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Science of Aphasia



Conversational Turn Length and Fluency Measurement in Aphasia

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Introduction

A common assumption regarding fluency is that the difference between a fluent and non-fluent speaker can be easily stated (Poeck, 1989; Gordon, 1998). However, there is no objective and valid measure to determinate the level of a person with aphasia on the fluency continuum. Traditionally, people with aphasia have been classified as fluent or non-fluent following the cognitive criteria. (Uribe, Arana & Lorenzana, 1969; Goodglass & Kaplan, 1986; Kertesz, 1994; Price et al., 2003)

Aim

The present study has attempted to clarify differences between fluent and non-fluent patterns of speech using analysis data from natural conversation settings.

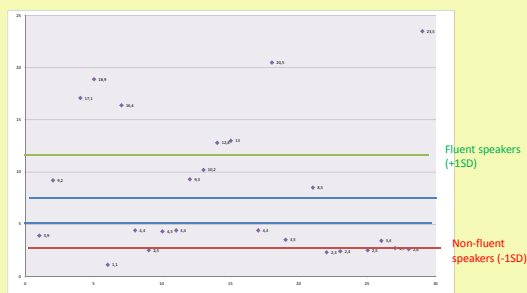
Data analysis

All analyzed conversations were fragments of 20 minutes chosen at random from conversation of one hour length. Fluency measurement has to be developed which can be adapted to the different types of discourse and their components; at the same time, the formula used has to indicate where the patient in the continuum of fluency is.

The formula evolved was:
speaker total words / speaker total speech turns.

Results

| Average number of words | Average number of turns | Number of words per turn | SD | Fluency measurement |
|-------------------------|-------------------------|--------------------------|------|---------------------|
| 1795 | 134.33 | 12.89 | 5,59 | 7,3 |



Data Collection & Participants

In order to guarantee validity of linguistic data, they should be collected in their natural conversational frame, as demanded from clinical practice (Penn, 1985; Ahlsén, 1995; Joannette & Ansaldo, 1999; Perkins, 2005; Gallardo-Paúls, 2009). One hour length conversations by 30 bilingual people with aphasia (Spanish- Catalan) talking with their key conversational partners (Withworth, Perkins & Lesser, 1997) were analyzed and compared with interactions between 'non damaged' bilingual (Spanish- Catalan) speakers in order to identify which variable can be relevant for the fluent/ non-fluent diagnosis.

| Brand | Sex | Age | Intelligence level | Language |
|-------|-----|-----|--------------------|-----------------|
| AMB | H | 70 | Medium-Low | Spanish-Catalan |
| ANG | H | 11 | High | Spanish |
| APP1 | M | 34 | Medium-Low | Spanish-Catalan |
| APP1 | M | 15 | Medium-Low | Spanish-Catalan |
| COR | H | 66 | Medium-Low | Spanish |
| JAL | H | 68 | Medium-Low | Spanish |
| JCM | H | 71 | Medium-Low | Spanish-Catalan |
| JCM | H | 71 | Medium-Low | Spanish-Catalan |
| JFO | M | 78 | Low | Spanish-Catalan |
| JLB | H | 17 | High | Spanish-Catalan |
| JPA | H | 76 | Low | Spanish |
| JZA | H | 74 | Low | Spanish |
| MAN | M | 69 | Low | Spanish |
| POJ | M | 69 | Medium-Low | Spanish |

| | | | | |
|------|---|----|-------------|-----------------|
| AMB | H | 69 | Medium-Low | Spanish |
| BUC | H | 73 | Low | Spanish |
| CEB | H | 67 | Low | Spanish |
| EDR | M | 22 | Medium-High | Spanish |
| EDV | M | 42 | High | Spanish |
| ENR1 | H | 64 | High | Spanish |
| ENR2 | H | 65 | High | Spanish |
| JLM | H | 56 | Medium-Low | Spanish-Catalan |
| JTC | H | 50 | Medium-High | Spanish |
| MCP1 | M | 27 | Medium-Low | Spanish |
| MCP2 | M | 27 | Medium-Low | Spanish |
| RTA1 | H | 28 | Low | Spanish |
| RTA2 | H | 29 | Low | Spanish |
| TRAI | H | 83 | Medium-High | Spanish-Catalan |
| TRAI | H | 85 | Medium-High | Spanish-Catalan |

Discussion

7,3 words-per-turn value is a valid measure in Spanish and Catalan to delimit fluent and non-fluent speakers. These results emphasize the importance of the quantitative analysis of fluency in speech in its natural environment.

As well, the measure of 7,3 words-per-turn not only can determinate the difference between fluent and non-fluent speaker, but allows the diagnosis of severe fluency deficits as logorrhea or mutism.

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