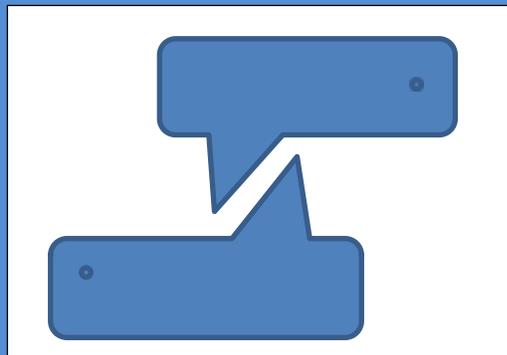


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## **The Emergence of Word Forms in Typically Developing Children in the Early Years of Life in Hindi Speaking Children: A Preliminary Study**

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### **Abstract**

Infants either develop word forms that express their intention or have no intention or just simply play with their articulators. It has been found that combinations of babbling and meaningful speech in a single utterance are produced by typically developing children (Branigan, 1977; Stoel-Gammon & Dunn, 1985). In this context, it is quite essential to investigate the emergence of syllabic shapes, suggesting a production yardstick in the later stages of babbling to their first word productions. The present paper is focused on the appearances of words in 8-12-month-old infants of native Hindi-speaking families. The participants included 20 infants, 10 in each of 2 age groups. from native Hindi speaking families. Audio recordings were carried out to obtain word forms according to Vihman and McCune's (1994) criteria for word identification. The data was analyzed using IPA to obtain the frequency of the word forms.

**Keywords** Protowords, true words, Hindi, babbling, phonological development

### **1. Introduction**

The transition from babbling to meaningful speech is a very important milestone in the development of articulation and phonological skills. It is at this point that the child moves from pre-linguistic to linguistic phonological development. There is typically an overlap of a few weeks to several months in the use of babbled and meaningful productions (Stoel-Gammon & Dunn, 1985, Vihman et al., 1985). Children may even use a combination of babbling and meaningful speech in a single utterance (Branigan, 1977). A child's first meaningful productions have been labeled protowords (Menn, 1983). Protowords are also known as vocables (Ferguson, 1978), phonetically consistent forms (Dore, Franklin, Miller, & Ramer, 1976), invented words (Locke, 1983), sensori-motor phonemes (Carter, 1979) and quasi-words (Stoel-Gammon & Cooper, 1984); they are vocalizations with no recognizable adult model that are consistently produced by the infant. However, they cannot be considered babbling either because they have some phonetic consistency (Stoel-Gammon & Dunn, 1985). Protowords are the language which are invented by the child's own and differs from babbling (Blak & Fink, 1987). This was also described by Ferguson (1978) that protowords as

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“babbling-like sounds used meaningfully”. Protowords are frequently tied to a specific context and are often accompanied by a consistent gesture. These vocal productions have frequently been considered the link between babbling and adult-like speech. Researchers have reported four phonetic forms that are frequently used in protowords: (1) syllabic nasals, (2) syllabic fricatives, and (3) single or repeated consonant-vowel syllables in which the consonant is a nasal or a stop (Ferguson, 1978; Halliday, 1975; Lewis, 1951 and Vihman & Miller, 1988).

At the end of the first year, vocalizations begin to be affected by the phonetic make-up of the specific language of the child’s environment. Carter (1979) observed the transition of protowords to true words in a single subject. The subject’s productions were termed as “sensori-motormorphemes”. She reported between the age range of 1 year 1 month, and 1 year 2 months, the subject produced vocalizations that differed from babbling, had some phonetic consistency and were frequently accompanied by a gesture.

Ferguson (1978) stated that children develop about 12 vocables as they undergo the transition from babbling to the use of adult-based words, which was contradicted by Stoel- Gammon and Cooper’s study (1984). Their study with 3 subjects showed greater variations among children. Stoel – Gammon and Cooper found that 1 subject used 13 vocables during the acquisition of 50 conventional words, while the other 2 subjects used only one vocable each during the same period. Elbers and Ton (1985) recorded play-pen monologues of a 1 year old Dutch boy for 20-30 minutes each day, for a period of 6 weeks. The mother kept a diary and noted the occurrence of new words. During the study, the infant acquired 4 new words, and it was found that prior babbling “prepared for” the selection and production of these true words.

Stoel-Gammon and Cooper (1984) studied 3 infants’ productions in English, from late babbling to the acquisition of the first 50 words. The goal of the study was to determine the relationship between word acquisition and phonological development. In their study, they distinguished between babbling, acquisition of adult words and creation of child based “quasi-words”. They found that the vocalizations produced by infants were not the same as in English and therefore concluded that they would not appear in real words. They also concluded that the infants use a limited number of “patterns” in the first words.

Locke (1985) noted that a number of researchers have reported that there is a tendency for words for “father” to appear earlier than words for “mother”. Such gender differences are common across cultures. In English, ‘dada’ is produced much earlier before than ‘mama’. Many infants referred ‘papa’ as ‘baba’ because they might have, in fact, perceived [b] and [d] as voiceless, unaspirated stops. It was also noted that infants were more likely to say a bilabial or an alveolar stop than a bilabial nasal. The infants had a 10% preference for producing bilabial nasals for example, probably “mom” was referred for dad more often.

Laakso et.al (2010) studied the patterns of protowords in the interaction with parents. The study revealed that at the age of twelve months children start to acknowledge or reject parental interpretations. The patterns consisted of acquisition of shared meanings embedded in the sequences of



first proto-utterances and their interpretations in the course of daily activities at home. For gaze orientation or pointing gesture, the sequences of proto words varied according to the contexts as interpreted by the parents. As cited in Gotzke and Goose (2007), during the 7- 9month period, infants may produce protowords or phonetically consistent forms of vocalizations with consistent structures that do not resemble an adult model (Menn & Stoel- Gammon, 2005; Sachs, 2005). These protowords may be recognized as an important step towards first words, as they suggest that the infants to have some degree of voluntary control over the vocal mechanisms and a certain degree understanding that sound sequences have unique meanings. Infants begin to produce consistent vocal patterns as that function as words early as nine months (Owens, 2001). It could be inferred that protowords have a somewhat stable sound and syllabic structure.

By the end of 10 to 12 months, most infants produce their first words (Owens, 2001 & Sachs, 2005). The first word may be the name of a toy, food or family member (Owens,2001) or may be a greeting, farewell or other social phrase such as peek -a-boo (Menn & Stoel-Gammon,2005). These first words may be used to gain attention. According to Pan (2005), first words tend to be similar for toddlers across cultures. The phase of initial production of words is referred to as “The First Fifty Word Stage” Ingram (1976). This stage encompasses the time from the first meaningful utterance that is a true word at approximately one year of age to the time when the child begins to combine two words together at approximately 18-24 months of age. A first word is usually defined as an entity of relatively stable form that is produced consistently by the child in a particular context and is recognizably related to the adult like word form of a particular language (Owens, 1996). Vihman and McCune (1994) have put forth certain criteria or the identification of true words, which were considered in the present study. 1) Determinative context- at least one use that occurs in a context which strongly suggests a word. 2) Maternal identification- the mother identifies at least one instance of the form of the word which either involves acknowledging or rejecting the word choice. 3) Multiple use- the child uses the target form/word more than once and 4) Multiple episodes- more than one episode of use.

Ferguson and Farwell (1975) stated that variability in children’s own pronunciation of words reveal incomplete knowledge on the part of the child, indicating the immature status of child’s linguistic and neuromotor capabilities in his/her formative years. The difference in canonical babbling in pre-term and full term infants was investigated by Lehithalmes, Heikkinen, Olsen and Yliherva (2012). The study revealed that extremely low birth weight infants failed to produce more different kinds of canonical syllable types and remained in the babbling phase longer than reaching the first meaningful words compared to the full term infants.

In the Indian context, a study conducted by Rupela and Manjula (2006) on 30 Kannada-speaking children from the age range of 0 to 5 years revealed bisyllabic words emerging at 6-12 month and increased by 18 months. This revealed the fact that as children grow they learn to carry out their vocal mechanism effectively, thereby increasing their word length and complexity.

