

# Normal Disfluency in Pre-schoolers: Silences, Pauses, and Repetitions<sup>1</sup>

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## Abstract

Delving into the amazing and confounding language of four-, five-, or six-year olds, who dexterously and quite diligently use language for a myriad of purposes has always been intriguing to the pundits of first language acquisition. This scrutiny was an attempt to unravel some features germane to the normal disfluency in the preschoolers' language. Normal disfluency is justifiably deemed to occur during periods of accelerated speech development (Guitar, 2013) and, unlike stuttering- a pathological condition-is a temporary condition. Over the years, researchers have investigated speech disfluencies of normally fluent young children in order to better understand the expected speech behaviors of young children but they have mainly focused on disfluencies of speech of English speaking children from Anglo-European, African-American, Hispanic, and Spanish cultures. Literature review proved there is not enough information regarding normal disfluency in Farsi speaking children. Therefore, the aim of this study was to describe the speech disfluencies in Farsi speaking Iranian preschoolers. The study was conducted in a kindergarten in Tehran in which from each age group 6 kids (3 boys and 3 girls) were ran-

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domly selected. Samples of their speech were recorded, carefully transcribed, and analyzed. A comparison was made among the three age groups as far as the in-mind categories were concerned (spontaneous speech, description, explanation, interpretation, and narration). Furthermore, in each category, the nature of the disfluency (repetition, silence, or filler) and the purpose behind its application (planning, reformulation, or replacement) was identified.

**Keywords:** fluency, disfluency, L1, preschoolers, repetitions.

## Introduction

A quick glance at the pertinent review of literature reveals that there exists a whole raft of studies on the fascinating and bewildering speech and language development of the preschool children. Some of these works, in essence, focus on structural descriptions of the child's growing grammatical competence (Chomsky, 1969; Menyuk, 1967, 1969); on the contrary, there seems to be studies which essentially underline the ways through which children use the burgeoning and escalating competence in social settings (Glucksberg & Krauss, 1971; Williams & Mattson, 1967). However, there is a general consensus on the point that preschoolers are, without a shadow of a doubt, confident users of language. Indeed, as children enter kindergarten and start formal schooling at around the age of three, their communication skills ostensibly blossom in a number of aspects. Although children at this stage still might not pronounce some sounds correctly and somehow struggle with a few tricky sounds, they can communicate clearly on the whole.

Over the years, researchers have investigated speech disfluencies of normally fluent young children. These studies have been successful in better understanding the expected speech behaviors of young children (Carlo & Watson, 2003; Ram & Savithri, 2007). It is known that speech and language abilities develop with age and that stuttering for many children begins during the time of rapid language growth between 2.5 and 5 years of age (e.g., Bloodstein & Bernstein Ratner, 2008 as cited in Tumanova, Conture, Lambert & Walden, 2014).

As far as listening is concerned, children have long become attentive listeners as a corollary of tremendous development in auditory memory skills. Likewise, their receptive language skills have witnessed drastic improvement. Interestingly, they can understand far more than they can express, having a vocabulary range of approximately 5000-20000 words (Ingram, 1989; Kuhl, Conboy, Padden, Nelson, & Pruitt, 2005). What is more to this incredible comprehension is the ability to understand jokes and riddles. Due to noticeable pragmatic skills, they can well understand, as an illustration, the discrepancies between being asked and being told to do something. Decidedly, complex and compound sentences comprising of 8 or even more words are an integral part of their speech. In addition, another striking feature is the inclusion of past,

present and future tenses, while describing events (Clark, 2009; Hoff, 2009; & Kuhl et al., 2005).

Using the cognitive skills, they have successfully and quite rapidly achieved for the comprehension of concepts, pre-school children manage to sequence and name things without difficulty (e.g. days of the week), can identify colors and shapes, begin to categorize objects, and use their imagination to create detailed stories and role plays as well. Furthermore, they have certainly developed effective social communication skills, with the assistance of which, they can engage in conversation with both peers and adults (Kidd & Arciuli, 2016; Kuhl, 2011). In this regard, these achievers are able to read even facial expressions, and, accordingly, act upon them. However, these little ones, during the attempt to dexterously develop language, have also inevitable disfluencies, which are, of course, essentially considered normal by the experts of the field. These disfluencies reflect the awareness they develop towards language and also the cognitive and linguistic processes children go through, in the encounter with the tough and somehow stressful period of language acquisition. For another thing, researchers are of the opinion that as the child's vocabulary boosts at a rapid rate, the child's brain seemingly accelerates too fast for the mouth. This, in turn, causes disfluency (Howell, 2007).

It is worth mentioning that although disfluencies normally occur in the process of language development by children, their frequencies can noticeably increase while children are tired, emotional, upset or excited and even when they try to hastily utter their intention.

Since some researchers such as Wexler and Mysak (1982) view the establishment of "normal expectations of disfluency" for different preschool age groups as theoretically and diagnostically important (Tomanova, et al., 2014), more research is needed to specify the number, type and duration of speech disfluencies that occur in the speech of children between 4 to 6 years, more so in the Iranian context.

Studies carried out in the past do not make clear what the central tendencies and variability of speech disfluencies are for 2 - 6-year-old Iranians. Without this information it is hard to assess the extent to which a child suspected or known to have disfluency deviates from his or her age norms or how closely an individual normally fluent child approximates them.

