

Pause Duration in Typically Developing Malayalam Speaking Children

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Abstract

In communication, the encoded speech should be fluent. Fluency refers to the continuous and smooth flow of speech production (Starkweather and Ackerman, 1997). The present study included 15 subjects, aimed the difference in filled and unfilled pause duration in typically developing Malayalam speaking children across the age group of 6-8years in tasks including conversation and picture description. The study reveals that there is not much variation in the filled pause duration whereas the unfilled pause showed a consistent general progression across the age group for conversation task. In picture description task, there was no significant difference for the filled and unfilled pause duration across the age group.

Keywords: unfilled pauses, filled pauses, Malayalam language.

Introduction

Speech is the vocalized form of human communication. It is a complex, highly skilled motor act, the refinement and stabilization of which continues well into adolescent years (Kent, 1976). It consists of articulation, voice and fluency.

The term *fluency*, derived from the Latin for “fluere”, describes what the listener perceives when listening to someone who is truly adept at producing speech. The speech flow easily and smoothly in terms of both sound and information. Fluency is the ability to talk with the normal levels of continuity, rate and effort. Speech is always without disruptions, which in

turn lead to break in fluency. These breaks in fluency can be normal or pathological. Starkweather (1987) described fluency as “effortless flow of speech”.

Disruptions in the forward flow of speech may consist of:

- Repetitions: Repeating of a syllable, sound, word, or phrase (e.g., “li-li-li-like this”).
- Prolongations: Holding onto a sound for an extended period of time (e.g., “lllllike this”).
- Blocks: No sound is produced then a “burst” of tension is released when the speaker is able to vocalize (e.g., “----like this”).
- Interjections: Extra words (e.g., “um, uh, like”).
- Revisions: Speech is revised during an utterance (e.g., “I have to go...I need to go to the store”).

Pauses in speech delivery and their indicative quality of fluency have attracted considerable attention. The presence, frequency and position of pauses affect the listeners’ impression of fluent performance (Chambers, 1997; Fulcher, 1996). However, not every type of pause in speech contributes equally to an impression of disfluency. So-called natural pauses, which occur during breathing or for stylistic reasons, apparently form necessary breaks in fluent speech (Duez, 1982). Two types of pause include: filled pauses and unfilled pauses.

Filled pauses are hesitation sounds that speakers employ to indicate uncertainty or to maintain control of a conversation while thinking of what to say next. Filled pauses do not add any new information to the conversation (other than to indicate the speaker's hesitation) and they do not alter the meaning of what is uttered.

Silent pauses include intervals of silence within stretches of speech. However, not all silent intervals necessarily count as hesitation phenomena. Many of these silent pauses are simply juncture pauses (e.g., corresponding to, say, commas in writing), or pauses for articulatory reasons.

One very common feature of spontaneous speech is hesitation in the form of pauses that can be one of three types (Dalton and Hardcastle, 1977). The first type is associated with the **Language in India** www.languageinindia.com ISSN 1930-2940 15:6 June 2015
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articulatory closure of stop consonants. These pauses range from 50 msec to 250 msec. Such pauses are ubiquitous and are usually not considered in studies of hesitation phenomena. The second type of pause is associated with respiration and occurs when a speaker pauses in order to breathe. Such pauses are normally silent, though on occasion they are accompanied by "an audible voiceless hissing caused by the generation of turbulent air at various points of stricture in the vocal tract" (Dalton and Hardcastle, 1977). Eisler (1968) in summarizing studies of breath pauses found that their rate and duration are likely related to overall speech performance. The first two pause types are related to articulatory processes. The third type may appear before or after entire speech acts, sentences, clauses, or words, but tends to occur at significant grammatical locations. These may be either silent (or unfilled) pauses or filled (or voiced) pauses (Dalton and Hardcastle, 1977; Leech and Svartvik, 1994).

