

Features of Bangla Child Directed Speech: A Sketch from Observation of Pre-School Children and Caregiver Interaction

By

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A thesis submitted to the Department of English and Humanities in partial fulfillment of
the requirements for the degree of
Bachelor of Arts in English

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Declaration

It is hereby declared that

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2. The thesis does not contain material previously published or written by a third party, except where this is appropriately cited through full and accurate referencing.
3. The thesis does not contain material which has been accepted, or submitted, for any other degree or diploma at a university or other institution.
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Approval

The thesis “Features of Bangla Child Directed Speech: A Sketch from Observation of Pre-School Children and Caregiver Interaction” submitted by Muntakimul Haq (22103030) of Fall, 2025 has been accepted as satisfactory in partial fulfillment of the requirement for the degree of Bachelor of Arts in English on January, 2026.

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Abstract

The mixed-method study examines the features of Child Directed Speech (CDS) within the Bangla language. The study employs naturalistic data collection from caregiver-child interactions in different families of the Bangla-speaking community. Children of five different age groups from 2-4 years were selected to observe the changes in CDS features as children develop. The features were categorized based on the functional aspect of the adult utterances. The parameters for the functions were set based on the researcher's own understanding of the language as a native speaker and existing literature on CDS features of other languages. The findings showed that there are indeed CDS features in Bangla; some of these features do show age-sensitive patterns. Furthermore, more the study also provides insight regarding the possible cultural influences a language has and how it is also observed in child-directed speech. Lastly, the study adds to the literature of CDS, especially Bangla CDS, which is quite understudied.

Keywords: Child Directed Speech, Features of Child Directed Speech, Caregiver Speech, Culture, Bangla Language

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Chapter 1: Introduction

One of the fascinating aspects of language studies is how children acquire language. A typical adult can learn a new language, but acquiring one's first language is a topic that is not yet fully understood. An adult is equipped with the knowledge to learn a language systematically; however, a child is not. Some theories discuss an innate mechanism of language learning, while others emphasize environmental factors. From years of research, it is established that adults or caregivers have some contribution to a child's first language learning. Adults talk to children in a certain register that is very different from how adults talk to other adults. Researchers have attempted to understand this register and tried to explain generalized features. However, the correlation between this special speech register and child language development is still not fully understood. However, it is likely that the speech used towards children has some influence on language learning by setting up the child to understand the parameters of language.

1.1. Purpose of the Study

Since this is a special register of speech, it is also likely that this register may vary in features for different languages. It could also not exist in certain languages. Bangla, however, does have these features. The existing study attempts to uncover some of these features. The study aims to detect the features of Bangla-speaking adult-child interactions. It also attempts to check the developmental patterns across different age groups and what are some of the cultural influences in this special type of caregiver speech.

1.2. Description of Bangla

Bengali or Bangla is a language spoken by the people of Bangladesh and parts of India, such as West Bengal. At present, it is currently ranking 6th with more than 200 million speakers worldwide (Katzner 2002). The language is a part of the Indo-European language family, with its roots in Sanskrit. It is the official language of Bangladesh. The language has a standard version with many more dialectic variants in different regions of the country.

1.3. Research Questions

This study attempts to answer the following questions: What features can be observed in Bangla caregiver speech that is directed towards children? Are there any changes in the rate at which these features are apparent in this register of speech? Are there possible influences of culture or interactional norms within these features?

1.4. Significance of the Study

The existing study provides information regarding the features of child-directed speech, adding to the literature of children's language acquisition. This study also adds to the existing literature of Bangla-specific adult-child interactions, which is quite understudied. Additionally, the cross-sectional approach of this study adds to developmental studies of language. Moreover, this study can be used as a base to study caregiver speech in the Bangla-speaking communities (different dialects and social setups are also important factors to consider). Furthermore, the existing study opens avenues for future language research that are culturally sensitive.

Chapter 2: Literature Review

Child Language Acquisition (CLA) is an important topic of discussion in the field of linguistics, as it provides insight into a human's ability to acquire the vastly complex system of language within a short period of time. This understanding of how a child can learn a completely new language system can shed light on how the human brain can decode, process, and generate linguistic patterns without systematic learning of the said language.

2.1. Theories Related to Child Language Acquisition

The acquisition of language by children has been looked at from different perspectives over the course of many years of research. Chomsky's theory of LAD (Language Acquisition Device) and UG (Universal Grammar) provides an understanding that humans are born with an innate device called the Language Acquisition Device, which stores universal grammar, which essentially is a blueprint for all the parameters of languages in the world. According to Chomsky, the environment does not provide enough input to learn a complete linguistic system, so there must be a mental faculty within us that provides us with the parameters of language that help structure the input. (Lightbown & Spada, 2013)

Moreover, B.F. Skinner's behaviorist perspective places importance on the environment of the child, the linguistic environment's input, the imitation of the input, and the reinforcements that help children acquire language. When a baby is born, they attempt to communicate at first with smiling, gazing, and cooing with their caregivers. The child is provided with positive reinforcement as they successfully imitate adult speech, and this encourages the habit of language use. However, this theory fails at explaining how children can create new linguistic patterns on their own. (Lightbown & Spada, 2013)

Furthermore, the Interactionist model emphasizes the interactive aspect of language learning. It takes into consideration how interacting with competent speakers of a language can assist in linguistic development (Lightbown & Spada, 2013). Vygotsky's socio-cultural theory discusses the significance of learning, which contributes to human cognitive development. "Vygotsky supposed everything is acquired by two stages. Firstly, interacting with other people, and after that integrating into the individual's mental structure" (Zahid 2021, p.11)

Additionally, this development through interaction is bound within an area according to Vygotsky. This area is titled the Zone of Proximal Development (ZPD), and in this zone, the learned is prepared to attain the language system; however, it is not without the help of a mentor or instructor who is equipped to 'scaffold' the child's cognitive development (Zahid 2021, Lightbown & Spada, 2013). These mentors or caregivers essentially work as an important figure in the child's language learning process through interaction.

2.2. External Factors Contributing to Child Language Acquisition

Beyond the innate factors, there are other external factors that have been reported to contribute to the development of child language. For instance, the socioeconomic state of a family can influence the development of a child's language learning. Studies have shown that middle and upper-middle-class parents tend to set language goals in their day-to-day conversations with their children compared to high SES parents. They speak more, and their language consists of a greater number of word types and tokens compared to upper-class parents. This discrepancy in language input from the parents was also influenced by their work, where parents from professional families provided more input than working-class parents. However, low income is just one of multiple factors that contribute to the developmental graph of a child's

language. SES-related differences may show patterns of CL development, but it is not the defining trait. For instance, the education of the parents, especially maternal figures, can also influence the acquisition of language (Schwab & Williams, 2016). High SES mothers use longer utterances, which results in their children acquiring a larger vocabulary pool (Rowe, 2008).

This brings us to the point that, apart from SES and parental education, the quality of the input is also important, as well as the quantity. Here is where the education of parents comes into play. Quality of input can be measured based on the diversity of vocabulary, narratives, and clarifications, as in language that does not pertain to the here and now. The diversity of caregiver speech influences the later speech of children, and according to research, children showcase higher levels of grammatical competence if their preschool teachers tend to use grammatically complex speech. The parents' speech also changes over time as the child ages, and it suggests that the child's linguistic capabilities might influence the input of adults (Schwab & Williams, 2016). Hirsh-Pasek et al. (2015) also highlight this point of parent-child interaction being both “dyadic” and “developmentally dynamic” (p. 1072).

Apart from this language scaffolding, studies also predict that gestures made by children may also push parents to provide input, providing instances of language learning. This type of gestural interaction occurs before the use of spoken language and involves facial expressions, vocalization, and gazing, which evolves into a symbolic and decontextualized conversation later on. (Hirsh-Pasek et al., 2015; Schwab & Williams, 2016)

As mentioned before, from the study it was understood that there are developmental differences within the same SES groups and factors included a diverse vocabulary provided by mothers and their level of education. However, just the amount of linguistic input did not seem to contribute to the development of the child's speech, which could mean that the quantity of input

is not as significant in the CL development process (Schwab & Williams, 2016). A study done on 60 low-income families also supports this argument that caregivers must provide a scenario for the children to communicate through shared objects and familiar communicative routines, through fluent and connected conversations and interactions, establishing the foundations for language acquisition. (Hirsh-Pasek et al., 2015)

A study on Low SES Spanish-speaking families shows how a child experiences child-directed speech impacts their later language development. The study done on children from the age of 19 to 24 months found that speech directed towards the child has an impact on the child's vocabulary, and not adult language in the child's environment (Weisleder & Fernald, 2013). While previous works did come to an understanding that diverse language input led to vocabulary growth, this particular study added a new dynamic: when language is directed towards children, they get more opportunities to process language structures and representations, and have more success in vocabulary development at a later age (Weisleder & Fernald, 2013).

