

## **Syntactic Analysis of Bangla-English Code-switching in Children's Spoken Discourse**

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**Abstract:** The present research provides a syntactic overview of code-switching patterns available in the spoken discourse of bilingual children who speak Bangla as their L1 and English as L2. It looks into the lexical and functional categories and elements of their code-switched sentences to find the ratio of this code-switching. In addition to that, the study also finds how significant these categories are against each element in the occurred code-switched sentences as well as how much these juxtapositions of L1 and L2 elements affect the well-formedness of sentences in Bangla language. Its parameters, hence, include the well-formedness judgments of sentences along with that of the sentential positions and code-switching arrangements to identify the main occurred lexical categories in bilingual children's conversation with cross-linguistic data, word order, and code-switching processes in Bangla language. In addition to these, the research also covers the concept of serial verbs (also verb serialization), and its grammatical aspects in relation to this study. Its findings show that the children in this context tend to switch mostly with Nouns rather than Verbs.

**Keywords:** Code Switching, Language production, syntactic analysis, lexical categories

### **Introduction**

The present research provides a syntactic overview of code-switching patterns available in the spoken discourse of bilingual children who speak Bangla as their L1 and English as L2. In general, one can say that a prerequisite for code-switching is a juxtaposition of [these/as

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mentioned] elements of two codes (Winford, 2003, p. 103). In order to work on such a research, an objective-based approach has been taken into account that includes a set of parameters. These are, the well-formedness judgments of sentences along with that of the sentential positions and code-switching arrangements, Minimalist Approach to identify the main occurred lexical categories in bilingual children's conversation with cross-linguistic data, word order, and code-switching processes in Bangla language. The research, hence, mainly focuses on the syntactic analysis of code-switching; i.e. the aim of the research is to analyze the syntactic distributions in children's spoken discourse within the sentence boundary. The main objectives of this research are;

- (a) to provide syntactic descriptions of code-switching in the occurred sentences of bilingual children who speak Bangla as L1, and
- (b) to explain the variations of their sentential constructions on the basis of the code-switching phenomenon.

The research required gathering relevant data from a standard sample size of 120 children of age 9 to 12 years old. It is worth to clarify the reason of selecting children within the above mentioned age limit; i.e. it is plausible to consider age 9 as the standard age for getting enough input from their L1 (Hyltenstam and Abrahamsson, 2003, p. 59). The research includes spontaneous and natural responses from the participants. Therefore, traditional questionnaire or semi-structured interview has not been selected to reveal the facts and resolve the problems. As a way out of this situation, an experiment has been performed following the quantitative research methodology. Hence, a null hypothesis has been formulated along with an alternative hypothesis in case it rules out the null hypothesis.

*The Null Hypothesis:* Since the research questions have already been devised, formulation of the null hypothesis was relevant for the research. In that case, the hypothesis below has been considered first.

- (a) Code-switching occasionally occurs as an unmarked feature in the sentence patterns of bilingual children who speak Bangla as L1. They use code-switching only for the stylistic purpose.

However, the following alternative hypothesis has been formulated, if the above null hypothesis rules out.

- (b) Code-switching is sensitive to sentence patterns of bilingual children who speak Bangla as L1. A number of fundamental triggers are responsible for the code-switching available in their speech at a high frequency.

All in all, the research presents a systematic description of aspects related to code-switching patterns available in the language of bilingual children who speak Bangla as L1.

## Literature Review

*Sentential Positions and Code-switching Arrangements:* In linguistics, word order refers to the study of the order of the syntactic constituents of a language, and how different languages can employ different orders. The basic word order for most languages can be defined by making a distinction between the subject and the direct object. There are six theoretically possible basic word orders for the sentences: subject verb object (SVO), subject object verb (SOV), verb subject object (VSO), verb object subject (VOS), object subject verb (OSV), and object verb subject (OVS). The overwhelming majority of the world's languages are either SVO or SOV, with a much smaller but still significant portion using VSO word order. The remaining three arrangements are exceptionally rare, with VOS being slightly more common than OSV, and OVS being significantly rarer than the two preceding orders. Example of Subject Verb Object (SVO) is below.

Sentence: He eats bread.

Parts:        S    V    O

In Bangla language the occurred sentences follow the SOV pattern. There may be some exceptions for the sentences in Bangla depending on the disposition of words. The sentences that occur from Bangla-English code-switching, have the subjects is in its specifier positions. Determiners, quantifiers, postpositions, clitics or grammatical particles etc. are added with the Bangla Noun words and placed in the specifier argument position. In Bangla Noun phrase, the determiners co-occur with the noun and not with other word-classes; for example: in the sentence 'বলটি পানিতে পড়ে গেল।' (English Translation: The ball fell into water) 'বল' is noun and 'টি' is the particle added with the noun word. টা, টি, খান, খানা, খানি, গাছা, গাছি, ছড়া, etc. particle can be added after noun words. For example: ছেলেটি, লোকটি, কাপড়খান, চিঠিখানা, বইখানি, চুড়িগাছি, হারছড়া