Rajan (2000) studied the disfluencies in 60 Malayalam speaking children between 3- 8 years of age. The results indicated that disfluencies decreased from 3 years till 6 years. In the age group of 6-7 years there was an increase in the percentage of disfluencies and again decrease from 7-8 years. 3-4 years group had the highest percentage of disfluencies. Unfilled pauses were greatest in frequency; in the age range of 3-4 years and 4-5 years. No phrase repetitions and prolongations were noticed in the age group of 4-5 years. Parenthetical remarks were greatest in the age range of 5-6 years audible inspirations were greatest in the age group of 6-7 years and filled pauses were maximum between 7-8 years.

Kowal, Connel and Sabin (1975) considered unfilled pause as a category of disfluency. They define unfilled pause as any silence less than 270 msec. Studies of situational anxiety by Kasl and Mahl (1965); Krause and Pilisuk (1961); Siegman and Pope (1965) found that introduction of high anxiety topics in interviews results in greater occurrence of non-ah hesitations.

Martin, Haroldson and Kuhl (1972) studied 20 children between the age group 3.5- 5years. They found that the disfluencies like repetitions (sound, syllable, word and phrase), prolongations and interjections are present. Moreover, there was no significant difference in the percentage of disfluencies and number of words omitted between the two speaking situations

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(mother-child, child-child). Thus, the disfluencies of children appear to be less environmental variable.

James (2011) studied on nature of disfluencies in typically developing Malayalam speaking children with the age range of 3-6 years and the results revealed that speech of 3-6 year old normal speaking children contains almost all the disfluency types. High proportions of silent pauses, sound or syllable interjections, whole word interjections and whole word and part word repetitions are the most frequent disfluencies occurred in short story narration, song recitation and general conversation.

Focus of This Study

The present study focuses on pause duration in 6-8 years typically developing Malayalam speaking children. Pause duration in 6-8 years typically developing Malayalam speaking children, a major language of Kerala, has not been studied so far, regardless of its great use for fluency understanding and clinical application. Although there are studies describing early speech disfluencies across the Indian subcontinent (Nagapoornima, Indu and Yamini, 1990; Rajendraswamy, 1991; Sharma, 1991; Joby, 1998; Umarajan, 2000; Paulene and Bhoominathan, 2008), the data provided by them are diversified. Since stuttering and other fluency disorders are observed universally across culture and languages, there is a need to study the developmental trends in fluency in children belonging to culturally and linguistically diverse backgrounds. The present study may provide a tool in future to differentiate between normal non-fluency and developmental stuttering in children.

Starkweather (1987) opines that knowledge of fluency is a must for the understanding of dysfluency. Only by having a clear and sound knowledge of the fluency development in children, can one identify the disfluent / stuttering group. In order to diagnose a child as having stuttering, it is necessary that the clinician is well aware of the kind of disfluencies seen in normal children of the same age group. Thus, the study of fluency becomes very significant.

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Methodology

A total of 15 subjects in the group of 6 years to 8 years typically developing Malayalam speaking children participated in the study. All the subjects were native speakers of Malayalam and had no history of speech, language and / or hearing problems. The task was general conversation and picture description task. Children were tested individually. The procedure was carried out in natural situation and the responses were audio recorded in a quiet room. Subjects were seated comfortably on the chair with one feet distance from the recorder placed on the table. The recorded speech samples were transcribed in International Phonetic Alphabet 4 (IPA IV).

Current study focuses on variation in

- Filled pauses (FP): Pauses filled with „mm...“, „a.“, „eh.“ etc.
- Unfilled pauses (UP): Silent pauses.

Results

The study attempts to understand the variation of pause duration in 6-8 year old typically developing Malayalam speaking children. More specifically it attempts with the specific objectives of:

1. To investigate whether any variation in duration of filled and unfilled pauses across 6-8 years during conversation and picture description.
2. To study the changes in filled and unfilled pause durations within each age group for conversation and picture description.