This type of speech directed towards children provides rich linguistic input and facilitates future linguistic abilities. This high-quality input, termed CDS or Child Directed Speech in the field of language studies, comprises features of its own.

2.3. Child-Directed Speech

When discussing the role of competent language speakers assisting in language learning, it is important to know that CDS (child-directed speech) plays its part in Child Language Acquisition. CDS, or otherwise known as “Baby Talk” a term first formally used by Charles A. Ferguson in his work *Baby Talk in Six Languages* (1964), to describe what is a modified linguistic input created by adult speakers that facilitates the acquisition of language in children.

This form of language is essentially a simplified version of the standard language of a community and is likely to be an imitation of the person (in this case, a child) who is addressed uses it (Yasmin and Jahan, 2016). Furthermore, family members have an important role to play when it comes to the phase of language acquisition of children. The role of the caregiver is to assist the child through the facilitation of language learning. According to Bruner (1983), people exist in a world that is defined in cultural terms, and language is an important tool in that world, because with that language one can assimilate with the present culture. What CDS does is essentially assist children in their journey of acquiring said language.

2.4. Features of Child-Directed Speech

Adult-to-adult conversations are relatively complex in terms of the content that is being discussed and the grammatical structure of it. Adult speech is quite fast-paced and often includes unnatural pauses with not fully finished sentences. This nature of adult speech would presumably pose an issue for a child, as they are yet to learn the standard structures of the language they are being exposed to. The parameters (words, sentences) are yet to be set in the child's linguistic mind (Broen, 1972).

Compared to the usual adult language, child-directed speech differs in a few different aspects. In essence, the features CDS include phonological features (high pitched rhythmic speech, a slower speed in speech, and clear pronunciation of words), lexical features (typically easy vocabulary), syntactic features (simpler, shorter sentences) and conversational features (use of questions, repeating what the child says and keeping the topic of conversation limited). Compared to other speech registers, CDS is rather simple, slow-paced and contains high-pitched utterances (Zahid 2021). Adding to this, Children from the time of their birth have shown

a clear interest towards CDS compared to the speech adults use or ADS. The reason is that ADS lacks the prosodic feature of CDS that provides children with clear boundaries of grammatical units and word forms, which results in enriched language learning (Schwab & Williams, 2016). In child-directed speech, words are often easy to understand, and guardians take time to say such utterances slowly. The higher pitch grabs children's attention while communicating with them. This variation in intonation or rhythmicity can be observed in various examples of child-directed speech. Stated in Payne et al. (2010), “[the] infant primarily perceives speech as a succession of vowels of variable durations and intensities, alternating with periods of unanalysed noise (i.e., consonants)” (p. 150).

Moreover, CDS also employs structural features, including short utterances such as isolated words, that help children segment words. Studies done on children exposed to Italian speech have shown that they were able to separately detect words that came in both fluent speech and isolated speech. Apart from isolated words, CDS utilizes simple sentence frames and another research has uncovered that child tend to understand nouns better when they are contextualized with a simple sentence frame rather than an isolated word (Schwab & Williams, 2016). Furthermore, CDS shows a limitation in the use of vocabulary. The topics covered during adult-child conversations are also limited in number and are often repeated. According to Saxton (2009), “Five topics in particular seem to recur frequently: kin, animals, parts of the body, food and clothing” (p.63). Due to the complexity of the language and the child’s inability to form fully grammatical sentences, children make use of telegraphic utterances.

2.5. Conversational Features:

Moreover, CDS is tuned in a way to keep the child's attention as they are spoken to. The child's interests grow as time passes, and the speech directed at them also adapts to it. According to Saxton (2009), an adult's ability to sustain a child's attention and then guide that attention to somewhere else is crucial for language development. Adding to this, infants show an affinity towards their mother's face and voice. Even before speech, babies express themselves via cooing and smiling, and their guardians respond in a rather exaggerated manner. They are more vocal and show a keen interest in the baby. With time and age of the child, this vocalization develops a playful attribute (Saxton, 2009).

Another 2019 study by Berk Ilhan on the feature of repetition and modification in Turkish language discusses how adult speakers of motherese often repeat what they say either exactly or with modification. The author mentions how two other researchers (Kuntay and Slobin, 1996) looked at these repetition features in a Turkish-speaking mother in terms of variation sets, and these sets consisted of 1. Lexical substitution, 2. Addition deletion of specific reference and 3. Reordering. "They defined variation sets as neighboring sequence of repetitions with a variation as a result of an intention" (Ilhan, p74). The study observed how a free word order language with various morphological systems would structure its constituents through variation in how one idea is being communicated.

Saxton (2009) mentioned that the comprehension of language is made easy due to mother or like figures having the habit of repeating the same phrase while slightly altering it. Adding to this, in the instance of repetition, there are also special features to how guardians say the utterance back to the child. It was observed that a mother may sometimes retell the child's telegraphic speech in a more structured and correct or near correct form to them, while

attempting to understand what the child initially meant. However, this grammatically complete form is not at the level of adult speech. because syntactically, CDS utterances are much simpler than the grammatical structures of ADS (Saxton, 2009).

Moreover, adults repeat or, in this case, ‘recast’ what the child says in a similar fashion or in various forms, and these forms are often restricted in terms of structure and follow a pattern. “Look at NP, Here’s NP and Let’s play with NP are typical of the sentence frames used by adults, with the noun in the noun phrase often being produced with exaggerated intonation and heavy stress” (Saxton, 2009, p.65). Due to this type of structure and tonality of CDS, new information is more emphasized and is cognitively easier for children to process.

Furthermore, a study looked at how a mother addressed a child and two other adults. In the comparison it was found that with children, the adult uses questions and imperative sentences at a higher frequency contrary to when they talk to the other two adults. The study also found how deletions of pronouns and do and be verbs was apparent in the child directed speech. This suggests that the mother was not just simplifying her speech for the child but was changing the types and forms of sentences she was producing. (Broen, 1972)

CDS research has predominantly been done in Non-Asian languages, and it is from those studies that researchers have found out about the commonalities between languages when it comes to addressing a child. The common features of CDS, such as high pitch, simple sentences, and a slower pace, have been discussed across many literatures such as Snow and Ferguson in their 1977’s study. Other studies on Spanish language by Pan et al., (2005) and Hurtado et al., (2008), both looked at how motherese can result in an increase in the child’s vocabulary. Furthermore, a study done by Shi et al (2021) attempted to uncover whether or not modulation of the caregiver's speech may help in enriching the child’s vocabulary. The study implemented the

use of toys that are and known and also unknown to the children in the experiment, and encouraged the caregivers to talk to the children about the toys. The results suggested that adults tend to be slower-paced when it comes to discussing the toys that were unknown. The study also placed the toy in the child's environment and removed it at a certain time and observations showed that adults tend to carefully refer to the names of the toys when they were absent. This suggested that caregivers were slowing down the rate of their speech to support the child in creating association with the referent (toy).

2.6. Cross-Cultural CDS

Some studies have been done on how the environmental context may influence the child-directed speech across different languages and ultimately affect the language acquisition of the child. The culture the child is surrounded by affects the linguistic items a child learns. Hoff (2013) states that culture-specific language styles are also a part of language development, and these styles are perhaps taught or influence language learning in subtle ways. The author further argues how a language with extensive and regular morphological patterns may cause a rapid development of morphological systems in a child who is in that language space, whereas a child in an environment that utilizes a language with a rather irregular morphological system may have a difficult time in developing the morphological system. Regarding this, a clear distinction can be made between Turkish and English-speaking children. English learning children tend to pick up content words predominantly, whereas Turkish learning children develop grammatical inflections, as a result producing two-morpheme utterances. Another 2006 article by the same author states how North American motherese is heavily object-oriented, consisting of concrete nouns, contrary to Asian motherese that emphasises verbs. Furthermore, a comparative study on

the vocabulary of Argentine, Italian, and US children showed that Argentine and Italian children have more terms to refer to their family members than the children of the US. It can be argued that it is possibly due to the level of connection the people of these particular countries have with their extended family (Hoff, 2006). Another study by Ambrose (2015) also highlights this point by addressing that Western families are mostly nuclear, lacking extended relatives. Contrary to this, Mexican American, Latino, and Hispanic families value familial bonds more and tend to teach their children these values through their parenting. Communities with certain religious beliefs tend to integrate those beliefs while interacting with children. Additionally, Western families include the child in adult conversations, whereas families from the south asian culture prefer keeping their child separate from adult-to-adult interactions (Ambrose, 2015). Differences such as this are likely to affect how much input a child gets in different cultures.