etc. The singular marker এক can be added before noun. For example: এক ছিলেন রাজা। (English Translation: There was a king.). টা, টি, খান, খানা, খানি, গাছা, গাছি, ছড়া, etc. singular marker can be added with এক and before noun words. For example: একটা লোক, একটি পাখি, একখান কাপড়, একখানা বই, একখানি চিঠি, একগাছা চুড়ি, একগাছি হার, একছড়া তেঁতুল etc. এ, রা, দেব, এদের, গলো, দল, সব etc. plural marker and quantifiers are added with noun words. For example: পাগলে, জেলেরা, ছেলেদের, বইগুলো, ছাত্রদল, পাখিসব, etc. সব, সকল, সমস্ত, এত, কত, etc. are added before noun. For example: সব নদী, সকল মানুষ, সমস্ত পথ, এত লোক, কত টাকা। Often noun words are repeated and used as compound noun phrase. For example: লোকে লোকে লোকারণ্য। Degree words for the Adjective phrases can also take the specifier positions. For example: বিশ পৃষ্ঠা, ভাল মানুষ etc. The sentences that occur from Bangla-English code-switching usually have the interjectional phrases in the adjunct positions. The adjuncts usually appear at the beginning of the sentences. For example, ও, ওঃ, ওরে, ওহে, বাঃ, আহা, বেশ, চমৎকার, না-না, ছিঃ, ছিঃছিঃ, নিশ্চয়ই, আচ্ছা, অবশ্যই, আঃ, উঃ হা, etc. are usually replaced by the English words 'Oh!', 'sure', 'wow', 'definitely', 'aha', 'of course', 'okay' etc. in the occurred sentences. সুতরাং, তাই, অধিকন্তু etc. Conjunctional phrases also take the adjunct position and take the English words 'so,' 'moreover' etc. while the code-switching occurs. If we look at the example (b) given next, it can be seen that the word definitely is a single word, is used in the adjunct position, and is optional. In case of Bangla-English code-switching, the total number of switched words is to be measured along with non-switched ones. In order to look into the code-switched items, there needs to be a look at the different sentential positions for code-switching. It can occur with both adjuncts and arguments. Given next are some examples and brief discussions of these kinds of code-switching.

#### (a) Switching with Argument

Sentence	:	জুই	homework	শেষ	করলো।
Transliteration	:	Jui	homework	shesh	korlo.
Parts	:	N.S3	N.	V.	V.PST. S3

#### (b) Switching with Adjunct

Sentence	:	Definitely	আমি	তোমাকে	ডেকেছিলাম।
Transliteration	:	Definitely	ami	tomake	dekechilam.
Parts	:	ADV.	P.	P.S3	V.PST.S3

In the first example (a), the sentence ‘Jui homework shesh korlo’ contains two arguments; ‘Jui’ is the subject argument and ‘homework’ is the object argument of verb predicate ‘shesh korlo’. ‘Jui’ is in the specifier argument and ‘homework’ is the complement argument. Example (b) shows that the word ‘definitely’ is added optionally with ‘ami toma-ke dekechilam’, thus here the switching is happening with adjunct with the word ‘definitely’. From these, it can be seen that at the example (a), there is a use of serial verbs in the occurred sentence. A serial verb (also verb serialization or verb stacking), is a syntactic phenomenon in which two or more verbs or verb phrases are strung together in a single clause. The words ‘shesh korlo’ has two verbs ‘shesh’ means ‘to finish’ which is the infinitive form of verb for the word ‘korlo’ that means ‘finished’. There are many examples of this pattern of serial verbs which gives rise to a third type of switching; switching with the verbs. Hence, another example of this type of switching is given next.

(c) Switching with Verb

Sentence	:	জুই	TV	on	করলো।
Transliteration	:	Jui	TV	on	korlo.
Parts	:	N.S3	N.	PREP.	V.PST.S3

Again, it has been found that ‘on’ is used as the infinitive form of verb for the word ‘korlo’ that means ‘finished’ and hence serial verbs have occurred. From the above sentences it can be found that the occurred sentences follow SOV (Subject-Object-Verb) pattern in all case. There may be some exceptions for the sentences in Bangla depending on the disposition of words.

*Morphosyntactic Features in Syntax:* Adger (2003) defined morphosyntactic features as ‘a property of words that the syntax is sensitive to and which may determine the particular shape that a word has. Features seem to be the core elements of languages that relate sound and meaning’ (p.39). He further claimed that these features ‘allow us to explain the morphological, syntactic, and semantic behavior of words in sentences’ (p. 39) and presented the most important features in a table. The table and its brief discussion is next.