Conversation Task

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Task: Conversation

		N	Mean	Std. Deviation	95% Confidence Interval for Mean		Kruskal wallis test value	p value
					Lower Bound	Upper Bound		
					Filled	6 yrs		
	7 yrs	5	1.791	.145	1.611	1.972		NS
	8 yrs	5	1.848	.114	1.707	1.990		
	Total	15	1.838	.228	1.711	1.964		
Unfilled	6 yrs	5	1.383	.208	1.125	1.641	12.522	.002
	7 yrs	5	1.832	.156	1.638	2.025		HS
	8 yrs	5	2.457	.269	2.122	2.791		
	Total	15	1.890	.498	1.615	2.166		

Table 1: Showing the duration of filled and unfilled pauses in the age groups for conversation task

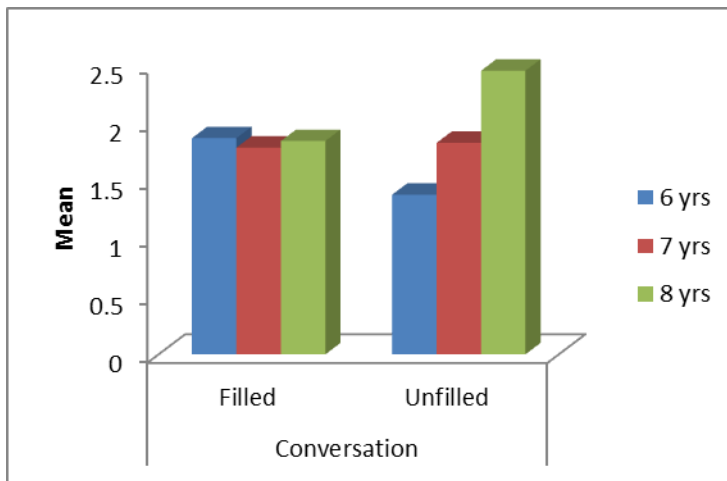


Figure 1: Showing the duration of filled and unfilled pause in each age group for conversation task

From the above table1 and figure 1, it is clearly evident that there is no significant difference ($p= 0.827$) across the age group for filled pause. Whereas, high significant difference ($p= 0.02$) for unfilled pauses was noticed for conversation task.

Picture Description

Task: Picture Description

	N	Mean	Std. Deviation	95% Confidence Interval for Mean		Kruskal wallis test value	p value	
				Lower Bound	Upper Bound			
Filled	6 yrs	5	1.803	.364	1.350	2.255	4.740	.093
	7 yrs	5	1.588	.322	1.188	1.988		
	8 yrs	5	2.077	.270	1.742	2.412		
	Total	15	1.823	.362	1.622	2.023		
Unfilled	6 yrs	5	1.639	.263	1.312	1.966	.620	.733
	7 yrs	5	1.886	.909	.758	3.014		
	8 yrs	5	1.783	.173	1.567	1.998		
	Total	15	1.769	.525	1.479	2.060		

Table 2: Showing the duration of filled and unfilled pauses in the age groups on picture description task.

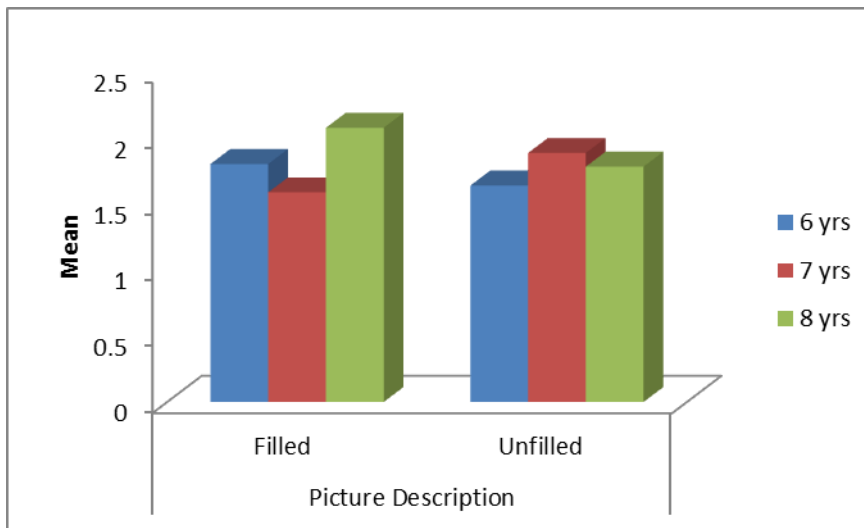


Figure 2: Showing the duration of filled and unfilled pause in each age group on picture description task.