Shishira (2013) carried out a study on the early phonetic repertoire in typically developing native Kannada-speaking children in the age range of 12 to 18 months. Results were analysed based on criteria given by Vihman and McCune (1994). Holophrastic words were found to be present in all the participants with a mean percentage of frequency of occurrence of 25.8%. Protowords existed in abundance, with the mean percentage of frequency of 41.6%. True word productions exhibited a reverse trend as that of holophrastic and protowords productions. The participants exhibited a mean percentage of 32.6% frequency of occurrence for true words and later showed a gradual increase in the participants nearing 16-18 months.

## **2. Methodology**

It must be noted that much of the review is of older literature findings; this was due to dearth of recent studies in this particular area of research on early word forms in children below the age of 1 year, especially in the Indian context. There is limited number of studies in the context of Indian language acquisition on early word forms and older references have findings on children on a higher age range, hence the researchers have included them in this preliminary study.

### *2.1. Participants*

A total of 20 participants from Hindi-speaking families were selected. Many of the studies have focused on children above the age of 1 year. The present study considered participants in the age groups of 8;0 to 12;0 months. This age group was considered to investigate if children had early word productions. Each age group consisted of ten infants comprising of five boys and five girls. A written consent was obtained from the parents for the participation of the infants.

Participants were identified from native Hindi speaking families and were assessed using the Developmental Screening Checklist (Swapna, Jayaram, Prema, & Geetha, 2010). It assesses receptive and expressive communication skills, auditory, motor and cognitive skills. The checklist was standardized on typically developing children in the Indian population and a good reliability and validity was obtained. It was ensured that both the parents were educated up to a minimum of 10th grade and were from middle socio-economic standing. The proficiency of the native language of the parents was assessed using the Language Proficiency Questionnaire: An adaptation of LEAP-Q in the Indian context by Maitreyee and Goswami (2009). A score of "5" would categorize the parent/ caregiver to be a "perfect" native speaker. Based on the perceptual analysis and transcription of the babbling utterances for each of the 20 participants, the frequency and type of protowords and true words was obtained based on the Vihman and McCune (1994) criteria.

### *2.2. Data collection and processing*

One-hour audio recordings were carried out by the investigator in a fairly quiet room with minimal distractions at the respective homes of the participants. Parents/ caregivers were asked to interact naturally with the child. Each individual participant was audio recorded with a hand held Sony



MZ-55 digital voice recorder with an integrated microphone. The audio recordings were carried out by the researcher from a reasonable distance so as not to distract the infant. Only one recording was carried out for each participant, hence a measure was established to obtain a minimum of 100 utterances (that would include any kind of production from beyond the 50 word stage also) from each participant to ensure an increase in utterances to obtain a better quality of the sample. All the recordings were transferred to a computer for analysis. The audio recordings were analyzed using the VLC media player software. No additional play materials were introduced into the environment, so that samples would reflect the infants' typical vocalizations in familiar surroundings.

On parental interview the type and frequency of protowords and true words (early words) were established. The parents were enquired on the words uttered by the infants and the word forms were then classified by the researcher. This was carried out during parent-child interaction. Two (post graduates) speech language pathologists and the 1st author served as judges for determining inter-subject reliability for the language. 10% of each of the subject sample was transcribed by each of the three Speech Language Pathologists, including the researcher. The researcher transcribed 10% of each of the subject sample for intra-judge reliability. Cronbach's alpha coefficient was consistent and found to be 0.70 and 0.75 for inter and intra transcriber reliability respectively.

### 2.3. *Data analysis*

Considering the small number of participants non-parametric tests were carried out. Descriptive statistics for the mean percentage of occurrence of protowords and true words with respect to language. Mann-Whitney U-test was used for comparison of between the two age groups.

## **3. Findings**

### 3.1. *Comparison of early words across age in Hindi participants*

Few participants produced early word forms such as proto words and true words sparingly from 6 months onwards, these word forms were produced by 2 participants each. The next higher age group of 8 to 10 months had 8 proto words but no true word productions by 3 participants. However the older age group of 10 to 12 months had a whopping production of 50 proto words and 36 true words which yet did not meet the 60% criteria (productions produced by 6 out of 10 participants), since there were only 5 participants in each who produced them. These early word productions are provided in Appendix A. On observation, protowords produced by the participants were centred on the child's basic needs. This was similar to the findings by Shishira, Sushma and Sreedevi (2014) in Kannada speaking children of 12 to 24 months. The median (Mdn) percent and inter quartile range (IQR) for the combined scores of boys and girls in Hindi for early word forms are presented in Table 1.

Table 1

*Descriptive statistics (Median percent and inter quartile range) of early words in Hindi*

Early word forms	Hindi			
	Age range (in months)			
	8;0 to ≤ 10:0 Group III		>10;0 to ≤ 12:0 Group IV	
N=10	Median	IQR	Median	IQR
Proto words	0.00	0.00-100.00	26.47	0.00-74.28
True words	-----	-----	17.14	0.00-60.29

Note: ---- indicates no production

As seen in Table 1, it is evident that proto words increased in occurrence from 8 months onwards, suggesting an increase in the emergence of word forms in the later stages of babbling. In the next age group of 10 to 12 months, early word forms comprised a total of 36 true words and 50 proto words; although they were produced by few participants (i.e did not meet 60% criteria).

As stated earlier, it was interesting to note that infants aged 6-8 months also exhibited a few word forms. The early emergence of word forms may be due to the added language stimulation by the non working mothers. This is in support of a study by Bergelson and Swingle (2012) that by 6-9 months, infants already began to link words to their referents in terms of comprehension and not production. The presence of early word forms in the younger age group (6 to 8 months) and absence in the immediate age group (8 to 10 months) is perhaps due to the cross sectional design considered in the present study. In other words the two age groups consisted of different participants.

In the present study the complexity in word productions advanced with age (Reeny & Sreedevi, 2014; Stoel- Gammon, 2011), although Mann- Whitney U test revealed no significant difference across age for proto words for Group III (8 to 10 months) and Group IV (10 to 12 months) in Hindi. Group III, i.e 8 to 10 months was lower in production of proto words (eight words) compared to the 10 to 12 month age group, having produced 50 proto words. Thus, the hypothesis that there is no significant difference in the phonetic behavior of protowords and true words across age in Hindi is accepted.

In conclusion, studies in the Indian context on infant early word production have focused on investigating on children above the age of 1 year and there are no studies that have profiled the early word productions in infants less than a year. Determining the phonetic behavior of early words in infants from the age of 8 months to 12 months with a native background of Hindi is a first attempt in the Indian context solely focused on the pre-linguistic stage. Understanding the emergence and nature of early words in infants will help to provide a better understanding of early phonological development. There is an increased awareness to educate parents who are sensitive to even the child's early speech development. The preliminary findings of the present study would help speech language pathologists to provide clinical services to children who are at risk for communication disorders. However, it



is recommended that the study would be carried out to a larger group of native Hindi speaking children.

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Appendix A

Protowords and True word productions in Hindi learning infants

Age Groups	Protowords	Truwords
>6;0 to ≤ 8;0 months	/t̪i t̪iː/- give, /t̪a t̪i/ - bye	/mama/-mom, /papa/-dad, /d̪I d̪I/- sister
8;0 to ≤ 10;0 months	/ememæː/-mom, /bə/- balloon /appa/-dad	-----
>10;0 to ≤ 12 months	/t̪iː/-tree, /ha/-eyes, /daI/-dog, /kaI/- carrot, /d̪aI/-dad, /d̪Iya/-give, /papa/- dad, /pəḍḍə/-powder, əḍḍə/- that side, /t̪ikətə/-pet name /əma/-mom, /d̪əḍḍə/- give, / d̪ad̪I/- dad, / d̪ad̪æ/-dad, /uː/-bow bow, /jɛjɛjɛ/- meow, /mːa/-flying kiss, /ka/-uncle, /pa/-plane, /dadI/- dad , / d̪ad̪a/-dad	/æppa/- dad, /nana/ -grandpa /kaka/-uncle, /papa/- dad, /hɛtu/- Jesus, /təbə/-t.v, /t̪iku/-name, /həkɛ/- okay, , /əI/- jai , /dədədə/- give /t̪i t̪i/ -give, /t̪a t̪i/ -bye, /mama/- mom, /papa/-dad, / d̪I d̪I/-sister, /ememæː/-mom, /bə/-balloon, /amma/-mom, /buː/-bow /əma/- mom, / d̪əḍḍə/- give bow, /amma/- mom, , /æpəl/-apple, /bələn/ - balloon, /n̪ja/- meow, /papa/-dad, /mama/-mom, /kjaː/-what



## **Brown's morphological skills in typical trilinguals**

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### **Abstract**

Language is the core of an effective communicative process. The appearance and mastery of the 14 grammatical morphemes in relation to the stages of development was found in the Brown's research. Morphemes generally convey meanings that could only be implied through the simple word orders and mastered at various stages. Numerous studies concern the acquisition of grammatical morphemes, no paper to the knowledge of the authors has explored the accuracy order and acquisition of English grammatical morphemes in Indian population.