Table 01: Morphosyntactic Features (Adger, 2003, p. 39)

Categories	Features	Comments
Tense	[past]	need [future] as well, for Irish
Number	[singular], [plural]	feature bundle [singular, plural] for dual number
Person	[1], [2]	[1,2] gives 'Fourth' person
Gender	[masc], [fem]	need others for different languages
Case	[nom], [acc], [gen]	again, may need others
Category	[N], [V], [A], [P]	may be reducible to just [N], [V]
Others	[part], [inf]	appear on verbs

He discussed that participles come in two broad classes in English: one class can be distinguished morphologically by the fact that it suffixes 'ing' to the verb, while the other is morphologically more heterogeneous and may suffix '-en', or '-ed' or may employ a vowel change. If a verb like 'be' is taken, which has the richest set of morphological forms in English, it can be found that, in addition to the present and past forms of the verb discussed above, there are three other forms that it takes: be, being, been. The latter two of these are participles. These verb forms appear when the tense feature is not marked directly on the verb. This can happen because there is no tense specification in the sentence, or because the tense marking is carried by something else (another verb -traditionally called the auxiliary verb). For example: 'He has been happy'. The form marked by the suffix '-ing' is traditionally called the present participle. The present participle can occur after the verb be to signify that an action is conceived of as ongoing, or continuous. This contrasts with the past participle, marked by '-en', '-ed', or a vowel change, which occurs mainly after the verb 'have', to signify that an action has been completed. The semantic distinction between ongoing and completed action is one of Aspect. Participial morphology, in conjunction with particular auxiliaries, is used in English to make certain aspectual distinctions. The participles from non-participles can be, thus, distinguished by the use of a feature [part], so that a present participle will be [V, part] and a past participle will be [V, past, part] (pp. 39-40). The morphological structure emerges over a period of several years. Initially, the words produced by English-

speaking children seem to lack any internal morphological structure: affixes are systematically absent and most words consist of a single root morpheme. Because many common words have irregular inflection in English ('went' as the past tense form of 'go', 'ran' as the past form of 'run', 'men' as the plural form of 'man'), children sometimes begin by simply memorizing inflected words on a case-by-case basis without regard for general patterns or rules. As a result, they may initially use irregular forms such as 'men' and 'ran' correctly. However, when they subsequently observe the generality of '-s' as a plural marker and '-ed' as a past tense marker (usually around age two and a half), they sometimes use these suffixes for the irregular forms, producing words such as 'mans' and 'runned' (Errors that result from the overly broad application of a rule are called overgeneralizations or overregularizations.) (O'Grady, pp. 471-476). Typical developmental sequence for non-lexical morphemes is given next.

Table 02: Brown's Grammatical Morphemes (1973, p. 449)

1. -ing	5. past tense –ed
2. plural -s	6. third person singular –s
3. possessive -'s	7. auxiliary be
4. the, a	

Nelson (1973) notes that the child's early nouns most often refer to things with which the child can interact: objects that are not fixed, unmovable parts of his environment. Generally, the child's early vocabulary includes nouns and words related to action. Also, words that refer to attributes of objects, states, or locations; such as pretty, big, hot, outside, and a few 'social' words like yes, no, please, and ouch. There are also several functional words; prepositions, articles, auxiliary verbs, interrogative words, etc. The particular words used, and even the kind of words, vary greatly from child to child (p. 31). In this respect it can be stated that there are four different code-switching patterns that may occur during conversations. These are; Intra-sentential code-switching: This type of code-switching occurs outside the sentence or clause level; Inter-sentential code-switching: This type of code-switching occurs within a sentence or clause; Tag-switching: This type

of code-switching is the switching of either a tag phrase, or a word, or both, from Language B to Language A; Intra-word switching: This type of switching occurs within a word, itself.

*Verb Serialization:* A different but very common strategy, known as verb serialization, occurs widely in the world's languages, for instance in Chinese, in many African languages, and in many of the languages of New Guinea.

Serial verb construction, broadly defined, is a syntactic structure in which two or more verbs are juxtaposed to form a complex predicate to express a series of related actions within a single clause with some general characteristics cross-linguistically: a. the verbs share the same grammatical subject; b. there are no connective markings to indicate the relationships of the verbs; c. the verbs are under the same grammatical categories, e.g., tense, aspect, and/or modality; and d. the verbs are in a fixed order with varied relationships based on the verb semantics (Tao, 2009, p. 210). In some languages, though, if the first of the two serial verbs is transitive, an object noun phrase can occur between them.

The serial verbs cannot be marked independently for such grammatical categories as tense, aspect or mood, but must share the same tense etc. This is either marked on each verb, or else occurs just once but is shared by both verbs (Tallerman, 2011, p. 96). Another important matter is that according to morphological descriptions, all complex words whether productively or unproductively derived are created by rules (Haspelmath, 2002, p. 42). It is also seen that many languages have a special verb forms making relative clauses are called participles and that verbs are derived from other verbs (Bauer, 2002, pp. 67-68). The inherent inflection comprises categories that, like derivation, convey a certain amount of independent information and that are not forced on the speaker by the syntactic context. Thus, a speaker may freely choose the verb's tense and aspect categories, the nominal number categories and also nominal inherent cases where the term inherent refers to cases such as locative that make its own semantic contributions and are mostly not syntactically determined. It has also been found that inflectional rules are inflectional rules apply only after the syntactic rules have applied (Haspelmath, 2002, pp. 77-82).