From the above figure 2 and table 2, it is clearly evident that there is no significant difference for filled pause ($p= 0.093$) and unfilled pause ($p= 0.733$) across the age group for picture description task.

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Duration of filled pauses within age group for conversation and picture description task

Task		N	Mean	Std. Deviation	95% Confidence Interval for Mean		Mannwhitney test value	p value
					Lower Bound	Upper Bound		
6 yrs	Conversation	5	1.873	.380	1.402	2.344	.10	.917
	Picture Description	5	1.803	.364	1.350	2.255		NS
7 yrs	Conversation	5	1.791	.145	1.611	1.972	1.36	.175
	Picture Description	5	1.588	.322	1.188	1.988		NS
8 yrs	Conversation	5	1.848	.114	1.707	1.990	1.15	.251
	Picture Description	5	2.077	.270	1.742	2.412		NS

Table 3: Showing the duration of filled pauses within age group for conversation and picture description task.

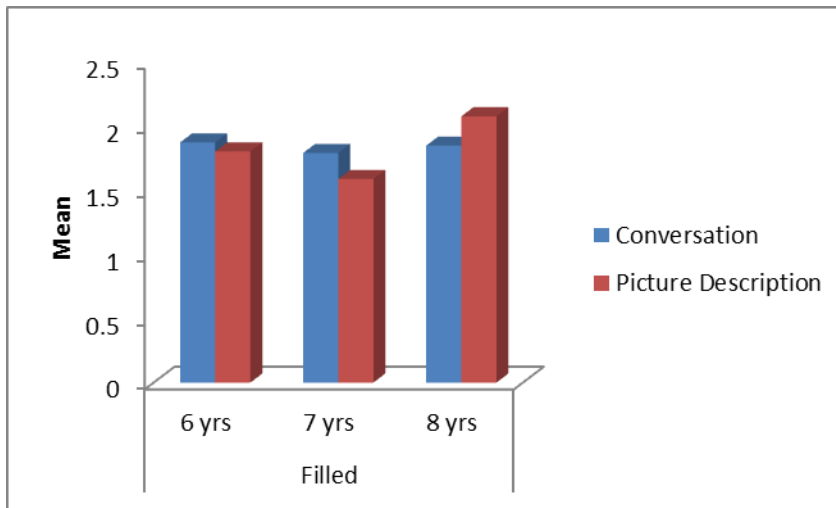


Figure 3: Showing the duration of filled pauses within age group for conversation and picture description task.

From the above figure 3 and table 3, it is clearly showing that there is no significant difference exist within age group [6years ($p=0.917$), 7 years ($p=0.175$) and 8 years ($p=0.251$)] for filled pause in conversation and picture description task.

Duration of unfilled pauses within age group for conversation and picture description task.

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Unfilled		N	Mean	Std. Deviation	95% Confidence Interval for Mean		Mannwhitney test value	p value
Task					Lower Bound	Upper Bound		
6 yrs	Conversation	5	1.383	.208	1.125	1.641	1.36	.175
	Picture Description	5	1.639	.263	1.312	1.966		
7 yrs	Conversation	5	1.832	.156	1.638	2.025	.31	.754
	Picture Description	5	1.886	.909	.758	3.014		
8 yrs	Conversation	5	2.457	.269	2.122	2.791	2.41	.016
	Picture Description	5	1.783	.173	1.567	1.998		

Table 4: Showing the duration of unfilled pauses within age group for conversation and picture description task.