2.7. Caregivers' influence CDS

Things like culture define a lot of the linguistic behavior of the people within that cultural paradigm. Another cultural feature that differentiates in different environments is how much the adults communicate with the children. Some cultures may talk a lot with the children in the family and some may talk significantly less. However, all cultures do provide adequate data for language acquisition (Hoff, 2013). Cultural practices provide opportunities for language to be used in a meaningful manner (Hirsh-Pasek et al., 2015). The discrepancy amongst different adult child communication in families depends on factors such as the parents' verbal abilities and the activities parents partake in, along with emotional and stress factors- and these are essentially part of the linguistic environment the child is exposed to. Moreover, the caregiver's cultural

background influences the linguistic activities¹ they participate in. Their belief and knowledge regarding a child's language development is what connects SES with the type of input they provide to children (since more education is a measure for higher SES) (Rowe, 2008). This, in turn, directly or indirectly influences the child's lexical processing capabilities.

2.8. Research done on Bangla CDS

There is a significant amount of research that has been done on CDS around the world; however, the CDS in the Bangla language is not as extensively researched comparatively. In recent studies, a work by Lamia Zahid (2021) looks into how family members provide child-directed speech. It was a qualitative study that involved a three-year-old child in a Bangla-speaking environment. They found that adult speakers, in fact, do have the features of CDS while talking to children, and children also mimic those features, furthering their language development. The author looks at features of CDS (phonological, syntactical, and conversational) as well as functions of language proposed by Halliday (1978) in the one-month-long data they collected.

Another research done by Yasmin F. and Jahan J. (2016) observed the journey of change in Bangla Baby talk from the past to the current independent Bangladesh. The study observed the trends that have become apparent in the Bangla language over the years from a sociolinguistic perspective. With the qualitative research, they found that new vocabulary, like English words, has been included in the current Bangla baby talk. They also observed how parents refer to their

¹ An ethnographic study done on the residents of Trackton addressed that boys start participating in adult conversations at around fourteen to sixteen months of age, which in the case of girls, is twenty two months. Reasoning behind this is that girls are often ignored or not understood as well as denied from participating in certain interactions, resulting in less linguistic data for the child to pull from, which causes a slower rate of language development (Heath 1983). According to another study, quite a few Arab Middle Eastern Muslim culture predominantly focuses on the education of sons and not daughters. (Ambrose 2015)

children in different names based on their gender and how they have deleted some words from their vocabulary due to political sensitivity. Furthermore, a 1971 study by Afia Dil looked at the contextualization of CDS and how different scenarios may call for differences in the speech of adult that is directed towards the child.

2.9. Research Gap

CDS is recognised as an important step in the language acquisition process of a child in the current field of linguistics. Most existing research on CDS has been done on Indo-European and Western languages; however, Bangla language has yet to be explored in this field. The existing literature on Bangla CDS consists of single-child qualitative case studies (Zahid, 2021), sociolinguistic features on Bangla CDS, and the evolution of Bangla baby talk (Yasmin & Jahan, 2016) and foundational descriptive work on CDS and how context and CDS are connected (Dil, 1971). However, there is no empirical research done on CDS, and the scale and detail of the study done on Bangla remains limited; and thus, it is yet to be understood how Bangla-speaking caregivers provide children with the necessary support for language acquisition. The lack of study in lexical, prosodic, and cultural features of Bangla makes it difficult to create a linguistic comparison.

Chapter 3: Research Methodology

This chapter includes the research design, the methods used for the research, the data collection procedure and the details of the participants. It also provides information about what tools were used and how they were used for the study. Furthermore, information on the data analysis process has been added along with the limitations of this study and the ethical considerations taken during the span of the study.

3.1. Research design

For this particular study, the mixed method design was selected. The study employed both qualitative and quantitative methods to look into how CDS facilitates child language acquisition. The qualitative method was used to understand and describe the categories of the techniques used, especially in Bangla CDS. Here, the author utilized existing literature on what CDS features are like and also the author's own experiences as a native speaker, aligned with observations made of the participants' data. On the other hand, quantification of the CDS features will provide input on what type of CDS is used in which age range at what frequencies. This was done by generating numbers for each CDS category that the author listed for this study. Additionally, quantifying the data made it possible to trace the differences among different age groups and see how the features and techniques vary across children. The time constraints have led to opting for a cross-sectional study, as it allows observation of multiple participants in a short period of time. This design was also purposely chosen to synthesize a pattern of features of CDS (if they are present or absent, and if present, then at what frequency) across different age groups.

3.2. Research Participants & Sampling

The participants selected for the study were all native Bangla speakers, and the caregivers also interacted with the target child in Bangla. An hour of recording at minimum was done for each child's interaction with their caregivers, and thirty minutes of data was transcribed for the analysis. The data was naturalistic, and there was no prior structure to how the interactions would be carried out (making them spontaneous), and the data was collected in a casual home environment. The sample consisted of six typically developing pre-school children from ages two to four, and these children were interacting with multiple adults/caregivers. The data is a representation of a small portion of their everyday interaction.

The participants of this research data collection include both adults and children. The number of children is 6, and the number of adults is 25. All of the children and adults included are native Bangla speakers. All of the participants are based in Dhaka, Bangladesh. The participant sampling was done by following the structure provided by the Acquisition Sketch Project (Hellwig et al., 2023).² The children are from different age ranges (2-4 years), and they were selected to observe whether or not the adults involved with the children are showing a change in the input they provide. Each age range consists of one child, apart from 2;6 years, which includes 2 children.

Here is a list of details of the child participants:

² The acquisition sketch project initiative's goal is to gather knowledge regarding languages that are fairly understudied. Their aim is to develop a much richer and diverse documentation of languages around the world, since most of the research done on language acquisition and development is biased towards English and European languages. The project's model considers multiple aspects when it comes to language documentation and has made a structure of documentation with as little data as possible of the target language. Bangla, being a comparatively understudied language, was one of the core reasons why the researcher chose this project's approach for the existing study.

Table 1*Child participants list*

Pseudonyms	Age	Sex	Session	Duration (in minutes)
OR	2;0	Male	1	98
NN	2;6	Male	1	76
TN	2;6	Female	1	107
MR	2;11	Male	2	68 41.15
AH	3;6	Male	1	60
ZB	4;0	Female	1	62.06

Here is a list of all the adult participants for each child:

Table 2*List of participants for (adult) 2;0-year-old*

Name	Age	Sex	Relation to the child
Sp02	24	Female	Relative
Sp03	55	Female	Relative
Sp04	54	Female	Grandmother
Sp05	57	Male	Grandfather
Sp06	33	Male	Father
Sp07	24	Female	Mother

Table 3

List of participants for (adult) 2;6-year-old

Name	Age	Sex	Relation to the child
Sp02	10	Male	Sibling
Sp03	30	Male	Adult
Sp04	42	Male	Father
Sp05	36	Female	Mother
Sp06	29	Female	Adult

Table 4

List of participants for (adult) 2;6-year-old

Name	Age	Sex	Relation to the child
Sp02	32	Male	Father
Sp03	29	Female	Mother
Sp04	29	Female	Adult

Table 5

List of participants for (adult) 2;11-year-old

Name	Age	Sex	Relation to the child
Sp02	30	Female	Mother
Sp03	55	Female	Grandmother
Sp04	24	Female	Adult
Sp05	61	Male	Grandfather

Table 6

List of participants (adult) for 3;6-year-old

Name	Age	Sex	Relation to the child
Sp01	70	Female	Grandmother
Sp03	12	Male	Brother
Sp04	10	Female	Sister
Sp05	37	Female	Mother
Sp06	41	Male	Father

Table 7

List of participants (adult) for 4;0-year-old

Name	Age	Sex	Relation to the child
Sp02	28	Female	Relative
Sp03	29	Female	Adult

3.3. Data collection tools

The research required naturalistic observation of parent-child interaction; hence, there was no pre-defined questionnaire or structured interview for the research. A structured language sampling method may have its benefits; however, it falls short (due to it being more focused and planned) in providing a diverse language dataset (See Evans & Craig, 1992). Therefore, the main tool for data collection was ‘spontaneous language samples’, as they provide real-time data of language use and the speaker is not prompted to say certain things. This is especially useful in synthesizing patterns in the language development of children. Spontaneous language samples from multiple children help to establish these developmental patterns. Notably, Spontaneous samples give insight into the day-to-day communicative environment of speakers by giving a

snapshot of how individuals (in the case of this study: children) interact with people they are familiar with and at what complexity. Additionally, the analysis of this spontaneous data allows for a much-detailed understanding of language development. This is not just limited to children's speech and is useful in higher levels of language use, hence it has been useful in synthesizing CDS features in adult speech. The flexibility SLS provides, helps in analyzing the same data over and over for different features while cutting down the time for data collection, which was beneficial for this study. (See Miller et al., 2011). Lastly, to collect the data, high resolution smartphones were used to video record the child and the adult's interaction. The smartphone models include: OPPO A38, Samsung Galaxy F23 and iPhone 16 pro max.