Among the numerous marked features of the pre-school children's language associated with speech and language development, the significance of the present study is to identify the nature of the disfluency (repetition, silence, or filler) and the purpose behind its application (planning, reformulation, or replacement) in different in-mind categories concerned (i.e. spontaneous speech, description, explanation, interpretation, and narration). Therefore, addressing the important issue of comparison of disfluency among 4 to 6-year-old preschoolers including forms, purposes/reasons and frequencies is the main concern of this study. Admittedly, this stuttering for the sake of coherence and fluency is fundamentally different from true stuttering of those having articulatory

ry and pathological problems. Furthermore, it is plausible to pinpoint that normal disfluency is self-corrected, relieved, and, later on, fades out completely as the child grows up (Harrison, 2011). Irrespective of the type and the function of the disfluency, the fact is that children are quite skillful at utilizing language in the best way possible. However, the appealing, gripping and yet aspects of this kind of fluency-saving disfluency on the children's part justifiably requires relevant investigations. Therefore, it is important to note that because of the paucity of data related to Persian monolingual preschool age children, the results could shed light on the importance of much needed normative data specific to Persian language.

## Review of the Related Literature

### Fluency and Disfluency

Fluency comes from the Latin word “fluentem”, meaning to flow. Although, seemingly, everyone understands the word fluent and has a clear concept of what fluent speech means, in practice, giving an accurate definition for “fluency” is not an easy task (Freed, 2000). Among the whole raft of existing definitions, there exist terms such as “articulate”, “hesitation free”, “fast rate of speech”, and “smooth performance” (Tavakoli, 2011, p. 72). According to Fillmore (1979, p. 51), fluency is “the ability to fill time with talk”. In Lennon's judgment (2000, p. 25), fluency is “the speed and smoothness of oral delivery”. Yet another definition stated is “smooth and easy flow with regard to speech” (Guillot, 1999, p. 13). Technically, fluency is the effortless production of long, continuous utterances at a rapid rate (Ram & Savithri, 2007).

On the other hand, any disruption to the normal and fluent speech results in speech disfluency. Disfluency or non fluency has been described as disruptions to the timing and flow of non stuttered speech such as interjections and phrase repetitions that are often perceived as being part of the normal interruptions of speech (Ram & Savithri, 2007). In general, breaks, pauses, different forms of irregularities, and also non-lexical vocables during the flow of speech are all considered speech disfluency. By the same account, false starts, restarted or repeated phrases or syllables, various pause fillers as well as repaired utterances are all instances of breaks causing speech disfluency. However, it is plausible to claim that among a myriad of existing disfluencies in normal speech, fillers and silences are the most recognizable and frequent ones (Fraundorf & Watson, 2011).

As far as the pause fillers are concerned, it is strongly deemed that, regardless of the pathological conditions, they are usually communicated well. As an illustration, “uh” and “um” in English reveal speaker's awareness or even emotional state (Rose, 2017). Likewise, they are, sometimes, used for the planning of the upcoming utterances. Some linguists provide reference perhaps justifiably that pause fillers of this kind are well understood as function words rather than meaningless accidents! Although different languages possess different

fillers (while Americans use “um” or “em”, the British use “uh” or “eh” and the French say “euh”), their existence in all languages is an absolute fact, meaning that disfluencies are an integral part of human speech (Belz, Sauer, Lüdeling & Mooshammer 2017; Rose, 2017). For example, researchers believe that “huh” is a universal syllable/word recognized clearly throughout the world (Dingemanse, Torreira & Enfield, 2013). There is a general consensus that “fluent speech is not perfect speech” (Culatta & Leeper 1990, p. 1), while speaking, all speakers constantly have pauses, reformulate and edit during the flow of speech. In the abstract, disfluencies are an inseparable part of what we call normal speech.

In addition to fillers, already mentioned, silences or silent pauses are factors causing disfluency. Once researchers concluded that the duration and frequency of silent pauses differed in a systematic way, based on certain linguistic and cognitive factors (Redford, 2013), the scrutiny and investigation of this area became a concern for psycholinguistics. Today, psycholinguists are of the opinion that pause time, indeed, mirrors general cognitive processing. Goldman-Eisler (1968), for instance, discovered that difficulty of the task leads to the surge of pause time. They argue that the intent and purpose is, for example, interpretation, in comparison with mere description speech, encompasses less predictable lexical choice, more silences, and a more complex syntax (Goldman-Eisler, 1968). Another investigation of the same nature, underlying pauses as indicators of cognitive processing, probed silences within stretches of spontaneous speech (Henderson, Goldman-Eisler & Skarbek, 1966). The corollaries denoted that during periods of higher pause time, compared with periods of less pause time, ostensibly, speakers were engaged in more cognitive processing (Redford, 2013). What is more, apparently, conceptual and semantic factors are more pertinent to the higher pause time (Butterworth & Goldman-Eisler, 1979).

