14th International SCIENCE OF APHASIA conference
Sep 20 - Sep 25, 2013
Science of Aphasia

Conversational Turn Length and Fluency Measurement in Aphasia

Verónica Moreno-Campos* & Beatriz Gallardo-Paúls**
*Florida Universitària
** Universitat de València

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.

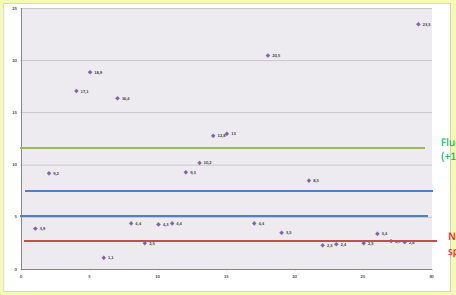
Data analysis

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; Joanette & 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.

Table 1. Aphasic participants data

Record	Sex	Age	Sociocultural level	Language
AH B2	H	70	Medium-Low	Spanish /Catalan
ANG	H	51	High	Spanish
APP1	M	34	Medium-Low	Spanish /Catalan
APP2	M	35	Medium-Low	Spanish /Catalan
COR	H	66	Medium-Low	Spanish
JAL	H	68	Medium-Low	Spanish
JCM1	H	71	Medium-Low	Spanish /Catalan
JCM2	H	71	Medium-Low	Spanish /Catalan
JFG	M	78	Low	Spanish /Catalan
JMB	H	57	High	Spanish /Catalan
JPA	H	76	Low	Spanish
JUA	H	74	Low	Spanish
MAR	M	69	Low	Spanish
POJ	M	69	Medium-Low	Spanish
AH B1	H	69	Medium-Low	Spanish
BUI	H	73	Low	Spanish
CHI	H	67	Low	Spanish
EDI	M	22	Medium-High	Spanish
EDV	M	42	High	Spanish
ENR1	H	64	High	Spanish
ENR2	H	65	High	Spanish
JMM	H	56	Medium-Low	Spanish /Catalan
JVC	H	50	Medium-High	Spanish
MCP1	M	27	Medium-Low	Spanish
MCP2	M	27	Medium-Low	Spanish
RUA1	H	58	Low	Spanish
RUA2	H	59	Low	Spanish
TRA1	H	83	Medium-High	Spanish /Catalan
TRA2	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.

References

Ahlsén, E. (1995). Pragmatics and Aphasia. An Activity based approach, *Monográfico 77 Gothenburg Papers in Theoretical Linguistics*.
Gallardo Paúls, B. (2009). Valoración del componente pragmático a partir de datos orales, *Revista de Neurología*, 48 (4), 57-61.
Goodglass, H. & Kaplan, E. (1986). Evaluación de la afasia y trastornos relacionados. Madrid: Editorial Médica Panamericana. Trad. de Carlos Wernicke.
Goodglass, H.; Kaplan, E. & Barelli, B. (2000). Boston Diagnostic Aphasia Examination–Third Edition (BDAE–3). San Antonio, TX: The Psychological Corporation.
Joanette, Y. & Ansaldo, A.I. (1999). Clinical Note: Acquired Pragmatic Impairments and Aphasia, In Stemmer, B: Pragmatics: Theoretical and Clinical Issues, *Brain and Language*, 68,(3), 529-534.
Kertesz, A. (1994). Localization and Neuroimaging in Neuropsychology. San Diego: Academic Press
Penn, C. (1985). The Profile of Communicative Appropiateness: A clinical tool for the assessment of pragmatics, *The South African Journal of Communication Disorders*, 32, 18-23.
Perkins, M. (2005). Clinical pragmatics: an emergentist perspective, *Clinical Linguistics and Phonetics*, 19 (5). pp. 363-366 . DOI: http://dx.doi.org/10.1080/02699200400027080
Price, C.J., Gorno-Tempini, M.L., Graham, K.S., Biggio, N., Mechelli, A., Patterson, K., & Noppeney, U. (2003). Normal and pathological reading: converging data from lesion and imaging studies. *Neuroimage*, 20 (Suppl. 1), S30-S41.
Poeck, K. (1989). Fluency. In C. Code (Ed.). The characteristics of Aphasia (Philadelphia: Taylor & Francis) p. 23-32.
Uribe, Arana y Lorenzana (1969). Neurología. Medellín, Colombia: Corporación para investigaciones biológicas.
Whitworth, A.; Perkins, L.; y Lesser, R. (1997). Conversational Analysis Profile for People with Aphasia CAPPA, London: Whurr Publ.