Publié dans Revue Tranel (Travaux neuchâtelois de linguistique) 38/39, 63-76, 2003
qui doit être utilisée pour toute référence à ce travail

The Application of Conversation Analysis (CA) to the Management of Aphasia

Anne WHITWORTH PhD
University of Newcastle upon Tyne, UK

L'étude de la conversation entre un patient aphasique et la personne qui prend soin de lui est de plus en plus utilisée pour identifier les troubles de la communication d'une part, et pour motiver une intervention dans le domaine de l'aphasie, d'autre part. Tous les cliniciens sont préoccupés au premier plan par le fait de porter l'impact fonctionnel de la thérapie de l'aphasie à son maximum et de mesurer cet impact d'une manière significative et valide, deux objectifs qui peuvent être réalisés grâce à l'analyse de la conversation. Cet article est centré sur la méthodologie de l'Analyse Conversationnelle (AC), une approche basée sur des données visant à décrire un comportement conversationnel observable et qui cherche des preuves évidentes de réussites ou de pannes dans les séquences de conversation qui ont lieu entre deux partenaires. Une discussion du rôle de l'AC dans l'intervention et la mesure de l'efficacité de la thérapie suivra la présentation des outils et des résultats issus de l'évaluation.

1. Introduction

The last decade has seen a growing number of clinicians and researchers applying Conversation Analysis (CA) to their work with people with aphasia (Milroy & Perkins, 1992; Lesser & Milroy, 1993; Ferguson, 1994; Wilkinson, 1995; Klippi, 1996; Whitworth, Perkins & Lesser, 1997; Lesser & Perkins, 1999). The introduction of CA has been motivated by a number of key clinical issues. First, the focus on conversational interaction necessarily involves the communication partner/s of the person with aphasia. While it has always been important to involve the carer/family when working with people with aphasia, the increased profile of social models of aphasia (see Pound, Parr, Lindsay & Woolf, 2000, and Simmons-Mackie, 2001, for recent reviews) has focused attention on the need to identify the communication difficulties experienced by people with aphasia in the context of their communication partners. The second issue relates to the need to maximise the impact of therapy through ensuring that (a) areas are targeted in therapy that will make a difference to communication and that (b) therapy goals take in the whole person and encompass both the communication deficits and the psychosocial impact they have. This has resulted in aphasiologists looking at language in its natural context. Finally, the need to ensure that therapy has had an impact on

contextual everyday communication has focussed attention on the role of conversation.

This paper will set out some of the issues raised by CA, and explore, in broad terms, the impact it has begun to have on aphasia management. The development of assessment tools and treatment methods will be outlined, with particular attention given to the Conversation Analysis profile for People with Aphasia (CAPPA) (Whitworth *et al* 1997). Issues arising in the assessment process, in particular, those relating to sampling, transcribing and analysing clinical data will be discussed. The literature applying CA to intervention is smaller but influential (e.g. Booth & Perkins, 1999; Lock, Wilkinson & Bryan, 2001). The merits of this approach will be discussed from a clinical perspective and in terms of issues that are developed around client candidacy and complimentarity with other approaches, e.g. a cognitive neuropsychological approach. The use of conversation as an outcome measure to capture therapeutic change will also be explored. Key questions raised by the use of CA in aphasia will be outlined and current research projects discussed.

2. What is conversation?

Conversation has been described as “a linguistic exchange” (Crystal, 1987), “…a basic form of communication… a vehicle through which selves, relationships and situations are talked into being…” (Schriffrin, 1988), “…the key to revealing competence and being viewed as a social being.” (Kagan, 1995). It is clearly a joint responsibility that has a dual nature, being a vehicle for, first, exchange of information and, second, social interaction. The ability to communicate through conversation is central to social life, and social interaction provides a powerful means for defining self, achieving self esteem and maintaining relationships with others (Schegloff, 1982). Any breakdown in conversational abilities in the event of aphasia will have, therefore, a significant effect on both the person with aphasia and his/her family.