3.4. Data collection procedure

Since the research required naturalistic data, the researcher visited the participants' homes in order to record their interactions. Moreover, A few people were involved in the collection of the data as the locations were in different places. Consent was taken from the adult members of the family prior to the visits, and a time was scheduled at their convenience. The adults were also informed about the nature of the research and were advised to carry on with their activities with the child as they would do on any given day, without having to follow any strict structure. Information about the child was also collected before starting the recording sessions. The child was followed and was recorded from a distance, allowing them to feel comfortable as much as possible without intruding much in their activities. The phone was either placed in a corner of the room where the child was playing and interacting with the adult present, or the researcher themselves followed the child with the device to record them. Additionally, some recordings required rapport building between the researcher and the child so that the child would not feel

uncomfortable while the researcher was present. This is to minimize any sort of inhibition or the risk of the child being too talkative because a new person is present. Furthermore, having a clear audio was important. Some children moved a lot, resulting in the researchers hand-holding the device and following them all around the house. Moreover, the researcher visited each child's residence at least 1 to 2 times, depending on the quality and quantity of the data. The recording sessions lasted from 1 to 2 hours, depending on the quantity and quality of the interactions. A minimum of 1 hour of recorded data was the goal of these sessions.

3.5. Data analysis procedure

The recordings of the interactions were transferred to a personal computer or laptop and transcribed. The transcription and analysis were done with the CLAN (Computerized Language ANalysis) software, which is used for language analysis (MacWhinney, B. 2000). For the transcription format, the author used CHAT (Codes for the Human Analysis of Transcripts). This program was designed by Brian MacWhinney in 1984 for the analysis of child language and has been used for this study as well.

Moreover, CDS features were the primary focus of this study; therefore, the software was utilized to code these features. A total of 30 minutes of recording was selected to transcribe and then code. These 30 minutes were selected, leaving out any long pauses or silences, memories or planned speech (as the study requires spontaneous data), and include speech from both the adult and the child. Moreover, in the software, the participants were all numbered and given a title (e.g., SP02, SP03). For this study, only the adult speech was marked according to the CDS categories developed. Each adult utterance was transcribed using the Roman alphabet and then coded in the following line.

Moreover, the number of utterances produced by each adult and the features they showcased were quantified by using the CLAN. Some of the categories have already been noted in previous literature (eg, Questions, Repetition, etc.); however, for this study on Bangla CDS, the categories were specifically defined, and newer categories have been added based on the features observed in the Bangla language. These considerations were made based on the function of said feature, the tone and format (structure) of the utterances, and the author's own experience of being a native speaker of the language. These categories of CDS features of Bangla are listed in the following:

REPETITION: For this category, utterances that were repeated by the adults were chosen. The repetition is either exact word-for-word or each utterance has a 70 to 80 percent similarity.

Moreover, adults can either repeat themselves or repeat what the child says in this category.

Examples:

1. Adult: *Tumi kothay giyechile?* (Where did you go?)
2. Child: *Tomar shathe.* (With you)
3. Adult: *Tumi kothay giyechile?* (Where did you go?)

RECAST: Recast includes utterances when an adult repeats back what the child said but in a grammatically correct form, either fully or to the nearest correct form. This is not done explicitly, but rather in a passive form of correction.

Examples:

4. Child: *Eta amar orange colour.* (This is my orange color.)
5. Adult: *Orange colourer dress?* (Orange colored dress?)

CORRECTION: Correction is similar to recast, but it differs in how the correct form is delivered. Here, the adult explicitly corrects the child's utterance and is usually very direct.

Examples:

6. Child: *Election bhalo!* (Election is good!)
7. Adult: *Abar ki bolla?* (What did you say again?)
8. Adult: *In?* (In?)
9. Child: *Injection bhalo.* (Injection is good.)
10. Adult: *Election na mamma injection.* (Not election, mamma, injection.)

PARAPHRASE: This includes utterances that are drastically structurally different while being repeated, but the meaning is intact.

Examples:

11. Adult: *Tumi babuder shathe kotha bolso?* (Did you talk with the babies?)
12. Adult: *Bondhuder shathe?* (With the babies?)
13. Adult: *Tomar friendder shathe kotha bolso?* (Did you talk with your friends?)

ACKNOWLEDGEMENT: This category involves an adult acknowledging what the child is trying to communicate. These utterances usually convey the meaning of “yes, I have understood

you” or “yes, I see”, usually letting the child know they are being heard. In Bangla, these utterances usually are “accha thikase” or “accha” or “Oh __ (followed by a repetition of what the child said)”. Moreover, affirmations are also included under acknowledgment eg. “hae evabe koro” (yes, do it like this). Additionally, if the speaker were to repeat the things the child says in an excited tone or as a question (not necessarily a question, but is structured in that way), that is also considered an acknowledgement.

Examples:

14. Child: *Oi boita oi balloon ase.* (That book, that balloon is there.)

15. Adult: *Oh oi balloon?* (Oh, that balloon?)

16. Child: *Biketa noshto hoye gesilo.* (The bike broke down.)

17. Adult: *Biketa noshto hoye gese? (high pitch)* (The bike broke down?)

18. Child: *Bim bim biketa noshto hoye gese.* (The bim-bim bike broke down.)

19. Adult: *Allah! (high pitch)* (Allah!)

EMPHASIS: These are utterances that bring the child’s attention to a particular word or topic. Similar to topicalization, where the topic word of the sentence is at the beginning of the sentence, in Bangla, the difference is that the word does not necessarily get placed at the beginning of the sentence all the time, and the topic word can also be used in isolation or repeated multiple times in one sentence.

Examples:

20. Adult: *Tomar bati niye ashi ekta bati?* (Want me to bring your bowl, a bowl?)

21. Adult: *Kite ghuri kite.* (Kite kite kite.)

CLARIFICATION: Clarifications are given or asked for by adults in CDS. Clarification consists of questions, both open-ended and yes no. Moreover, clarification can be in the form of repetition, where the adult repeats what the child said in a question form to make sure they heard it right the first time.

Examples:

Clarification asking

22. Adult: *Tumi ki korteso?* (What are you doing?)

23. Child: *Wekfi nei.* (Taking a wekfi.)

24. Adult: *Hae?* (What?)

Note: wekfie is like referring to the word “selfie”.

Clarification giving

25. Adult: *Eita katar jonno ammu.* (This is for cutting, ammu.)

26. Child: *Ki katcho?* (What are you cutting?)

27. Adult: *Eije jokhon je chul ber hoye jay tokhon eita kete dibo.* (When the hair grows, then I will cut it.)

IMPERATIVES: Imperatives for this study consist of REQUESTs, COMMANDs (including warnings, prohibitions). Requests are when the adults are requesting the child to do something. These differ from COMMANDS in terms of tone and structure; often structured like a question (eg *dekhba?/ want to see?*) and are less harsh. Moreover, there are also polite requests that usually include an endearment word within the utterance. On the other hand, COMMANDs are more direct and usually guide the child to do or not do an action. (*eta koro/do this.*) Essentially, imperatives are an attempt by the speaker to get the hearer to commit an action.

Examples:

Command

28. Adult: *Edik asho.* (Come here.)

Request

29. Adult: *Daduke khete dao mach?* (Let grandma eat the fish?)

SUGGESTIONS: Suggestions include speech that usually involves the caregiver suggesting a joint activity with the child. Essentially, it is speech that is inviting in nature and involves the adult in some way. For this study, suggestions also include utterances that are said to offer help to the child.

Examples:

30. Adult: *Amra cholo baranda theke ghure ashi.* (Let's go visit the balcony.)

31. Adult: *Maa darao maa porishkar kore dei?* (Maa, wait, let mother clean it for you?)

ELICITATION: The consideration for elicitations in adult speech includes the type of utterances that usually provide some type of guidance to the child to say something. In most cases, the adults know the answer to the question they ask the child, or it is something that is likely common knowledge. This type of utterance is used to prompt the child to speak.

Example:

32. Adult: *Maaer naam ki?* (What is mother's name?)

33. Adult: *Orpi?* (Orpi?)

34. Adult: *Nose diye ki koro?* (What do you do with a nose?)

In addition to this, the existing study also considers questions that are part of role-playing to be elicitation, as they do not quite make sense but are make-believe and are said to sustain the conversation with the child.

