

Morpho-Syntactic Development of Verb Phrases in a Three-Year-Old Bangla-Speaking Child: A Case Study



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CERTIFICATE OF APPROVAL

I hereby declare that this thesis is the student's own work and effort. All sources of information incorporated here have been acknowledged. This thesis has been submitted with my approval.



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DECLARATION

This thesis is a presentation of my original research work. Wherever contributions of others are involved, every effort is made to indicate this clearly, with due reference to the literature, and acknowledgement of collaborative research and discussions.



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Dedication

I dedicate this study to the child and caregiver who made this research possible through their participation and interaction.

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Table of Contents

Abstract	ix
Chapter One.....	10
Introduction	10
1.1 Background	10
1.2 Problem Statement.....	11
1.3 Research Gap	12
1.4 Research Objectives	12
1.5 Research Questions.....	13
1.6 Significance of the Study.....	13
Chapter Two.....	14
Literature Review	14
2.1 First Language Acquisition	14
2.2 Mean Length of Utterance (MLU) in Child Language Research	17
2.3 Verb Inflection and Auxiliary Development	22
2.4 Local Data (Bangla Language).....	25
Chapter Three.....	33
Methodology	33
3.1 Methods	33
3.2 The participants	34
3.3 Tasks.....	34
3.4 Data Collection and Management	35
3.5 Data Transcription	35
3.6 Ethical considerations.....	35
3.7 Data Analysis.....	35
Chapter Four.....	37
Findings and Data Interpretation.....	37
4.1 Introduction	37
4.2 Mean Length of Utterance MLU and overall development	37

4.2.1 Calculation of MLU.....	37
4.2.2 Interpretation of MLU	38
4.2.3 Examples from data	38
4.3 Use of Verb Inflectional Marker	40
4.3.1 Types of verb inflectional markers.....	40
4.3.2 Accuracy of verb usage	41
4.3.3 Consistency of usage	41
4.4 Relationship Between MLU and Verb Morphology	42
4.5 Role of Caregiver Input	42
Chapter Five	44
Discussion	44
Chapter Six.....	47
Conclusion.....	47
References	48
Appendices.....	52-55

Abstract

Child language is a complex and gradual process. This study investigates the morphosyntactic development of a three-year-old child that mostly focuses on verb phrases with a partial focus on Mean Length of Utterance (MLU) and the caregiver's input on verb-morphology. Morphosyntactic development is the most crucial stage for a child. This study examines the MLU level of the child and the verb inflection markers used by the child, and finds the relationship between the MLU level and verb morphology. Also, it analyzes the caregivers' input frequency on the child's verb phrases usage. This is a descriptive approach and a mixed method because it holds a qualitative measure within quantitative support. The data was collected through a naturalistic process. The spontaneous speech of the child and the interaction with her caregivers have been observed and analyzed. The findings of this study reveal that the child is at an intermediate level according to her MLU count. The child is progressing towards using complex verb phrases. The presence of her caregiver and accurate input help her to use the verb phrases in a more accurate manner. Overall, the study reveals the verb morphosyntactic development of a three-year-old child and the role of a caregiver's input in early language development and contributes to the morphosyntactic development of a three-year-old Bangla-speaking child.

Keywords: First language acquisition, verb inflection markers, MLU, caregiver's input, morphosyntactic development, Bangla verb acquisition

Chapter One

Introduction

1.1 Background

Language acquisition is a gradual and complex process. In this process, the lexical, phonological, and morphological developments happen gradually in language development. Among these, morpho-syntactic development plays an important role in shaping the ability to organize words and the child's ability to speak and express themselves. To organize words into meaningful sentences, morphosyntactic development is crucial. Verb phrases are one of the core components of morphosyntactic development. Verb phrases encode the tense, aspect, and agreement markers.

Bangla language has a rich and complex verb morphology and there are a variety of inflectional markers such as persons, tense and aspect. For the children, this is a slow and steady process that gradually improves. At different stages a child can use a range of grammatical markers. The accuracy and proficiency is not a great factor at the age of three. Studying how the children learn to use these verb phrases reveals the internal process and external factors. The whole process of learning the language has some steps such as from cooing, babbling to holophrastic stage and then a full sentence ('Cookie' gradually becomes "I want to eat a cookie"). Interestingly, the stage of learning verb phrases shows variability and errors.

Mean Length of Utterance (MLU) is used widely to measure the syntactic development, which provides an estimate of the child's grammatical complexity. MLU is counted through

the number of morphemes per utterance. In morphologically rich languages, MLU can be an indicator only.

Though there is an internal process of grammar development an external factor that is caregivers input also shapes the use of grammatical structures. Because linguistic input plays a crucial role in a child's grammatical development.

Despite the importance of these factors there is limited research on Bangla language and a Bangla speaking child, particularly a combined focus of verb morphology and caregivers' input and also the relationship between MLU and morphosyntactic development.

1.2 Problem Statement

Though first language acquisition is a widely studied subject, in Bangla language there is very limited data available. Specially single case studies are very rare. To know the language acquisition process one might need to know from the very beginning. A child starts her journey from cooing, babbling to a holophrastic stage where she expresses her needs through one or two words; eventually they become efficient and add verb, person markers, tense and aspect.

The relationship between MLU and verb phrase development remains unclear due to limited studies on this topic. As Bangla is a morphologically rich language, these data are needed to be well understood.

Another issue concerns the light of caregivers' input that shapes the acquisition process. How the caregivers' interaction and accurate use of verb phrases makes the natural acquisition easier for the child is a concern.

1.3 Research Gap

Although previous studies have explored this sector but lacks an in-depth review and a combined review of MLU, verb morphology and caregivers input frequency.

Also, there is a lack of single case study of a three year old child's verb morphology. This creates a gap in understanding the verb morphology and the influence of caregivers input in shaping the use of verb morphology.

Therefore, this study seeks to investigate how a three-year-old Bangla speaking child develops verb phrases and uses it along with how this development relates to MLU and the influence of caregivers' input.

1.4 Research Objectives

1. To determine the Mean Length of Utterance (MLU) of the three-year-old Bangla-speaking child and examine what it indicates about the child's overall morpho-syntactic development.
2. To identify the types of verb inflectional markers for person, number, tense, and aspect, including auxiliaries, used by the child in spontaneous speech, and to analyze their accuracy and consistency within verb phrases.
3. To explore the relationship between the child's use of verb morphology and the observed MLU level.
4. To investigate the role of caregiver input frequency in shaping the child's verb phrase development.