In parallel investigations, another group of researchers adopted a different view. They attempted to, instead of focusing on the potential associations between silences and general cognitive processing, systematically scrutinize the relationships between silences and the pertinent linguistic structure (Ferreira, 1988; Cooper & Paccia-Cooper, 1980; Selkirk, 1984 as cited in Maloney, Payne & Redford, 2012; Wagner, 2005; & Watson & Gibson, 2004). Like the others, this group also admitted that silent pauses indicated the time needed to plan future utterances; nevertheless, they asserted that silent pauses were affected, to some extent, by the preceding linguistic structure of the utterance. These researchers basically considered “final lengthening and pausing as reflective of the existence of higher order linguistic structures or units.” (Maloney, Payne & Redford, 2012, p. 1).

## **Reasons for Fluency Failures**

To sum up, there are five essential reasons for fluency failure according to Culatta & Leeper (1990) which have been summarized in Table 1, below:

**Table 1.**

Types of fluency failure (Culatta &amp; Leeper, 1990, p. 59)

<b>Normal Disfluencies</b>	<b>Abnormal Disfluencies</b>
<b>Developmental</b>	<b>Stuttering</b>
	<b>Neurogenic Dysfunction</b>
	<b>a. motor speech disfluencies</b>
	<b>b. neurolinguistic disfluencies</b>
	<b>c. chemical reaction disfluencies</b>
	<b>Psychogenic</b>
	<b>a. emotionally based disfluency</b>
	<b>b. manipulative disfluency</b>
	<b>c. malingering</b>
	<b>Language Delay</b>

Based on the explanations given for disfluency in Table 1, all disfluencies are not necessarily abnormal. Accordingly, there is one type of disfluency which is the corollary of a normal developmental process. This is, indeed, the inevitable consequence of a child's experiencing the language acquisition process; a trajectory which should be trodden by almost all normal children, while language learning is being developed (Culatta & Leeper, 1990).

## **Normal Disfluency in Children**

Unlike stuttering and other pathological conditions, related to speech, normal disfluency in children, which occurs during periods of accelerated speech development is a temporary condition (Guitar, 2013, pp. 115-116). Unlike true stutterers who tend to insert dysrhythmic and prolonged sounds in their speech and often repeat certain words several times before uttering what they have in mind, normal children who are challenging the tough stage of developing language might also have disfluent speech. Normal fluency is not similar to stuttering accompanied with physical symptoms such as eye-blinking or apparent frustration. For another thing, normal disfluency, as a transitional stage, is mainly characterized by repeating words and phrases once or twice (not several times), reformulation or editing of uttered phrases, replacement of certain words, and insertion of fillers such as "uh" or "um" for planning purposes. It is also believed that although normal disfluency might come and go, each emergence does not last more than six months (Guitar & Conture, 2006).

While attempting hard to acquire language, between the ages of 1.5 – 7 years (some say between 1.5 – 4.5 years), disfluency, as a normal part of language development, emerges in children's speech. To be more precise, in this regard, children between 18 months and 3 years of age tend to repeat sounds, syllables, and words. This most often happens at the outset of sentences. Later on, after the age of 3, more than sounds and syllables, whole words and phrases are repeated by children with normal disfluencies (Guitar & Conture, 2006). In addition to the repetitions mentioned, pause fillers are included, as well. Regarding silences, research indicates that children within the age range of 5 – 8 have the largest developmental difference in pausing (Redford, 2013).

What seems to be worth mentioning is the fact that although disfluencies normally occur in the process of language development by children, their frequencies can noticeably increase while children are tired, emotional, upset or excited and even when they try to hastily utter their intention. Similarly, it is observable that when children are being asked questions the answers to which require thinking on their part as well as follow-up explanations, in comparison with occasions when they are simply asked to describe something, or even when they are aware that their audiences are attentively listening to them and perhaps, they are being judged, ostensibly, disfluencies soar drastically.

There exists a controversy regarding disfluency and that is the gender effect. Several studies have shown that there have been no statistically significant differences in the total number of speech disfluencies or in most disfluency types exhibited by English speaking boys and girls (Kools & Berryman, 1971; Haynes & Hood, 1977; Yairi, 1981, 1982; Yairi & Lewis, 1984; & Ambrose & Yairi, 1999); and Spanish speaking children (Carlo & Watson, 2003). However, other studies have shown that there exist significant sex differences (Haynes & Hood, 1977; DeJoy & Gregory, 1985; Ambrose & Yairi, 1999; & Ram & Savithri, 2007).

Searching the literature, much less is seen on how Iranian preschoolers produce disfluencies in their utterances in a natural setting when speaking Persian. What types of disfluencies are produced by preschoolers (aged 4 – 6 years) in a kindergarten setting when children are unaware or unconcerned of their actions when asked questions? Many studies on disfluency of Iranian children so far, have focused on lexical and/or syntactic complexity, to name a few Haresabadi, Pooladi, Bakhtiari and Kamali (2010) investigated the effect of syntactic complexity on the amount of speech disfluency in stuttering Persian-speaking children, compared them with the non-stuttering ones and found that in both groups there was a significant difference for the amount of disfluency between simple and complex sentences. Kalashi (2004) studied the effect of syntactic complexity and length of utterance on speech disfluency of children with stuttering and normal children aged 6 – 12 years in the city of Tehran. She reported a positive correlation between increasing length and complexity of utterance with increasing speech disfluency. This is while Vahab, Zandian, Falahi and Howell (2013), investigated lexical category influences in Persian children who stutter. Their study aimed at finding whether Persian speaking school-aged children who stutter were more disfluent on content words, function words or content-function words. They reported high rates of stuttering on content words in young participants and reasoned it might be a reflection of the complex nature of content words in Persian. In another study, Mehrpour and Meihami (2017) examined repetition types produced by the children who stutter and those who do not, observing for differences in word classes, including content and function words.

