

Pattern of Disfluencies in Children of North and South Karnataka

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ABSTRACT

Fluent speech flows in a rhythmic, smooth and effortless manner. Disfluencies are disruptions of fluent speech. It is normal to occasionally repeat a sound or word, pause briefly or interject extra sound or syllables. The present study aimed to compare the occurrence of disfluencies in children belonging to North and South Karnataka. The study comprised of two groups. Group I consisted 60 children from North Karnataka (Dharwad) and Group II consisted 60 children from South Karnataka (Mysuru). Participants were in the age range of 4 to 5 years. Speech samples from both the groups were collected and analysed to identify the disfluencies. The results revealed that, there is a significant difference in the mean percentage of total disfluencies between children of North and South Karnataka. The children of North Karnataka showed significantly more number of disfluencies when compared to children of South Karnataka. The results also revealed no significant difference in occurrence of disfluencies between males and females of both North and South Karnataka. In the present study the mean percentage of occurrence of disfluencies were found to be more in children of North Karnataka when compared to children of South Karnataka. This could be because of their speaking style. Perceptually the speaking rate of people belonging to North Karnataka tends to be faster when compared to people of South Karnataka. Speaking at a faster rate can lead to emergence of more number of disfluencies in the speech.

Keywords: Fluency, Disfluency, Dialect

INTRODUCTION

Fluent speech flows in a rhythmic, smooth and effortless manner and is determined by variables such as time span of individual sounds and syllables, time span of sounds and syllables in relation to neighbouring sounds and syllables, time span of pauses, presence of stress variance and degree of co-articulation. In other words it is the effortless production of long, continuous utterances at a rapid rate. The ability to speak fluently increases as the age increases. ^[1] Disfluencies are disruptions of fluent speech. Every speakers experience moments of disfluency. It is normal to occasionally repeat a sound or word, pause briefly or interject extra sound or syllables.

^[2] In early childhood, learning to speak needs the loading of the mental lexicon, the consolidation of articulatory movements, and the acquisition of grammatical, phonological, as well as pragmatic regularities of the given language. Two to three-year-old children commit seven times as many errors in their speech than adults do. ^[3]

In the past years, speech disfluencies of normal fluent young children have been investigated by other researchers. The findings of these studies helped the speech language pathologist in finer comprehension of expected behaviors of speech in young children ^[4-6] Fluency characteristics of 36 no stuttering males aged 2,4, and 6 years were

investigated in terms of patterns of disfluency and relationships among disfluency variables.^[7] The most frequently observed disfluency types at each age level were revision-incomplete phrase and interjections; the least noted type was part-word repetitions for two and four year old children and for six year old children, it was disrhythmic phonations. They also reported that the patterns of disfluency appear to be similar at all age levels, except for children belonged to 2 yr-old. This age group children exhibited greater magnitudes in various disfluency types.

The disfluent speech of 32 normally fluent monolingual, Spanish-speaking children from Puerto Rico was investigated. The results revealed no main effects for age or gender as well as no interactions. Moreover, no differences were observed between the age groups in most of the disfluency types, including the rank orders of the types. Revisions, interjections, and single-syllable word repetitions were the most frequently observed speech disfluencies for both age groups. Broken words, blocks, and repetitions of more than one syllable were the least frequent.^[8]

In the Indian context, Disfluencies in the speech of 12 children speaking Kannada within the age of 6-7 years was investigated using story narration.^[9] The results indicated were more number of disfluencies in males and the percentage of disfluencies increased from 6 to 6.4 years and then declined. Filled pauses, prolongations, false starts and repetitions were the disfluencies which occurred maximally.^[10] The evaluated disfluencies in the speech of 12 children speaking Kannada within the age of 5-6 years. The samples analysed for disfluencies were picture description, story narration and conversation. She reported unfilled pauses, filled pauses, parenthetical remarks and audible inspiration were the most frequently seen disfluencies and prolongation, part-question repetitions, repeats and false starts occurred rarely.

