

## **Critical Review: The Communication Impact of Test Questions on the Conversation of Individuals with Aphasia**

Stanoulis, K.

M.Cl.Sc (SLP) Candidate

University of Western Ontario: School of Communication Sciences and Disorders

This critical review examines the evidence to determine if the use of “test questions”, (eg: where the non-aphasic communication partner (CP) is asking questions to which they already know the answer), impact the face value, turn taking ability and overall communicative success in conversation based aphasia therapy and in general conversation with people with aphasia (PWA). Four articles were reviewed and analyzed to investigate the question of interest. The evidence gathered in this review suggests that the use of test questions may have a negative impact in conversation with PWA; however, additional research is needed to take a clinical standpoint on this topic, as the studies reviewed were small-scale case studies and single subject designs. Recommendations for further research and clinical implications are provided.

### ***Introduction***

The ability to communicate through conversation is one of the most significant, yet underappreciated characteristics that define and shape human life. Conversation represents the primary framework for language use, and is the vehicle through which we build and maintain relationships and influence the environment around us (Beeke et al., 2013). Over 100,000 Canadians are currently living with Aphasia, a language problem that masks a person’s inherent capability to communicate through conversational speech as well as their ability to read and write (Dickey et al., 2010). Many of these people are unable to converse in an effective, conventional manner, often leaving them feeling socially isolated and alone.

In recent years, the use of conversation-based therapy for persons with aphasia (PWA) and their communication partners (CP’s) has become an effective and well-known manner of intervention. Evidence is accumulating and indicates that targeting aphasia therapy directly at the everyday conversations between PWA and their CP’s; particularly through the application of conversation analysis (CA) techniques can create significant change in their interactions (Lock et al., 2001).

Conversation analysis is a systematic procedure created to analyze recorded, naturally occurring speech produced in everyday human interaction. The aim of this type of analysis is to discover how speakers understand and respond to each other through turns in conversation, and how such turns are organized into sequences of interaction. CA is not restricted by prior theoretical assumptions and is considered a bottom-up, data-driven approach (Beeke et al., 2013).

Although there are many different methods, elements and strategies involved in conversation therapy, a common target is to instruct the CP to reduce or eliminate the use of certain pedagogic behaviours, such as asking for known information by using ‘test questions’ when conversing with PWA (Simons Mackie et al., 2014). The use of these types of questions can lead to displays of negative emotions such as upset, frustration and embarrassment by the PWA, ultimately leading to conversation breakdown (Wilkinson et al., 2010). It has also been argued that the use of test questions can create a drill-based environment, reducing the face value and validity of the conversation at hand (Aaltonen & Laakso, 2011).

### ***Objectives***

The primary objective of this critical review is to examine the research pertaining to the use of test questions in conversation and in conversation-based intervention between a PWA and their CP to determine if:

- a) A reduction in the use of test questions by the CP is an appropriate goal in therapy.
- b) A reduction in the use of test questions by the CP results in improved communication between the dyad.
- c) The extent to which test questions pose a threat to face value and inter-subjective understanding in conversation.

Several articles addressing this information will be critically reviewed, and the study designs will be analyzed to evaluate if the information provided can be considered valuable, compelling research. Clinical implications and directions for future research will also be discussed.

## *Methods*

### Search strategy:

The computerized databases PubMed, PsycINFO and Medline were searched to find relevant articles pertaining to the topic of interest. Key words used in the search included: (Aphasia OR “Broca’s Aphasia” OR “Non-Fluent Aphasia” AND “Conversation-Based Therapy” OR “Supported Conversation Analysis) AND “Test Questions”. Reference lists from the articles found through the database searches were also scanned to retrieve additional articles for critical review.

### Selection Criteria:

The papers selected for this critical review all included CA between a PWA and a CP (most commonly their spouse). The PWA’s in all of the dyads were involved in Cerebrovascular Accidents (CVA’s) sustained over 12+ months prior to initiating treatment. In addition, the papers selected all discuss or assess the use of test questions in conversation and/or as a target in conversation-based intervention.

### Data Collection:

Results of this literature search yielded four articles consistent with the selection criteria and pertaining to the question of interest. Two of the studies employed a single subject case design. The other two studies used CA in case studies.