Another matter worth investigation is what conditions may influence disfluencies, and is there any pattern in there? Does time of the day, hunger, tiredness, excitement, etc. influence or enhance disfluencies? The reason is that there is a claim in that there is an increase in disfluencies in children, when

tired, excited, upset or being rushed to speak (Guitar & Conture, 2006; Tumanova, et al., 2014). Can this be true for Iranian preschoolers acting or talking in a spontaneous and natural speech setting or predetermined question asking situations?

In order to scrutinize and account for the purpose of the present study, the following research questions were proposed:

1. Does the possible fluency-saving stuttering of pre-school children depend on the nature of the task, the question being asked, and the expected answer?
2. Do these stutters occur more within sentences or between sentences?
3. Do these stops belong to specific parts of speech such as verbs or subjects or certain categories such as transitional words between sentences?
4. Considering the aforementioned questions, are there any significant differences among the three age groups (4, 5 and 6-year-olds) in this study?

## Method

### Participants and the Research Setting

This study was conducted in a bilingual kindergarten, located in the Western North of Tehran, in an area called “Saadat Abad”. To illustrate the warranted background of kids under investigation in this study, it is fairly reasonable to pinpoint that due to the fact that this kindergarten is utterly a private center, and it provides children with a whole raft of courses and facilities, which are only found in good and private kindergartens of the city, parents need to pay high fees on a monthly basis, meaning that, as far as the financial situation of the probed families are concerned, most are relatively affluent. By the same token, a brief survey indicates that most parents are quite educated, belonging to the elite class of the society. In this kindergarten, four-, five-, and six-year-olds attend different classes. There are about 10 to 15 children accompanied by a teacher and an assistant in each class. For the purpose of this study, from each class 6 kids (3 boys and 3 girls) were randomly selected, meaning that there were, overall, 18 children under study in this research.

### Data Collection and Procedures

As a corollary of the fact that the researcher’s own kid had been studying in the same kindergarten for approximately three years, during the investigation, the researcher had never been looked at and taken into consideration as an uninvited and unknown intruder or observer from the authorities’ and kids’ perspectives. On the contrary, the researcher had already been a familiar figure for all, including the teachers. This decidedly maximized the much needed cooperation of the staff of the kindergarten to the extent possible, providing a very amicable, relaxed, and secure setting for the study (to avoid any kind of potential bias, the class of the researcher’s son was not included in the study). Neverthe-



less, the researcher spent adequate time in the research setting, prior to the actual observation and recording.

The researcher's initial, active, and purposeful presence in the kindergarten commenced with playing and spending quality time with these kids, mainly in the playground and, occasionally, in their class, pretending that she was doing her own business and had nothing to do with them. However, gradually, this subliminal and not-in-the-picture role turned to an involved one, making the researcher a member of the group. Moreover, buying small gifts and giving stickers was never forgotten by the researcher, wishing to build a strong and friendly bond with the children accordingly.

Short and occasional recordings and the pertinent transcriptions started long before the main recordings in mind for the purpose of the scrutiny. The justification behind this decision was twofold. For one thing, these brief recordings made the children accustomed with the upcoming intended and more prolonged recordings. On the other hand, this beginning was certainly beneficial for the researcher on the ground that unpredicted issues affecting the procedure could be unveiled. What is more, using these introductory recordings tremendously assisted the researcher to finalize and, likewise, narrow down the questions which could have ended in the best possible responses on the children's parts for the purpose of the research. Therefore, the attained initial recordings were regarded as the pilot study for the main investigation, for the sake of the future trajectory or the actual phase of the study.

All recordings were done by the researcher's personal cell phone and tablet which were almost always handy and were considered by the kids as her belongings and not the instruments intended for a kind of research or inspection. Even sometimes, the researcher let them play with her cell phone or tablet and showed the kids pictures, cartoons, and similar stuff. About two months after the first on-the-purpose presence, when the decision was on the basis that almost everything had already been anticipated and the researcher, children, as well as the teachers in the classes were quite ready, the main phase with predetermined categories and questions in mind started. To collect the needed data, the researcher spent adequate time in the setting, carefully and meticulously observing children, listening to them, and recording their speech.

The actual recordings were done during one week. Every day, the researcher was present at the setting at 8:00 a.m. and left the place at around 3:00 p.m. However, in the researcher's judgment, most useful data was recorded from 9:30 a.m. to 11:30 a.m., since kids were often fresh and whole-heartedly active and participating during the mentioned time-span. Most of these kids had both of their parents working: thus, they had to start their day at the kindergarten really early at about 7:30 – 8:00 a.m., when they were still sleepy and not ready enough for the daily activities. Similarly, at noon, most were hungry and quite reluctant to have active participation in the class. The routine schedule was usually finished at 1:00 p.m. For the rest of the day up to 3:30 p.m., they were free to do what they wanted to do. This free-time was often spent in the play-

ground. There were also those who, out of habit, had a siesta or took a nap, then.