3. What is Conversation Analysis?

Conversation Analysis (CA) is a procedure used for the study of interaction, and in particular, talk-in-interaction, which uses a naturalistic, observation-based approach to study actual verbal and non-verbal behaviour (Lock, Wilkinson & Bryan, 2001). It is essentially the analysis of conversation, but one that comes with its own set of beliefs and principles. CA, which was developed as a tool within sociology in the 1960s and 1970s (e.g. Schegloff, Jefferson & Sacks, 1977), was drawn upon by linguists in the 1980’s (e.g. Levinson, 1983) as the area of pragmatics opened up. It was applied to aphasiology towards the end of the 1980’s and throughout the last decade

(e.g. Milroy & Perkins, 1992; Lesser & Milroy, 1993; Whitworth *et al*, 1997; Lesser & Perkins, 1999). The developments in pragmatics (i.e. that area of linguistics that investigates the rule systems that regulate the use and understanding of language in context (Bates, 1976); see a discussion of pragmatics in Lesser & Milroy, 1993) saw the appearance of pragmatic profiles (see Manochioping, Sheard & Reed, 1992, for an overview of pragmatic assessments), discourse analyses and conversational analyses of different varieties applying a systematic set of principles to measure particular aspects of communication[1].

In the event of aphasia, pragmatic behaviour is generally considered to be relatively spared. There are, however, a range of interactional consequences, sometimes obvious, at other times less obvious, that arise as a direct consequence of linguistic problems (e.g. such as in lexical retrieval or auditory comprehension) (Milroy & Perkins, 1992). Many people working in the area of CA would argue that CA actually goes further than pragmatics alone, to encompass an even broader domain of social interaction.

CA is a data-driven bottom-up approach that focuses on what the participants do rather than starting with a specific model or framework (as in cognitive neuropsychology). Analysis is carried out on naturally occurring conversation (not synthetic tasks such as picture naming or repetition). CA does not use “normal” conversation against which to judge success, as conversation that deviates from “normal” may still be effective communication. It provides a set of principled procedures on which to judge success or failure; these judgements are based on the outcome of sequences of interaction (the responses) between the two speakers. Inherent in this is the belief that conversation is orderly and that the sequence involving what goes on before and after the person’s turn is important. It further takes into account the “detail” that is often ignored by other approaches, being interested in the pauses, the repetitions, the hesitations, the re-starts, etc. that are present in day to day interaction. For example, a long pause due to lexical retrieval difficulties may cause the listener to step in and take over the conversation from the speaker, leading to frustration in the speaker and subsequent lack of initiation.

1 While speech and language therapists / pathologists tend to use the term pragmatics synonymously with functional communication, pragmatic approaches do tend to look more systematically at interaction than functional approaches. Functional communication developed within a more medical setting which looked at rehabilitation and was related more generally to activities of daily living (Worrall, 2000).

4. What happens to conversation in normal conversation and in aphasia?

There are three main areas covered in CA. These are (1) turn-taking, (2) repair and (3) topic management

4.1. Turn-taking

4.1.1. Normal conversation

A turn is the conversational contribution by one speaker that is followed either by a silence or by the contribution (turn) of the next speaker. A set of rules exist for how turns are taken by speakers, e.g. asking a question, saying the next speaker's name, using a particular intonation pattern, pausing and establishing eye contact, remaining silent. There is usually only a small or no gap between turns and overlap (talking over the other speaker) is minimal. Long silences are not tolerated in many languages, e.g. English, French.

4.1.2. Implications of impaired turn-taking for people with aphasia

Delays in responding (due to slowed processing, slowed formulation of response, word retrieval problems) may cause the person with aphasia to lose his/her turn, resulting in frustration as well as the person taking a more passive role in conversation. Different listener responses, e.g. allowing time or not allowing time, will result in different conversational consequences. People with poor monitoring ability (e.g. fluent aphasia) may violate turn-taking rules and not hand over to the next speaker. Additionally, pressure to respond quickly and take a turn may result in linguistic errors.

Research has looked at "minimal turns" such as "mm", "aha", "yeah" (e.g. Schegloff, 1982). These can play an important role in how conversation proceeds and who takes the turns. Many speakers with aphasia use such devices to remain in conversation while not having heavy linguistic demands placed on them. People with aphasia may spontaneously develop a range of strategies to hold onto their turn, e.g. avoiding eye contact until ready to hand over the turn, raising a hand or changing posture to initiate a turn. These can be facilitated in therapy.