*Minimalist Approach to Code-switching:* In a Minimalist approach to code-switching, lexical items may be drawn from the lexicon of either language to introduce features into the numeration, which must then be checked for convergence in just the same way as monolingual features must be checked, with no special mechanisms permitted. In this lexicalist approach, no 'control structure' is required to mediate contradictory requirements of the mixed systems. The requirements are simply carried along with the lexical items of the respective systems. Thus, it makes sense to formalize the grammar used for code switching as the union of the two lexicons, with no mediating mechanisms. According to O'Grady (1987) '... the emergence of syntactic rules takes place in an orderly sequence. Beginning with the production of one-word utterances near the end of the first year of life, children gradually master the rules for sentence formation in their language' (p. 476). Given next is a table showing 'the development of phrase structure'.

Table 03: The Development of Phrase Structure (O'Grady, 1987, p. 476)

Stage	Approx. Age	Developments
Holophrastic	1- 1.5 years	single word utterances; no structure. e.g. 'dada' which is used to express 'I see daddy', etc.
Two- word	1.5- 2 years	early word combinations; presence of syntactic categories unclear. e.g. 'Daddy hat', which is used to express 'Daddy give me the hat', etc.
Telegraphic	2- 2.5 years	emergence of phrase structure, especially head-complement and subject-VP patterns. e.g. 'I lost a shoe', etc.
Later	2.5 years up	emergence of non-lexical categories (Det, Aux) including those used as specifies

Adger (2003) pointed four major word classes in his writing, which are usually abbreviate as just N, V, A and P and which we could distinguish using the four features [N], [V], [A] and [P]. He termed these features as major category features (p. 28). Adger (2003) further provided the breaks as below.

- a. Noun [+ N, - V]
- b. Verb [-N, +V]

- c. Adjective [+N, +V]
- d. Preposition [-N, -V]

Thus, according to Minimalist Approach the major category features may be reducible to only Noun [N] and Verb [V] (p. 41). As the sentences are not complete it is not certain which categories these words are presenting. O'Grady (1987), in his discussion presents examples of word-level categories that are most central to the study of syntax in the table given next.

Table 04: Categories (O'Grady, 1987, p. 41)

Lexical Categories	Examples
Noun (N)	Harry, boy, wheat, policy, moisture, bravery
Verb (V)	arrive, discuss, melt, hear, remain, dislike
Adjective (A)	good, tall, old, intelligent, beautiful, fond
Preposition (P)	to, in, on, near, at, by
Adverb (Adv)	silently, slowly, quietly, quickly, now
Non-Lexical Categories	Examples
Determiner (Det)	the, a, this, these
Degree word (Deg)	too, so, very, more, quite
Qualifier (Qual)	always, perhaps, often, never, almost
Auxiliary (Aux)	will, can, may, must, should, could
Conjunction (Con)	and, or, but

He further mentioned that the four most studied syntactic categories are noun (N), verb (V), adjective (A), and preposition (P). Some items can belong to more than one category (pp. 41-182).

### Methodology

The present research is a quantitative one since the research focuses on code-switching ratio or frequency of the occurred switching where one has to distinguish between two basic kinds of variables: categorical variables and continuous variables; categorical variables are those variables whose values can be easily separated into discrete categories and continuous variables, however, cannot be easily classified into categories this way. Rather, they are variables whose values exist on a mathematical scale. A canonical example of a continuous variable is age, where one variable value is straightforwardly larger than another and smaller than a third. The difference between these values is also mathematically meaningful. For the present study, the variables are categorical and there are basically five different categories. Hence,

ANOVA test has been implemented in this case. This particular research is a cross-sectional one since the samples have been taken into account from different participants of different schools. Simultaneously it can be considered as an experimental study as well since it is based on a task-based experiment. For this research, participation of the learners has been chosen leaving scopes for measurements, interrogation, and observation if that adds to the research. The research, hence, is a semi-structured one with a set questionnaire and other possible options for gather the primary data in case. An experiment has been designed for collecting natural data from them. This experiment has been performed within a flexible guideline of the quantitative research technique which is a task-based approach. The data questionnaire has been basically presented to the students in a worksheet format. It is because the age group of these students falls into 10-12 where they are already familiar with worksheets as classworks and assessments. This has been conducted purely because to get the students' attention along with not scaring them in the process. There are thirteen sentences that fall into different lexical and non-lexical categories including the different features such as tense, number, etc. Given next are the sentences along with the areas focused.

1. Tense – Ritu cleaned her room today.
2. Number- My friends visited me when I was sick.
3. Noun- I got my result.
4. Adjectives- Her room is really nice.
5. Transitive- The guard closed the gate.
6. Intransitive- He always complains.
7. Ditransitive- Rabbi passed Rohan the ball.
8. Adverb- I did not completely understand the topic.
9. Preposition- She walked in the room.
10. Conjunction- We wanted to play outside but it is raining.
11. Interjection- Oh! The flower vase got broken.
12. Adjunct- Submit your homework by tomorrow.
13. Ditransitive- Son gave mom a flower.