In order to collect samples of kids’ spontaneous and natural speech, the researcher was, to the extent possible, silent, and not intervening. This was to simply record their natural conversations with each other as well as their teachers in the classroom. Moreover, half way through the day, when kids had seemingly accepted the presence of the researcher, gradually the predetermined questions were asked. In Table 2 below, the nature of the collected speech from these kids are summarized.

**Table2.**  
The collected data

Nature of the collected speech	
<b>Spontaneous speech</b>	Their natural conversations and interactions, while playing, painting, studying, and doing different regular things in the classroom, with peers and their teachers
<b>Description</b>	Questions like: Can you describe your classroom? Can you describe the 4-, 5-, or 6-year-olds’ class? Can you describe your room? What does your teacher look like? What does your mommy look like?
<b>Explanation</b>	Basically why questions: Why do your parents work? Why do you want to be a teacher, doctor, nurse... in the future?
<b>Interpretation</b>	What happens if...? What does it mean...? What if...? What do you understand from...?
<b>Narration</b>	Story telling

Consequently, all the collected and recorded data were transcribed. Moreover, the instances of speech disfluency, including silences, breaks, repetitions and pause fillers of different kinds were identified. As a result, a numerical comparison was made among four-, five-, and six-year-old children, as far as the above mentioned categories are concerned (spontaneous speech, description, explanation, interpretation, and narration). Furthermore, in each category, the nature of the disfluency (repetition, silence, or filler) and the purpose behind its application (planning, reformulation, or replacement) was identified as well.

## Results

Regarding spontaneous speech in the routine and daily natural settings (i.e. when the utterance is not planned but the setting is quite predictable), analysis of the transcribed conversations with the children revealed that while playing, painting and doing regular classroom tasks, and interacting with their peers and teachers, 4-, 5-, and 6-year-old children had gained enough mastery to be

able to run a fluent flow of conversation with the least possible number of silences, repetitions, and fillers. These included amazing range of vocabulary as well as complex structures in their speech. On average, signs of disfluency were identifiable only once in every 10 sentences. In this comparison, the highest degree of fluency belonged to 5-year-olds with an average a sign of disfluency only once in every 12 sentences. Six-year-olds and four-year-olds had, on average, one instance of disfluency in every 10 and 8 sentences, respectively. The fact that the six-year-old children were ostensibly less fluent than the five-year-old group was perhaps due to the fact that they were, indeed, attending the prerequisite course, which all Iranian children at six should do before entering the primary school at seven; therefore, they had constantly been introduced to correct use of language (L1) by their teachers. This, in turn, had apparently led to their full awareness and consciousness towards language. In other words, their disfluency can be well interpreted as signs of rapid speech development. What is more, most disfluencies were either **silences** for **replacement and planning**, or **fillers** for increasing the quality of speech, getting attention or emphasizing the importance of their utterance or what they had in mind and were trying dexterously to convey in words (**reformulating**). Interestingly, the instances of **repetition**, however, in this regard, were nominal and not noticeable. Six-year-olds were tangibly the busiest kids, self-correcting and generalizing things they knew about language.

The striking features of the **description** category were demonstration and constant movement on the children's part. This was even more evident while they were being asked to describe another setting than where they were (for example, in another class, or in their room at home). In all three groups, frequent uses of deictics (here and there) were considerably prevalent, especially while describing a place. Furthermore, it was crystal clear that in the search for a perfect description which misses almost nothing and includes all the required details, while describing, they were, in comparison with other categories, more emotional and excited. This, of course, led to a myriad of disfluencies, comprising **silences, repetitions and fillers for planning, reformulation, and replacement**. The frequent fillers such as "let me think"<sup>1</sup>, "wait a minute"<sup>2</sup>, "I'll say it myself"<sup>3</sup>, and "look"<sup>4</sup> are only some of the fillers verifying the fact that they were attempting hard to have error-free and impeccable descriptions. The most frequent pause filler was the word "then". This pause filler is a very good example of the **planning** strategy, denoting that they were actively involved in a conscious effort to deliver the best plot possible.

As for the **explanation**, at the beginning, children seemed to be highly in control of the flow of the conversation and the warranted explanations. Similarly, they were fairly still and relaxed; however, with the intentional increase on the difficulty level of the questions, silences and pause fillers for **planning** and

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<sup>1</sup> "بذار فک کنم"

<sup>2</sup> "یه دقیقه صبر کن"

<sup>3</sup> "خودم میگم"

<sup>4</sup> "بین"

reflection drastically surged up. Likewise, gradually more fidgeting, especially leg-shaking was observable. Nevertheless, on average, the most degree of fluency among all three groups, concerning the above-mentioned categories, belonged to the category of explanation.

