THE IMPORTANCE OF SPONTANEOUS AND SEMI-SPONTANEOUS SPEECH AND ITS ANALYSIS IN APHASIA EVALUATION

Réka Incze (Kutasi)
PhD student, "Lucian Blaga" University of Sibiu

Abstract: As an acquired language disorder aphasia affects millions of people worldwide. One of the difficulties that aphasic patients usually encounter is the inability to produce well-structured sentences. Even if patients are aware of what they would like to say or express they are often unable to utter words which are syntactically correct. A lot of sentence production impairments have been described during the years and a few generalizations have appeared. In order to help researchers create a generalized list of deficits that occur during aphasic speech, aphasic patients' spontaneous or semi-spontaneous speech samples have been analyzed.

Keywords: aphasia, language impairment, semi-spontaneous speech, picture description

One of the difficulties that aphasic patients usually encounter is the inability to produce well-structured sentences. Even if they are aware of what they would like to say or express they are often unable to utter words which are syntactically correct. A lot of sentence production impairments have been described during the years and a few generalizations have appeared. In order to help researchers create a generalised list of deficits that occur during aphasic speech, spontaneous or semi-spontaneous speech samples produced by aphasic patients have been analysed. Spontaneous speech can be elicited in many different ways but one of the most used elicitation technique is conversation elicited through *personal narratives*.

1. Spontaneous speech and its analysis

As the disturbance of spontaneous speech is the clearest and most noticeable evidence of aphasia, its analysis has become extensively widespread representing a real aid in the diagnosis and classification of aphasia[1]. Its analysis is also very important as it provides the most complete and exquisite reflection of language abilities in case it is analyzed from a linguistical point of view. The analysis of spontaneous speech has also been used for the categorization of aphasics into motor or non-fluent types (disturbed speech production but intact comprehension) and sensory or fluent types (intact production, disturbed comprehension)[2]. Above this, research conducted report that speech comprehension is disturbed in all aphasics, therefore the analysis of spontaneous speech is significantly more important for the assessment of aphasia. More, spontaneous speech analysis is essential for treatment as the results obtained after its analysis can be beneficial in planning an adequate treatment plan.

[1] H. Goodglass, F. A. Quadfasel & W. H Timberlake, *Phrase length and the type and severity of aphasia,* in *Cortex*, 1, 1964, pp. 133-153.
[2] C. Wernicke, *Der Aphasische Symptomencomplex. Eine Psychologische Studie auf Anatomischer Basis*. Breslau, Cohn, Franck & Weigert, 1874. (English translation, in R. A. Cohen & M. W. Bartowsky (Eds.), *Boston Studies in the Philosophy of Science*, Vol. IV, Dordrecht, Reidel Publishing Company, 1969, pp. 34-97.

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1.1. Personal narratives

According to Garro and Mattingly "the role of personal narratives is that of decoding and reframing the past to make sense of the present and provide an orientation for the future".[3] The authors highlighted that the production of a narrative is an active and valuable process that relies on one's personal as well as cultural resources. Stories can be a helpful aid for learning about and at the same time observing aphasic people's speech and the mistakes they make as a result of their medical condition. At the end of the nineteenth century, Sigmund Freud pointed out the therapeutic importance of personal narrative by stating that „the symptom carries a meaning and is connected with the experience of the patient."[4]

Personal narratives are highly regarded as they are important for the everyday life of aphasic people and they offer outstanding information on a wide variety of linguistic and extralinguistic competences. In 1997, Labov emphasized that „narratives are privileged forms of discourse that play a central role in almost every conversation".[5]

The use of personal narratives in aphasia evaluation and treatment has been suggested as they are a helpful aid in re-establishing an aphasic person's identity. In order to retell a story, the patient needs to possess narrative competence. However, it is demonstrated that in case of a severely impaired speech the ability of an aphasic to make a „point" with a personal narrative may be damaged.

Personal narratives are multi-functional, meaning that they can be referential (telling events clearly) and evaluative (emphasize the principal data in the narrative).[6] Data from past research suggests that aphasic patients have a difficulty in re-telling events in a clear manner, meaning that the referential function of the narrative is vulnerable. On the other hand, aphasic patients are somehow obliged to use a so-called evaluative language, which, according to Armstrong[7], represents a difficulty for them as they tend to misuse evaluative verbs and clauses.

When using narratives as elicitation tasks, the performance of personal narratives is the first task aphasic patients are asked to complete. At the beginning of the session, the patient is asked to narrate or to simply tell his/her stroke story afterwards, being asked to recount a happy or a sad event from his/her life and in the end to describe his/her actual state of well-being. Besides their use in investigating coherence, clarity, reference, temporal-causal sequencing and evaluation, personal narratives can also be used for investigating lexical and grammatical errors in aphasic speech.

