

Establishing normative data on the speech disfluencies of normally fluent French-speaking preschool children



Introduction

English normative data are used to describe speech (dis)fluency in typically developing French-speaking young children

- < 3 % stuttering-like disfluencies (SLD) and < 10 % total disfluencies (e.g. Guitar, 2013; Tumanova et al., 2014), as opposed to children who stutter;
- However, the speech disfluencies can differ from one language to another (Ardila et al., 2011; Crible et al., 2017).

Whole-word repetitions are frequent in young children

- There is a debate about the relevance of considering them as SLD (e.g., Howell, 2013);
- The mean number of repeated units in normally fluent children is less than two (Natke et al., 2006; Pellowsky & Conture, 2002).

Gender impact

- There is no gender impact on the type and amount of disfluencies among preschool children in Spanish (Carlo & Watson, 2003);
- Interjections are more frequent among girls than boys in English (Ambrose & Yairi, 1999);
- Girls produce more prolongations and sound repetitions, but less word repetitions, than boys in Swedish (Hedenqvist et al., 2015).

Age impact

- There is a decrease in part-word repetitions from Age 3 to Age 4 in English (Ambrose & Yairi, 1999);
- There is an increase in prolongations from Age 3 to Age 5 in Spanish (Carlo & Watson, 2003).

Aim

- Establishing normative data on the speech disfluencies of normally fluent, French-speaking children at age 4 and 5.
- Examining the influence of age and gender on speech disfluencies in French.

Methods

Participants

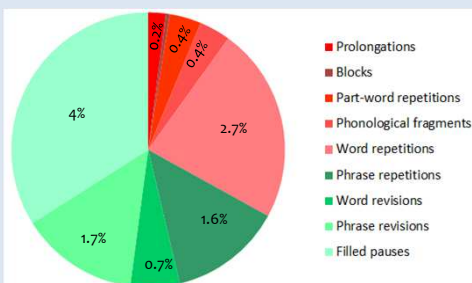
- 30 monolingual, French-speaking children, aged 4 (15, 8 boys) and 5 (15, 8 boys)
- They exhibited less than three stuttered disfluencies per 100 words of conversational speech, and scored ≤ 10 on the SSI-IV (Riley, 2009)
- Absence of labelling of stuttering now or in the past by family members and a specialised SLP

Speech samples

- 250 to 550-word conversational speech sample, based on utterances longer than two words (Boey et al., 2007)
- Speech samples were videotaped, transcribed and analyzed using CLAN (MacWhinney, 2000)

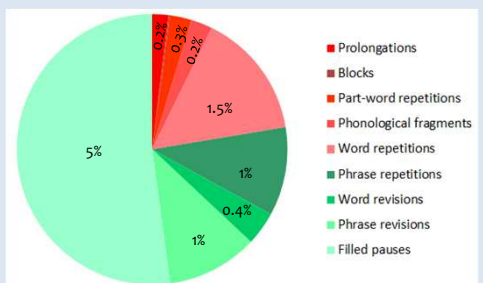
Results

AGE 4



	Age 4	Age 5
SLD	3.67 (2.45)	2.17 (0.90)
<i>M (SD)</i>		
<i>Range</i>	1 – 10.48	0.63 – 2.96
NSD	7.97 (2.49)	7.48 (2.44)
<i>M (SD)</i>		
<i>Range</i>	5 – 13.12	3.41 – 11.33
TOTAL	11.64 (4.23)	9.65 (2.74)
	6 – 23.39	4.90 – 14.29

AGE 5



Gender impact: No statistical difference for any of the disfluency types ($p > .05$).

Age impact: SLD and phrase revisions were less frequent at Age 5 ($p < .05$).

Whole-word repetitions: Mean number of iterations: 1.18 at Age 4 and 1.07 at Age 5

In each Age group: - Non-stuttered disfluencies (NSD) > SLD ($p < .001$)

- Filled pauses were the most frequent disfluencies
- Each SLD occurred on less than 1% of the words (except for whole-word repetitions)

Discussion

The average of **total disfluencies** observed in normally fluent children was **11.6 per 100 words** at Age 4 (9 children produced more than 10% Total disfluencies) and **9.6 per 100 words** at Age 5 (7 children produced more than 10% Total disfluencies).

As expected, **SLD were significantly less frequent than NSD** in both groups. The frequency of SLD was under 3% at Age 5, but ranged from 1% to 10.48% at Age 4, probably because we included all whole-word repetitions that are highly frequent in young children (up to 8.7% in our sample). When excluding whole-word repetitions in the SLD count, the mean percentage of SLD was 1.19 % and ranged from 0.6 to 1.8.

As compared to **English normative data**, our results show some **similarities**:

- The mean number of iterations for whole-word repetitions is less than two (e.g., Pellowski & Conture, 2002);
- We found a decrease in SLD from Age 4 to Age 5 (Ambrose & Yairi, 1999);
- SLD are less frequent than NSD, and SLD is under 3% at Age 5 (Tumanova et al., 2014);

... But also some **differences**:

- We found no gender impact for any of the disfluency types;
- The alert criterion for stuttering that has been established for English, such as 10% or 8% total disfluencies (Guitar, 2013, Tumanova et al., 2014), is not directly applicable to French-speaking children.