Following the framework, the data is analyzed in two segments; the first one provides with a ratio analysis and later relates to the linguistic analysis. Given next is the checklist for the school selection.

Table 05: Checklist of the School Profile

Checklist: School Profile	
Name of the School:	
Location:	
Checklist Items	
1. Type of the school:	6. Languages taught:
2. Medium of instruction:	7. School curriculum
3. Registered:	8. Class size:
4. Co-educational or Single-sex school:	9. Students' attendance:
5. Public or Private:	10. Observer allowed:

Name of the school and location are not required but it is important to record for future data collection or analysis. The type of school was a primary one as the students' age limit is from 9-12. The medium of instruction was in Bangla language as majority of the students in Bangladesh get admitted to schools that follow Bangla language as their medium of instruction for all the subjects. The school is a registered one, and is a co-educational school, therefore, the data is natural and accurate in terms of gender balance.

*Ratio Analyses:* The report was presented according to the pictures in the questionnaire; each picture was presented with five variations of the thirteen sentences for the students to rank. The students of the first school is presented with CAB and each participant has been tagged with numbers as in 001, 002, etc. Therefore, CAB-001 means the first male participant from the school Civil Aviation. In the same manner, the girls' numbering was being done leaving them to CAG-001 to CAG-50. The students of the second school were presented as BAF, B-001 for first male participant and BAF, G-001 for first female participant. All these students were in their grade five. It was kept in mind that a number of students, attempted for non-code-switched sentences and that the students might rank randomly as they please due to the questionnaire options settings as open. The sentences were read to find the nouns, verbs, adjuncts, and particles switching along with particles switching along with original pictures for each. For example, given next is a sample.



রিতু আজকে তার room clean করল।  
  
 রিতু আজকে তার room পরিষ্কার করল।  
  
 রিতু আজকে তার ঘর পরিষ্কার করল।  
  
 Ritu cleaned her room today, তাই না?  
  
 রিতু আজকে তার ঘর পরিষ্কার করল, right?

Figure 01: Sample Questionnaire Table (Original Work)

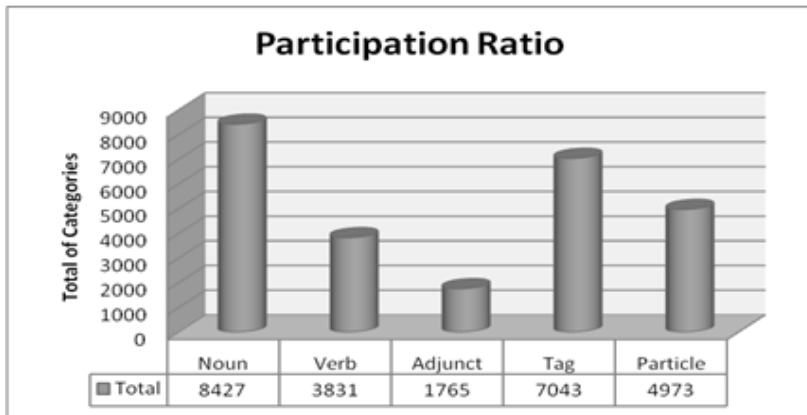


Figure 02: Bar Diagram Showing Total Participation

In the above picture, there are five variations for the sentence ‘Ritu cleaned her room today.’ where tense is given an importance. There is, Ritu a noun, clean being the verb, her is pronoun, and today is adverb. The first variation has a noun and a verb being switched and the following sentences have noun switch, no code-switching, the rest two have a tag switching variation. It was closely monitored that the students have understood the instructions before beginning the ranking. Due to this, students came up with their own rankings for each. Some of them

preferred two 'threes' some preferred 'blank' to not answer anything, some preferred 'five' for non-code-switched items leaving the rest blank or a few blanks. Hence, the responses varied and were genuine. The students gradually filled up the questionnaire.