4.2. Repair

4.2.1. Normal conversation

Repair is a mechanism to deal with "trouble sources", examples of which include such things as false starts, dysfluencies, wanting to change the

message, mishearings and misunderstandings. Repair usually occurs when the person with aphasia either corrects his or her own trouble source, asks the other speaker to clarify what has been said, or corrects his or her own trouble source when asked to by the other speaker. Within CA, there is a whole set of terminology around repair, e.g. self-initiated self repair, other-initiated other repair. It often requires both speakers to be involved, as will frequently be seen when word finding difficulties occur.

4.2.2. Implications of impaired repair for people with aphasia

Linguistic impairments result in a greater number of trouble sources and more repair having to take place. They similarly impair the person's ability to repair, and can cause lengthy repair sequences (e.g. "20 questions") – these can be highly frustrating for both partners. Poor monitoring ability and an inability to self-correct semantic paraphasias or neologisms can also lead to repair sequences. Inability to request clarification may result in continued comprehension problems. People with aphasia will often not request clarification as this may expose their difficulties. Inability to repair when requested by the other speaker may indicate poor awareness or linguistic difficulties, and may result in difficulties continuing the conversation.

Speed of repair may also be slowed down, such that the conversational partner usually needs to take an active role in helping to sort out the trouble. This is known as "collaborative achievement" (Milroy & Perkins, 1992). Partners may, however, focus on "correcting" (or repairing) errors even when they have not disrupted communication. This can, in itself, be disruptive (Booth & Perkins, 1999).

4.3. Topic management

4.3.1. Normal conversation

Topic refers to *what* is talked about and how this is talked about across turns. A topic will tend to relate to what has been said previously. A gap between turns usually signals the end of a topic.

4.3.2. Implications of impaired topic management for people with aphasia

People with aphasia often have difficulties *initiating* new topics. This can result in the person with aphasia taking a more passive role in conversation. Problems are also seen in *maintaining* topics, and therefore maintaining the conversation. This can arise from difficulties repairing trouble sources as well as over-using minimal turns. Poor topic maintenance similarly has the effect of

the person with aphasia taking a more passive role in conversation. Both of the above usually result in the other speaker having to work harder during the conversation and can result in different outcomes, depending on the response of both speakers.

5. Benefits of looking at conversation using a CA approach

Some of the benefits that have been put forward by advocates of CA are that it:

- provides a method of exploring the impact of aphasia on how language is used in context by looking beyond the purely linguistic deficit to communication in everyday life,
- moves away from the notion of the deficit belonging only to the person with aphasia and involves the other people in the interaction (Goodwin, 1995),
- identifies patterns of behaviour (through assessment) and can directly motivate intervention,
- can complement other approaches, and
- given its everyday nature, it may provide us with a method of evaluating therapy effectiveness, whether therapy is focused directly on interactional behaviour or whether it is targeted purely to linguistic impairments.

6. How can we “assess” conversation?

The literature over the past decade has yielded a small group of studies that have applied knowledge of CA principles to the investigation of aphasic output, probably beginning with Gerber and Gurland (1989) who quantified repair sequences in their Assessment Protocol of Pragmatic Linguistic Skills (APPLS). Crockford and Lesser (1994) looked at three different dimensions of conversation for the purpose of their study, while other researchers developed more formalised assessment tools. These have included the Checklist of Conversational Abilities (Lesser & Milroy, 1993), the Conversation Analysis Profile for people with Aphasia (CAPPA) (Whitworth *et al*, 1997) and, more recently, the SPPARC Conversation Assessment (Lock *et al*, 2001). Other researchers have analysed conversation using a looser interpretation of CA. One such tool is the Profile of Word Errors and Retrieval in Speech (POWERS) (Herbert, Best, Hickin, Howard & Osborne, in preparation) which has combined both linguistic and conversation elements. The CAPPA is outlined below.

7. The CAPPA

The CAPPA was developed specifically as a resource for speech and language therapists/pathologists; its rationale was to motivate therapy that focuses on facilitating effective communication strategies between people with communication impairment and their carers. With respect to applying CA, the CAPPA essentially revolves around a set of identified behaviours that fall within the four categories of (1) linguistic impairments (2) initiation and turn-taking (3) topic management and (4) repair. The first category, while not a key area of CA, was none the less considered important in characterising a person with aphasia's overall conversation, as linguistic deficits will interact with conversational outcomes. Information is gathered through:

(a) a structured interview with both the person with aphasia and the key conversational partner, usually separately, and

(b) an analysis of a 10 minute sample of unscripted conversation between the person with aphasia and his/her conversational partner.