## *Results*

### Single-Subject (n of 1) Designs:

Single subject designs allow for the flexibility of individual differences because each participant can act as his/her own control. Therefore, such designs are quite appropriate for examining PWA as there is substantial variation from patient to patient regarding type and severity of this disorder. Although single subject designs are considered level 1 evidence, small n studies are considered to be less compelling, as they cannot be generalized to larger populations or used in a meta-analysis.

**Wilkinson et al. (2010)** conducted a single subject (n of 1) study to assess the effects of a conversation-focused intervention targeting specific communicative behaviours in a dyad of a PWA and their CP. The study used a novel combination of quantitative measures and qualitative conversation analysis to evaluate the success of the intervention. The authors assessed the efficacy of targeting intervention both at the PWA and the CP as a dyad, focusing on ameliorating conversational behaviours where the PWA may become restricted by the conversational actions of the CP. The behaviours specifically targeted in intervention included reducing

the use of test questions by the CP.

Participants included a 66-year old male with a broca-type aphasia and his 63-year old wife and CP. Recruitment details were not provided. The dyad participated in 8 weekly intervention sessions, lasting between 1-2 hours and a Speech-Language Pathologist (SLP) recorded conversation between the dyad, before, during, and after intervention. The conversational data was transcribed and analyzed using traditional CA methods (Lock et. Al., 2001). Analysis focused on features of turn taking, turn construction and topic initiation and repair. A positive change in conversation style was discussed and the amelioration of test questions post treatment was visible, but the results could not be statistically analyzed due to the nature of CA. Pre-and post-intervention conversations were also rated by naive listeners to discover whether unbiased listeners could, also identify the changes that had been identified by the researchers. A battery of commonly employed standardized tests of language and cognition were also administered pre and post intervention to obtain quantitative comparisons of the intervention results.

Appropriate statistical analysis was used to prove reliability of the raters, revealing that the targeted therapy behaviours had increased in post-intervention evaluation when compared to pre-intervention results. Visual inspection of the standardized test results was sufficient to reveal no change in language or cognitive abilities. The PWAs perception of his abilities did show change and post intervention interview revealed more positive feelings towards their communication in general.

Overall, the design of this study is quite strong, using many different methods to assess the results; it provides compelling evidence of a change in targeted behaviours, including a significant reduction in the use of test questions by the CP, post intervention.

**Beeke et al. (2015)** conducted a single subject design to investigate a conversation-based intervention for agrammatism targeting both the PWA and their CP equally. The intervention focused on informing the dyad about behaviours that can facilitate effective communication and behaviours that can cause breakdowns in understanding and then targeting or eliminating those behaviours in therapy. The CPs in both dyads chose to target the elimination of the use of test questions in conversation with the PWA.

Two dyads were selected through referral from community SLP’s to the NHS foundation at the University College London in London, United

Kingdom. PWA's in each dyad presented with severe, non-fluent aphasia. Each dyad completed 6 months of weekly intervention, subdivided into three, 8-week phases (pre-therapy baseline assessment; therapy and post-therapy follow up assessment). The authors performed pre-post assessment batteries using commonly employed standardized tests of language and cognition to analyze the quantitative outcomes of conversation change and the use or elimination of chosen strategies. Spontaneous conversation between the dyad was transcribed and analyzed using standard CA methods (Lock et al., 2001) to provide insights into why behavioural change in conversation may have occurred.

Appropriate statistical analysis was presented for both dyads to summarize the effects of intervention on the chosen strategies for each participant over time. Results between the dyads differed, where in one dyad the PWA showed significant increase in the use of all chosen strategies and the PWA in the other dyad showed no significant change in these categories. However, for CPs in both dyads, a reduction in the use of test questions was significant and almost completely eliminated in both cases. In addition, extracts from conversations were analyzed to demonstrate the form that test question sequences commonly took in pre-therapy talk for these two dyads in order to highlight the impact of these questions on turn taking ability for the PWA. The analysis revealed that both PWAs had severe difficulty producing answers in response to test-type questions and the use of these questions can cause instances of frustration, annoyance, and breakdown.

