- see you there, /na:I/-dog, /pItʃI/ /podU/-tear it, /pItʃI/ /poda:□ə /-dont tear it, /olə/-coconut leaf, /jəlo/-yellow, /pu:tU/-lock, /eŋə/-where, /ədU ţ It/ /pova: □ə /-dont take it and go, /peper/-paper, /kəd□kU /-its there, /□Ija:/-dhiya, /m□mmi:/-mummy, /a:ma:/-yes, /□osaI/-dosai, /polə/-go man, /m□nnU/-soil, /□dI/-beat, /po□Um/-enough, /mi:nU/-fish, /□□U/-that, /pu:/-flower, /koja:/-guava, /va:I/-mouth, /pƐnU/-pen, /v□lƐ/-work, /h□lo/-hello, /ţ a:la:/-give man, /ţ Ɛ rIja:□U/-I donno, /□nna:/-there, /□ppa:ke/-dad's, /d□pa:/-box, /mUtƐ/ /podUm/- it lays egg, /□na:/ /IrUkU/- it's there, /ţ Ur□k□/ /mUdIl□/-can't open it, /si:/ /jIU/- see you, /pIlle/- dear, /□kka:/-sister, /ən□kU /- for me?, /kolI/-hen, /va:ţ U/-duck, /kUtʃI□ə /-it drank, /ka:tI/ /ţ a:/-show me, /ţ otI/-tank, /kUtI/ /pa:pa:/- little girl, /b□t□n/-button, /k□nU/-eyes, /pota:/- shall I go?, /□ntI/-aunty, /IŋƐ/-here, /ţ □mbI/-younger brother, /kaI/-hand, /ma:ŋa:/-mango, /mu:kU/-nose,

		/p□lU/-teeth, /va:I/-mouth, /ka:□U/-ear, /k□lUt̪ U/-neck, /potItU/-broken,/potIŋ□a:/-Did you put?
2.1 to 2.6 months	/b□ɸa:/, /nɛraI/- many, /cekɛtoma:/-shall we cut the cake?, /olIt ʃ □pɐnI/will hide, /p□tʃIja:/-did u study?, /otʃI/-needle, /v□□ɛ ma:t̪ en/-I won't come, /k□t̪ Ika:/-brinjal, /pIt̪ U/, /k□r□p□r□m/-type of plant, /□oɸa:/-roja, /t̪ a:nU/-shanu, /t̪ ɛ lIkopen/-I will tell him, /ki:□ɛ/-spinach, /la:lI/-lorry, /m□d□m/, /vepe/, /b□nUm/-Iwant, /t̪ ɛ □UpU/-shoes, /f□nd□m/-snacks, /mi:ŋɛ/-where is the fish?	/mUtaI/-candy, /t̪ InUten/-I ate, /ɛnt̪ ɛ/ /kadaIkU/- which shop?, /pu:tIrUkU/-it's closed, /t ʃ ɛrI/ /p□n□/ /kUdUt̪ IrUkU/-it have given it to repair, /n□la:/ /Il□/-its bad, /saIkIl/-cycle, /p□l□m/ /pɛItU/-banana went, /p□ta:sU/ /vɛdItʃU/-crackers bursted, /t̪ Inen/- I ate, /mUta:sI/-candy, /jerI/ /pona:/- went, /kekU/-cake, /pa:Is□m/- rice pudding, /t̪ □ŋ□tʃI/-younger sister, /k□lja:n□/ /vi:tU/-marriage home, /pa:□I/- half, /t̪ □rva:la:/-will she give?, /vɛtUvoma:/-shall we cut?, /onnU/ /kUdUpen/-I will give one, /odIpen/-I will break it, /v□ndI/-vehicle, /olIt̪ʃI/ /vaIpen/- I will hide it, /pɛrIjɛ/-big, /vi:tUkU/ /pona:/-she went home, /t̪ UnI/-dress, /t̪ □tʃI/- stitch, /ka:nom/- missing, /IŋotU/-here, /venda:ma:/- don't u want?, /v□ndIle/-in vehicle, /k□ropIle/-curry leaves, /t ʃ ɛdɬ/ plant, /k□t̪ □rIkaI/-brinjal, /InonU/-another one, /pa:t̪ Ija:/-did you see?, /verɛ/-other, /ka:tI/ /t̪ □ren/-will show you, /pu:/-flower, /a:dU/-goat, /Unɛ/-you, /IdIka:ka:□U/- it won't hit, /m□le/-up, /nIkU□U/-standing, /□dUpU/- stove, /vaIpa:nge/- they keep, /ja:rI/ /nIkIja:/- climbs up, /k□lU/-stone, /ka:n□a:rI/ /molɛvU/-type of chilli, /t̪ Iŋɛ/ /ku:da:□U/-should not eat, /t̪ eŋa:I/-coconut, /p□l□m/-fruit, /pUlI/-tiger, /povelɛ/- I din't go, /k□l□r/-colour
2.7 to 3.0 months	/IlI/-rat, /ɸokə/, /t̪ʃa:pU/-pocket, /ku:lUk/-to school, /d□tU/-date, /□meme/-grandma, /ɛdItʃU □UkU/-burning, /leɸe/-hallelujah	/perU/-name, /bUkU/-book, /ɛnʌ □U/-what is this/, /ma:dU/-cow, /ɛlI/-rat, /rɛndU/-two, /t̪ʃu:pU/-lick, /pa:rUŋɛ/- see here, /p□mb□r□m/-a toy object, /vi:tUlen □U/- from home, /t̪ʃa:pUdUven/-I will eat,

		/ʈ u:ŋƐnUm/-should sleep, /sUtI/ /tv/-chutti tv channel, /pa:pen/-will see, /kUtʃI/-stick, /v□tʃU/-place, /vƐtUven/-will cut, /□mUk□nUm/-should press, /□dIpen/-will beat, /m□r□ʈ Ulen□U/-from tree, /ʈ a:gƐm/-thirst, / tʃolIja:tʃU/-I told, /□pUro/-then, /p□r□nʈ U/-flied, /v□laIkU/-to work, /□m□ma:/-grandma, /InerUŋƐ/-see here, /nIkU□U/-its standing, /bIŋo/-bingo, /va:ŋIta:n/-he bought, /IpdI/-like this, /or□ŋIja:/-she is sleeping, /va:ŋIta:/-she bought, /ʈ opI/-cap, /pUdIpa:ŋƐ/-they hold, /pa:ʈ en/-I saw, /mUdI/-hair, /fonU/-phone, /p□ndUm/ /potUrUken/-I have put pant also, /kosU/-mosquito, /k□dIkU□U/-biting, /nIk□r□/ /potIrIkIja:n/-he worn shots, /sopU/-soap, /ʈ □ka:lI/-tomato, /ki:lƐ/-down, /ʈ □r□ma:ten/-I won't give, /m□rUn□U/-medicine, /t ʃ a:pa:dUm/ /mUtƐjUm/ rice and egg, /ja:rUm/ /p□dIk□le/-nobody is studying, /ma:ʈ □□UkU/-to change, /t ʃ □taIjUm/ /podUp/ut shirt also, /pInkU/-pink, /blU/-blue, /pIna:dIlenʈ U/-from behind, /□dIk□le/-din't beat, /ma:tItU/-caught, /□dI/ /p□tU□a:/-did u get hurt?, /pu:s□nIka:/-pumpkin, /kodaI/-umbrella, /sa:vI/-key, /jesa□pa:/-Jesus, calling names of the familiar persons also included.