A similar study was carried out by.^[11] She analysed disfluencies in the speech

of 12 children speaking Kannada within the age of 4-5 years. Conversation, rhymes, picture description and story narration were the samples used for the analyses. The results indicated more disfluencies on nouns and in the initial position. The commonly observed disfluencies were filled pauses, repetitions and parenthetical remarks. Although extensive researches had been carried out to estimate the percentage of disfluencies in Kannada speaking children in various age groups^[9-11] no studies have focused to compare any differences in occurrence of percentage of disfluencies with respect to children speaking the Kannada language in various geographical locations. Since stuttering is a disorder of fluency which can be observed across languages and cultures^[12-16] it is essential to understand disfluencies in the speech of young children with diverse cultural and linguistic background. In the present study an attempt has been made to compare the occurrence of disfluencies in children from North (Dharwad) and south (Mysuru) part of Karnataka. The study also aimed to compare the rate of speech of children from these regions.

Aim

To compare the occurrence of disfluencies in children belonging to North and South Karnataka

METHOD

Subjects: Two groups of children in the age range of 4 to 5 years were participated in the study. Group one consisted of 60 children (M=30, F=30). These subjects were selected from northern part of Karnataka (Dharwad). Group two consisted of 60 children (M=30, F=30). They were selected from southern part of Karnataka (Mysuru). All the subjects were attending normal school. All of them were having normal speech, language and hearing abilities. None of the subjects had any other medical related issues.

Materials: Picture cards depicting the story of 'Thirsty crow' were used to elicit the speech sample.

Procedure: Each child was seated comfortably on a chair in a distraction free quiet environment. Picture cards were in front of the child on a table. The experimenter explained the story in the picture card to each of the subject. After that each child was instructed to repeat back the story to the experimenter. The elicited speech samples were recorded using a Sony digital recorder, which was placed approximately 6 inches away from the subject mouth.

Data Analysis: The recorded samples were carefully analysed by the experimenter for finding the percentage of each type of disfluencies, percentage of total disfluencies and rate of speech.

Estimation of percentage of each type of disfluencies: This was calculated by dividing each type of disfluency to total number of disfluencies and multiplied by 100. Likewise investigators calculated the percentage of disfluencies of each type.

Percentage of total disfluencies: This was calculated by dividing the total number of disfluencies to total number of syllables uttered by the subject and multiplied by 100. Likewise all the recorded samples were analysed and compared the disfluencies and rate of speech between children belonging to North and south part of Karnataka using appropriate statistical methods.

RESULTS AND DISCUSSION

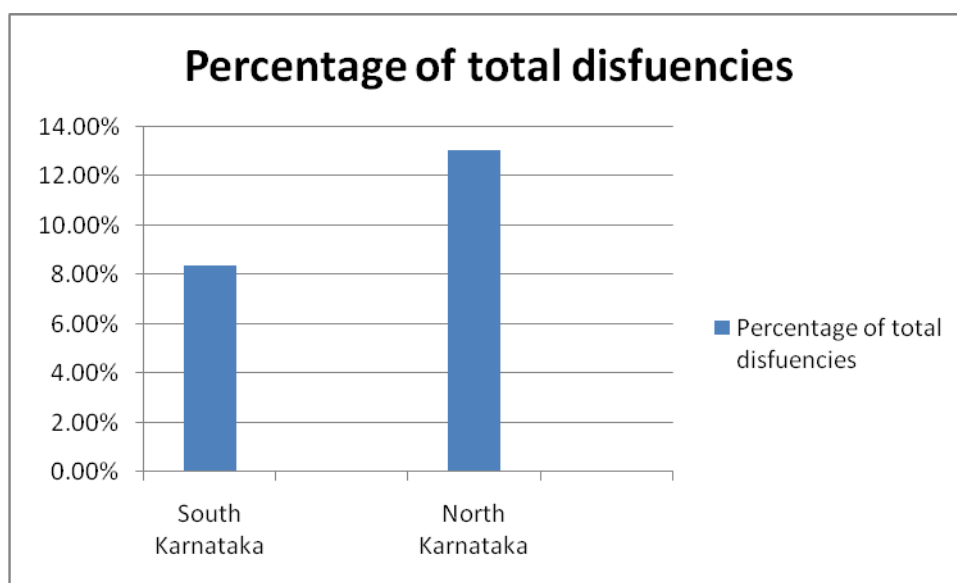
Descriptive statistics of percentage of frequency of each type of disfluencies, total disfluencies and rate of speech were computed for both children of North Karnataka and South Karnataka. Syllable repetition, part word repetition, whole word repetition, prolongation, audible pause, inaudible pause, revisions and parenthetical remarks were seen in the speech sample of children in both the regions. Following