This study provides compelling evidence that targeting a reduction in the use of test question behaviours can be ameliorated through intervention. It also provides reason through CA, as to why test question behaviour is pedagogic and provides clinical insight as to why its elimination can produce more successful conversations. Although the results are strong, it is important to take into consideration the size and design of the study, as it would be beneficial if results could be replicated in more PWA.

#### Case Studies:

Case studies are often limited in terms of external validity, but can be beneficial to direct future research in specific populations. Using CA to examine utterances produced by PWA in certain contexts, allows clinicians to assess areas where communication breakdowns occur and provides us with a deeper understanding of what occurs in aphasic conversation.

**Beeke et. al (2013)** used CA to conduct a qualitative case study. The CA assessed the types of utterances

produced by PWA under two different interactional contexts; one where the PWA was able to take extended turns in conversation, and another where turn construction is limited by a test question sequence initiated by the CP. The conversations analyzed in the article were collected as a part of a Stroke Association-funded Conversation Therapy Project at University College London, in London, United Kingdom. Examples of extended turn construction from three dyads were analyzed with aims to explore how such turns are constructed when the subject has a type of aphasia that limits their ability to use grammar appropriately to shape the meaning of conversational utterances. Examples of test question sequences for two of these three dyads were analyzed as a comparison.

Due to the nature of the case study, it was not possible to analyze the conversations statistically, although this study provides insight into the use of test questions in different natural contexts. The analysis is only suggestive and should be interpreted with caution but provides examples as to how breakdowns occur following the use of test questions and how test questions impact turn taking in conversation.

**Aaltonen & Laakso (2011)** performed a case study using CA to assess the aspects of aphasic conversation and explore how understanding is constructed within the sequential organization of conversation between PWA and their CPs. The study focused on how two different types of conversation halts (exam halts, and real halts) affect the face value and intersubjective understanding of conversation. The term "real halts" refer to a breakdown occurring in response to a comment or question where the answer or response is unknown by the CP, and the term "exam halts" refer to a breakdown occurring as a result of the CP asking test questions, where the CP and the PWA both know the answer.

Data was collected from recorded conversations of two Finnish-speaking dyads where one partner in each dyad had aphasia with moderate to severe word finding difficulties. The conversations used in this study were originally collected for separate research initiatives and were collected using different methods, however, all conversations were transcribed using simplified CA methods (Lock et al., 2001).

The article did an excellent job describing the differences between a real halt and an exam halt in conversation, and provided examples from the data as to how these halts cause different threats in the flow of conversation. The study concluded that real halts pose bigger threats than exam halts at interrupting intersubjectivity and general understanding and exam halts pose bigger threats than real halts to face validity

of the conversation, by provoking irritation on behalf of the PWA.

In keeping with the case study design, statistical analysis was not reported and results should be interpreted with a degree of caution. However, this valuable analysis of conversation provides suggestive insight into how different CP behaviours can lead to different types of breakdown from the PWA in conversation.

### ***Discussion***

Aphasia is a unique disorder that is quite case specific. Weaknesses in the number of subjects in each study and the ability to perform quantitative statistical analysis reduces the strength of the evidence provided; however, analysis of the results suggest:

- a) *A reduction in the use of test questions is a successful, obtainable goal that can be targeted and ameliorated in conversation-based intervention.*
- b) *Qualitative CA and post intervention analysis reveal that communication can be improved through conversation-based intervention.*
- c) *Test questions can negatively impact the face value of a conversation and limit turn-taking opportunities between dyads and therefore should be used with caution.*

Studies by Wilkinson et al. (2010), and Beeke et al., (2015) both revealed that a significant reduction in the use of test questions could be accomplished through 8-week conversation-based intervention with an SLP. In addition, qualitative CA and post-intervention questionnaires, revealed positive changes in communication and communication style between all PWA and their CP's. Whether the reduction in the use of test questions is what specifically caused the qualitative improvement in communication between the PWA and their CP's could not be analyzed, therefore, this success should be taken with caution. In addition, since both of these studies combined, assessed a total of only three dyads, results need to be replicated on a larger scale in order to provide more substantial clinical evidence that a reduction in the use of test questions are not just successful on a case-by-case basis.