Examples:

35. Adult: *Policeman kothay?* (Where is the policeman?)

36. Adult: *Tumi policeman?* (Are you the policeman?)

The study attempts to understand the fluctuations in these features in adult speech directed towards children across 5 different age groups and how they may facilitate child language development. It should be noted that the 2;6 age group consists of 2 children

(originally, all age groups were meant to have 2 children; however, it was not possible due to time constraints), and the numbers generated from these two children have been averaged to maintain consistency of 1 child per age group. Furthermore, since each child has a different number of adults who are interacting with them, and for that, the adults' data (utterance and the features used by each adult for a single child) has also been averaged to maintain consistency. Additionally, the data analysis reports on the total number of each feature of CDS used in the adult's speech for each child. The analysis also quantifies the mean length of utterances (MLU) of each adult and reports on the average MLU. Finally, the number of all CDS features used for each child was converted to percentage rates.

3.6. Ethical Considerations

Before the recording sessions of the target caregiver-child interactions, proper consent was received from the caregiver of the child. They were briefed about the recording process and the goal of the research before the sessions. A consent form with further details was provided for documentation purposes. No participant was forced to take part in this experiment, and they were informed that they could withdraw from the data collection process at any time. Their identity has been anonymized to protect their privacy.

3.7. Limitation

One of the limitations of this study is that since it is a small-scale research, the developmental trends may not be representative of all Bangla-speaking children. Furthermore, the CDS techniques employed by the participant adults/caregivers might also not be representative of all adult-child interactions. A cross-sectional study means that the number of

participants is diverse. However, it also means that the children were not observed for a longer time span. Longitudinal studies usually help in subject matters like this, as they provide a much clearer picture of developmental trends. Moreover, the use of spontaneous speech samples did provide a varied dataset; however, it is also difficult to control or organize the data (the children's linguistic output) in a systematic manner, thus the data is subject to inconsistency.

Additionally, a key factor that needed to be considered for this study is time, and it was important to keep the study within a time frame. The study used data of one child from one age group, except for age group 2;6, which includes two target children. A larger data pool from each selected age group would have been useful in understanding how CDS may be modified with age difference, but due to a lack of time and families who had children in the desired age group, this study is limited.

Chapter 4: Findings

This chapter presents the study's findings, based on the analysis of child-directed speech produced by each caregiver involved. The data shown are synthesized from the speech used by the interlocutors with the six children observed for the research, ranging from age 2 to 4 years. The datasets are organized in two main sections, one showcasing the mean length of utterance (MLU) and average utterance for the adults. The second section reports on the distribution of the features of CDS in the speech used by the Bangla-speaking adults. The findings have been reported descriptively along with charts showing the generated numbers for both sections.

4.1. Mean Length Utterance

The ratio of morphemes to utterance was calculated as a standard procedure for any language research, and it provides information about the level of language use. MLU serves as an indicator of child language development; however, for this study, the MLU of adults has been calculated. It gives a picture of what level of speech is being used by the adults with the children and whether or not there is change. The MLU values were first calculated for each adult and then averaged, and this was done for the groups of adults involved with all 6 children separately. The same was done for the utterance rate.

Table 8

Average Utterance and MLU Count for adults for each age group

Age	2;0	2;6	2;6	2;11	3;6	4;0
Average Utterance	58.5	91.8	115	101.5	77	198.5
Average	3.55	3.9	4.9	3.2	5.24	4.4

MLU						
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Since MLU represents the average number of morphemes in an utterance, higher MLU indicates higher morphosyntactic complexity in language usage. The reason for looking at adult MLU was to correlate it with the language capabilities of the child (If the adult speech has a higher MLU, then it is possible that the child is capable enough to keep up with complex levels of language). It can be seen in the chart that higher MLUs do show up in older children; however, the values are not linear, as there is a drop in MLU for the oldest child (4;0-year-old being exposed to an MLU of 2.5). A discrepancy in this value can also be seen where both children, despite being the same age (2;6), have differences in terms of adult MLU (3.9 and 4.9). Additionally, there are variations in MLU in individual adults who have interacted with the children. Primary interlocutors tend to have the most MLU value (eg, Mothers); however, this value is also dependent on how much a certain interlocutor speaks and at what level. So, a certain interlocutor having higher MLU values does not necessarily mean they provided the highest linguistic input.

4.2. Overview of General Frequencies in Interlocuter Speech

The following tables report on the total number of utterances for each adult for each child, along with the total number of morphemes, followed by their individual MLU. Lastly, the average utterance of the interlocutors has been calculated along with the average MLU value each child has been exposed to.

Table 9

General Frequencies of OR's Interlocuter Speech

Speaker	Utterance	Morpheme	MLU
Sp02	119	304	2.555
Sp03	49	140	2.857
Sp04	128	589	4.602
Sp05	37	159	4.297
Sp06	13	39	3.000
Sp07	5	21	4.200

Table 10

General Frequencies of NN's Interlocuter Speech

Speaker	Utterance	Morpheme	MLU
Sp02	14	47	3.3
Sp03	92	297	3.2
Sp04	119	536	4.5
Sp05	213	1023	4.8
Sp06	21	85	4.0

Table 11

General Frequencies of TN's Interlocuter Speech

Speaker	Utterance	Morpheme	MLU
Sp02	64	269	4.20
Sp03	254	1470	5.78
Sp04	27	130	4.81

Table 12

General Frequencies of MR's Interlocuter Speech

Speaker	Utterance	Morpheme	MLU
SP02	171	797	4.661
SP03	52	226	4.346
SP04	182	535	2.940
SP05	1	1	1.000

Table 13

General Frequencies of AH's Interlocuter Speech

Speaker	Utterance	Morpheme	MLU
SP01	323	1577	4.8
SP03	19	133	7
SP04	25	141	5.64
SP05	16	93	5.812
SP06	2	6	3.000

Table 14

General Frequencies of ZB's Interlocuter Speech

Speaker	Utterance	Morpheme	MLU
SP02	394	1913	4.8
SP03	3	12	4.000

Table 15

List of Average Utterance and MLU

Age	Utterance	MLU
2;0	58.5	3.55
2;6	91.8	3.9
2;6	115	4.9
2;11	101.5	3.2
3;6	77	5.24
4;0	198.5	2.5

4.3. Frequencies of CDS Features in Interlocuter Speech

A total of 15 features were categorized for the analysis, and they were quantified for each adult speaker. At first, all the features used by the interlocutors were averaged individually based on their total number of utterances, and then each feature was averaged by the number of speakers who had that feature in their speech. This allowed for a more accurate picture of the distribution of the CDS feature among each speaker and in totality. Additionally, the feature percentage quantified for the two children of age 2;6 was again averaged to standardize the age range, by having one child per age. The following tables reports on these feature percentages in detail, while being categorized based on functionality.

4.3.1. *Scaffolding and Interactional Strategies*

These strategies usually support the child's attempts at conversing with the interlocutor by sustaining the conversation. Out of all the CDS features quantified, **elicitation** was the most observed feature overall (34.14%). The highest percentage of elicitation was seen in the interaction of the 2;6-year-old. The least amount of elicitation was seen in the oldest child (4;0

years), with 1.59%. However, the rate of elicitation is quite inconsistent with lower rates showing for the 2;0-year-old (3.34%), 2;11-year-old (3.38%), and 3;6-year-old (8.20%).

Table 16

Rates of Elicitation in Interlocuter Speech Across Age Groups

Age	2;0	2;6	2.12	3;6	4;0
elicitation	3.34%	34.14%	3.38%	8.20%	1.59%

Moreover, clarification³ asking (**Clarification_ask**) was present moderately with all children. However, there is a steady rate of decline in percentage (except for the 4;0-year-old having an increase), hinting at the possibility that with age, children have clearer and corrected language use, leading to adults asking for less clarification. Comparatively, **Clarification_give** was quite less frequent in the data set, with its peak at 3.00% for the 2;11-year-old age range, while for the other children it was less than 1%.

Table 17

Rates of Clarification giving and Clarification asking in Interlocuter Speech Across Age Groups

Age	2;0	2;6	2.12	3;6	4;0
Clarification_give	0.58%	0.11%	3.00%	0.24%	0.9%
Clarification_ask	12.57%	8.97%	4.52%	3.54%	6.29%

³ Both 'clarification asking' and 'clarification giving' refer to an adult doing it. No child response was quantified for this study.