These two sources of information are then combined onto a summary profile. This allows analysis of the level of agreement between the two sources of information and establishes a baseline for intervention.

In the interview, the clinician asks the client and the carer a direct question such as that seen in Figure 1. In framing the questions in this way, the clinician gets an idea of the frequency of the behaviour (Frequently, Often or Never/ Almost Never). The clinician then goes on to ask what the person being interviewed does when something happens, e.g. "when your partner doesn't respond to your question, what do you do?". And then, "what happens when you do that?". The aim here is to establish which strategies, if any, are in place, and how effective these may be. A final question aims to determine the person's perception of the behaviour in terms of whether or not it is problematic.

Figure 1. Example of a question in the Initiation and Turn-taking Section

2. Does s/he fail to respond when it's his/her turn to talk?	F* 2	O* 1	N 0
* (a) What do you do in that situation?			
* (b) What happens when you do this?			
* (c) How much of a problem for you is it that s/he occasionally/ frequently fails to respond when it's his/her turn to talk?	0	1	2

The method of analysis of the actual conversation maps tidily onto the questions and is essentially a statement as to whether a particular linguistic or

conversational behaviour is present or absent in the actual sample. In order to determine how typical the 10 minute sample is, both people involved are asked to indicate whether or not it was a representative sample of their conversation and of the difficulties experienced.

In addition to the mapping of the interview to the actual conversational output, a further section in the interview looks at a comparative history of the person's conversational style and how, when and with whom he or she communicated both prior to the onset of aphasia and following it. It aims to identify the changes that are confronting the person and his/her family, e.g. has the person gone from being an outgoing communicator to a more withdrawn one or, vice versa, has a relatively passive speaker become less inhibited and more dominant in his/her role in conversation? Both will influence, for example, the emotional reaction of everyone involved toward the aphasia. A comparison of performance over two time periods (i.e. pre-morbid and present) is then possible, allowing the clinician to (a) assess the degree of change that has taken place post-aphasia, (b) consider the reduction in opportunities for interaction post-aphasia and (c) ensure the suitability of treatment goals.

The CAPPA aims therefore to provide a mechanism to guide therapists in individually targeting advice that takes into account the unique interaction that occurs between two individuals. It is anticipated that information gained will guide intervention through:

(a) the reinforcement of existing successful strategies and the development of additional strategies for the person with aphasia and the conversational partner to maximise successful interaction, and

(b) the identification, in combination with other investigations (e.g. psycho-linguistic), of those behaviours which cause most disruption to interaction and which therefore may be the target of deficit-focused therapy.

It is also hoped that it will allow evaluation of the use of strategies over time.

So, in summary, the *CAPPA* is designed to provide accurate information on the specific conversational strengths and weaknesses of the person with aphasia, both the person with aphasia and the carer's knowledge and perception of these and what strategies are already being employed by them. This provides a basis for the therapist to develop rationally motivated intervention which is client-led and incorporates both the knowledge and skills already developed by the carer and the communication strengths of the person with aphasia. It does not replace linguistic assessment, nor elicit information on all aspects of communication. It is intended to complement other language assessments, focusing on the interaction between the person with aphasia and his/her conversational partner and the ways in which the interaction is managed between the speakers.

8. Can we quantify conversation?

As mentioned above, the CAPPA is not the only formalised method of using CA to assess conversation in aphasia. Other methods (e.g. Lesser & Milroy, 1993; Lock *et al*, 2001) also identify conversational features or areas and look for the absence or presence of certain behaviour. While each of these draw on CA, there is a key difference between the CAPPA and a tool such as the SPPARC (Lock *et al*, 2001). In addition to qualitative analysis, the CAPPA attempts to quantify behaviours in conversation by creating a numerical profile. The SPAARC takes a more descriptive approach, noting simply whether or not something is present and how this is handled within the conversation. The motivations for this in the CAPPA stemmed from a belief that it was possible to count many conversational behaviours, and that, in order to be useful as a tool for detecting difference and measuring change, it was necessary to quantify what was happening. In this sense, the CAPPA deviates from a central belief of CA purists who hold that CA is a qualitative method and not a quantitative one. This leads to a key methodological issue – can conversation be quantified?