India with its history of exposure to English language and current demand for English medium Education joins global trend of multilingualism. Speech Language Pathologist need to understand typical English language acquisition and how it differs from monolinguals in order to accurately assess and effectively identify potential language disorders.

The aim of the study is to determine the order of acquisition of English morphological structures produced by typical trilingual children in the age range of 7-10 years, with the objective of comparing the acquisition of morphemes across the age groups and task selected.

Thirty typical school going children who had been learning English as second language (ESL) for an average of 3.5 years participated in the study. The children's accuracy and the production of Brown's 14 English grammatical morphemes (1973) were examined in general conversation, monologue and picture description task. The samples were then analysed for the presence of the grammatical morphemes for each child.

The results were, in general conversation and picture description task children does not use all of the 14 grammatical morphemes, while in monologue they acquire an adult like pattern by the age of 9-10 years which are in agreement studies done by Bland- Stewart and Fitzgerald (2001).

Hence trilinguals follow a different pattern of grammatical development compared to monolinguals.

**Keywords** Morphological Skills, Trilingual speakers. Malayalam language, Brown's grammatical morphemes, monolinguals

### **1. Introduction**

In Communication is usually visual, auditory, or biochemical while human communication is unique for its extensive use of language. Language is referred as system of communication using sounds or symbols that enables us to express our feelings, thoughts, ideas, and experiences (Thompson, 2008). It refers to a rule based system of symbolic communication involving

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a set of small unit (syllables or words) that can be combined to yield an infinite number of larger language forms (Hoff & Naigles, 2002).

Morphology is the aspect of language concerned with the rules governing change in the word meaning. A morpheme is the word or part of the word that carries meaning. This entails grammar and using words that form sentences. Many words can be broken down into smaller units that can be used to convey meanings. Grammatical morphemes such as 'in', 'on', 'a', the, which can stay alone and modify another word without attaching to that word, are called "free" morphemes. On the other hand grammatical morphemes such as the present progressive '-ing', the regular past '-ed', and the plural '-s', are described as "bound" in that they function as markers or tags that are used to change the meaning of the word when attached to it.

Children use word order combinations to convey meanings rather than the use of grammatical morphemes in their early childhood. When the mean length of utterances (MLU) approaches 2.5 words, morphemes such as 'in' and 'on' begins to appear. At approximately 18 months of age toddlers begin to combine words into two -word phrases. Between 2-5 years, the ability to use basic grammatical sentence types and advanced grammatical constructions in a mature adult like form gradually emerge in preschoolers.

Malayalam is one of the four major languages of the Dravidian family spoken across the Kerala and also by linguistic minorities in the neighbouring states. Over half of the global population speaks more than one language. The scenario remains even in India adhering to the hallmark of multilingualism and most of the children tend to learn multiple languages during the school years sequentially.

In India, 255 million people speak at least two languages and 87.5 million speak three or more languages. According to 2001 census done in India around 12.18% of the total population speaks English.

[https://en.wikipedia.org/wiki/Multilingualism\\_in\\_India](https://en.wikipedia.org/wiki/Multilingualism_in_India)

### 1.1. Grammatical development

According to Brown, there are five stages which depict the development in children's language. They are characterized as following

Stage 1: individual words and semantic roles combined in linear simple sentences.

Stage 2: modulation of meanings (specifically the grammatical morphemes) emerges.

Stage 3: simple sentences are rearranged into different sentence modalities such as questions, imperatives and negatives.

Stage 4: begins to embed the elements of one sentence within another

Stage 5: utterances are coordinated, combining, the content of two sentences into one.

### 1.2. Brown's 14 grammatical morphemes

The appearance and mastery of the 14 grammatical morphemes in relation to the stages of development was focused in brown's research. Each of the morphemes appears in stage 2. These morphemes generally convey meanings that could only be implied through the simple word orders



exhibited in stage 1. they were then mastered at various stages as the child's language developed.

Table 1  
*Brown's ranked order of mastery of grammatical morphemes*

Rank	Mastery months	Morpheme	Example
1	19-28	Present progressive inflection	She <b>going</b>
2	27-30	Preposition in	Ball <b>in</b> box
3	27-30	Preposition on	<b>on</b> bed
4	27-33	Regular plural inflection	My cars <b>s</b>
5	25-46	Past irregular	Me <b>fell</b> down
6	26-40	Possessive inflection	Daddy's <b>'s</b> book
7	27-39	Uncontractible copula	<b>Is it</b> Jain? yes <b>it is</b>
8	28-46	Articles	<b>A</b> man in <b>the</b> car
9	26-48	Regular past tense	She jumped <b>d</b>
10	26-46	Regular third person singular	She <b>likes</b> cakes
11	28-50	Irregular third person singular	He <b>has</b> chocolate, she <b>does</b> too
12	29-48	Uncontractible auxiliary	<b>Are they</b> swimming? <b>She was</b> laughing
13	29-49	Contractible copula	<b>She's</b> ready. <b>They're</b> here.
14	30-50	Contractible auxiliary	<b>They're</b> coming. <b>He's</b> going.

### 1.3. Western Studies

Barrot and Leon (2014) investigated the accuracy order of 14 English grammatical morphemes of Filipino preschool pupils. Specifically, this paper sought to determine the grammatical morphemes which have the highest and lowest accuracy level by Filipino preschool pupils. It also attempted to identify whether there is a relationship between the order of grammatical morpheme acquisition of Filipino preschool pupils compared to the order of grammatical morpheme wherein English is the first language and English is the second language. The participants involved in this study were 18 preschool pupils whose age ranges from three to five years old. These participants were divided into two clusters based on their linguistic and geographical background. The findings revealed that plurality and progressive verbs posted the highest accuracy level while prepositions and past irregular verbs had the lowest level of accuracy. As regards the

relationship between the order of acquisition, the results revealed that the present study posted a different order compared to Dulay and Burt's (1973) and Brown's (1973) studies

Baron (2013) in their thesis defined the norms for grammatical morpheme development in Spanish for Spanish – English bilingual children ages 4; 0-7; 6 relative to their use of Spanish this study uses secondary data analysis based on two existing data sets. Participants included 334 Spanish – English bilingual children that were recruited from school districts in Texas, Utah and Pennsylvania. Grammatical morpheme accuracy was determined by performance on the BESA (Bilingual English Spanish assessment). Percentage of current use of Spanish was estimated based on a parental interview in which parents estimated children language input and output. The average percent accuracy of grammatical morphemes was calculated and analysed as a function of current use of Spanish and of chronological age. Results show that the percentage of accurately produced morphemes has a general upward trend as Spanish use and age increases. These findings will help define expectations for bilingual children that in turn inform the development of intervention goals.

Davison and Hammer (2012) studied the development of 14 grammatical morphemes in Spanish English preschoolers. The goals were to determine (a) whether there are differences in children's productions of English grammatical morphemes based on timing of English exposure and (b) which morphological structures met mastery, emerging and early emerging levels of production by bilingual children. Comparisons were made between English speaking children who were exposed to English at home from birth (home English communication (HEC)) and Spanish speaking children who were not expected to communicate in English until their entry into head start (school English communication (SEC)). Results indicate that children in HEC group mastered more morphemes earlier than the children in the SEC group; however, by the end of children's second year in head start both groups had mastered a similar number of morphemes. Additionally the children in both groups differed in which morphemes were mastered at the end of head start when compared to monolingual English speaking children.

Mayo & Olaizola (2011) examined the third language (L3) developing morphology of 78 Basque- Spanish bilinguals following a Content And Language Integrated Learning (CLIL) program and a mainstream English as a foreign language (non - CLIL) program. The analysis of cross sectional and longitudinal oral data shows that (1) the omission of inflection in the L3 English interlanguage of these groups of learners is due to problems with the realization of surface morphology,(2) there is a disassociation infrequency of suppliance between suppletive inflection (copula and Auxillary be) and affixal inflection (the third person morpheme –s and the past tense morpheme –ed ) already attested in L2 data, and (3) no significant difference were found between the two groups tested as far as the development of suppletive and affixal tense and agreement morphemes. The overall findings seem to support full – UG explanations for the variable use of morphology in the acquisition of nonnative systems.