4.3.2. Directive Strategies

Directive strategy-related features were also observed in the data set. These include commands and prohibitions (**Imperative_commands**), requests (**Imperative_requests**), and suggestions (**suggestion**). Commands are very frequent in the dataset, with their highest at 24.98% for the youngest child (2;0 years) and the lowest (2.86%) for the oldest child (4;0 years). However, the 3;6-year-old child also has a high command percentage (22.97%) in its CDS despite being the second oldest child. In contrast, requests are not as varied across children, with its highest being 3.86% for the 2;11-year-old, and its lowest at 1.09% for the 4;0-year-old. Moreover, suggestions are notably fewer in number, with the lowest being 0.50% for the oldest child and a significantly higher percentage of 7.9 for the 2;6 age range.

Table 18

Rates of Commands, Requests, and Suggestions in Interlocuter Speech Across Age Groups

Age	2;0	2;6	2.12	3;6	4;0
imperative_commands	24.98%	14.12%	8.38%	22.97%	2.86%
imeperativ_requests	2.81%	3.61%	3.86%	3.42%	1.09%
suggestion	1.31%	7.9%	1.34%	3.3%	0.50%

4.3.3. Structural Modification and Attention-Grabbing Strategies

Furthermore, some features were oriented towards discourse and had structural modifications to them. This domain of features includes emphasizing (emphasis), paraphrasing (Paraphrase) and shortening (Shortening). Emphasis had some variations in their usage percentage and peaked at 12.87% for the 3;6-year-old and remained relatively low for the rest of

the children. Moreover, paraphrase rate was significantly low for the youngest and oldest children, but was on an incline from the 2;6 age range to 3;6 age range (1.98% 2.28% and 2.52% respectively). Similarly, the percentage rate of Shortening was significantly low (below 2%) and showed no steady usage pattern.

Table 19

Rates of Paraphrase, Emphasis, and Shortening in Interlocuter Speech Across Age Groups

Age	2;0	2;6	2.12	3;6	4;0
Paraphrase	0.26%	1.98%	2.28%	2.52%	0.08%
Emphasis	3.15%	3.77%	1.30%	12.87%	0.75%
Shortening	1.36%	0.54%	0.97%	1.97%	0.25%

4.3.4. Feedback Strategies

Recasting (recast) and **correcting (correction)** were two feedback strategies that were observed in Bangla CDS, and they were quite low in their usage rates overall. Correction was used only in older children (2;11 to 4;0 years old), and all of them were below 1%. Recast was used for all children, highest percentage being 1.79% for the 2;0-year-old. Moreover, another strategy observed comparatively at a higher rate, was **Acknowledgment**, and is seen in the highest percentage for the oldest child participant's interaction (18.43%). Additionally, for the first three age ranges, usage of acknowledgment was generally stable with a decrease in percentage for the 3;6 year-old age range (7.01%).

Table 20

Rates of Recast, Correction and Acknowledgment in Interlocuter Speech Across Age Groups

Age	2;0	2;6	2.12	3;6	4;0
recast	1.79%	0.09%	0.28%	0.06%	0.08%
correction	0%	0%	0.58%	0.43%	0.33%
Acknowledgment	12.84%	12.74%	13.56%	7.01%	18.43%

4.3.5. Affection Strategies

Lastly, child-oriented expressions were categorized using **endearment words** and **nursery vocabulary**. Nursery vocabulary was most frequently used in younger children with the 2;0 and 2;6-year age range having the two highest rates (6.81% and 3.32% respectively). Moreover, Endearment words had a somewhat steady usage across CDS used among children except the youngest and the oldest child (0% and 0.75% respectively)

Table 21

Rates of Endearment Words and Nursery Vocabulary in Interlocuter Speech Across Age Groups

Age	2;0	2;6	2.12	3;6	4;0
Endearment word	0%	2.51%	3.42%	2.5%	0.75%
Nursery vocabulary	6.81%	3.32%	0	0.24%	1.01%

Throughout this chapter, the various features of Bangla CDS were calculated, and a percentage rate was generated of the features for each age group. This was done to examine the patterns of feature usage rate across age groups. The following chapter further discusses these patterns.

Chapter 5: Discussion

The study has examined the functional features of Bangla Child-Directed Speech and attempts to identify developmentally important features, investigating the change in features with the child's age. Additionally, it attempts to interpret the possibility that there are features that are culturally influenced and are exclusive to Bangla CDS. This chapter discusses these questions based on the findings of the earlier chapter.

5.1. Features of Bangla Child-Directed Speech

The concept of CDS having its own special features⁴ compared to adult language has long been studied by many researchers. The type of utterances used by caregivers of a child provides them with the corpus to extract information about the constructions of the language. (Broen 1972). Additionally, this child-specific register is not 'simple', and consists of questions and imperatives (Ma, 2022). As shown in the findings chapter, Bangla caregiver speech also exhibits certain features. However, some of these features do not necessarily confine themselves to being exclusively CDS features (e.g., questions⁵ being used for clarification-asking and elicitation), and can commonly be seen in adult-to-adult speech; it is the frequency and the function they serve that give these features a place in the pool of CDS categories. For this study, the prominent features categorized for Bangla CDS include - elicitation, repetition, commands, clarification-asking and giving, emphasis, and acknowledgement. These features are not the only ones that were analyzed; however, these features do indicate that the Bangla caregiver-child interaction is highly engaging.

⁴These features include shorter utterances, higher pitch, comparatively less false starts, and repetitions (Ma, 2022)

⁵ Newport et al (1977) provides an example of how a feature can have multiple functions. (See page 124-125)

As mentioned before, these features were categorized keeping in mind the function they served. Elicitation and clarification asking prompted children to talk more, as well as provide elaborations to the interlocutor. Moreover, features like acknowledgement supported children's input in the conversation by signaling to them that they are being heard. Repeating is notably an overlapped feature where it serves different functions for another category, such as repeating a certain phrase for emphasis, repeating a question multiple times to elicit information, or repeating a piece of information to provide clarification.

Moreover, directive features such as commands, requests, and suggestions are features that are utilized to guide the child in a certain direction, providing direct or indirect instructions. Commands are usually the most direct, stating clearly what the adult wants the child to do, whereas requests are less harsh. For Bangla, this is understood by the tone of the statement and certain items within the utterances (*ektu, dekho-to*). They are also sometimes said in a manner that it seems interrogative, similar to English (e.g., can you please do this for me?). Similarly, suggestions also sometimes form an interrogative tone; however, for this study, suggestions were categorized based on the inclusive nature of certain statements, usually in joint attention scenarios.

5.2. Age-related Changes in Bangla CDS (Developmental trends)

Based on the findings, it is suggested that CDS features are indeed age sensitive and have the level of change varies from feature to feature. However, it can only be an assumption that these features vary in usage rate because of how old the child is. There are multiple reasons behind this. The first one being the fact that this was a naturalistic observation, and the children did not go through any preliminary screening and did not have a set, consistent routine of

interaction. Additionally, all the children in the study did not have the same number of interlocutors, and this is likely to have influenced the number that is generated. Furthermore, CDS is not necessarily an established ‘technique’ of interaction but rather a register⁶ used by adults, which is often unknown by the interlocutors themselves. And due to this, it is not possible to propose that these registers are consciously used by adults and would have a linear pattern of usage rates. It is possible that CDS is influenced by the experiences of the adults themselves and how they wish to interact with the child.

With these being addressed, the patterns that were found are not fully random and do show age-oriented changes. For example, instances of repetition had the most linear pattern. It was the highest for the youngest child and gradually went down towards the end for the oldest child. This may suggest that as the child grows older, they are likely to acknowledge the caregiver's speech easily, without having the caregiver repeat themselves. A study supports the idea that a mother's tendency to repeat may gradually decrease as the child's comprehension improves (Blount, 1977). Another study by Snow (1972) also showed similar results for repetition and younger children compared to older ones. According to her, the repetition of the same utterance provides children with more processing time to successfully understand the component of the language. Her study showed a prevalence of repetition in 2-year-olds, which is the case for the existing study on Bangla as well.

Furthermore, clarification is done when the interlocutor is either asking for or providing clarification to the child. It would mean that the rate at which clarification is happening would go down as well with age (understanding higher levels of speech would result in less misunderstanding). This assumption is somewhat supported by the rate of clarification asking,

⁶ CDS or motherese is not clearly defined along with what features it include and is likely not universal. (Matychuk, 2005)

and the percentage of it does go down linearly, with the exception of the oldest child (4;0 years). This exception could be happening due to the caregiver's failure to understand the child or the child not producing clear utterances. However, providing clarification, at least from a logical standpoint, seems to be more in line with child language development, the logic being: providing fewer clarifications could be a sign that the child understands what is being said better. However, from the findings, it is seen that the patterns are quite unstable and mostly under 1 percent. Though the linear pattern of repetitions in caregiver speech suggests that scaffolding decreases as the child grows older, it does not really provide a clearer picture, as the reasons vary for why caregivers may repeat themselves.⁷

Furthermore, elicitation had a rather sudden spike in number for the 2;6 age range. Whereas it was relatively low for the other children, the lowest usage rate was for the oldest child. It could be hypothesized that elicitation may go down with age; the oldest child's percentage rate (1.59%) supports that. However, the surprisingly high rate for the 2;6 age suggests that during this age, the caregivers put effort into making the child participate in active conversations. A study by Faulkner et al (2003) also found a good amount of questioning in their caregiver participants' utterances and suggested that they are likely to elicit interaction even when there is no researcher present. For this study, elicitation was considered the utterances that specifically prompted the child to say something, though this could be influenced by the presence of the researcher during the interaction.