1.5 Research Questions

This research aims to answer four distinct questions:

1. What is the Mean Length of Utterance (MLU) of the three-year-old Bangla-speaking child, and what does it indicate about the child's overall morpho-syntactic development?
2. What types of verb inflectional markers for person, number, tense, and aspect, including auxiliaries, are used by the child in spontaneous speech, and how accurate and consistent is their use within verb phrases?
3. How does the child's use of verb morphology relate to the observed MLU level?
4. What role does caregiver input frequency play in shaping the child's verb phrase development?

1.6 Significance of the Study

Firstly, this study is significant because it contributes to the field of first language acquisition and provides an insight into the development of a Bangla speaking child. Secondly this study highlights the importance of MLU and its relationship to Verb phrase development that gives a comprehensive understanding. Finally ,by examining the role of caregiver this study provides an insight into how internal factors help in shaping the development of verb-morphology of a child.

Chapter Two

Literature Review

2.1 First Language Acquisition

First Language Acquisition (FLA) refers to the process of acquiring one's native language from birth through natural interaction with caregivers (Clark, 2009). As language is the medium through which the communication of human beings is done, understanding how a child acquires this language is really important. Linguistically, it is a broad field, but it has different parts including sounds, words, grammar, etc. One crucial factor is how children learn a language through the process of verb-phrase acquisition. However, this literature review will explore the development of verb phrases in first language acquisition through the theoretical lens of Universal Grammar (UG), CPH, usage-based theory and some empirical studies. There are a lot of theories in first language acquisition such as behaviorism, innatism, cognitivism, and interactionism.

Mehrpour & Forutan (2015) provided a comprehensive overview of the major theories of first language acquisition, including behaviorism, nativism, interactionism, and connectionism. It broadens the theoretical perspectives of how children internalize the language. These perspectives are important to learn about verb phrase acquisition because different theories explain the process differently. Initially, infants actually possess an innate grammar template or UG that allows them to select and construct the grammar of their own native language (Islam 2013, p.503). The nativist theory highlights the child's aptitude for language learning, implying that a child is born with the brain structured for language (Chomsky, 1965). For instance, the nativist theory proposed that an innate language faculty drives the development

of grammar, whereas the interactionist theory emphasizes the crucial role of environmental input and social interaction in language learning (Mehrpour&Forutan, 2015).

Although Mehrpour&Forutan does not focus entirely on verb phrases, it gives an overall theoretical framework to explore morphosyntactic phenomena. Though it was not mentioned by the speakers, it highlights the interplay between innate mechanisms and environmental factors that shape language acquisition outcomes. Alharbi mentions Vygotsky 1978, a child's social and cultural exposure affects language acquisition. Social interactionist theory emphasizes that there is a joint contribution of the linguistic environment and the learner's internal mechanisms that impacts language development (Islam 2013, p.505). That indicates the role of interaction between the caregiver and the child. However, the social interactionist theory is more concerned about the pragmatics of the language, unlike Chomsky, who pays more attention to the development of grammar, and Skinner, who pays more attention to the active linguistic environment (Islam 2013).

According to Tomasello (2000), children mostly use language the way they heard it from how adults use it in their daily conversations, and that is called item-based utterance schemas. Because children do not operate with more abstract linguistic categories and schemas, it is quite simple that they do not have enough linguistic expertise in particular settings. (Tomasello, 2000).

According to Tomasello (2003), learning is all about interaction, about how the child is perceiving or how the parents or the caregivers are using the words. Children learn to talk day by day by participating and interacting often as part of familiar daily routines, by using their skills of attention and intention together (Tomasello 2003). According to Matthew, a child and caregiver are in joint attention when they are attending to the same thing and are mutually aware that they are doing so. This joint attention makes a common bond that they

are sharing while focusing on the same object. Eventually, this makes it easier for the child to learn a new word. From the age one year infants start to use their understanding of others' intentions to interpret communicative acts (Matthews, 2019). In his comprehensive review, Matthews synthesizes the findings of Grassman 2014 that talks about experiments that demonstrate how infants use pragmatic information about others' attention and intentions for word learning. Children learn by repetition what they hear from their caregivers. One of the assumptions of Matthews is that the words children hear are called CDS (Child Directed Speech), are highly repetitive and formulaic. Subsequently, the second assumption is that children store a whole sequence of words, which suggests that children store whole chunks of linguistic material. It emphasizes that children learn their grammar from what they hear without relying on some innate linguistic biases (Matthews, 2019). According to Bybee's Network Model (Bybee 1985, 1995), whether it is a regular or irregular all word forms, can be stored in the mental lexicon, as long as encountered them before (which seems sensible, since the mental lexicon is part of memory, and it does not seem reasonable that we keep some word forms in memory and discard others). When they are more similar in their phonological form a morphological schema can occur. As an example those words have similarity in pronunciation and spelling they are mostly connected. Such as the word that contains -ed at last that is stored in the mind as a past tense schema. Altogether these indicate the importance and the role of caregiver input frequency play in shaping the child's verb phrase development.

Themes were analyzed following Braun and Clarke's (2006) six-step thematic analysis framework. The initial step in the analysis was to carefully read, analyze, and extract key findings from each of the articles.

2.2 Mean Length of Utterance (MLU) in Child Language Research

to use language successfully one requires one to acquire a range of tools that includes phonology, morphology, syntax, semantics, and an extensive vocabulary (Ranti, 2015). One of the most widely promulgated indices is Mean Length of Utterances (MLU) to measure the morphemes. Mean length of utterance, or MLU, refers to the length of the sentences that a child typically uses (speechlanguagekids.com). Usually, a child uses a lot of utterances, but not all of them are called morphemes. Mean Length Utterance (MLU) is a quantitative measure for morpho-syntactic complexity. It indicates how many morphemes or words a child uses per utterance. Usually, a child uses a lot of utterances but not all of them are called morphemes. Such as a child asking for her toy to his mother, ‘putul’/ ‘doll’; ‘ammu’/ ‘mother’; ‘mum’/ ‘water’ etc these are one morpheme. When they are using only one morpheme their MLU count is 1. MLU is used to see how the child’s language is developing. To calculate MLU a child’s conversation record is needed. To calculate MLU in words, we simply count how many morphemes the child says in each utterance(speechlanguagekids.com). Now, to know MLU it is important to know what morphemes are. Ranti (2015) mentioned in her paper the definition of a morpheme is “a minimal unit of meaning or grammatical function” (Yule, 2006). The word is derived from the Greek word *morphe* meaning “form” (Fromkin, Rodman and Hyams, 2003). There are two types of morphemes; bound and free morphemes. Free morphemes are independent units that are not dependent on any other such as when, because, woman, bird etc. (Ranti 2015). In Bangla, *kokhon*, *kora*, *dekha* etc. They are free because they can stand alone and hold a meaning. On other hand, according to Ranti (2015) bound morphemes are those who are dependent on other such as -s, -es, -ed etc. In Bangla, -che, -chi, -bo etc. So, in English the

word ‘happened’ has 2 morphemes (happen, -ed). For instance if a child is saying , ‘amarputul/my doll’ it has 2 morphemes but if she says , ‘amarputulgulo/my dolls’ here it will be 3 morphemes.