Nicholls, Eadie & Reilly(2011) investigated the expressive morphological abilities of multilingual children acquiring English, compared with



monolingual children, at 3 years of age. Participants were 148 children (74 multilingual children; 74 matched monolingual children; mean age of 3 years and 4 months) already participating in a larger prospective longitudinal cohort study of language development in Melbourne, Australia. Thirty one languages in addition to English were represented within the embedded cohort. All participants completed a direct language assessment to measure their expressive abilities across the range of English morphemes. The parents of multilingual participants completed an interview regarding the children's language backgrounds and experiences. The multilingual group typically performed below the monolingual group in terms of their accurate use and mastery of English morphemes at 3 years of age., although variable expressive abilities were indicated within each group. The same morphemes were shown to be mastered by relatively higher proportions of each group. Likewise the same forms were mastered by relatively lower proportions of each group. The results indicated similarities between the children's acquisition of English morphology, regardless of whether they were acquiring English only or in combinations with other language(s) at 3 years of age.

Bloom (2010) investigated the language development of 2- to 3-year-old Turkish—Dutch bilingual children with different amounts of input quantity. Developmental patterns in spontaneous speech data of the bilingual children are compared to those of monolingual children of the same age. It is found that low input quantity leads to slower grammatical development, but only if input is clearly reduced. The observation that not only mean length of utterance but also the development of finiteness can show pronounced delays in bilingual language acquisition contradicts maturational views of grammatical development. However, such overall delays are expected given input-based theories of grammatical acquisition. All four bilingual children show difficulties in establishing the relation between finiteness and expression of grammatical subjects in Dutch. It is argued that cross-linguistic influence, driven by surface overlap between Turkish and Dutch, may account for this observation.

Montanari (2009) studied the multi – word combinations and the emergence of differentiated ordering patterns in early trilingual development. This study examined word order differentiation in early trilingual development through an analysis of the combinations produced by a tagalong- Spanish- English trilingual child with an MLU of less than 1.5. same and mixed language combinations were tracked down from diary data and weekly recordings to assess (1) whether word order significantly varied across linguistically and (2) whether mixed utterances originated from vocabulary gaps rather than from an undifferentiated syntax. The results indicated that (a) argument/ predicate sequences were differentially ordered depending on their language and following input- dependent preferences, (b) mixed utterances were generally caused by vocabulary gaps and (c) they displayed the same order as those single- language combinations produced by in the same language context. Findings suggest that evidence for early word order differentiation can be found before the appearance of inflectional morphology and even when three- rather than two -languages are been acquired, indicating that trilingual exposure does not slow down the process of differentiation.

Khan and James (2008) studied the order and rate of acquisition of browns (1973) 14 grammatical morphemes were investigated in three children with language disorders periodic spontaneous speech samples were analyzed for correct and incorrect use of the morphemes in obligatory contexts. Results indicated that the groups order of acquisition was similar to that reported by brown (1973) and De Villiers and De Villiers (1973) for normal children but that there were individual variations in the children's acquisition orders. Also the language disordered children demonstrated a much slower rate of acquisition than that reported for normally developing children.

A longitudinal study conducted by Jia and Fuse (2007) investigated the acquisition of 6 English grammatical morphemes (i.e., regular and irregular past tense, 3rd person singular, progressive aspect -ing, copula BE, and auxiliary DO) by 10 native Mandarin-speaking children and adolescents in the United States (arrived in the United States between 5 and 16 years of age). The goals were to chart and compare the acquisition trajectories and levels of mastery across the morphemes, identify when age-related differences emerged and which forms they took. Results indicate that the acquisition of some grammatical morphemes by school-aged immigrants takes several years to complete. As second language learners exhibit some error types and difficulties similar to monolingual children with specific language impairment, caution needs to be taken when interpreting and using morphological errors as indicators of speech/language learning problems in this population.

Balason and Dollaghan (2002) studied the grammatical morpheme production in 15-minute spontaneous language samples from 4-year-old children. Substantial variability was observed in both the frequency of obligatory contexts (OCs) and in the percentage of correct usage of GMs. For only one morpheme did all 100 samples contain the minimum number of 3 OCs; for only 7 of the 14 GMs was an adequate number of OCs found in at least half of the 100 samples. Results from the present investigation indicate a need for caution in interpreting information on GM production derived from samples of this nature from children at this age; the validity of using such data to identify deficits in inflectional morphology for either clinical or research purposes appears questionable.

Bland Stewart and Fitzgerald (2001) investigated Standard American English (SAE) morphological development for 15 bilingual Hispanic preschoolers who were attending a bilingual day care center. Thirty minute spontaneous language samples were obtained yielding 100 utterances for mean length of utterance (MLU) and morphological analysis according to Millers (1981) criteria. Analysis of the data revealed emergent use of browns (1973) 14 grammatical morphemes, although mastery generally was not seen at the same ages as those expected for SAE speakers.

#### 1.4. *Indian Studies*

Indian studies on language development are limited. Most of the studies mainly include masters dissertation with a few doctoral and post doctoral research studies (Vijayalakshmi 1981, Karanth,1984, Subharao,1995).

Dsouza & Kumaraswamy (2015) studied on browns morphological skills in Konkani -English- Kannada trilinguals on 6-9 year old children. Forty five



school going typically developing children were selected for the study. General conversation and picture description task were used to collect the language samples. The results revealed that out of 14 morphemes only 6 and 8 morphemes were present in picture description and general conversation in 6 -7 years children, 8 and 8 morphemes were present in picture task and general conversation in 7-8 years children, 9 and 10 morphemes were present in picture task and general conversation in 8-9 years children respectively. They concluded that trilingual children followed a different morphological pattern compared to typically developing monolingual children.

Similar study done by Varghese & Kumaraswamy (2013) studied Browns Morphological Skills in Kannada – English typically developing bilinguals in the age range of 5-7 years children. 30 school going normal children were selected for the study. Picture description task was used as language sample. The results of their study show that no all of the grammatical morphemes were present in the children..

Varghese, Thomas, Nebu, Sunny, & Kumaraswamy (2014) studied Browns Morphological Skills in Malayalam- English bilinguals on 5-7 years children's. 30 normal school going children were selected for the study. Picture description task and general conversation were used as a language sample. The results showed that the presence of 6 morphemes in picture discrimination task and presence of 8 morphemes in general conversation task.

### 1.5. *The need for the study*

The language acquisition in bi/ multilingual children is understood based on the studies conducted in the west. The findings of these studies cannot be generalized for Indian population which offers cultural and linguistic diversities. Though it provides abundance of research opportunities to explore the acquisition of language in bi/multilingual environment, the literature review reveals a scarcity of investigations in Indian context. In India English is learnt as a second language from the age of 3-4 years in schools through formal education irrespective of their native language most of the parents prefer to send their children in English medium of instructions. In this context sometimes children may found to be over identified with language impairment because speech language pathologists do not have appropriate developmental expectations. Thus it is essential to understand typical language acquisition and how it differs from monolingual English in order to accurately assess and effectively identify potential language disorders as early as possible. Thus the current study attempts to study the English morphological development in Malayalam – English – Hindi trilinguals.

## **2. Methodology**

The aim of the study was to determine the order of acquisition of English morphological structures produced by typical trilingual (Malayalam – English – Hindi) children and which morphological structures mastered by 7-10 years with the following objectives.

- a. To assess the acquisition of English grammatical morphemes across different tasks for 7-8, 8-9 and 9-10 years.
- b. To assess the acquisition of English grammatical morphemes within tasks for 7-8, 8-9 and 9-10 years.
- c. To compare the acquisition of English morphological structures across the group 7-10 years.

### 1.1. *Participants*

Thirty typically developing children attending regular schools with English as a medium of instruction participated in the study. Based on the chronological age, the children were further divided into Group 1 (G1), 7-7.11 years (6 boys and 4 girls), Group 2 (G2), 8-8.11 years (5 boys and 5 girls) and Group 3 (G3) 9-10 years (6 boys and 4 girls).