Narratives include information regarding people, time, action and location. Expressing information like, who did the action, what actually happened, where did it take place, what exactly happened are impaired in people with aphasia.[8]

Narratives are also extremely important in aphasia therapy as well. By telling his/her story, the aphasic patient tries to accept what happened to him/her and reintegrate himself/herself into society. A personal narrative is seen as „a window into individual life

[3] L. Garro, C. Mattingly, *Narratives as construct and construction*, in *Narrative and the Cultural Construction of Illness and Healing,* C. Mattingly and L. Garro (Eds), Berkley, University of California Press, 2000, p.7.
[4] Freud Sigmund, *A general introduction to psychoanalysis*, New York, Boni and Liveright, 1920, p. 221.
[5] W. Labov, *Some further steps in narrative analysis,* in *Journal of Narrative and Life History*, 7, 1997, p. 396.
[6] R. Jakobson, *On language* (L. R. Waugh & M. Monville-Burston, Eds.), Cambridge, MA, Harvard University Press, 1990.
[7] Elizabeth Armstrong, *Expressing opinions and feelings in aphasia: Linguistic options,* in *Aphasiology*, 19:3-5, 2005, p. 286.
[8] H. K. Ulatowska, L. Allard, & S. B. Chapman, *Narrative and procedural discourse in aphasia,* in Y. Joanette & H. H. Brownell (Eds.), *Discourse ability and brain damage: Theoretical and empirical perspectives*, New York, NY, Springer-Verlag, 1990, pp. 180–198.

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[.....] from which to see [.....] how meaning and understanding have been constructed and or reconstructed".[9]

2. Semi-spontaneous speech and its analysis

The main aim of linguistic rehabilitation for aphasic speakers is the enhancement of their day-to-day communication. Conversation and turn-taking are evidently considered to be important in speech production[10] though in clinical practice a more controlled type of discourse context is preferred, like storytellings and picture descriptions which can be defined as semi-spontaneous discourse production[11]. The assessment of semi-spontaneous speech has been used in aphasia therapy since 1972 by Goodglass and Kaplan[12] with the help of a stimulus in the form of the *Cookie Theft* drawing. Since then, researchers have been using semi-spontaneous speech in the assessment and treatment of aphasia in order to point out its importance and usefulness in aphasic discourse analysis..

2.1. Picture description

Picture description was and is one of the most extensively used elicitation technique as discourse samples produced by aphasic speakers in this way can be easily compared. Researchers have used it and are still using it as it is the most efficient way to analyse aphasic speech.

Picture stimuli utilized in the assessment and treatment of patients with aphasia vary from single pictures, action pictures to picture sequences.[13] The analysis of connected speech has helped clinicians to understand how patients suffering from aphasia use the standard rules of a language and their predefined patterns.[14] The development of stimuli based on single picture description or a picture sequence has aided therapists to assess the elicited narrative discourse from a different point of views in a clinical setting. Undoubtedly, picture stimuli have been utilized to a great extent in the assessment of speech of people with aphasia. Luria[15] emphasizes that pictures used for clinical discourse elicitation are of two types. Thus, there are simple and complicated pictures. When using simple pictures as an elicitation task, researchers have to be aware that these do not offer enough information unlike complicated

[9] B. De Vries, A.J. Lehman, *The complexity of personal narratives,* in *Birren J., Kenyon GM, Jan-Erik R, Schroots JJF, Svensson T, eds. Aging and Biography: Explorations in Adult Development,* New York, Springer Publishing Co. 1996, p. 153.
[10] S. Beeke, R. Wilkinson, & J. Maxim, *Exploring aphasic grammar 1: a single case analysis of conversation,* in *Clinical Linguistics & Phonetics*, 17, 2003a, pp. 81–107.
[11] R. Prins, & R. Bastiaanse, *Review: analysing the spontaneous speech of aphasic speakers,* in *Aphasiology*, 18, 2004, p. 1076.
[12]H. Goodglass & E. Kaplan, *The assessment of aphasia and related disorders*, Philadelphia, Lea & Febiger, 1972.
[13] P. S. Myers, & C. W. Linebaugh, *The use of context-dependent pictures in aphasia rehabilitation,* in R. H. Brookshire (Ed.), *Clinical Aphasiology Conference Proceedings*, Minneapolis, MN, BRK Publishers, vol.14, 1984, p. 145.
[14] L. E. Nicholas & R. H. Brookshire, *A system for quantifying the informativeness and efficiency of the connected speech of adults with aphasia,* in *Journal of Speech Language and Hearing Research*, 36, 1993, p. 338.
[15]A.R. Luria, *Higher cortical functions in man* (B. Haigh, Trans.), New York, Basic Books, [Original work published 1962.], 1962, p. 363. Available at: https://goo.gl/5WRD5e, accessed: March 10th, 2018.