$$\text{Mean Length Utterance} = \frac{\text{Number of morphemes}}{\text{Number of utterances}}$$

MLU is used for measuring the development of language in children. Ranalli 2012 mentioned that Brown saw MLU as an ideal way to quantify the qualitative data of a language sample. In his words, “The mean length of utterance (MLU) is an excellent simple index of grammatical development because almost every new kind of knowledge increases length” (Brown, 1973, p. 53). It indicates that MLU is the ideal way to measure language development. It can be used as a benchmark for language acquisition and is used to compare language intervention outcomes in autistic children (Ranti 2015, p.102). MLU serves as a benchmark for the language impaired children. Brown in Bowen (1998) says, children's MLU increases their capacity to learn and use grammatical structures and eventually their greater complexity increases. They move from Stage I into Stage II, where they learn to use “-ing” endings on verbs, “in”, “on”, and “-s” plurals. The Brown’s stages of MLUm can be seen in the table below:

Brown's Stage	Age in Months	Mean MLUm	MLUm Range	Morphological Structure	Examples
Stage I	12-26	1.75	1.0-	Stage I Sentence	see above

			2.0	Types	
Stage II	27-30	2.25	2.00- 2.5		
1				Present progressive (-ing)	it going
2				in	in box
3				on	on box
4				s-plurals (regular plurals)	my cars
Stage III	31-34	2.75	2.5- 3.0		
5				Irregular past tense	me fell down
6				's possessive	man's book
7				Uncontractible copula (the full form of the verb to be when it is the only verb in a sentence)	Is it Alison? Yes, it is . Was it Alison? Yes, it was .
Stage IV	35-40	3.5	3.0- 3.75		
8				Articles	A ball on the book.

9				Regular past tense	She jumped .
10				Third person regular, present tense	The puppy chews it. Jason likes you.
Stage V	41-46+	4.0	3.75- 4.5		
11				Third person irregular	She does . He has .
12				Uncontractible auxiliary (the full form of the verb 'to be' when it is an auxiliary verb in a sentence)	Are they swimming? Were you hungry? I'm not laughing; she is . She was laughing; not me.
13				Contractible copula (the shortened form of the verb 'to be' when it is the only verb in a sentence)	She's ready. They're here. Daddy's got tomatoes. My dog's lost his collar.
14				Contractible auxiliary (the shortened form of the verb 'to be' when it is an auxiliary verb in a sentence)	They're coming. He's going. I'm opening it up. We're hiding. It's freezing.

Rice et al. (2010) investigates the language developments among children with and without language impairment from 3 to 9 years old through MLU count. The result of his study supports the reliability and validity of MLU.

MLU is a tool for distinguishing between typical and delayed language development. It fixes a benchmark for the normal and delayed development of child language. For instance, Rice et al. (2010) reports age-referenced MLU data from children with specific language impairment and children without language impairments. This study shows the lower MLU of children with language impairments rather than the developing child.

Parker et al. (2005) has done a comparative study between the Mean Length of Utterances (MLUm) in morphemes and Mean Length of Utterances in Words (MLUw) on the typically developed English speaking children. Their finding suggests that MLU can be used as a measurement of a child's gross language development. Mean Length of Utterance or MLU is a reliable tool to indicate the nature of morphosyntactic development of children (Arif et al. 2008). This study reviews a normally developing child and a child with language disorder from the CHILDES. This study reveals the comparative study between MLUm&MLUw. According to their findings, to get information about the productive grammatical development of children, especially their linguistic richness and morphological structure. and syntactic complexity. After all, as an indicator of morphosyntactic development of child-language, MLUm is still unique and more appropriate (Arif et al. 2008).

Potratz et al., (2022) investigates thirty-two typically developing children in two age groups to measure the syntactic complexity (clausal density [CD], developmental level [D-Level], mean length of clause [MLC]) and lexical diversity of their language. According to their

findings it supports MLU as a responsive and valid measure of children's syntactic development (Potratz et al. 2022).

But the question remains. MLU is a gross indicator of development, and does not determine the structural complexity of grammatical competence, even in children with similar MLU (Ranti, 2015). **Significantly**, MLU reflects global grammatical growth, not specific grammatical forms. MLU is used only to contextualize the child's developmental stage, not as a direct measure of verb morphology. According to Scarborough (1991), they have examined the association of MLU and grammatical complexity in normally developing children and the children with speech delays.

2.3 Verb Inflection and Auxiliary Development

Naomi Shin and Karen Miller (2022) explored how children acquire morphosyntactic variation especially focusing on subject expression and verb forms such as clitics in Spanish-speaking children. Here they explore how children learn to alternate between overt and null subjects. For instance, in early stages, children tend to overuse overt subjects like *yo* ("I") even in contexts where adult speakers would omit them (e.g., saying *yo quiero* instead of just *quiero*) (Shin & Miller, 2022, p. 135). Children use easier and frequent forms to express their thoughts but it improves day by day. Children's productions move from fixed enclisis forms, e.g., *decírselo*, toward flexible use of proclisis (*se lo digo*) in line with caregiver input (p. 140). It also emphasizes the role of input frequency and variability because whose parents use a more appropriate pragmatic version their child will learn it more effectively. Though it was

not stated by the speakers, clitic placement suggests that children internalize the grammatical rules.

Bassano (2000) examines early noun and verb development in French-speaking children, while his main focus was how lexical knowledge and grammatical development interact in early stages of language acquisition. The study tracks data from age 1;3 to 2;5. It emphasizes that children acquire a set of high frequency words and it expands their verb repertoire. The study highlights that the first verbs acquired are often semantically light and highly frequent, such as *faire* (“do/make”) and *mettre* (“put”), and are typically used in formulaic expressions (p. 16). Bassano further observes that the child’s use of verb morphology, such as tense and agreement, appears in a piecemeal fashion, gradually expanding from isolated uses to more consistent application (p. 22). Basically early stages are dominated by nouns more than verbs. When verbs appeared, they were often used in fixed expressions or chunks like *fais dodo* (“go sleep”) or *metlà* (“put it there”) (p. 16–17). These findings support the idea that morphosyntactic development in verb phrases is a gradual process influenced by both lexical and syntactic exposure.