⁷ Based on the findings of the existing study, an adult may repeat themselves to put emphasis on a topic, elicit speech from the child or acknowledge the child's input to the interaction as well as prohibit action (command), making it a feature of multiple functions.

Additionally, features that guided the child's behaviour also showed variation in usage. Commands were mostly high⁸ for younger children and showed a gradual decline for the first three age groups, suggesting that adults tend to direct children's behaviours and actions through commands at an early age. It is also the lowest in amount for the oldest child, which supports this assumption. Newport et al. (1977) have seen similar results in their study and stated that action directives go down in number as the child develops. However, like many of the features discussed here, commands can also be influenced by various factors (the 3;6-year-old having a higher command rate from caregivers), and this is a snapshot of the interactions.⁹ In addition to this, requests were at a stable rate except for the youngest and the oldest age range. It is a possibility that perhaps the younger children are likely not to listen to subtle requests (which might be the case because of the really high rate of commands at this age range, 24.98%). On the other hand, both commands and requests are relatively low for the oldest age range, which could suggest that older children are likely to perform actions or provide input themselves, which may be supported by the fact that they have the highest rate of caregivers acknowledging¹⁰ them (18.43%). Acknowledgement in the existing study is very much akin to showing sensitivity towards what the child says and responds accordingly. It is, as mentioned before, a way of letting them know that they (the child) are being heard and acknowledged. According to studies, sensitivity towards children's speech is thought to contribute to children's sense of

⁸ Drach (1969) also found similar results of high rates of imperative in English speech towards young children (see Broen 1972)

⁹ A supposedly occupied child may pay less attention to what the adult is telling them, making the adult employ commands more than usual. Additionally, a presence of an outsider (researcher) may also influence the adult to feel the need to regulate the child's behaviour.

¹⁰ Statements by the oldest child such as '*eita amar eita amar basha*' are being acknowledged by the caregiver by saying '*oh tomar basha?*', and in another instance the child asking '*eita kori?*' and the adult responding '*hmm koro?*' may suggest that older children tend to make their own decisions (or say decisive statements) in some cases requiring less guidance from the caregivers.

accomplishment and capabilities. Being responsive to children may establish effective communication, helping children navigate interactions. Approval and affirmations are a type of these responses (such as saying ‘good job’ after a child does an action). The study further addresses that as children grow older and obtain a higher level of communicative competence, the responsiveness of a mature language user may become more meaningful and helpful in their linguistic development journey (Tamis-LeMonda et al., 2001).

5.3. Culturally Distinct Features

Culture and language are deeply intertwined, and it is almost impossible to separate one from the other. Language is also an important starting point for understanding cultural ideas and cultural exchanges, how it is expressed in day-to-day life and how it is transmitted from one to another. Examination of language may shed light on how language is used to express culturally meaningful utterances in interactions between caregivers and children (Schieffelin and Ochs 1986). Some of the features that have shown up in the findings are culturally influenced. In the case of Bangla CDS, a key distinction was made between the structure of topicalization and emphasis. Structurally, topicalization is usually when the topic word comes to the front of the sentence, creating emphasis. (E.g., ‘this dish, I have not had this before’). However, for Bangla, a different type of emphasis structure was observed. It usually consisted of the typical fronting for topicalization, with the topic of the utterance being repeated again at the end of the utterance. For example:

37. Adult: *Tomar bati niye ashi ekta bati?* (How about I bring your bowl?)

38. Adult: *Fele disi moyla fele disi.* (*I threw away the trash.*)

39. Adult: *Fishta bair koro fish.* (*Bring out the fish.*)

40. Adult: *Jao oi roome jao.* (*Go to the room.*)

In addition to this, another type of emphasis was seen where only the topic of the utterance was repeated. For example, the caregiver asks '*bhaiyake diba?* (Do you want to give it to your brother?) and follows it up by saying '*bhaiyake?*'. Another example, '*tomar dari kothay?*' (Where is your beard?) followed by '*dari?*' (Beard?).

Moreover, this emphasis is also done by repeating just the topic word multiple times (it is often twice). Blount (1977) states that repetition of words and phrases are key feature in child-directed speech. They also propose that "A likely interpretation is that repetitions are used to attract children's attention, to get a response, so that interaction will continue, irrespective of any semantic content" (p.122)

41. Adult: *Ball ball?* (Ball? Ball?)

42. Adult: *Kola kola.* (Banana? Banana?)

43. Adult: *Lukay geso lukay geso?* (Did you hide? Did you hide?)

Furthermore, Bangla CDS happens to exhibit a high rate of imperatives, making the language more activity-oriented. The language encourages children to participate and interact with the caregiver. This aligns with non-Western languages that do not rely on explicit language instructions but rather utilize directives and prompted situations. According to a study, various non-Western languages (Kwara'ae, Kaluli, Samoan, Basotho, Mexican-American) report having 'routines' that prompt the child to say a certain thing or perform a certain action. Furthermore, the participation of the child in these routines depends on their age (Schieffelin and Ochs 1986). For example:

44. Adult: *Eikhane handlee dhorō*. (Hold the handle here)

45. Adult: *Eije tomar mum nao*. (Here, take your water.)

46. Adult: *Daduke bolo deyar jonno*. (Tell grandmother to give you.)

Another similarity with these non-Western languages that have been observed is that caregivers often attempt to elicit information from the child. According to studies, these routines tend to be marked by "Say" (Schieffelin and Ochs 1986). Multiple cases of this can be seen in Bangla CDS:

47. Adult: *Ki ki tumi ki dekhe ashcho boloto*. (What? What? What did you see? Say it)

48. Adult: *Eta ki colour boloto eita?* (What color is this? Say)

49. Adult: *One two bolo?* (Say, one two?)

Additionally, nursery vocabularies and endearment words are inherently culture-specific and support in establishing relationships within a social context. It further situates CDS in a sociocultural context, providing insight into cultural interactions. Examples such as ‘*Gopaila*’ and ‘*Gobani*’ suggest internal relationships as well as cultural norms.¹¹ Nursery vocabularies also provide information on the age of the child, as according to the findings, they have a somewhat linear rate of decline with age, suggesting that it is likely children move away from words they are familiar with as they grow older and are successful in learning the established terms. Example: ‘mum’ is a commonly used term to refer to water. Moreover, the diminishing of these features suggests that they may act as preliminary placeholders in young children that would later become standardized items.

Furthermore, culture includes a community and individuals' belief system and values and people raise their children teaching these values. Families interact with their children, and the integration of faith can also be observed within these communities (See Ambrose 2015). Samples of speech having these features can also be seen in the existing study. Interactions such as these provide insight into familial and cultural norms.

This utterance is from a family of Hindu background

¹¹ Gopaila is likely a nickname however its origins from Hindu mythological character Gopal. Adding extra syllables like ‘ila’ adds an informal and intimate connotation to it. Another example would be if someone were to be named Ismail then they might be referred to as ‘*Ismaila*’ by person who is very near and dear to them.

50. *Adult: Gopalwala tumi amar jonno bag kine niye eshecho?*

(Gopalwala, did you buy and bring a bag for me?)

Note. Gopal is a character from a Hindu myth.

This utterance was made by a devout Muslim family member who was inviting the child to pray with them.

51. *Adult: Tumi Allah korba? (Will you perform Allah?)*

52. *Child: na. (No)*

53. *Adult: Asho Allah kori. (Come, let us perform Allah)*

Instances such as these provide insight into the dialects the child hears in their linguistic environment, which may be useful in understanding specific community interactions. Example:

54. *Adult: Dhuke gelo (It got in.)*

Note. the child used a dialect variant of the word ‘dhuke’, which is dhuika.