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pictures do. Complicated pictures or complex[16] ones help the patient formulate a story by giving him/her the possibility to see what happened before the climax.

Nicholas and Brookshire[17] have used a three-picture sequence with patients with aphasia in order to determine whether the patient is able to utter sufficiently intelligible words in order to be included in a study that they wanted to perform. In order to assess whether aphasics are able to understand the main idea of a topic and on how well do they perceive it, Nicholas and Brookshire[18] have also used the picture descriptions, by using four single pictures, two picture sequences. The research was conducted on 20 brain-damaged adults and 20 adults suffering from aphasia. Each of the pictures presented a series of events which the aphasic patient had to follow so as to create a story. The pictures were presented to the patients individually, put in from of him/her and the examiner asked the subject to talk about them, leaving the pictures on the table until the patients finished talking. By using this technique the authors wanted to test whether „the presence, completeness, and accuracy of main concepts in connected speech can be scored with acceptable interjudge and intrajudge reliability for most adults with aphasia."[19] The same elicitation method was employed by Kathryn M. Yorkston and David R. Beukelma[20] in order to develop a technique that can help them to quantify the connected speech samples of 50 aphasics, all native English speakers, suffering from moderate and mild aphasia (content-unit analysis). Unlike Nicholas and Brookshire, Yorkston and Beukelma have used a single picture, namely *Cookie Theft* picture.

Picture descriptions can also be used to assess narrative discourse performance of people with aphasia. In this way, researchers can find out how many words, correct information units and their percentage does a patient convey per minute. In this regard, the most notable research was conducted by Nicholas and Brookshire[21] in which, by analyzing the correct information units per minute they could offer data about the efficiency and informativeness of a person's speech.

Another aspect that raised the curiosity of the researchers was whether female and male-oriented pictures would have an impact on the amount or content of the aphasic speakers' responses. Correia, Brookshire and Nicholas[22] used eight black and white gender-biased pictures in their research in order to find out whether this categorisation has an impact on the speech elicitated by aphasic people of different gender. The pictures were categorised by a committee as four male-biased and four female-biased pictures. Upon conducting their research they concluded that subjects used more words when describing male-biased pictures while the same amount of words was used for both male and female-biased pictorial stimuli.

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[16] Gloria Streit Olness, *Genre, verb, and coherence in picture-elicited discourse of adults with aphasia,* in *Aphasiology*, 20 (2/3/4), 2006, p.176.
[17] Linda E. Nicholas, Robert H. Brookshire, *A System for Quantifying the Informativeness and Efficiency of the Connected Speech of Adults With Aphasia,* in *Journal of Speech and Hearing Research*, Volume 36, 1993, p. 340.
[18] Linda E. Nicholas, Robert H. Brookshire, *Presence, Completeness, and Accuracy of Main Concepts in the Connected Speech of Non Brain-Damaged Adults and Adults With Aphasia,* in *Journal of Speech and Hearing Research*, Volume 38, 1995, p. 147.
[19] *Ibidem*, p. 151
[20] Kathryn M. Yorkston and David R. Beukelma, *An analysis of connected speech samples of aphasic and normal speakers,* in *Journal of Speech and Hearing Research*, 45, 1980, p. 28.
[21] Linda E. Nicholas, Robert H. Brookshire, *A System for Quantifying the Informativeness and Efficiency of the Connected Speech of Adults With Aphasia,* in *Journal of Speech and Hearing Research*, Volume 36, 1993, p. 340.
[22] L. Correia, R.H. Brookshire, & L.E. Nicholas, *Aphasic and non-brain-damage d adults' descriptions of aphasia test pictures and gender-biased pictures,* in *Journal of Speech and Hearing Disorders*, 55, 1990, pp. 714-715.

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Patients produced correct information units in the case of male-biased pictures than in the case of female ones. The author has also concluded that gender bias of pictures did not affect the percentage of words uttered by aphasic patients thus, it should not represent a threat to the correct outcome of the research. In case, a researcher would like to totally eliminate this so-called threat, he/she is advised to use gender-neutral pictures in speech elicitation tasks.[23]

Spontaneous and semi-spontaneous speech analysis can be a useful aid in aphasia evaluation and why not aphasia therapy.

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[23] *Ibidem*, p. 719.

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