As the inclusion criteria, Malayalam as native language, English as a second and Hindi as the third language, teachers' input, school records and attending to an English medium school since kinder garden were used.

History of speech, language, and hearing problems, history of middle ear infections, and major health and neurological problems were used as the exclusion criteria.

### 1.2. *Stimuli*

Based on 5 experienced SLP's view, eight color picture cards depicting the activities of day to day life, school, playground, occasions and nature chosen from the children's textbook and from other resources were used for picture description task. Monologue samples were taken by giving simple topics including favorite place, my country and family. Connected speech sample was also elicited from each child.

### 1.3. *Environment*

Test was administered in a quiet room with adequate illumination. At one time one child was taken for the recording. The subject was seated in a chair next to the examiner one foot distance in front of the standard notebook with an inbuilt microphone.

### 1.4. *Procedure*

The instruction by the clinician was given in English for the tasks individually to every child as "Now I am going to show picture cards of places, natures, occasions etc. You have to describe the activities that had happened in the picture in full and meaningful sentence", and also asked to describe on the topic given. Instruction was repeated if the child did not follow in the first attempt also an example was provided if required. If the participants were not able to say in complete sentence, semantic cues were given. The audio recorded samples were transcribed using International Phonetic Alphabet (IPA) -5 and analyzed for morphological structures. A score of one for presence of morphemes and zero for absence were given. The obtained data was further statistically analysed for significant difference using Fishers exact p test. The identified morphemes were compared with browns 14 stages and checked for order of acquisition and its relevance in Malayalam-English-Hindi trilinguals.



### 3. Findings

Findings should not be discussed here. Please copy and paste the findings here. Tables, Figures, Graphics etc. should be centered; placed where they should be and numbered consecutively. Captions of the tables, figures etc. should be right below them and should be cited when referred to in the body of the text.

Table 2

*The present percentage of Brown’s morphemes for general conversation task across three age groups*

Parameter: General conversation

	Age	Yes		p value to compare pairwise- testing equality of proportion test		
		Count	%	7-8yrs VS 8-9yrs	7-8yrs VS 9-10 years	8-9yrs VS 9-10 years
present progressive inflection	7-8 years	10	100.0%	NS	NS	NS
	8-9 years	10	100.0%			
	9-10 years	10	100.0%			
proposition in	7-8 years	10	100.0%	NS	NS	NS
	8-9 years	10	100.0%			
	9-10 years	10	100.0%			
proposition on	7-8 years	10	100.0%	NS	NS	NS
	8-9 years	10	100.0%			
	9-10 years	10	100.0%			
regular plural inflection	7-8 years	8	80.0%	.068 NS	.068 NS	NS
	8-9 years	10	100.0%			
	9-10 years	10	100.0%			
past irregular	7-8 years	5	50.0%	.005 HS	.005 HS	NS
	8-9 years	10	100.0%			
	9-10 years	10	100.0%			
possessive inflection	7-8 years	1	10.0%	.025 sig	.000 HS	.005
	8-9 years	5	50.0%			
	9-10 years	10	100.0%			
uncontractible copula	7-8 years	6	60.0%	.165 NS	.061 NS	.266 NS
	8-9 years	8	80.0%			
	9-10 years	9	90.0%			
articles	7-8 years	10	100.0%	NS	NS	NS
	8-9 years	10	100.0%			
	9-10 years	10	100.0%			
regular past tense	7-8 years	0	.0%	.002 HS	.000 HS	.013
	8-9 years	6	60.0%			
	9-10 years	10	100.0%			
regular third person singular	7-8 years	7	70.0%	sig .030	sig .030	NS
	8-9 years	10	100.0%			
	9-10 years	10	100.0%			
irregular third person singular	7-8 years	2	20.0%	sig .012	.004 HS	.303 NS
	8-9 years	7	70.0%			
	9-10 years	8	80.0%			
uncontractible auxillary	7-8 years	5	50.0%	.181 NS	.005 HS	.030
	8-9 years	7	70.0%			
	9-10 years	10	100.0%			
contractible copula	7-8 years	0	.0%	sig .030	.002 HS	.089 NS
	8-9 years	3	30.0%			
	9-10 years	6	60.0%			
contractible auxillary	7-8 years	8	80.0%	.266 NS	.068 NS	.152 NS
	8-9 years	9	90.0%			
	9-10 years	10	100.0%			

7-8 vs 8-9 years – no significant difference ( $p > 0.05$ ) was seen for present progressive inflection, prepositional markers, regular plural inflection, Uncontractible copula, articles, Uncontractible auxiliary, and contractible auxiliary. Significant difference was sighted for possessive inflection ( $p = 0.025$ ), regular third person singular ( $p = 0.030$ ), irregular third person singular ( $p = 0.012$ ) and contractible copula ( $p = 0.030$ ).

Highly significant difference present for past irregular ( $p = 0.005$ ) and regular past tense ( $p = 0.002$ ). 7-8 vs 9-10 years - no significant difference ( $p > 0.05$ ) was observed for present progressive inflection, prepositional markers,

regular plural inflection, Uncontractible copula, articles, and contractible auxiliary. Significant difference was seen for regular third person singular ( $p = 0.03$ ). Highly significant difference seen for past irregular ( $p = 0.005$ ), possessive inflection ( $p = 0.000$ ), regular past tense ( $p=0.000$ ), irregular third person singular ( $p= 0.004$ ), Uncontractible auxiliary ( $p=0.005$ ) and contractible copula ( $p=0.002$ ). 8-9 vs 9-10 years - no significant difference ( $p > 0.05$ ) was noticed for present progressive inflection, prepositional markers, regular plural inflection, past irregular, Uncontractible copula, articles, regular third person singular, irregular third person singular, contractible copula and contractible auxiliary. Significant difference was observed for regular past tense ( $p = 0.013$ ) and Uncontractible auxiliary ( $p = 0.03$ ). Highly significant difference was noted for possessive inflection ( $p = 0.005$ ).

Parameter: Monologue

	Age	Yes		p value to compare pairwise- testing equality of proportion test		
		Count	%	7-8yrs VS 8-9yrs	7-8yrs VS 9-10 years	8-9yrs VS 9-10 years
present progressive inflection	7-8 y ears	10	100.0%	NS	NS	NS
	8-9 y ears	10	100.0%			
	9-10 y ears	10	100.0%			
proposition in	7-8 y ears	10	100.0%	NS	NS	NS
	8-9 y ears	10	100.0%			
	9-10 y ears	10	100.0%			
proposition on	7-8 y ears	10	100.0%	NS	NS	NS
	8-9 y ears	10	100.0%			
	9-10 y ears	10	100.0%			
regular plural inflection	7-8 y ears	10	100.0%	NS	NS	NS
	8-9 y ears	10	100.0%			
	9-10 y ears	10	100.0%			
past irregular	7-8 y ears	9	90.0%	.152 NS	.152 NS	NS
	8-9 y ears	10	100.0%			
	9-10 y ears	10	100.0%			
possessive inflection	7-8 y ears	3	30.0%	.089 NS	.001 HS	.013
	8-9 y ears	6	60.0%			
	9-10 y ears	10	100.0%			
uncontractible copula	7-8 y ears	6	60.0%	.165 NS	.013	.068 NS
	8-9 y ears	8	80.0%			
	9-10 y ears	10	100.0%			
articles	7-8 y ears	10	100.0%	NS	NS	NS
	8-9 y ears	10	100.0%			
	9-10 y ears	10	100.0%			
regular past tense	7-8 y ears	5	50.0%	.181 NS	.005 HS	.030
	8-9 y ears	7	70.0%			
	9-10 y ears	10	100.0%			
regular third person singular	7-8 y ears	7	70.0%	sig .030	sig .030	NS
	8-9 y ears	10	100.0%			
	9-10 y ears	10	100.0%			
irregular third person singular	7-8 y ears	4	40.0%	.089 NS	sig .010	.132 NS
	8-9 y ears	7	70.0%			
	9-10 y ears	9	90.0%			
uncontractible auxiliary	7-8 y ears	5	50.0%	.327 NS	.005 HS	.013
	8-9 y ears	6	60.0%			
	9-10 y ears	10	100.0%			
contractible copula	7-8 y ears	0	.0%	sig .013	.000 HS	.034
	8-9 y ears	4	40.0%			
	9-10 y ears	8	80.0%			
contractible auxiliary	7-8 y ears	8	80.0%	.068 NS	.068 NS	NS
	8-9 y ears	10	100.0%			
	9-10 y ears	10	100.0%			

Table 3  
*The present percentage of Brown's morphemes for monologue across three age groups*

7-8 vs 8-9 years – no significant difference ( $p > 0.05$ ) was seen for present progressive inflection, prepositional markers, regular plural inflection, past irregular, possessive inflection, Uncontractible copula, articles, regular past tense, irregular third person singular, Uncontractible auxiliary, and contractible auxiliary.