The bar diagram above presents the total of each categories; Noun, Verb, Adjunct, Tag, Particle. Given the data, it can be said that the switching with Nouns is more frequent than switching with Verbs. According to frequencies, the sequence of code-switching happens more with Nouns, then comes Tag switching, Particles, Verbs, then Adjuncts. Tag-switching happens at the phrase level which is at the end of a sentence and this does not affect a sentence's structure at the core, i.e. SOV (for Bangla) and SVO (for English). Particles are being associated with Nouns. For example: in the sentence 'আমার friend-রা আমাকে দেখতে এসেছিল।' (English Translation: My friends came to see me.) 'friend' is noun and 'রা' is the singular marker added with the noun word. Grammatical particle Bivokti (বিভক্তি). টা, টি, খান, খানা, খানি, গাছা, গাছি, ছড়া etc. singular marker can be added after noun words. For example: ছেলেটি, লোকটি, কাপড়খান, চিঠিখানা, বইখানি, চুড়িগাছি, হারছড়া etc. Verb switching is less frequent as it seems in comparison to switching with Noun words. These data were further analyzed following one-way Anova test with Post-Hoc Tukey HSD Test Calculator. For the test, A, B, C, D, and E were considered as Nouns, Verbs, Adjuncts, Tags, and Particles. With all the calculations, the test results show a few interesting phenomenon. First of all, it shows the p-value to be 1.1102e-16 which means there is a significant factor that exists in the data; i.e. one or more pairs of treatments are significantly different. In order to validate the significance a Post-Hoc test has been performed as there is a chance of errors that might exist; i.e. 4.6242 or 3.8697. Even in Post-Hoc test all 20 each categories; A versus B, A versus C, A versus D, A versus E, B versus A, B versus C, B versus D, B versus E, C versus A, C versus B, C versus D, C versus E, D versus A, D versus B, D versus C, D versus E, E versus A, E versus B, E versus C, E versus D show significant percentages; i.e. p-value is below 0.01. This result entirely confirms that there exist a few traits that might be looked into. Given below is the chart showing p-value and further details of the test procedures and result is shown in the Appendix section for further addition to the research.

**One-way ANOVA of the  $k=5$  independent treatments:**

source	sum of squares SS	degrees of freedom $\nu$	mean square MS	F statistic	p-value
treatment	233,345.6678	4	58,336.4169	859.6875	1.1102e-16
error	39,696.7542	585	67.8577		
total	273,042.4220	589			

Figure 03: ANOVA Test Results

To check further on this, the bar diagrams are considered as it shows the number of categories that occurred in the selected sentences. The Nouns occur significantly more than the Verbs and other categories. It also shows that the particles that tag along with Nouns aren't switching and staying as Bangla which makes the switched words being Nouns. It is a 25.68% of times the particles are attached with Nouns for girls and 24.05% times for boys. Another interesting phenomenon is that there is a significant number of serial verbs that are present in the raw data. Adjunct switching happens outside the sentential level hence switching with adjuncts may also play less of an effect on change of sentence structure at the core. Following the methodologies, hence it can be concluded that this data received supports the Null Hypothesis with was Code-switching occasionally occurs as an unmarked feature in the sentence patterns of bilingual children who speak Bangla as L1 and that they use code-switching only for the stylistic purpose as the ANOVA test is significant. Hence the alternative hypothesis is not considered which emphasizes on the sensitiveness of the sentence patterns due to code-switching for bilingual children who speak Bangla as L1 and that the children may have language acquisition or product concerns since it might affect the sentence structure building. However, an interesting factor was noticed from the data; i.e. there were quite an amount of serial verbs that were present in the sentences preferred. This study also shows the different participation ratio of boys and girls. Boys tend to be more frequent in adjunct switching than girls. Boys also have a higher percentage in tag switching. On the contrary girls seem to be switching more with particles, nouns and verbs.

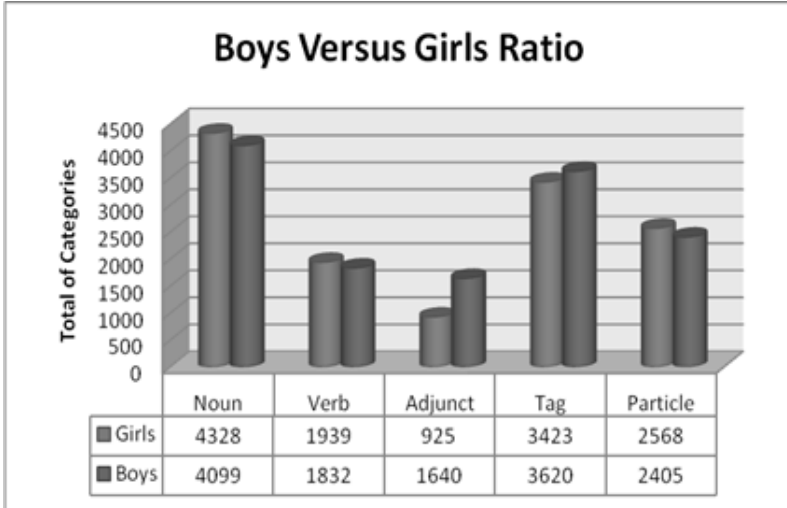


Figure 04: Bar Diagram with Participation Differences

Another important data received from the survey is that the Intra-word switching is taking place at 25.68% for girls and 24.05% for boys. The tag-switching happens to be 34.23% for girls and 36.2% for boys. Inter-sentential on the other hand is 62.67% for girls and 59.31 for boys. These data is being shown in a bar-diagram below.