Furthermore, lack of coherence and unity by constant inserting of irrelevant sentences was another feature of their speech, while giving explanation. Careful investigation and scrutiny of these irrelevant sentences, however, clearly manifest that most of the meanderings are for expressing their own feelings and attitudes towards the topic under discussion. This is tremendously due to the ego-centric nature of preschoolers, firmly regarding themselves as the center of the universe (Gordon & Browne, 2015; Kalyan-Masih, 1973). The followings are some examples, in this regard:

**Why do we have to go to school?<sup>1</sup>** *To study, but I don't like the school. I like to stay home with my mom. Yesterday, we went to a park...*

**Why don't boys in the kindergarten play with girls?<sup>2</sup>** *I don't like girls, but I like my little sister. Yesterday, I helped my mother....*

**Why do we need to do exercise?<sup>3</sup>** *It's good for the body. When I grow up, I want to be an athlete.*

**What does a pilot do?<sup>4</sup>** *I don't like airplanes. We go on a trip by my father's car. It's black.*

None of the questions above are personal questions, requiring them to think about their own feelings and emotions or even their likes, dislikes and preferences. However, in all the responses, the pronoun "I" and reference to their preferences are well recognizable.

There existed also **repetitions** which were not corollaries of disfluency or deliberate search for the purpose of either planning or reformulation. These were mainly to emphasize a word or underline a concept, assuring that the audience perceived the importance of what had just been uttered, or the significance a certain explanation had in the flow of speech. Moreover, it is deemed that, once in a while, these intelligent language learners were getting feedback and checking sufficient attention on their audience's part. Other applied strategies for emphasizing were word lengthening, the use of word stress and the apparent change of intonation while reaching the segment of significance. Interestingly, all uses of word-lengthening were merely for the words like "all" and "every", emphasizing absoluteness. Some of the related examples are:

*Because this is big... big, big,<sup>5</sup>*

<sup>1</sup> "ما چرا باید بریم مدرسه؟" - تا درس بخونیم. اما من مدرسه رو دوست ندارم. دوست دارم خونه پیش مامانی بمونم. دیروز رفتیم پارک ...  
<sup>2</sup> "چرا پسرا تو مهد کودک با دخترا بازی نمیکنن؟" من از دخترا خوشم نمیاد، اما خواهر کوچیکم رو دوست دارم. دیروز به مادرم کمک کردم ...

<sup>3</sup> "چرا باید ورزش کنیم؟" برا بدن خوبه. وقتی بزرگ شدم، میخوام ورزشکار بشم .

<sup>4</sup> "کار خلبان چیه؟" من هواپیما دوست ندارم. با ماشین بابام مسافرت میریم. ماشینش سیاهه.

<sup>5</sup> چون بزرگ، بزرگ، بزرگ ...

*A good good girl goes to school.<sup>1</sup>  
I can do eeeeeeeeeeverrrrrrrything!<sup>2</sup>  
I want it aaaaaaaaaaall!<sup>3</sup>*

Another interesting point was the frequent reference to a personal memory in the middle of the utterance or explanation, assuming that the others should also know about it. Concerning this, instead of commencing the sentences with phrases such as "one day"<sup>4</sup>, they had beginnings like "that day when..."<sup>5</sup> It should be noted that in comparison with four-year-olds, there were fewer examples of this kind of assumption among five- or six-year-olds.

**Self-correction** was an integral part of preschoolers' language. Although a large number of self-corrections were for correcting pronunciation, there were also cases of syntax as well as semantic corrections. On the other hand, most peer-corrections ended in anger and frustration and, in the abstract, they were not accepted. Comparison was a noticeable aspect in peer-correction: that was, perhaps, why corrections by friends were not welcoming (... *you don't know. I know...*)<sup>6</sup>. They were equally indifferent and pretending, in most cases, not hearing their teacher's corrections. What was completely evident was the fact that they insisted on their own way of speaking, and corrections were only the result of self-decision and self-monitoring.

Moreover, these smart children used **avoidance**, as a frequent strategy, whenever they were not able to continue the flow of speech, and in cases, they were seemingly at loss for words or explanation. The breaks and silences which were longer than usual ones, suddenly turned to unwillingness and reluctance to answer the question. There were also cases that they smartly bought themselves time by repeating the question being asked several times before eventually starting to answer.

*We go to school...(reformulation) I mean schools... (silence).....a long pause ... starring...um...um...um (repetition of a pause filler) ... (trying to plan) ..... I don't want to answer. I don't like this question. Ask her (referring to a friend nearby)<sup>7</sup>.*

Why do we go to school?... Why? ... Why?... Why do we go to school?... Yes? ... Why? Is this your question?<sup>8</sup>

In addition to questions, which were essentially somehow difficult and needed more thinking and reflection, once answering a question and giving an

<sup>1</sup> یه دختر خوبه خوب میره مدرسه.

<sup>2</sup> من هممممممممه کار میتونم بکنم.

<sup>3</sup> من هممممممشو میخام.

<sup>4</sup> "یه روز"

<sup>5</sup> "اون روز که ..."

<sup>6</sup> (... تو نمیدونی. من میدونم...)

<sup>7</sup> ما میریم مدرسه...منظورم مدرسه ..... نمیخوام جواب بدم. از این سوال خوشم نمیداد. از اون بپرس.

<sup>8</sup> چرا ما مدرسه میریم؟ چرا؟ چرا؟ ... چرا مدرسه میریم؟... بله؟ چرا؟... این سوال شامست؟

explanation required also thinking about violation of a general stereotype or imagination; similarly, there were several examples of disfluency. Their friends or teacher's interference, apparently lessened their concentration, and resulted in more aggravated disfluency. There were, besides, topics of their interest, such as talking about a famous cartoon character or hero, which made them excited and emotional, and, in turn, used to add to the disfluency, and more observable fidgeting and body movements.