Significant difference noticed for regular third person singular ( $p= 0.030$ ) and contractible copula ( $p=0.013$ ).

7-8 vs 9-10 years - no significant difference ( $p > 0.05$ ) spotted for present progressive inflection, prepositional markers, regular plural inflection, past irregular, articles and contractible auxiliary.



Significant difference was seen for Uncontractible copula ( $p=0.013$ , )regular third person singular ( $p = 0.03$ ), irregular third person singular ( $p = 0.010$ ). Highly significant difference was viewed for possessive inflection ( $p = 0.001$ ) and regular past tense ( $p=0.005$ ).

8-9 vs 9-10 years - no significant difference ( $p > 0.05$ ) was observed for present progressive inflection, prepositional markers, regular plural inflection, past irregular, Uncontractible copula, articles, regular third person singular, irregular third person singular and contractible auxiliary.

Significant difference was seen for possessive inflection ( $p= 0.013$ ), regular past tense ( $p = 0.030$ ), Uncontractible auxiliary ( $p= 0.005$ ) and contractible copula ( $p = 0.034$ ).

Parameter: Picture description

	Age	Yes		p value to compare pairwise- testing equality of proportion test		
		Count	%	7-8yrs VS 8-9yrs	7-8yrs VS 9-10 years	8-9yrs VS 9-10 years
present progressive inflection	7-8 years	10	100.0%	NS	NS	NS
	8-9 years	10	100.0%			
	9-10 years	10	100.0%			
proposition in	7-8 years	10	100.0%	NS	NS	NS
	8-9 years	10	100.0%			
	9-10 years	10	100.0%			
proposition on	7-8 years	10	100.0%	NS	NS	NS
	8-9 years	10	100.0%			
	9-10 years	10	100.0%			
regular plural inflection	7-8 years	9	90.0%	.152	.152	NS
	8-9 years	10	100.0%	NS		
	9-10 years	10	100.0%			
past irregular	7-8 years	5	50.0%	.005	.005	NS
	8-9 years	10	100.0%	HS		
	9-10 years	10	100.0%			
possessive inflection	7-8 years	2	20.0%	.080	sig	.181
	8-9 years	5	50.0%	NS		
	9-10 years	7	70.0%			
uncontractible copula	7-8 years	0	.0%	.000	.000	NS
	8-9 years	10	100.0%	HS		
	9-10 years	10	100.0%			
articles	7-8 years	10	100.0%	NS	NS	NS
	8-9 years	10	100.0%			
	9-10 years	10	100.0%			
regular past tense	7-8 years	1	10.0%	.061	.003	.089
	8-9 years	4	40.0%	NS		
	9-10 years	7	70.0%			
regular third person singular	7-8 years	7	70.0%	.030	.132	.152
	8-9 years	10	100.0%	sig		
	9-10 years	9	90.0%			
irregular third person singular	7-8 years	2	20.0%	.012	.004	.303
	8-9 years	7	70.0%	sig		
	9-10 years	8	80.0%			
uncontractible auxiliary	7-8 years	1	10.0%	.010	.000	.013
	8-9 years	6	60.0%	sig		
	9-10 years	10	100.0%			
contractible copula	7-8 years	1	10.0%	.132	.003	.037
	8-9 years	3	30.0%	NS		
	9-10 years	7	70.0%			
contractible auxiliary	7-8 years	9	90.0%	.152	.152	NS
	8-9 years	10	100.0%	NS		
	9-10 years	10	100.0%			

Table 4  
*The present percentage of Brown’s morphemes for picture description across three age groups*

7-8 vs 8-9 years – no significant difference ( $p > 0.05$ ) viewed for present progressive inflection, prepositional markers, regular plural inflection, possessive inflection, regular past tense, Uncontractible copula, articles, regular past tense, irregular third person singular, contractible copula, and contractible auxiliary.

Significant difference was seen for regular third person singular ( $p= 0.030$ ), irregular third person singular, ( $p=0.012$ ) and Uncontractible auxiliary ( $p=0.010$ ).

Highly significant difference observed for past irregular ( $p = 0.005$ ) and Uncontractible copula ( $p = 0.000$ )

7-8 vs 9-10 years - no significant difference ( $p > 0.05$ ) was seen for present progressive inflection, prepositional markers, regular plural inflection, articles, regular third person singular and contractible auxiliary.

Significant difference was seen for possessive inflection ( $p = 0.012$ ).

Highly significant difference was observed for past irregular ( $p = 0.005$ ), Uncontractible copula ( $p = 0.00$ ), regular past tense ( $p = 0.003$ ), irregular third person singular ( $p = 0.004$ ), Uncontractible auxiliary ( $p = 0.000$ ), contractible copula ( $p = 0.003$ ).

8-9 vs 9-10 years - no significant difference ( $p > 0.05$ ) was discovered for present progressive inflection, prepositional markers, regular plural inflection, past irregular, possessive inflection, Uncontractible copula, articles, regular past tense, regular third person singular, irregular third person singular and contractible auxiliary.

Significant difference was seen for Uncontractible auxiliary ( $p = 0.013$ ) and contractible copula ( $p = 0.037$ ).

Table 5

*The present percentage of Brown's morphemes for 7-8 years across tasks*

Age: 7-8 years		Yes		p value to compare pairwise- testing equality of proportion test		
Parameter		Count	%	General conversation VS Monologue	General conversation VS Picture description	Monologuen VS Picture description
present progressive inflection	General conversation	10	100.0%	NS	NS	NS
	Monologue	10	100.0%			
	Picture description	10	100.0%			
proposition in	General conversation	10	100.0%	NS	NS	NS
	Monologue	10	100.0%			
	Picture description	10	100.0%			
proposition on	General conversation	10	100.0%	NS	NS	NS
	Monologue	10	100.0%			
	Picture description	10	100.0%			
regular plural inflection	General conversation	8	80.0%	.068	.266	.152
	Monologue	10	100.0%			
	Picture description	9	90.0%			
past irregular	General conversation	5	50.0%	sig	NS	sig
	Monologue	9	90.0%			
	Picture description	5	50.0%			
possessive inflection	General conversation	1	10.0%	.132	.266	.303
	Monologue	3	30.0%			
	Picture description	2	20.0%			
uncontractible copula	General conversation	6	60.0%	NS	HS	.002
	Monologue	6	60.0%			
	Picture description	0	.0%			
articles	General conversation	10	100.0%	NS	NS	NS
	Monologue	10	100.0%			
	Picture description	10	100.0%			
regular past tense	General conversation	0	.0%	HS	.005	.152
	Monologue	5	50.0%			
	Picture description	1	10.0%			
regular third person singular	General conversation	7	70.0%	NS	NS	NS
	Monologue	7	70.0%			
	Picture description	7	70.0%			
irregular third person singular	General conversation	2	20.0%	.165	NS	.165
	Monologue	4	40.0%			
	Picture description	2	20.0%			
uncontractible auxillary	General conversation	5	50.0%	NS	sig	.025
	Monologue	5	50.0%			
	Picture description	1	10.0%			
contractible copula	General conversation	0	.0%	NS	NS	.152
	Monologue	0	.0%			
	Picture description	1	10.0%			
contractible auxillary	General conversation	8	80.0%	NS	.266	.266
	Monologue	8	80.0%			
	Picture description	9	90.0%			



General conversation vs Monologue – no significant difference ( $p > 0.05$ ) for present progressive inflection, prepositional markers, regular plural inflection, , possessive inflection, Uncontractible copula, articles, regular past tense, regular third person singular, irregular third person singular, Uncontractible auxiliary, contractible copula, and contractible auxiliary.

Significant difference was seen for past irregular ( $p= 0.025$ ) and Highly significant difference seen for regular past tense ( $p = 0.005$ ).