55. *Adult: Kheltase na bolo kheltese. (Do not say playing, say playing.)*

Note. The child used a dialect variant of the word kheltese, which is kheltase

5.4. Lack of Correction Feedback features

There are various methods in which a caregiver may provide feedback to the child's speech. A type of this feedback deals with the correction (see Marcus (1993), p.56) of child utterances and whether or not this feedback¹² provided may help children to recognize correct forms of language explicitly is still up for debate. However, their existence is clear. The evidence found in this study also suggests that the correction feedback rate (correction and recast) is not significantly high and is not linear. This is because these corrective feedbacks are not provided consistently across all age groups, and some do not get this feedback as well (aligns with Marcus's (1993) statement). In the findings of Bangla CDS, corrections are below 1%, with the first 3 age ranges having no corrections in their interactions. Recasts also show up inconsistently at a very low rate. This may suggest that Bangla CDS emphasizes successful interactions rather than grammatically correct ones. Examples found in the findings suggest that adults make corrections at a word level rather than sentential level:

56. Adult: *Ironman na iron iron.*

57. Adult: *Election na mamma injection.*

Some corrections come in the form of a question, hinting towards the error the child has made.

58. Adult: *Choddo poddo hoy naki? (Is choddo poddo even a thing?)*

¹² Marcus (1993) categorized these as 'noisy feedback'.

From the examination of the findings, it may be possible to assume that Bangla CDS is an adaptive register that is sensitive to age. However, these features are multifaceted and depend on different variables, and even though parameters have been set to limit these varied influences, it may be subjective. In addition to adults utilizing a special register, be it consciously or without being aware of it¹³, the functional features of this register are culturally influenced at certain levels, making it unique. This further highlights the importance of culture-specific CDS study.

¹³ It is likely that the specialty of this register is not a conscious decision but rather an attempt of the caregiver to match the linguistic and cognitive level of a child for communication. (Matychuk 2005, Newport et al, 1977)

Chapter 6: Conclusion

6.1. Summary of the Study

The study was conducted to gain a significantly deeper understanding of Bangla CDS than previously existed. The aim was to identify the notable CDS features used by caregivers in Bangla, along with features that may have been influenced by the culture, if there are any, as well as to observe the changes that may occur with age. The analysis was accomplished by synthesizing naturalistic interactions, and it was found that Bangla CDS has quite a few functional features, and these features were categorized under domains based on those functions, including Scaffolding and Interactional Strategies, Directive Strategies, Structural Modification and Attention-Grabbing Strategies, Feedback Strategies, and Affection Strategies. Moreover, some of these features exhibited linear patterns of development while others varied in their rates of usage by adults. These variations were seen across age groups, suggesting that some of these features are age sensitive; meanwhile, others, though not showing much of a linear pattern, may require longitudinal studies. Additionally, the study also discussed how some of these CDS features may have cultural influences in them and how these make Bangla CDS its own unique register. This study highlights the importance of CDS studies across different languages and may prove useful for further research in the sphere of the Bangla language.

6.2. Limitations of the study and future recommendations

Bangla child-directed speech is really understudied with the exception of a few studies. However, most of these lack a wide range of data sets. The existing literature is only a stepping stone and has its own limitations. This study provides a snapshot of the day-to-day interaction of Bangla-speaking adults and children. While it does provide an understanding of the nature of

CDS in Bangla, it is not representative of all caregiver-child interactions in the Bangla-speaking community. There are further sociocultural and socioeconomic factors that influence the features and developmental trends of these features.

Additionally, this study uses a naturalistic data collection procedure, making it difficult to create a uniform data set, as it is not up to the researcher to control the output. Moreover, the sample size was small, consisting of only 4 age ranges and each range having 1 (except one) child. This limits the generalizability of features within a single age group. Longitudinal studies may provide further information in establishing key features of Bangla CDs. The parameters created for the features for this particular study were set based on the limited data collected and the recurring patterns they showed. However, these patterns may be subjective in some cases and require revisiting in the future. Additionally, a more structured data collection method may provide consistent output.

Moreover, this study touches on the cultural influences quite briefly based on the author's own position as a native speaker, though it is important to include more and more ethnographic data to provide standardized research. But with the limited data that was worked on, it could be proposed that the Bangla CDS register is quite adaptive, and age is not the only factor that influences these usage rates, and they are likely shaped by culture.

6.3. Further Studies

This study may provide inspiration for future research avenues, such as the development of child language acquisition in relation to caregiver input. Comparative studies between caregivers' input and child language acquisition may also provide insight into the facilitation of language learning in children. Moreover, this can work as a framework for a similar study with a

much larger participant number. There can also be community community-specific study on how caregivers provide language input to children and what factors influence this input, to what extent.

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Appendix A

A1. A sample of transcription and coding in CLAN software.

```

Clan - [CHILD-1]
File Edit View Tiers Mode Window Help
[Icons: New, Open, Save, Print, Find, Help, etc.]

@Begin
@Languages:      ban
@Participants:   SP07 Mother, SP06 Father, SP05 Grandfather, SP04
                 Grandmother, SP03 Relative, SP02 Relative, SP01 Target_Child
@Options:       CA
@ID:   ban|change_corpus_later|SP07||female||Asian|Mother|||
@ID:   ban|change_corpus_later|SP06||male||Asian|Father|||
@ID:   ban|change_corpus_later|SP05||male||Asian|Grandfather|||
@ID:   ban|change_corpus_later|SP04||female||Asian|Grandmother|||
@ID:   ban|change_corpus_later|SP03||female||Asian|Relative|||
@ID:   ban|change_corpus_later|SP02|24;05.|female||Asian|Relative|||
@ID:   ban|change_corpus_later|SP01|2;00.|male||Asian|Target_Child|||
@Media: CHILD-1, video
*SP02:  bujhi na. •
%mor:   |bujh |i |na
*SP01:  ball koi? •
%mor:   case|+nom |koi
*SP02:  boi koi? •
%mor:   case|+nom |koi
%cds:   clarification_ask

*SP03:  daduke diso? •
%cds:   recast
%mor:   |dadu case|+acc |de | |s |o
*SP04:  fupike dao. •
%mor:   |fupi case|+acc |de |o
%cds:   imperative_commands
*SP04:  fupike daoto ekta. •
%mor:   |fupi case|+acc |de |o |to |ek |ta
%cds:   repetition imperative_requests
*SP01:  ei! •
%mor:   |ei
*SP04:  daduke dao oi daduke dao. •
%mor:   |oi |dadu case|+acc |de |o
%cds:   repetition imperative_commands
*SP04:  ayhay daday ki anche dekhoto. •
%mor:   |ayhay |dada case|+nom |ki |an |ch |e |dekh |o |to
%cds:   imperative_requests
*SP04:  ki anche daday? •
%mor:   |ki |an |ch |e |dada case|+nom
%cds:   open_ended_question
*SP05:  niya asho. •
%mor:   |ni |a |ash |o
%cds:   imperative_commands
*SP05:  fupike niya asho. •
%mor:   |fupi case|+acc |ni |a |ash |o
%cds:   repetition imperative_commands

```

Appendix B

B1. Sample of the consent form given to the caregivers of the children.

Parental Consent Form

Study Title: Features of Bangla Child-Directed Speech: A Sketch From Observation of Pre-School Children and Caregiver Interaction

Researcher(s): Dr. Asifa Sultana, Shakika Rubaiat, Tahsina Quamarun, Muntakimul Haq

Affiliation: BRAC University

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Purpose of the Study

This study aims to observe the interaction between caregivers and children between the ages of 2-4 years and examine the features of child directed speech found in Bangla speaking adults. The findings will contribute to understanding language facilitation factors in early childhood in Bangla speaking communities.

What Participation Involves

- Your child will be video-recorded during a natural, spontaneous conversation with you or another familiar caregiver.
- Each recording session will last approximately 60 minutes.
- Recordings will be transcribed for linguistic analysis.
- All personal information will be kept confidential, and your child's name or any identifying details will not appear in any publications or reports.

Confidentiality and Anonymity

- Your child will be assigned a pseudonym or participant code in the research data.
- The video recordings will be stored securely in password-protected, encrypted storage accessible only to the researcher and authorised supervisors.
- The transcriptions will remove or replace any identifying information.

Voluntary Participation and Right to Withdraw

- Participation is entirely voluntary.
- You may withdraw your child from the study at any time without giving a reason.
- You may request withdrawal of your child's data up to August 30, 2025, after which the anonymised data may already be integrated into the research analysis.

Potential Risks and Benefits

- Risks: There are no anticipated risks beyond everyday conversation.
- Benefits: While there is no direct personal benefit, the study will contribute to scientific knowledge about child language development, which may help parents, educators, and researchers.

Consent Statement

I have read and understood the information above. I have had the opportunity to ask questions and have received satisfactory answers. I understand that my child's participation is voluntary and that I may withdraw my child at any time up to August 30, 2025. I consent for my child to take part in this study.

Child's Name: _____

Parent/Guardian Name: _____

Signature of Parent/Guardian: _____

Date: _____