Bertinetto et al. (2015) explore the acquisition of tense and aspect by children acquiring Italian and Austrian-German which focuses on how morphological richness impacts early grammatical development. The study uses longitudinal data from spontaneous speech samples of children aged between 1;6 and 3;6 by analyzing the production of verbal inflections such as past participles, auxiliaries, and tense/aspect markers. Their goal was to see how the structure of a language, especially how rich or complex its grammar is and how it

affects children form verb phrases as they learn to speak. For instance the usage of auxiliaries (e.g., “ho mangiato” / “I have eaten” in Italian). Italian-speaking children showed earlier and more accurate use of auxiliary verbs and tense-aspect forms compared to Austrian-German-speaking children, who often omitted auxiliaries or used incorrect forms (Bertinetto et al., 2015, pp. 1269–1272). So this study shows that the structure and regularity of a language's morphology can affect verb phrase development in early language acquisition. Which strengthens the idea that morphosyntactic development is not only biological but also shaped by the nature of the input language.

Bassano et al. (2004) examine the acquisition of verb grammar and lexical development in French and Austrian German which focuses on the emergence of periphrastic constructions combinations of auxiliary/modal verbs with main verbs. This study emphasizes the interplay between cognitive processes and linguistic input. They looked at children's natural speech to see how they begin and combined it with helping verbs (like “is” or “will”) with action verbs (like “eating” or “go”). These combinations are called periphrastic constructions that show how children move from using single words to full verb phrases. The researchers found that although children in both languages go through similar steps, they don't always do it at the same time or in the same way (Bassano et al., 2004, pp. 45–55). They also discovered that children need to learn enough vocabulary before they can use these complex verb forms well. This supports what's called the lexical mass hypothesis, meaning that having a bigger word bank helps children form better grammar (Bassano et al., 2004, pp. 60–65).

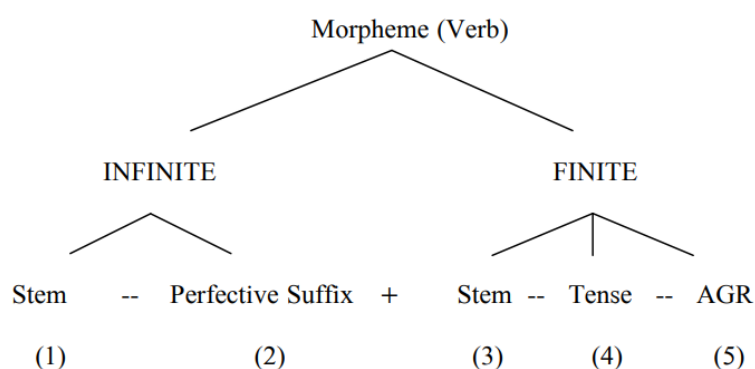
Yuan and Fisher (2009) investigated how toddlers learn verb structure through listening alone, without visual context. They introduced novel verbs in either transitive frames (“Jane blicked

the baby”) or intransitive frames (“Jane blicked”) via dialogues, and later asked children to recognize the verb while watching events involving one or two characters (Yuan & Fisher, 2009). The results showed that children who heard the transitive sentence looked more at the two-person action. This means they understood that “blicked” probably involved two people. The children who heard the intransitive sentence didn’t show this pattern (Yuan & Fisher, 2009). So that means though they do not understand the meaning but they can figure out what kind of action a verb describes.

2.4 Local Data (Bangla Language)

According to Bhattacharya et al., (2005) there are 56 different forms of a Bengali verb root, which can give rise to 112 new forms by the addition of emphasizing suffixes (i and o). (). Often, the root changes its form when certain suffixes are added to it. For example, the verb *khA* (to eat) when followed by the suffix **chhi** (present continuous, 1st person) becomes **khAchchi**, whereas when followed by the suffix **echhi** (present perfect, 1st person) it becomes **kheYechhi** (p.36).

(3) Bengali morpheme (Verb) structure



This is a picture of the Bangla verb structure showing two types of morphemes: infinite and finite morphemes. The infinite form is the main verb and the finite form is an auxiliary verb there (Kar, 2009). In this study Kar mentions Campbell 1995 says that, in Bangla, number is not marked, i.e., the same verbal form is used for both singular and plural and the aspect or tense markers are added to the stem before the personal inflexions (p.154). Bangla has no distinction between singular and plural at the verbal level so the verb would be the same for both 3rd person singular and plural number.

(15) 3PF /kin-/ (third person formal for SPR, PRP, PRC, SP, PP and PC)

	Simple	Perfect	Continuous
Present	ken-Ø-en	kin-e-c ^h -Ø-en	kin-Ø-c ^h -Ø-en
Past	kin-l-en	kin-e-c ^h i-l-en	kin-Ø-c ^h i-l-en

(16) 3PF /k^ha-/ (third person formal for SPR, PRP, PRC, SP, PP and PC)

	Simple	Perfect	Continuous
Present	k ^h a-Ø-n	k ^h e-εe-c ^h -Ø-en	k ^h a-c ^h -c ^h -Ø-en
Past	k ^h e-l-en	k ^h e-εe-c ^h i-l-en	k ^h a-c ^h -c ^h i-l-en

According to kar, when the present cases have form /c^h-/, past cases have /c^hi-/ then /c^hi-/ is the default suffix /c^h-/ as a phonological variation of it.

(17) Suffixes and features for the terminal nodes (SPR, PRP, PRC, SP, PP and PC)

Affixes for tense and AGR	Features
-Ø(c ^h i)	[+ Present_Participant]
-l	[+ Past]
-(ε)e	[+ Past_Participant]
-(e)n	[-S, -A] ²⁰

According to Tomasello (2000) children use what they hear for multiple times. The exposure of adults using right and accurate form of verb makes very effective for the child to grab it

easily and effectively. Also according to him children of all ages do not overgeneralize strongly entrenched verbs than weakly entrenched verbs such as I arrived it than I comed it. Ultimately that means children do not learn what they hear but what they hear multiple times. Importantly, from a usage-based and emergentist perspective, non-target-like patterns such as overgeneralization, variability, and occasional omission of verb inflectional markers are expected in early child language.