General conversation vs Picture description - no significant difference ( $p > 0.05$ ) was seen for present progressive inflection, prepositional markers, past irregular, regular plural inflection, possessive inflection, articles, regular past tense, regular third person singular, irregular third person singular, contractible copula and contractible auxiliary.

Significant difference was seen for Uncontractible auxiliary ( $p = 0.025$ ).

Highly significant difference seen for Uncontractible copula ( $p=0.002$ ).

Monologue vs Picture description - no significant difference ( $p > 0.05$ ) was noted for present progressive inflection, prepositional markers, regular plural inflection, possessive inflection, articles, , regular third person singular, irregular third person singular, contractible copula and contractible auxiliary.

Significant difference ( $p= 0.025$ ) was seen for past irregular, Uncontractible auxiliary, regular past tense and Highly significant difference was notice for Uncontractible copula ( $p = 0.002$ ).

Table 6

*The present percentage of Brown’s morphemes for 8-9 years across tasks*

Age: 8-9 years

Parameter	Yes		p value to compare pairwise- testing equality of proportion test		
	Count	%	General conversation VS Monologue	General conversation VS Picture description	Monologuen VS Picture description
present progressive inflection	General conversation	10	100.0%	NS	NS
	Monologue	10	100.0%		
	Picture description	10	100.0%		
proposition in	General conversation	10	100.0%	NS	NS
	Monologue	10	100.0%		
	Picture description	10	100.0%		
proposition on	General conversation	10	100.0%	NS	NS
	Monologue	10	100.0%		
	Picture description	10	100.0%		
regular plural inflection	General conversation	10	100.0%	NS	NS
	Monologue	10	100.0%		
	Picture description	10	100.0%		
past irregular	General conversation	10	100.0%	NS	NS
	Monologue	10	100.0%		
	Picture description	10	100.0%		
possessive inflection	General conversation	5	50.0%	.327	NS
	Monologue	6	60.0%		
	Picture description	5	50.0%		
uncontractible copula	General conversation	8	80.0%	NS	.068
	Monologue	8	80.0%		
	Picture description	10	100.0%		
articles	General conversation	10	100.0%	NS	NS
	Monologue	10	100.0%		
	Picture description	10	100.0%		
regular past tense	General conversation	6	60.0%	.320	.186
	Monologue	7	70.0%		
	Picture description	4	40.0%		
regular third person singular	General conversation	10	100.0%	NS	NS
	Monologue	10	100.0%		
	Picture description	10	100.0%		

irregular third person singular	General conversation	7	70.0%	NS	NS	NS
	Monologue	7	70.0%			
	Picture description	7	70.0%			
uncontractible auxiliary	General conversation	7	70.0%	.320	.320	NS
	Monologue	6	60.0%	NS	NS	
	Picture description	6	60.0%			
contractible copula	General conversation	3	30.0%	.320		.320
	Monologue	4	40.0%	NS	NS	NS
	Picture description	3	30.0%			
contractible auxiliary	General conversation	9	90.0%	.152	.152	NS
	Monologue	10	100.0%	NS	NS	
	Picture description	10	100.0%			

General conversation vs Monologue – no significant difference ( $p > 0.05$ ) was noticed for all parameters

General conversation vs Picture description - no significant difference ( $p > 0.05$ ) was seen for all parameters

Monologue vs Picture description - no significant difference ( $p > 0.05$ ) found for all parameters

Table 7

*The present percentage of Brown's morphemes for 9-10 years across tasks*

Age: 9-10 years

Parameter	Yes		p value to compare pairwise- testing equality of proportion test			
	Count	%	General conversation VS Monologue	General conversation VS Picture description	Monologuen VS Picture description	
present progressive inflection	General conversation	10	100.0%	NS	NS	NS
	Monologue	10	100.0%			
	Picture description	10	100.0%			
proposition in	General conversation	10	100.0%	NS	NS	NS
	Monologue	10	100.0%			
	Picture description	10	100.0%			
proposition on	General conversation	10	100.0%	NS	NS	NS
	Monologue	10	100.0%			
	Picture description	10	100.0%			
regular plural inflection	General conversation	10	100.0%	NS	NS	NS
	Monologue	10	100.0%			
	Picture description	10	100.0%			
past irregular	General conversation	10	100.0%	NS	NS	NS
	Monologue	10	100.0%			
	Picture description	10	100.0%			
possessive inflection	General conversation	10	100.0%	NS	.030	.030
	Monologue	10	100.0%		sig	
	Picture description	7	70.0%			
uncontractible copula	General conversation	9	90.0%	.152	.152	NS
	Monologue	10	100.0%			
	Picture description	10	100.0%			
articles	General conversation	10	100.0%	NS	NS	NS
	Monologue	10	100.0%			
	Picture description	10	100.0%			
regular past tense	General conversation	10	100.0%	NS	.030	.030
	Monologue	10	100.0%		sig	
	Picture description	7	70.0%			
regular third person singular	General conversation	10	100.0%	NS	.152	.152
	Monologue	10	100.0%			
	Picture description	9	90.0%			
irregular third person singular	General conversation	8	80.0%	.266	NS	.266
	Monologue	9	90.0%			
	Picture description	8	80.0%			
uncontractible auxiliary	General conversation	10	100.0%	NS	NS	NS
	Monologue	10	100.0%			
	Picture description	10	100.0%			
contractible copula	General conversation	6	60.0%	.165	.320	.303
	Monologue	8	80.0%			
	Picture description	7	70.0%			
contractible auxiliary	General conversation	10	100.0%	NS	NS	NS
	Monologue	10	100.0%			
	Picture description	10	100.0%			



General conversation vs Monologue – no significant difference ( $p > 0.05$ ) was observed for all parameters

General conversation vs Picture description - no significant difference ( $p > 0.05$ ) viewed for present progressive inflection, prepositional markers, past irregular, regular plural inflection, articles, , regular third person singular, Uncontractible auxiliary, irregular third person singular, Uncontractible copula, contractible copula and contractible auxiliary.

Significant difference was seen for possessive inflection and regular past tense ( $p = 0.030$ ).

Monologue vs Picture description - no significant difference ( $p > 0.05$ ) was examined for present progressive inflection, prepositional markers, past irregular, regular plural inflection, articles, , regular third person singular, Uncontractible auxiliary, irregular third person singular, Uncontractible copula, contractible copula and contractible auxiliary. Significant difference was seen for possessive inflection and regular past tense ( $p = 0.030$ ).

Table 8

*The overall acquisition of English morphological structures across the tasks*

		Fishers exact test p
General conversation	present progressive inflection	.
	proposition in	.
	proposition on	.
	regular plural inflection	0.117
	past irregular	0.002
	possessive inflection	0.000
	uncontractible copula	0.271
	Articles	.
	regular past tense	0.000
	regular third person singular	0.036
	irregular third person singular	0.015
	uncontractible auxillary	0.039
	contractible copula	0.014
	contractible auxillary	0.329
Monologue	present progressive inflection	.
	proposition in	.
	proposition on	.
	regular plural inflection	.

	past irregular	0.355
	possessive inflection	0.005
	uncontractible copula	0.082
	Articles	.
	regular past tense	0.039
	regular third person singular	0.036
	irregular third person singular	0.058
	uncontractible auxillary	0.036
	contractible copula	0.001
	contractible auxillary	0.117
Picture description	present progressive inflection	.
	proposition in	.
	proposition on	.
	regular plural inflection	0.355
	past irregular	0.002
	possessive inflection	0.079
	uncontractible copula	0.000
	Articles	.
	regular past tense	0.024
	regular third person singular	0.133
	irregular third person singular	0.015
	uncontractible auxillary	0.000
	contractible copula	0.018
	contractible auxillary	0.355

General conversation: No significant difference noted for present progressive inflection, prepositional markers, regular plural inflection, Uncontractible copula, articles and contractible auxiliary. Significant difference ( $p < 0.05$ ) was seen for past irregular, possessive inflection, regular past tense, regular third person singular, irregular third person singular, Uncontractible auxiliary and contractible copula.

Monologue: No significant difference identified for present progressive inflection, prepositional markers, regular plural inflection, past irregular, Uncontractible copula, articles and contractible auxiliary. Significant difference ( $p < 0.05$ ) was seen for possessive inflection, regular past tense, regular third person singular, irregular third person singular, Uncontractible auxiliary and contractible copula

Picture description: No significant difference was present for present progressive inflection, prepositional markers, regular plural inflection, past irregular, Uncontractible copula, articles and contractible auxiliary. Significant difference ( $p < 0.05$ ) was obtained for possessive inflection,



regular past tense, regular third person singular, irregular third person singular, Uncontractible auxiliary and contractible copula.