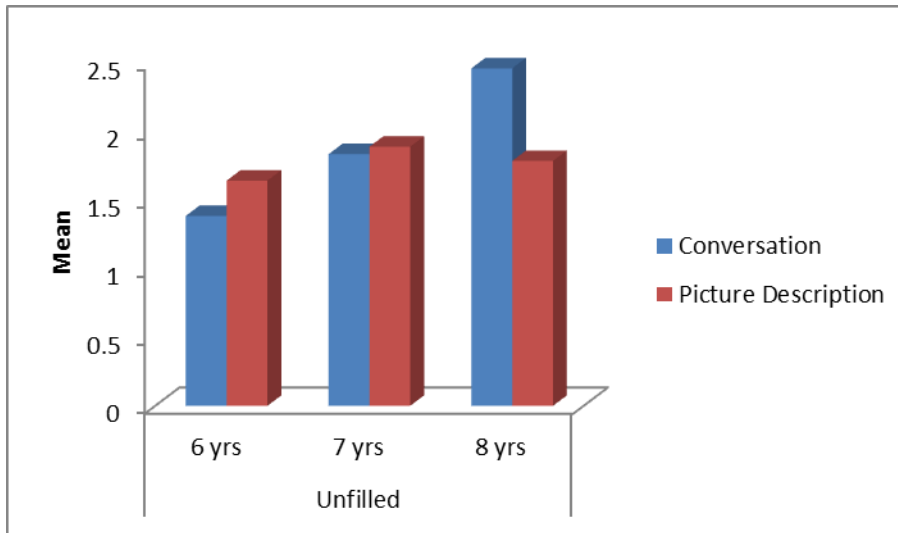


Figure 4: Showing the duration of unfilled pauses within age group for conversation and picture.

From the above figure 4 and table 4, it is clearly evident that there is no significant difference within age group of 6 years ($p= 0.175$) and 7 years ($p= 0.754$) whereas, there is a significant difference was shown at 8 years ($p= 0.016$) for unfilled pause in conversation and picture description task.

Discussion

The purpose of this study was to understand the variation in the duration of pauses in the general conversation and picture description of 6-8 year old typically developing Malayalam speaking children. The present study focused on (1) type of pauses (filled/ unfilled) present in children with the age range of 6-8 years on general & picture description task (2) general progression of pauses through 6-8 year old children.

The study reveals that there is not much variation in the filled pause duration, whereas the unfilled pause showed a consistent general progression across the age group for conversation task.

In picture description task, there was no significant difference for the filled and unfilled pause duration across the age group. This finding is supported in previous study of Indu (1990) & Joby (1998).

For conversation and picture description, there was no significant difference found for filled pause for the age group 6 and 7 year old children and for unfilled pause, there was a significant difference exist at the age group 8years. This finding is an agreement with previous studies by Yamini (1990) and Sharma (1991)

Summary and Conclusion

The present study was taken up with aim of measure pause (filled and unfilled) duration in typically developing children. A total of 15 subjects, 5 in each group were participated in the study. These subjects were native speakers of Malayalam with no history of speech, language, and hearing problems. Picture description and conversation task were included. Speech samples were elicited and recorded. The samples were analyzed for filled and unfilled pauses.

It is observed that the pause duration do not show a linear increase or decrease with age, rather exhibit a varying pattern. In conversation task, as the age increases the duration of unfilled

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pauses also varying or increasing and a slight variation in filled pauses can also see. In picture description task, there is a slight difference in filled and unfilled pauses as age increases.

Comparing within age group at 8 years, there is a difference in the unfilled pause for conversation and picture description task.

The reason for the increase in the pauses may be attributed to them being used during the planning time, required for the production of the content words (Silverman, 1973). The age of 8 are observed more unfilled pauses during conversation task. It may be because of that they tend to repair their speech as they are aware and entering in the social conversation also.

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