In the study of Farzana et al. (2021) mentioned in the study of comprehensive analysis of the syntax of English and Bangla languages by comparing the mechanism of each language. “In linguistics morphology refers to the mental system involved in word formation or to the branch of linguistics that deals with words, their internal structure, and how they are formed” Aronoff & Fudeman (2011, as cited in Farzana et al. 2021). According to David (2015) in English, the morpheme /-s/ is used as plural markers to nouns (e.g. balls). Similarly s is used to the human subject to make it plural (e.g. girls, boys). In contrast, in Bangla language /-রা/, /-এরা/, /-গুলো/, /-গুলি/ is used for plural markers for human and objects.

Shanawaz et al. analyzes morphology of English and Bangla (“Bengali Grammar,” & “English Language,” n.d.), it is obvious that both the languages possess some morphological similarities and dissimilarities: Unlike English, there are three aspects for Bangla verbs - the simple aspect, the progressive/continuous aspect, and the perfect aspect.

- *āka* - verbal noun (‘act of drawing’)
- *ākte* - verbal infinitive (‘to draw’)
- *ākte-ākte* - progressive participle (‘while drawing’)
- *ākle* - conditional participle (‘if X draws’)
- *ēke* - perfect participle (‘having drawn’)
- *ēke-ēke* - iterative participle (‘having drawn many times’)

Figure:1

According to her, four simple tenses of Bangla combine with mood and aspect which eventually form more complex conjugations, such as the past progressive, or the present perfect. In Bangla it is easy to form the habitual past tense. It starts with the simple past tense and changes the *l* to *t* (except in the **tui** in very familiar form). The endings are **-tam, -tish, -te, -to, -ten**. For example: **amidekhtam, tui dekhtish, tumidekhte, sha dekhto, apnidekhten**. In less standard varieties of Bangla, ‘**a**’ is substituted for ‘**e**’ in second-person familiar forms; thus ‘**tumibolta/khulta/khelta**,’ etc.

Nasrin (2008) examined a 26 months old Bengali speaking child where she found phonological and morphological errors in her speech. Such as: *tini* instead of *chini*(sugar). ‘*Tini kabii?*’ (want some sugar?). In Bangla, the verb used with 1st person always takes the inflection “*o*”, with 2nd person “*e*” or “*a*” and with 3rd person “*e*”; for example: ‘*jabo*’ (I’ll go) and ‘*jabe*’ (you/ he/ she will go). she ‘overgeneralizes’ this rule while talking about 2nd or third person. Thus, instead of ‘*apukhabe*’ (sister will eat), she says ‘*apukabo*’, and ‘*apugumabo*’ (sister will slip) for ‘*apughumabe*’. She is aware of reduplication such as *sottisotti?*. But aspirated morphemes are difficult for the child to utter such as *kabi*, instead of *khabi*. She is not developing her grammar gradually from ‘wrong’ to ‘right’; instead she is following her own hypothesis in constructing her conversation which is rule-governed, not random.

Sultana et. al, (2016) examined the forms of verb morphology of typically-developing Bangla-speaking children between the ages of two and four : the Present Simple, the Present Progressive, and the Past Progressive. This study focuses on the accuracy of the forms and on

the errors. Children often substitute the Past Progressive form by the Present Progressive form.

Sultana et.al. (2019) investigated the verb inflections of a group of children with language disorder and also compared with typical children. On the basis of accuracy rates and error patterns, three stages were identified for typical development of the Bangla verb forms studied, which reflect their structural and cognitive complexity: stage 1 -- Present Simple only; stage 2 -- Present Simple plus Present Progressive; stage 3 -- Present Simple, Present Progressive and Past Progressive. This study found a lower accuracy rate of children with LD in comparison to the TD.

Sanjana et. al. (2016) describe the productivity of verb inflections in Bangla speaking pre school children. Basically productivity means how a child acquires the productivity of a particular linguistic item and how he/she creatively uses that item in a natural setting, as opposed to rote-learning.

“Due to the limited generality, children cannot transfer their existing knowledge in case of constructing novel items, at least before 3 years of age.” (p.8)

By examining their speech she concluded that Bangla speaking pre-school children use verb inflections in a smaller scale at the very early age but gradually become efficient through the exposure.

Altogether these studies suggest that there is clear gap in the specifically in Bangla language. To sum up these reviews entails the theoretical perspectives of how children internalize the language, By highlighting the interplays between innate mechanisms and environmental

factors. The exposure of adults used as item based utterance schemas. According to Tomasello 2003 learning is all about interaction about how the child is perceiving or how the parents or the caregivers are using the words. Children learn by repetition that they heard from caregivers. MLU count increases by age; it works as a benchmark of language development. According to Rice et al. (2010) the language development differs the MLU count with and without language impairments. According to Potratz et al., (2022) MLU is a responsive and valid measure of children's syntactic development. MLU is a gross indicator of development, and does not determine the structural complexity of grammatical competence.

The global studies of verb morphology suggests that children use easier and frequent forms to express their thoughts. According to Bertinetto et al., 2015 the structure and regularity of a language's morphology can affect verb phrase development. Also visual contexts help to learn verb phrases easily.