Table 9  
*The overall acquisition of English morphological structures across the groups*

	Fishers exact test p
7-8 years	
present progressive inflection	.
proposition in	.
proposition on	.
regular plural inflection	0.329
past irregular	0.101
possessive inflection	0.535
uncontractible copula	0.007
Articles	.
regular past tense	0.013
regular third person singular	1.000
irregular third person singular	0.506
uncontractible auxillary	0.101
contractible copula	0.355
contractible auxillary	0.787
8-9 years	
present progressive inflection	.
proposition in	.
proposition on	.
regular plural inflection	.
past irregular	.
possessive inflection	0.875
uncontractible copula	0.315
Articles	.
regular past tense	0.387
regular third person singular	.
irregular third person singular	1.000
uncontractible auxillary	0.866
contractible copula	0.861
contractible auxillary	0.355

9-10 years	present progressive inflection	.
	proposition in	.
	proposition on	.
	regular plural inflection	.
	past irregular	.
	possessive inflection	0.036
	uncontractible copula	0.355
	Articles	.
	regular past tense	0.036
	regular third person singular	0.355
	irregular third person singular	0.787
	uncontractible auxillary	.
	contractible copula	0.621
	contractible auxillary	.

7-8years: No significant difference was seen for present progressive inflection, prepositional markers, past irregular, regular plural inflection, possessive inflection, regular third person singular, irregular third person singular, articles, Uncontractible auxiliary, contractible copula. and contractible auxiliary. Significant difference ( $p < 0.05$ ) was detected for Uncontractible copula and regular past tense.

8-9years: No significant difference ( $p > 0.05$ ) was seen for all parameters.

9-10years: No significant difference was spotted for present progressive inflection, prepositional markers, regular plural inflection, past irregular, Uncontractible copula, articles regular third person singular, irregular third person singular, Uncontractible auxiliary, contractible copula and contractible auxiliary. Significant difference ( $p < 0.05$ ) was obtained for possessive inflection, regular past tense.

#### 4. Discussion

##### 4.1. Acquisition of English grammatical morphemes across different tasks for 7-8, 8-9 and 9-10 years

The results revealed the presence of 8, 9 and 7 grammatical morphemes was present in majority of 7-8 year population for general conversation, monologue and picture description. For 8-9 years group 12, 13 and 11 morphemes were used for general conversation, monologue and picture description respectively. By the age of 9-10 years all morphemes get acquired in majority of children the findings can be supported by the study of Guo (2009) that young children use tense and agreement morphemes variably because adult like speech is not learned by the time and use frequent / lexically specific constructions instead. Language input, and overgeneralization of the morphemes is one the explanation for the occurrence of difference across the tasks. Monologue tasks elicited greater



number of morphemes compared to other task as it provides a child with appropriate number of opportunities to produce the morpheme.

4.2. *S Acquisition of English grammatical morphemes within tasks for 7-8, 8-9 and 9-10 years*

In contrast to Brown's (1973) study, contractible copula, possessive inflection, regular past tense, past irregular, irregular third person singular, Uncontractible auxiliary was mastered later when compared to monolingual development. A larger percentage of children mastered these features by the end of 10 years. The difference seen across the age groups can be explained based on the salience and the frequency with which the grammatical structures occur in each language (Bedore, 1999; Bedore & Pena, 2008). Forms that are similar across languages occurs at a higher level of productions. Furthermore the language environment in the classroom may have underscored the importance of communicating in English and hence the use of the structures. Maturation factor and parent child interaction can be factors that influence the difference across age groups.

4.3. *Comparison of the overall acquisition of English morphological structures across the tasks (general conversation, monologue and picture description) and across the group (7-10 years)*

In contrasts to Brown's (1973) study, contractible copula, possessive inflection and regular past tense mastered later when compared to monolingual English speakers also Monologue task elicited more number of morphemes in all the age groups. All the morphemes get mastered only by 10 years of age in Indian trilingual population, which can be explained based on Tomasello (2003) usage based theory. Bedore and Peña (2008) suggested that differences in language-specific morpho-syntactic rules may yield differences in the mastery of specific grammatical structures. This difference may be due to the timing of language exposure for each trilingual child. These findings suggest that bilingual children look to use the knowledge of both of their languages to express syntactic complexity (Tomasello, 2003). It appears that children are basing their knowledge on the frequency and type of input from each language, and because there are differences in the type and frequency of input, differences are observed in children's productions (Tomasello, 2003). These differences may include the use of unexpected or unusual forms within either language when compared to monolingual norms. Such forms include using past progressive constructions instead of regular past tense. The differences in the language production of bilingual children are indicative of their degree of knowledge of each language and are not necessarily indicative of a deviance from typical language development. Bedore and Peña (2008) also suggested that not only will differences in the syntactic features of each language yield differences in morphemes mastered, but may also yield differences in the rate of development of grammatical structures. Variation in productions of each morpheme was noticed in a period of 2 years and the mastery of morphemes overlapped within the population which is similar to the studies done by Brown's (1973). He stated that none of the grammatical morphemes get acquired completely or suddenly rather a period of present and absent obligatory contexts of each

grammatical morpheme were observed. Usage of morphemes is more in the productive domain and the generalizability progress as age improves (Mervis and Johnson, 1991). The study is in accordance of Bland – Stewart and Fitzgerald (2001) which revealed emergent use of Browns (1973) 14 grammatical morpheme, although mastery generally was not seen as those expected for SAE speakers.

### **5. Summary and Conclusion**

Language is a complex and dynamic system of conventional symbols that is used in various modes for thought and communication (ASHA 1982). Recent researchers have focused on language behaviors and their acquisition in children. These provide a basic data for normal language acquisition in different language groups.

A high demand of globalization made individuals to expose to more than one language to be an efficient communicator in the society. Thus bilingualism or multilingualism is common in this scenario. According to the assumption of usage based theory of language acquisition (Tomasello, 2003) children's morphological development is dependable to factors like language input and age. The exploration of English morphological skills in these populations is little and need to be focused to assess how it differs from monolingual English in order to identify potential language disorders as early as possible. Barrot and Leon (2014) investigated the accuracy order of 14 English grammatical morphemes of Filipino preschool pupils and posted a different order compared to Dulay and Burt's (1973) and Brown's (1973) developmental pattern. The current study was carried out with the aim to determine the order of acquisition of English morphological structures produced by 7-10 year old typical Malayalam – English – Hindi trilingual's. Thirty typical children, further divided into 3 groups of 10 each in the age range of 7-7.11, 8-8.11, 9-10 years participated in the study. Participants being native speakers of Malayalam and using English as second and Hindi as third language since kindergarten. General conversation, monologue, and picture description was used to collect speech sample. Based on their responses, the presence or absence of various morphemes was studied across the development tabulated by Brown (1973).

The results revealed that out of 14 grammatical morphemes only present progressive inflection, prepositional markers, regular plural inflection, articles, regular third person singular and contractible auxiliary was used consistently across general conversation, monologue and picture description in 7-8years, while regular past tense, Uncontractible copula, irregular third person singular, past irregular was used along with other morphemes in 8-9 years and all 14 morphemes were present across tasks for 9-10 years, which are in accordance with Bland- Stewart and Fitzgerald (2001). He hypothesized that English morphological structure produced by Bilingual children followed a different developmental pattern when compared to the order of acquisition of typical monolinguals.

### **6. Clinical implications further suggestions**

The obtained data is useful for Speech- Language pathologists to understand typical English second language acquisition and how it differs from



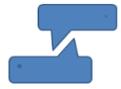
monolinguals in order to assess and effectively identify potential language disorders as early as possible. Also the results can be used to compare with language disordered group.

As further suggestions, the study can be carried out across various Indian languages and in language impaired population. Comparison can be done across gender to find the difference and including various influencing factors. The study can be carried out in a large population. The frequency of occurrence of each morpheme in the given group can be studied. Comparison across monolinguals and bilinguals in acquisition of English morphemes can be studied

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Note to readers:

For the pictures used to collect data, please contact the corresponding author.