Table shows the mean percentage of the disfluencies in North and South Karnataka

Table 1: Mean percentage of the disfluencies in North and South Karnataka

Type of Disfluency	North Karnataka	South Karnataka
Syllable Repetition	2.85%	.23%
Part word repetition	5.16%	7.43 %
Whole word repetition	2.76%	13.7%
Prolongation	36.57%	19.50%
Audible pause	14.52%	15.68%
Inaudible pause	22.18%	30.4%
Revision	11.46%	9.32%
Parenthetical remarks	2.56%	2.58%

The results indicated differences in the mean percentage of disfluencies among children of North and South Karnataka i.e. 30.48%. The most predominantly seen disfluency was unfilled pauses in children of both South and North Karnataka (SD=28.96) and 22.18% (SD=20.17) respectively. Other commonly seen disfluencies were prolongation, audible pause and revisions in children of both regions. The whole word repetition was found to be more in children of South Karnataka (Mean= 13.70%, SD=19.60) when compared to children of North Karnataka (Mean=2.76%, SD=5.57). Disfluencies such as part word repetition, revisions and parenthetical remarks were found to be less in children of both North and South Karnataka. Occurrence of false starts was observed in the speech sample of children of North Karnataka (Mean=.84%, SD=4.55). However the mean percentage of total disfluencies in speech sample of children in North Karnataka was found to be more when compared to children of South Karnataka i.e. the mean percentage of total disfluencies was 13.04% (SD=6.11) for children of North Karnataka and 8.39% (SD=5.20) was obtained for children of South Karnataka. Graph 1 depicts the mean percentage of total disfluencies in children of North Karnataka and South Karnataka.



Graph 1: Mean percentage of total disfluencies in children of North Karnataka and South Karnataka.

To compare the mean percentage scores of disfluencies between children of North and South Karnataka, MANOVA was carried out. The results revealed that, there is a significant difference in the mean percentage of total disfluencies between children of North and South Karnataka [$F_{(1,118)} = 20.179, P=0.00$]. The children of North Karnataka showed significantly more number of disfluencies when compared to children of South Karnataka. There were also significant differences among type of disfluencies between children of North and South Karnataka. Percentage of occurrence whole word repetition [$F_{(1,118)}=39.194, P=0.00$], syllable repetition [$F_{(1,118)}=5.10, P=0.026$], prolongation [$F_{(1,118)}=146.34, P=0.00$] and unfilled pauses [$F_{(1,118)}=133.58, P=0.00$] were found to be more in children of South Karnataka. The results also revealed no significant difference in occurrence of disfluencies between males and females of both North and South Karnataka. Earlier studies also reported that the difference in the total number of speech disfluencies noticed between genders was not statistically significant. [17-22] In the present study, syllable repetition was observed to be less when compared to other disfluencies. The findings are in harmony with those procured by [10] reported that 5-6 year old children had less syllable repetitions.

CONCLUSIONS

Understanding disfluencies in the speech of young children in culturally and linguistically diverse backgrounds is essential. In the present study the mean percentage of occurrence of disfluencies were found to be more in children of North Karnataka when compared to children of South Karnataka. This could be because of their speaking style. Perceptually the speaking rate of people belonging to North Karnataka tends to be faster when compared to people of South Karnataka. Speaking at a faster rate can lead to emergence of more number of disfluencies in the speech.

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