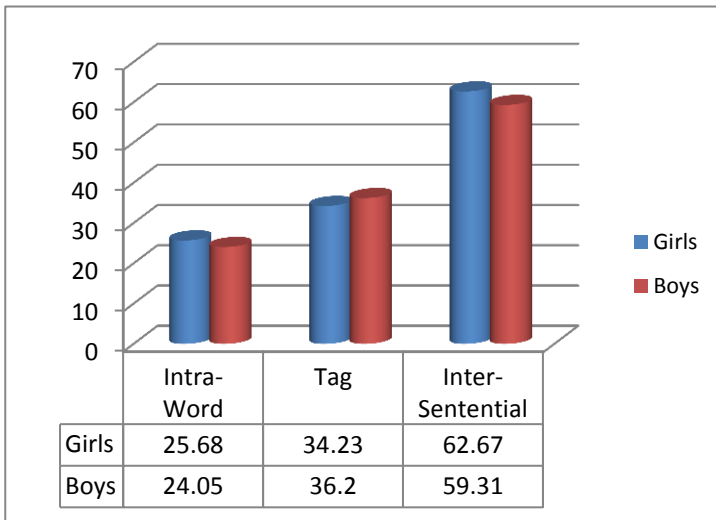


Figure 05: Ratio of Types of Occurred Code-switching in Sentences



At the end it can be said that the data supports the Null Hypothesis which is Code-switching occasionally occurs as an unmarked feature in the sentence patterns of bilingual children who speak Bangla as L1. They use code-switching only for the stylistic purpose. However, during the data collection procedure there had a few difficulties that may be considered as limitations. First of all, there was a time constraint for collecting data. The data had to be collected during a regular class time and it was not enough a time to conduct a small interview with the students afterwards. The questionnaire had to be explained to the children and even an example had to be shown on the board. The teachers were conscious about the observed sessions and it also took time explaining the procedures to them. The study could not be done in a broader scale, as in the data could not be collected other than the city due to lack of time as well. The questionnaire was designed for the students. Hence the numbering was done to make it easy for them. However, during data analyzing the numbering had to be reversed. It could be conducted differently. There was noise outside the classroom and it was a disturbance when monkeys got in the class. However, on the contrary it was also good for rapport building with the students of one of the sections as they listened to the instructions delivered. The participants for the research have been chosen from few specific areas rather than wide range coverage. The children have been chosen from Dhaka city as opposed to the entire country as it is a time consuming self-funded research. Due to shortage of time a longitudinal study report could not be prepared.

*Linguistic Analyses:* The sentence structures do not necessarily violate the juxtapositions of the grammatical elements. However, there is a presence of inflectional particles switching and serial verbs. The sentences regardless being well-formed or ill-formed are being used naturally by children of grade 4 in the study who are at their age 10 to 12. The children here are at their later developmental stage. In Bangladesh, Bangla language is the standard or official language and also is the lingua franca as English is used as a second language, there is the compulsory Arabic language studies for majority of the people being Muslims, there are many vernacular languages or tribal languages in use and there exists the influence of Hindi language from the surrounding or neighbor country. Thus, children of this bilingual or multilingual country develop control over distinct varieties of languages

from their early childhood. The study of bilingualism and multilingualism provides an explanation on how a child acquires language in this context. In case of Bangla-English code-switching, the total number of switched words is to be measured along with non-switched ones. In order to look into the code-switched items, I looked at the different sentential positions for code-switching. The code-switching has taken place in term of Nouns, Verbs, Adjunct positions along with Tags and Particles. In a Minimalist Approach to code-switching, lexical items may be drawn from the lexicon of either language to introduce features into the numeration, which must then be checked for convergence in just the same way as monolingual features must be checked, with no special mechanisms permitted. In this lexicalist approach, no 'control structure' is required to mediate contradictory requirements of the mixed systems. The requirements are simply carried along with the lexical items of the respective systems. Thus, it makes sense to formalize the grammar used for code-switching as the union of the two lexicons, with no mediating mechanisms. It is also seen that many languages have a special verb forms making relative clauses are called participles and that verbs are derived from other verbs (Bauer, 2002, pp. 67-68). Thinking morphologically, there is a significant presence of inflectional particles which are not changed from that of their L1; i.e. Bangla. Only the noun words added to the particles are being switched.

## **Conclusion**

In this era of globalization, technological innovations, and connections code-switching is a common phenomenon. It can be concerning if these tendencies change the structure of a language. Significant studies and researches have been conducted to follow-up with the changing attitudes towards code-switching and to measure the pros and cons of language changes. The classroom teaching and everyday lives have been questioned and brought under concern due to the influences of code-switching. This study has shown that children tend to switch between codes where their L1 is Bangla and L2 is English. They tend to switch mostly with the Noun words rather than Verbs which signifies that there might not be an influential change at the core in Bangla language. In most cases they switch between codes subconsciously and/or without much awareness of switching. Another factor is that

there is a difference with that of girls' and boys' code-switching ratio. Boys tend to be more frequent in adjunct and tag switching than girls. Although this thesis is far from being established and contains many open questions, it offers many findings in code-switching which add to the studies of Bilingualism, Multilingualism, Code-switching itself, and many other areas of Linguistics along with the studies of the nature of language.