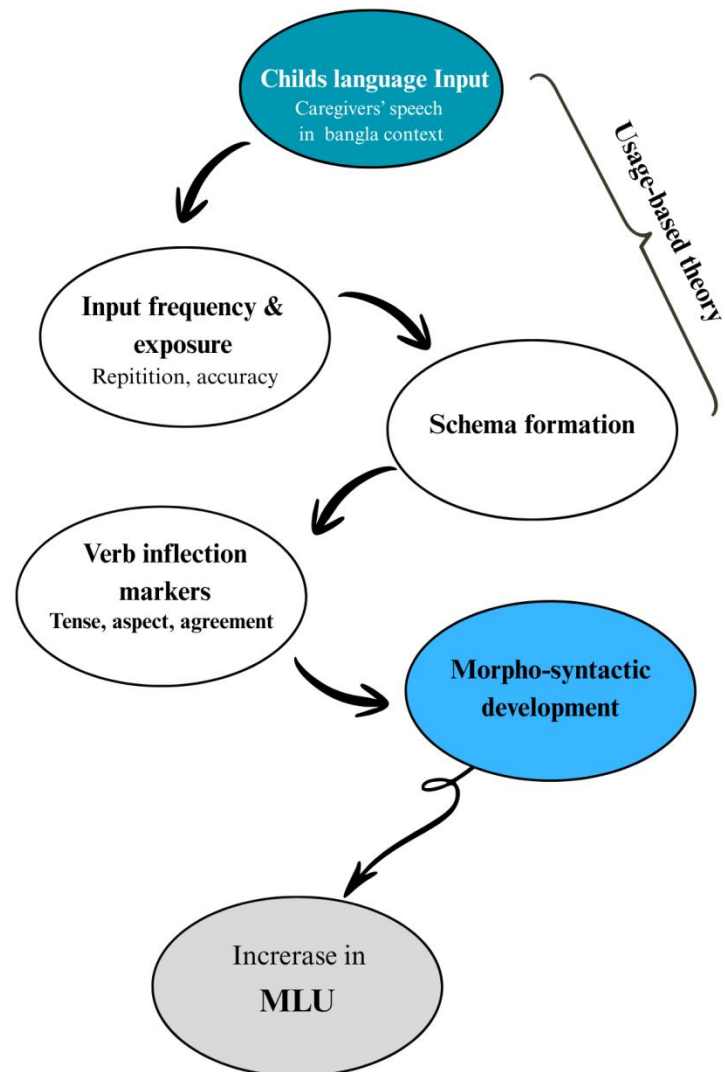
Bangla verb morphology is different from English morphology such as Bangla has no distinction between singular and plural at the verbal level. Bangla verbs have three aspects: the simple aspect, the progressive/continuous aspect, and the perfect aspect. According to Nasrin(2008) children are aware of reduplication and they follow their own hypothesis in constructing their conversation. Lastly, Sanjana et. al. (2016) suggests in her study that pre-school children use verb inflections on a smaller scale and gradually become efficient.

Altogether, these studies suggest that there is a clear gap that remains specifically in the Bangla language. Though a lot of studies has been done, there is limited data where the focus was on verb morphology, especially on tense, person and aspect, MLU count and the exposure of caregivers on child verb phrase usage. So, this study aims to fulfil those gaps.

2.5 Theoretical framework

This study is grounded on the framework of Usage-based theory to explain the morpho-syntactic development of verb phrases of a three-year-old child. Usage-Based theory emphasizes the role of input in the language acquisition of a child. Input plays an important role as this is crucial for the language development of the child. According to Michael Tomasello (2000), children grab what they hear multiple times. Such as the right and accurate exposure from the caregivers works as a schema and foundation for the child that ultimately results in an accurate use of verb inflection markers. Learning is all about interaction, about how the child is perceiving or how the parents or the caregivers are using the words (Tomasello 2003). So, caregivers usage of verb inflection markers plays a crucial role in the acquisition of verb-morphology of the child. According to Bybee (1985), the morphological structure is shaped and polished by the usage and frequency of meaning. Eventually, input is the key factor and the independent variable of this framework. If the input is accurate and proficient, then the output of the child will be greater. On the other hand, if the input frequency is lower than the output will be shallower. Meaning that the output is a dependent variable. Lastly, the higher frequency of input results in the more accurate use of verb inflections and a higher level of Mean Length of Utterance (MLU).

Theoretical framework



Chapter Three

Methodology

3.1 Methods

This study adopts a descriptive case study design using quantitative and qualitative (mixed-methods) data analysis. This is a descriptive case study because it focuses on describing some special characteristics and patterns (Creswell 2009).

Case studies are a strategy of inquiry where the researcher explores in depth of a program, event, activity, process, or one or more individuals. Basically, cases are bound by time and activity, and researchers collect detailed information using a variety of data collection procedures over a sustained period of time (Stake, 1995 as cited in Creswell). So, a case study approach is appropriate to get an in-depth understanding of verb phrases of a three year old child.

This is a qualitative study followed by some quantitative measures. This study holds a mixed method approach because it has two distinct subject MLU and verb phrase usage. To understand a phenomena and measure its richness qualitative approach is perfect (Creswell2009). Because MLU is usually counted through a quantitative approach.Because Usually, to measure MLU quantitative data is needed.

On the other hand , verb phrase is a qualitative measure. According to Creswell (2009) mixed method approach is appropriate when a phenomena needs to be understood and involves quantitative and qualitative within a single study. This study has been conducted on a normally-developing child who is three years old who speaks Bangla as his first language. The data has been collected through a naturalistic process and limited elicitation processes

through the caregiver, such as observing, as they often understand everything but do not express themselves fully. Her naturalistic conversation has been recorded, and interaction has been noted by note-taking and audio recordings (using an Apple 13 variant phone) of the child's natural everyday conversation, focusing on the usage of verb phrases. Firstly, the child was observed for a few days to create a friendly bond and a safe, natural environment. Then the conversation was recorded. Additionally, how he interacts with his parents and elder siblings to understand the input on verb phrase development.

3.2 The participants

The participant of this proposed study was selected by a convenience sampling method due to the easiest accessibility and also time constraints. The participant is a female child who is 2 years and 8 months old. Her L1 is Bangla. She lives in a joint family with his parents, an elder sister, grandfather, grandmother, aunt, and uncle. So, the caregivers around influence her learnability. She especially spends most of her time with her elder sister, who is 5 years old. The dominant language in the family is Bangla. Mostly, she stays at home and interacts with her family members. The child is very active and interactive. Most importantly, according to her parents, there are no known impairments that could affect her language learnability.

3.3 Tasks

Mostly her normal conversation has been recorded while playing and interacting with others. A picturebook task was given to her also. From the picture book some pictures were shown to

her. The pictures were chosen on the basis of the criteria where the picture had to illustrate an action depicting an early developing verb.

3.4 Data Collection and Management

Data was collected through the daily naturalistic conversation while the child was playing with her elder sister and cousin also with her mother. Though the data collection of a toddler was a challenge. The conversation with the participant has been recorded using an iPhone 13 (Apple).

3.5 Data Transcription

The naturalistic conversations have been recorded and transcribed verbatim done manually as there were unnecessary words and noises.

3.6 Ethical considerations

Her Parents completed a consent form. The identity of the child will be highly confidential. The data was collected in a friendly and playful environment so that it does not exceed the stress level of the child.

3.7 Data Analysis

The data was analyzed in three steps. Firstly, the MLU was calculated using the formula $MLU = \frac{\text{Total number of Morphemes}}{\text{Total number of utterances}}$. Secondly, the analysis of verb morphology has been done. The frequency and accuracy were calculated. Lastly, the

caregiver's conversation with the child was analyzed to measure the role in the acquisition of verb inflection.

Chapter Four

Findings and Data Interpretation

4.1 Introduction

This chapter presents the findings from the spontaneous speech data of the participants. The analysis is organized according to the research questions and indicates the key variables MLU, verb morphology, and caregiver input.