As shown in Table 2, another series of questions needed **interpretation**. Four-year-old children found this set of questions somehow not quite easy, as far as the fluency is concerned. However, most disfluencies were more for **planning** rather than **replacement** or **reformulation**. The demand to think deeply about a given situation, and the search for the best possible words, phrases, and even sequence of events clearly was not that much simple for this group of preschoolers. On the contrary four-year-olds had the highest number of silences and fillers like "um" in this category of interpretation. In contrast, regarding interpretation of situations and events, and, in comparison with the previously discussed explanation category, there was no significant difference for five and, especially six-year-olds. This reveals that at five or six, children are well equipped with elements of imagination and thought, tremendously assisting them in language development as well as reference to the abstract or concepts not present in the immediate setting.

Eventually, concerning the last category in the table, which is **narration** or story-telling, the easily recognizable and prominent feature of disfluencies was the existence of the most number of silences between sentences in spontaneous story-making and story-telling and their existence within sentences, in case of telling previously heard and known stories. Therefore, fluency, in this regard, immensely and noticeably depended on whether the story of their choice was a spontaneous or a familiar one.

Provided that the story had been made off-the-cuff, more examples of disfluencies, comprising silences, repetitions, and fillers were used. Seemingly they were basically for the purpose of **planning**. In other similar studies, the fact that children do not actually plan or formulate the whole scenario or plot prior to speaking, while narrating, has been repeatedly confirmed (Cooper & Paccia-Cooper, 1980; Maloney, Payne & Redford, 2012). As already denoted, while narrating spontaneously, although most disfluencies were between sentences, there were also silences within sentences. These were mainly when they were trying to enter a new character in the story for the first time:

*...then they were living happily and everything was good. One day a a a (repetition) a 'um'*

*(filler)... ...(pause, while thinking and looking around)...a **rabbit** came to the jungle<sup>1</sup>.*

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<sup>1</sup> ... بعدش خیلی خوشبخت شدند و همه چیز خوب بود... یه روز... یه یه یه ... خرگوش اومد توی جنگل.

On the other hand, when the narration was that of a familiar and already heard story, it was clear that the silences or other types of disfluencies were more of the **replacement** and **reformulation** nature in order to promote the quality of the story, to the extent possible. Likewise, in case of some kids, who seemed more sociable, creative, motivated, or risk-taker, the disfluencies of this type were for making possible modifications to the original version of the story to attract attention and sometimes evaluate the others' reaction.

Overall, six-year-olds, in comparison with four and five-year-olds, and long-attending students of the kindergarten, compared with newcomers who did not possess the same store of stories and not really accustomed with the kindergarten environment, had more tangible fluency, while narrating. However, story-telling was the activity in which most kids participated actively, enthusiastically, and indeed whole-heartedly, pinpointing the fact that the nature of the speaking topic can also be taken into account as an influential factor, as far as fluency and pauses are concerned. This, of course, as well as personal characteristics already referred to, decidedly requires further investigation and scrutiny.

## Discussion

The preschool period (i.e. 2 to 6 years of age) is of great concern in studying disfluency patterns. These periods are both important in regards to disfluency (Ram & Savithri, 2007), and also, the onset of stuttering as it has been observed to be most frequent during this period of development (Johnson, 1959 cited in Tumanova, et al., 2014). Since the relationship between normally disfluent speech and early stuttering continues to be of theoretical interest (Tumanova, 2016; Yairi, 1981), researchers view the establishment of "normal expectations of disfluency" (Wexler & Mysak, 1982) for various preschool age groups as theoretically and diagnostically important (Tomanova, et al., 2014). We think that research is needed to show the number, type and duration of speech disfluencies that occur in the speech of preschool children. While several studies carried out in the past have shown to be of great value, they still do not make clear what the central tendencies and variability of speech disfluencies are for 4 – 6-year-olds and so forth.

This study was an attempt to unravel some features pertinent to the normal disfluency in the Iranian preschoolers' language. A comparison was made among children aged four, five, and six years, encompassing in-mind categories such as spontaneous speech, description, explanation, interpretation and narration. Furthermore, in each category, the nature of the disfluency (repetition, silence, or filler) and the purpose behind its application (planning, reformulation, or replacement) were identified.

Corollaries of the present study are summarized in Table 3 below.

**Table 3.**  
Overall Corollaries of the Study

	The least number of disfluencies	The most number of disfluencies	Dominant types of disfluencies	Dominant purpose
<b>Spontaneous speech (in routine settings)</b>	Five-year-old children	Four-year-old children	Silences, fillers	Reformulation
<b>Description</b>	Six-year-old children	Four-year-old children	Silences, fillers, repetition	Planning
<b>Explanation</b>	Six-year-old children	Four-year-old children	Silences, fillers	Planning
<b>Interpretation</b>	Six-year-old children	Four-year-old children	Silences, fillers	Planning
<b>Narration</b>	Six-year-old children	Four-year-old children	Silences, fillers	Replacement (familiar stories) Planning (off-the cuff stories)