Beeke et al., 2013 discussed the idea that the main motivation for using test questions by CP's is to support the PWA in joining in with a new topic of conversation, rather than practicing saying words in an attempt to improve language skills (Beeke et. al.,2013). However, CA revealed that the use of test questions cause

limitations and restrictions in response and turn taking and may cause a more negative impact than positive on the overall effectiveness of the conversation. This study acknowledged the need for more research in this area, and exemplified the use of CA as a method of evaluation, as it provides a closer look at components of communication and insight into analysis of conversation breakdowns.

Aaltonen & Lakso (2011) provided examples where the use of test questions caused a negative impact on the face value of the conversation and the use of real questions caused increased levels of confusion and decreased inter-subjective understanding between the dyad. By forcing the PWA to say the target word and answer the given test question, the CP emphasizes the impact that aphasia has on the conversation and simultaneously establishes the PWA as a person in need to be taught or instructed, turning the conversation into a stressful, unnatural situation. Mediating aphasic conversation is almost like a balancing act, trading one aspect of success with another and the goals of both the PWA and the CP must be taken into consideration when choosing what to target in therapy.

### ***Conclusion***

Upon analysis, results of this review suggest that the use of test questions have a general negative impact on communication in conversation and can be successfully ameliorated as a target in conversation-based aphasia therapy. However, the question of whether or not elimination of test questions results in improved communication remains variable. It is clear that more research is needed as only a few cases were assessed in each study and the impact of test questions may be differ depending on the PWA's abilities and communication profile.

### ***Clinical Implications***

The purpose of test questions in conversation and conversation-based intervention should be carefully thought out in order to preserve face validity, enhance communication and prevent frustration in PWA. A reduction in the use of test questions can be considered as an obtainable goal in conversation-based aphasia therapy.

### ***Directions for Future Research***

Larger scale studies with more dyads and control groups to support the results should be performed to assess if this research can be generalized across a larger population of PWA.

### References

- Aaltonen, T., & Laakso, M. (2011). Halting Aphasic Interaction. Creation of Intersubjectivity and Spousal Relationship in Situ. *Communication & Medicine CAM*, 7(2).
- Beeke, S., Beckley, F., Best, W., Johnson, F., Edwards, S., & Maxim, J. (2013). Extended turn construction and test question sequences in the conversations of three speakers with agrammatic aphasia. *Clinical Linguistics & Phonetics*, 27(10-11), 784-804.
- Beeke, S., Beckley, F., Johnson, F., Heilemann, C., Edwards, S., Maxim, J., & Best, W. (2014). Conversation focused aphasia therapy: Investigating the adoption of strategies by people with agrammatism. *Aphasiology*, 29(3), 355-377.
- Dickey, L., Kagan, A., Lindsay, M. P., Fang, J., Rowland, A., & Black, S. (2010). Incidence and profile of inpatient stroke-induced aphasia in Ontario, Canada. *Archives of Physical Medicine and Rehabilitation*, 91, 196-202
- Lock, S., Wilkinson, R., Bryan, K., Maxim, J., Edmundson, A., Bruce, C., & Moir, D. (2001). Supporting Partners of People with Aphasia in Relationships and Conversation (SPPARC). *Int J Lang Commun Disord International Journal of Language & Communication Disorders*, 36(S1), 25-30.
- Simmons-Mackie, N., Savage, M. C., & Worrall, L. (2014). Conversation therapy for aphasia: A qualitative review of the literature. *International Journal of Language & Communication Disorders INT J LANG COMMUN DISORD*, 49(5), 511-526.
- Dickey, L., Kagan, A., Lindsay, M. P., Fang, J., Rowland, A., & Black, S. (2010). Incidence and profile of inpatient stroke-induced aphasia in Ontario, Canada. *Archives of physical medicine and rehabilitation*, 91(2), 196-202.
- Wilkinson, R., Bryan, K., Lock, S., & Sage, K. (2010). Implementing and evaluating aphasia therapy targeted at couples' conversations: A single case study. *Aphasiology*, 24(6-8), 869-886.
- Wilkinson, R., & Wielaert, S. (2012). Rehabilitation Targeted at Everyday Communication: Can We Change the Talk of People With Aphasia and Their Significant Others Within Conversation? *Archives of Physical Medicine and Rehabilitation*, 93(1).