4.2 Mean Length of Utterance MLU and overall development

4.2.1 Calculation of MLU

The MLU was calculated to assess the overall morphosyntactic development of the child. A total of 100 utterances that were naturally and spontaneously produced by the child were transcribed and analyzed. The total number of morphemes identified across all utterances was 349. Based on this, the MLU was calculated using the formula:

$$\text{MLU} = \text{Total Morphemes} / \text{Total Utterances}$$

Thus, the MLU was

$$\text{MLU} = 349 / 100 = 3.49$$

The result is presented below in the table 4.1 below:

Total utterances	Total morphemes	MLU
100	349	3.49

4.2.2 Interpretation of MLU

The MLU count of this child is 3.49 that suggests the child is in the intermediate stage of grammatical development. According to Brown's stage she is in stage 3 of language development. Usually, a child aged 32 months consists of a MLU 2.75. But her MLU is quite advance than her age. Language development depends on the linguistic variation and individual differences.

The observed MLU of the participant indicates she is in the expected level of child morphosyntactic development. Here she has gained the proficiency of two word stages and she can use present progressive and use plural forms in her sentences. In this age she has gained the proficiency of more structurally complex words.

Finally the MLU suggests that the child has not properly gained the proficiency of Bangla Language but in the progressing level. So the morphosyntactic development is still progressing.

4.2.3 Examples from data

a. "Arekta pore geche" (One more has fallen down)

Aro-ekta-pore-geche

6 morphemes in this one utterance

b. “Borogula ache” (Biggers we have)

Boro+gulo-ache

3 morphemes [usage of plural markers]

c. “amipanikhabo” (I want to drink water)

Ami-pani-khabo

4 morphemes (indicating future tense)

d. Samira chocolate to khaynaiamikheyefelchi (Samira has not eaten her chocolate but i have eaten)

(she is talking about her elder sister)

Samira-chocolate-to-khay-nai-ami-kheye-felchi

9 morphemes [more complex structure]

e. Pore (reading) [asked Eimeyetaiki kore by showing her book]

1 morpheme

These examples entail though the MLU count was 3.49, but according to her age her MLU should be lower and infact she can use more complex sentence structures than usual that indicated her level of advancement in language.

Overall, Her MLU suggests that she is at the intermediate level of language development, but in fact, she can use more complex and longer sentences than usual. So, MLU is a gross indicator of development and does not determine the structural complexity of grammatical competence.

4.3 Use of Verb Inflectional Marker

4.3.1 Types of verb inflectional markers

The analysis of the spontaneous speech of the child entails that she can use different types of verb inflectional markers such as tense, aspects, numbers, persons etc.

Person markers	
Ami jai	First person marking
O jay	Second person marking
Gorughaskhay	Third person marking

Tense markers	
Ami ekhon aki	Present tense markers
Ekhaneiluka chilo ball ta	Past tense markers
Ammurkache jabo	Future tense markers

Aspect markers	
Ammu jharud diteche	Progressive marker
Lekha jaitechena	Progressive marker

So, these examples show her usage of different inflectional markers.

4.3.2 Accuracy of verb usage

Mostly she uses the correct forms of all inflectional markers. Here is an example from her speech:

Ayan khelte**che**amiduicekha**itechi** - correct use of markers

Lekhapore (studying) in response to the question ‘Samira ekhonki kore’- instead of lekhapora kore. Here is an error in her verb usage.

Ami eta fala**idey**instead of -dei.

So, she can use the fully inflected form of verbs but often make some mistakes. Such as

Samira ki kore ?

She answers- ‘lekhapore’ instead of ‘lekhapora kore’

4.3.3 Consistency of usage

The consistency of here verb inflectional markers usages can be measured by the following examples taken from her speech -

Hae**anchi**

Se to dak**che**

Amar pakhiurege**che**

O kemon kore dekh**cho**

Khelna diyek**heli**

Ayan **khele**

So, by demonstrating these examples, it can be said that she can consistently use progressive markers such as **-chi**, **-che**, **-cho**.

4.4 Relationship Between MLU and Verb Morphology

The findings indicate that there is a relationship between MLU and verb morphology. Though the child's MLU was 3.49, her usage of verb inflection is more complex than the usual level.

So it can be suggested that MLU is a gross indicator but can not define the level of a child's use of grammatical complex constructions.

4.5 Role of Caregiver Input

The role of caregivers input has been examined while interacting with the child. The caregiver uses a more accurate and proficient form of verb inflection markers. The caregiver uses the correct form of verb, tense markers, person and agreement markers.

Such as -

tumikikhaccho ??

What are you eating

Tumi ajsokalekikorechile ?

What were you doing in the morning

Amra launch e kore gramegiyechilam,

We have visited our village by launch

Amar jonno juice enecho ?

Did you bring juice for me ?

Tumi kikhelnadiyekhelbe ?

Would you like to play with toys ?

The imitation has been observed while data collection from the child. The child immediately imitates the caregiver. The accurate use of caregivers' verb forms makes it effective for the child that reinforces her use of correct tense and progressive forms. (See Appendix IV)

So overall, it can be concluded that the child has an advanced level of grammatical construction that implies the MLU as a gross indicator instead of the determiner of the structural complexity of grammatical competence. Also, the caregivers' use of verb forms works as an input of language development of the child.

Chapter Five

Discussion

This chapter focuses on four areas: the Mean Length of Utterance, the development of verb inflection, the relation of MLU, and the development of verb morphology and the role and influence of the caregivers input on the development of child verb use.

The MLU 3.49 suggests that the child is in an intermediate stage of development. According to the Browns stage of development, the age of 32 months usually falls under stage three. In this stage they know how to use two word structures very accurately. Such as “ami jai”, “otadao” etc. They are well known for the use of tense markers such as “amikhaitech,okhelche”. She has surpassed the level of two-word stages and is moving towards using more complex words such as - ekhaneilukaychilo ball ta, amiparitumi to parona ,Samirajems to khaynaiamikheyefelchi. In the example of 4.2.3 (see Appendix) the child uses eight morphemes in one utterance that is quite advanced. Also mostly she loves to answer yes or no to questions such as ;tumiki vat kheyecho-hae; kejhogra kore age? -ami, while showing her hattimatimtim and asking orakikorche-nachche-she replies. According to Ranalli (2012), Brown saw MLU as an ideal way to quantify the qualitative data of a language sample. MLU count has been an indicator of language development for a long time. According to Brown (1973), MLU is an excellent indicator of child language development. Also, he stated that by increasing the MLU the language usage complexity also increases. Similarly, MLU helps to distinguish between the child with or without grammatical complexity. MLU helps to investigate the language development among children with and without language impairments. In this study, findings indicate the level of grammatical

complacency of the child and as an intermediate level she is more advanced. She can use 8 morphemes in a single utterance. So MLU is a benchmark and a gross indicator of development, and does not determine the structural complexity of grammatical competence.