In brief, in all three groups, most recorded and observed disfluencies were for **planning** the flow of speech. As mentioned by Starkweather (1987) and Rose (2017), these disfluencies help children gain the time that they need for the speech-planning process. This, however, cannot be regarded as something unexpected and surprising: their disfluency, in this respect, can be well interpreted as a sign of their diligent attempt to produce the most impeccable utterance possible, impressing everyone. These children are, in the real sense of the word, busy dealing, getting involved and struggling with rapid speech development (Kowal, O'Connell, & Sabin, 1975; Walker & Archibald, 2006). Nevertheless, the result which was certainly out of expectation was their relative fluency in the explanation category: this was predicted and surmised beforehand to require noticeable thinking and reflection, resulting in a large number of disfluencies such as silent pauses as well as pause fillers. The recordings, in contrast, revealed their dexterity, in this regard, which can well be recommended to be the subject of further inquiry and research.

As far as the research questions in-mind are concerned, in the light of the pertinent findings in this scrutiny, it should be argued that there seems to be a close relationship between the nature of the task and the number of disfluencies in children's utterances. Even a further stride can be taken, and it can be concluded that the topic and, likewise, the level of difficulty of the task can be taken into account as determining factors, accordingly (Redford, 2013). In the observation related to this study, it was crystal clear that those tasks warranting more reflection and pondering such as **interpretation**, as an inevitable part, resulted in more disfluencies of various kinds. Furthermore, topics which were not essentially appealing and interesting to the kids, and, similarly, the increase in the difficulty-level of the questions meant simply more silences, fillers, and repetitions (Tilsen, 2006). As one can also easily anticipate, equally, other factors like distractions, expectations from audiences, fatigue, hunger, as well as personality aspects had their own undeniable roles and contributions to



the normal disfluency of preschoolers' language as also shown by others (Freed, 2000; Kehoe, 2006).

On the other hand, there firmly seemed to exist patterns for these disfluencies. Most clearly, they often occurred more at the outset of sentences rather than within different segments of the sentence, which might be the case for true stutterers with pathological conditions. Other than the initial position in the sentences, disfluencies were also frequent between consecutive sentences to search for the best **transition word** as seen by Buhr and Zebrowski (2009). This means that they are totally aware of the fact that any kind of utterance requires coherence or go-togetherness. Nonetheless, it should be noted that in case of repetitions, or use of pause fillers, the number never exceeded three. This is also another discrepancy between normal disfluency and pathological stuttering requiring therapy (Einarsdottir & Ingram, 2005; Kowal et al., 1975).

Apart from the spontaneous speech, six-year-olds had the least number of disfluencies and four-year-old children the most. This is fairly plausible regarding the fact that in comparison six-year-olds possessed more vocabulary at hand, more experience accompanied, and, of course, more relevant practice, in this regard. More fluency for the spontaneous speech in five-year-olds can be recommended as a research topic for further scrutiny. However, the researcher's judgment and justification for this exception is that six-year-olds in this kindergarten were attending special courses which aimed at preparing them for basic literacy skills such as basic writing, reading, math, and science. These are compulsory prerequisite courses which should be taken by six-year-old children in Iran before entering the primary school at the age of seven. This, perhaps, made them more prudent and considerate, concerning the use of spontaneous speech. By the same account, six-year-olds had the highest frequency of **self-corrections**, in comparison with the other two groups. In other words, the function behind a large number of their disfluencies was for the **planning** purpose. Self-corrections, in turn, turned to generalizations at times, which were in essence grammatically not acceptable. There were no significant differences between boys and girls, within the age-range of four to six, regarding the number or nature of disfluencies in this study. A similar study comparing 3 and 5-year-old Spanish speaking male preschoolers from Puerto Rico did not find any significant differences between the age or sex groups either (Carlo & Watson, 2003).

Given the influence of linguistic and cultural behaviors, attitudes and beliefs on fluency, (Watson & Keyser, 1994; Cooper & Cooper, 1998; Watson, 2001 all cited in Ram & Savithri, 2007), one must be cautious in generalizing findings describing English speaking children to other linguistic and cultural groups. Also, an understanding of expected speech behaviors in normally fluent Persian speaking children will make one better able to differentiate more or less typical behaviors and identify stuttering within this population. Lastly, through cross-linguistic studies of fluent and disfluent speech, our understanding of fluency development in all young children, including those children who speak Persian

should be enhanced, thus, ascertaining the purpose of this study (Ram & Savithri, 2007).

## Conclusion and Implications

It could be concluded that disfluency in preschoolers is immensely taken into account as an integral and normal aspect of language development. Disfluencies of various types, comprising silences, breaks, fillers, or repetitions are decidedly and admittedly used for a whole myriad of reasons, including reformulation, replacement, and planning. Irrespective of the type and the function of the disfluency, the fact of tremendous value is that children at 4, 5, or 6, are quite skillful and dexterous at utilizing language in the best way possible.

The results of this study provide primitive normative values of disfluencies in 4-6-year-old Iranian Persian speaking children. The study thus provides a base for determining normative disfluency patterns in a language other than English (Ram & Savithri, 2007) and thus shed light on the importance of normative data specific to each language (Leclercq, Suaire, & Moyse, 2017). Caution should be exercised in generalizing the results of the study in view of the small sample size and other factors.

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