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## Appendix

### A Sample Questionnaire for Students

Name: \_\_\_\_\_ Class: \_\_\_\_\_ Sec: \_\_\_\_\_ Roll: \_\_\_\_\_ Date: \_\_\_\_\_

Instructions: Given below are pictures with five sentences for each.

- (a) Read the sentences.
- (b) Rank the sentences where 1 = Very Good, 2 = Good, 3 = Medium, 4 = Bad, 5 = Very Bad.

#### Pictures



#### Sentences

- রিতু আজকে তার room clean করল।
- রিতু আজকে তার room পরিষ্কার করল।
- রিতু আজকে তার ঘর পরিষ্কার করল।
- Ritu cleaned her room today, তাই না?
- রিতু আজকে তার ঘর পরিষ্কার করল, right?
- যখন আমি sick ছিলাম, আমার friends-রা আমাকে দেখতে এসেছিল।
- যখন আমি sick ছিলাম, আমার friends-রা আমাকে visit করতে এসেছিল।
- যখন আমি অসুস্থ ছিলাম, আমার বন্ধুরা আমাকে দেখতে এসেছিল।
- যখন আমি অসুস্থ ছিলাম, আমার বন্ধুরা আমাকে দেখতে এসেছিল, right?
- My friends visited me when I was sick, তাই না?





- আমি আজকে আমার result পেয়েছি।
- আমি আজকে আমার ফলাফল পেয়েছি।
- I got my result today, দেখেছ?
- আমি আমার ফলাফল পেয়েছি, see?
- আমি আমার result পেয়েছি, see?



- তার room-টা really nice.
- তার ঘরটা অনেক সুন্দর।
- তার room-টা অনেক nice.
- Her room is really nice, তাই না?
- তার ঘরটা অনেক সুন্দর, right?



- দারোয়ান সদর দরজাটা বন্ধ করে দিল।
- দারোয়ান gate-টা close করে দিল।
- দারোয়ান gate-টা বন্ধ করে দিল।
- দারোয়ান সদর দরজাটা বন্ধ করে দিল, right?
- The guard closed the gate, তাই না?



- সে always complain করে।
- সে সব সময় complain করে।
- Always সে complain করে।
- সে সব সময় অভিযোগ করে।
- He always complains, তাই না?



- রাব্বি রোহানকে বলটা pass করল।
- রাব্বি রোহানকে ball - টা pass করল।
- রাব্বি রোহানকে বলটা প্রেরণ করল।
- রাব্বি রোহানকে বলটা প্রেরণ করল রাব্বি, right?
- Rabbi passed Rohan the ball, তাই না?



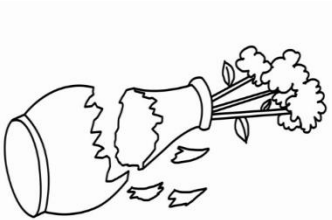
- আমি topic-টি completely বুঝতে পারিনি।
- আমি topic - টি সম্পূর্ণ বুঝতে পারিনি।
- Topic - টি সম্পূর্ণ বুঝতে পারিনি।
- আমি বিষয়টি সম্পূর্ণ বুঝতে পারিনি।
- আমি বিষয়টি সম্পূর্ণ বুঝতে পারিনি, can you say again?



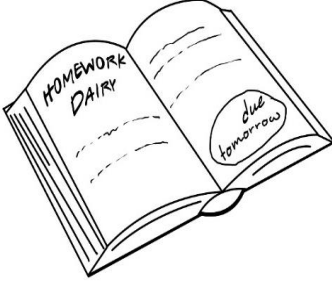
- সে room-এ in করল।
- সে কক্ষে প্রবেশ করল।
- Room-এ in করল সে।
- সে কক্ষে প্রবেশ করল, right?
- She walked in the room, তাই না?



- তারা বাইরে খেলতে চাইছিল but it is raining now.
- তারা বাইরে খেলতে চাইছিল but এখন বৃষ্টি হচ্ছে।
- তারা বাইরে খেলতে চাইছিল কিন্তু এখন বৃষ্টি হচ্ছে।
- তারা বাইরে খেলতে চাইছিল কিন্তু এখন বৃষ্টি হচ্ছে right?
- We wanted to play outside but it is raining, তাই না?



- Oh! The flower vase got broken!
- Oh! flower vase-টা ভেঙে গেল!
- Oh! ফুলদানিটা ভেঙে গেল!
- ওঃ ফুলদানিটা got broken!
- ওঃ ফুলদানিটা ভেঙ্গে গেল, right?



- By tomorrow, home work জমা দিবে।
- By tomorrow, home work submit করবে।
- আগামিকালের মধ্যে home work submit করবে।
- আগামিকালের মধ্যে home work জমা দিবে।
- আগামিকালের মধ্যে বাড়ির কাজ জমা দিবে।



- খোকা মাকে একটি ফুল দিল।
- খোকা মাকে একটি flower দিল।
- খোকা mom-কে একটি ফুল দিল।
- খোকা মাকে একটি ফুল দিল, right?
- Son gave mom a flower, তাই না?