Consequently, the child can use multiple inflection markers such as tense, persons and aspects. In the example taken from the conversation she can distinguish between first person, second person markers and third person markers. “**Ami khai**”, “**o khay**”, **tumi khao**. The finding also shows high frequency in present and past participle **.-chile, -chila, -chilo, -chilen** etc. Similarly, in aspect markers such as **dite-che, korte-che, dhorte-che**. According to Farzana et al. (2021) the syntax and morphology of English and Bangla have distinction. In Bangla, **-era, -gullo, -guli** is used for plural markers (David 2015). In the conversation with the child it has been noticed that she can use plural markers accurately. In the sentence “**oi pakhita falayadise ora**” - ‘ta’ is a number marker. According to Shahanawaz et al. (2013) bangla language has three simple tenses: the simple aspect, the progressive/continuous aspect, and the perfect aspect that combines the mood and aspect that form complex conjugations. Also in bangla it is easy to form habitual past tense such as **-tam, -tish, -te, -to, -ten**. The child also uses these past tense in her speech as **tumi bolta, amik hel tam**.

Subsequently, at the age of 26 months to three years old, children often make morphological and phonological mistakes such as: **tini** instead of **chini** (sugar) (Nasrin 2008). In the conversation with the child, she says ‘**ami duice (juice) khai**’. In this age, pronouncing some words is really difficult for them, especially the aspirated ones such as **-kh, -dh, -ghin** **khabo, ghumabo, dhorlam** etc. But the participant can pronounce most of the aspirated words

properly. So, it can be said that every individual contains their own type of hypothesis that gradually improves.

Caregiver's input plays an important role in the development of a child's verb phrases. Sanjana et al. (2016) examines and states in her study that Bangla preschool children have smaller scale inflections at very early age but gradually they become more efficient by getting the exposure. According to Bassano (2004) children need to have enough word banks before they can use complex verb forms. To gather enough vocabulary one might need to get the exposure of caregivers input. From the usage-based perspective, language acquisition is driven by frequency and input. Also, according to Naomi Shin and Karen Miller (2022) the role of input frequency and variability plays a crucial role such as whose parents use a more appropriate pragmatic version their child will learn it more effectively. While observing the child in the conversation she immediately imitates what her caregivers speak. Mostly she copies her elder sister and repeats herself. Most importantly, the accurate use of verb inflections immediately has an impact on the child.

Altogether these results highlight that verb development of a child can be indicated by MLU but can not be fully dependent on it. In this age, children have a limited amount of schemas that causes their limited use of verb inflectional markers. The accuracy often depends on the caregivers of the child that works as an input and shapes the language used.

Future studies could expand on this research by taking multiple children, by doing a longitudinal study also by examining different types of caregivers input particularly in the Bangla language.

Chapter Six

Conclusion

The study finds that the input frequency plays a crucial role in the acquisition of verb morphology of a child. Also, age cannot be a factor that limits the grammatical complexity of a child. According to the findings, the child is more advanced than the MLU level for her age. From a theoretical perspective, the study's limitations affect interpretation because it is a single case study that limits the ability to get broader and more general information. Also, the lack of longitudinal data lacks insights. A single case study cannot represent the whole nation, and time constraints make it difficult to collect more data and limit the analysis.

The morphosyntactic development of a three-year-old child is limited; they can use a limited sort of verb inflections and gradually it becomes higher. MLU is an indicator of language development, but MLU is used only to contextualize the child's developmental stage, not as a direct measure of verb morphology. Lastly, caregivers' input plays an important role in the development of a child's verb usage.

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Appendix I

Informed Consent Form

Title of the Thesis: Morpho-Syntactic Development of Verb Phrases in a Three-Year-Old Bangla-Speaking Child: A Case Study

Researcher: Shanta Islam

Department of English, University of Liberal Arts Bangladesh (ULAB)

Purpose of the Study

You are invited to allow your child to participate in this research study. The purpose of this study is to:

1. Measure how they use verb phrases in their speech
2. Measure the accuracy of verb usage.
3. The influence of caregivers on their usage of verb phrases.

This study aims to better understand children's language development, how they use verbs in their regular conversation, and learning behavior.

Participant's Role

If you agree to allow your child to participate, your child will be asked to:

Take part in speaking activities, interviews, classroom tasks
Spend approximately 40-45 minutes for each session
Participate in a total of 3-4 sessions (if applicable)

There are no right or wrong answers, and your child may stop at any time without any consequences.

Confidentiality and Anonymity

All information collected in this study will be kept strictly confidential.

Your child's identity will not be disclosed in any reports or publications.

A pseudonym (fake name) will be used instead of the child's real name.

Any data collected (audio, video, or written) will be securely stored and only used for research purposes.

Voluntary Participation

Participation in this study is entirely voluntary. You may withdraw your child from the study at any time without any penalty.

Risks and Benefits

There are no known risks involved in this study.

While there may be no direct benefit, the findings may contribute to academic research and improved understanding in this field.

Consent Statement

I have read and understood the information provided above. I voluntarily agree to allow my child to participate in this study.

Parent/Guardian Name: _____

Signature: _____

Date: _____

Appendix II

Pictures shown to the participant to collect data



<https://shorturl.at/gf2VV><https://shorturl.at/Q3MX5>

<https://shorturl.at/POb8u><https://shorturl.at/DeKC><https://shorturl.at/qfPsj>

Appendix III

Conversation with the participant (A book)

R: I ask her brother to bring his book,

P: Amader basay ekta boi ache

I have a book in our house

R: Kokhon boi porcho –

When did you read the book today?

P: Ajke

Today

Appendix IV

P: Amar pakhi koi?

R: Pakhi Koi

Her brother: Pakhi bikri kore disi.

P: Pakhi niche falaya dise

R: pakhi niche falaya dise?

P: Fuppi jano ei pakhita falaya dise ora

Aunt: hae,ke falaya dise?naki ure geche?

P: Pakhi ure gechega

Aunt:oo

P: Na, Emnei falayadise

Aunt: emnei pore geche?

P: hae