



# Disfluency Behaviors of Non-Stuttering Spanish-Speaking Adults

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## Abstract

This study presents preliminary data about disfluency behaviors of Spanish-speaking Puerto Rican adults with no fluency disorders. Description of total disfluencies and disfluency types during oral reading, conversation and monologue for males and females are reported. Results are discussed in terms of previously reported findings for English speakers and disfluency behaviors in Spanish-speaking children. Implications of these results for clinical intervention with people who stutter will be discussed.

## Background Information

Several studies have described the disfluency behaviors of adults with no fluency disorders and those of adults who stutter (Duchin & Mysak, 1987; Johnson, 1961; Leeper & Culatta, 1995; Lewis, 1991; Lutz & Mallard, 1996; Searl, Gabel & Fulks, 2003). This information helps in the differential diagnosis of fluency disorders and assists in determining treatment progress. However, there are no available data to examine when intervening with Spanish speakers. This deserves attention given that differences in the speech fluency have been reported in languages other than English, like Portuguese and French (Furquim de Andrade, Sassi & Zackiedwicz, 2004; Roberts & Meltzer, 2002), which like Spanish, are also Romance languages. In addition, the linguistic function of disfluencies, such as *interjections* and *revisions* in normally-fluent adults has been investigated (Bortfeld, Leon, Bloom, Schobert & Brennan, 2001) and could differ according to the linguistic features of the language and cultural aspects of the communication.

The current study is the second phase of a project aim to establish normative fluency data for Spanish-speaking Puerto Rican adults. The first phase described speech rate for the same population of young adults with no communication disorders, aged 21 – 30 years, males and females (Carlo, 2006). Differences observed reflected variations in the perceptions of normalcy for this cultural group, as well as linguistic differences, factors which have great implications for clinical intervention

## Specific Aims

The specific aims of the study were:

1. To describe the total number of disfluencies, the total number of individual disfluency types and their rank order.
2. To compare groups according to gender and according to the speaking condition sampled: oral reading, monologue and conversation.
3. To compare results with previous reports of English-speaking adults and of Spanish-speaking children.

## Methodology

- Participants included sixty Puerto Rican monolingual-Spanish speakers, 30 males and 30 females (21-30 years of age).
- Participants had no communication disorders as determined by interview, speech samples, hearing and reading screenings, and self report.
- All speakers had completed secondary school education.
- Three speech samples (oral reading, monologue and conversation were audio recorded from each individual while controlling for order effects.
- The samples were transcribed and disfluencies were identified and coded.
- The disfluency classification system of 15 disfluency types, previously employed when describing Spanish-speaking children was used in order to comprehensively describe the full spectrum of possible disfluent behaviors presented by Spanish speakers and to address linguistic features unique to Spanish.
- All samples were analyzed by a research assistant and later revised by the principal investigator.
- **Inter-observer and intra-observer reliability estimates for the identification and classification of the disfluency types were completed for 20% of the samples randomly selected from each gender group.**

## Results

Descriptive statistics (i.e. means and standard deviations) of the samples were obtained to describe disfluencias. A two-way ANOVA with repeated measures was used to examine results for differences by gender groups and by speaking conditions as well as interaction effects among these variables. A probability of .05 was selected based on the lack of information available about disfluency behaviors in Spanish.

Results will be discussed in terms of previously reported observations of English-speaking adults and of Spanish-speaking children. Findings will represent preliminary guidelines for expected fluency patterns in Spanish-speaking adults and therefore, will aid in the differentiation of normal fluency and stuttered speech among this population.

## Results

### Comparison with Data from English speakers

- **No influence of gender on speaking rate, consistent with previous studies in English: A slight difference was observed between males and females when using a *Communication Rate Analysis* that might suggest the presence of more pauses and disfluencies in males, specially in conversation (all student interviewers where females).**
- **No significant differences according to speaking condition, as reported for English speakers: There was a tendency toward slower rates in monologue (not statistically significant) when using the communication rate analysis.**
- **Faster rate in Spanish than in English as measured in SPM; slower rate as measured in WPM: This is explained by a higher number of multisyllabic words in Spanish, which results in fewer words in the sample. The faster rate (in SPM) could be explained by a shorter syllable structure in the Spanish language as compared to English.**
- **Larger ranges and variability in Spanish: This might be due to possible subgroups according to interviewer.**

### Conclusions and Future Considerations

- **There were shorter ranges and less variability in reading (for all measures and analysis procedures.)**
- **High variability was observed when using *Communication Rate Analysis*, specially for monologue, probably due to the presence of pauses and disfluencies. An analysis of disfluency behaviors will be completed with this data.**
- **Findings of this study represent preliminary guidelines for expected fluency patterns in Spanish-speaking Puerto Rican adults. Results provide normative data to compare progress of stuttering speech rate after treatment. Moreover, normal disfluency behaviors, perceptions of normalcy and its implication for treatment could be examined with this data.**

## Acknowledgements

We would like to acknowledge the graduate students from the University of Puerto Rico, who assisted in the sample, transcription and analyses procedures.

## References

Bortfeld, H., Leon, S.D., Bloom, J.E., Schobert, M.F. & Brennan, S.E. 2001. Disfluency rates in conversation: effects of age, relationship, topic, role and gender. *Language & Speech*, 44(Pt 2): 123-47.

Carlo, E.J. 2006. Speech Rate of Non-

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