Many people working in the area of CA reject the notion of quantifying conversation, seeing CA as essentially a qualitative approach. The whole process of adding up features that occur takes away the sequential context that is found in conversation and therefore removes it from where conversation should be studied, i.e. within the surroundings of what came before and what comes after (Lesser & Milroy, 1993). This area remains highly controversial (Crockford and Lesser, 1994; Perkins, 1995) and is linked to the questions of how consistent conversation is across time; how consistent does it remain from day to day or, for that matter, from conversation to conversation? Reporting on 12 non-aphasic adults recounting an event, Armstrong (2002) demonstrated, for example, that normal speakers vary vastly both qualitatively and quantitatively within a single task and that stylistic variations were greater than anticipated. How possible is it then to determine what is a “normal” or “typical” conversation for any one individual with aphasia?

Boles and Bombard (1998), when looking at the reliability of conversation, found that 5-10 minute samples were representative of larger samples. This suggests that the same pattern seen in a shorter sample is maintained over a longer time period. Perkins, Crisp and Walshaw (1999) looked at quantitative analysis of repair in eight people with aphasia and their conversational partners, taking conversational samples across four different conversations and time periods. When pooling the results, they found wide variation on quantitative measures, although they did suggest that, with individuals, it was possible to take into account within-participant variability by obtaining, for example, repeated baseline measures before therapy. Perkins *et al* (1999) did

find, however, that qualitative analysis was more revealing in its consistency across conversations and concluded that this was perhaps the better way to go with respect to measuring outcome.

Two key issues are raised here. The first relates to whether quantifying conversation is useful for assessment. If there is lack of reliability between analyses of interactions with the same partner and context, how will the clinician know which analysis to consider when planning therapy, especially as the different conversational samples may suggest different goals? The second issue relates to measuring change over time within the same speaker. If there is considerable variability between conversations, how will the clinician know whether change following therapy is an outcome of that therapy and not simply a normal level of variation that would be expected in this form of communication (Perkins *et al*, 1999)?

With respect to the second issue of quantifying changes over time in an individual, Manochioping *et al* (1992) concluded that analysis of conversation was not appropriate for measuring precise changes over time. They felt that the variability in topics was a key issue in comparing conversational samples. Perkins *et al* (1999) also addressed the issue of change over time. They compared the interaction of six people with aphasia and their relatives at less than three months post-stroke and then again four months later. Qualitative results included, for example, **c**hanges in patterns of self repair and collaborative repair in all the participants of the study. Quantitative analyses, however, was less revealing although one finding was the significant reduction in the ratio of major turns involved in collaborative repair. This issue is closely linked to considering analysis of conversation as an outcome measure and will be addressed later.

9. How can we use conversation in therapy?

Clinically, conversation has been used for a long time in therapy (see Green, 1984, for further discussion) and has become the key focus of a number of different approaches (e.g. Kagen, 1998). What CA, in particular, offers the therapeutic process is a systematic analysis of interaction from which to plan targeted intervention around conversation. This is usually achieved by identifying strategies to best manage the difficulties arising from linguistic deficits. While an assessment such as the CAPPA provides a profile from which to develop an individualised therapy programme, one programme, the SPPARC (Lock *et al*, 2001), essentially provides a package of ideas and handouts that can then be adapted for individuals or groups. Whatever the resources used, many issues arise in implementing this type of therapy, e.g. who is involved in the therapy (the person with aphasia, carer or both), how closely does working with couples interface with counselling issues, who might conversational training work best with?

With respect to whether such conversational training is effective, limited literature is available. While studies by Lock and her colleauges are in preparation, Booth and Perkins (1999) provide data from a successful case study. Motivated by findings from the CAPPA, Booth and Perkins report on the individualised intervention programme devised for a man with aphasia and his brother. This study focussed on the successful alteration of strategies used, in particular, by the carer while also highlighting how CA may be better utilised in intervention.

10. Combining CA with other Approaches

Lesser and Perkins (1999) provide an excellent insight into how cognitive neuropsychological models and conversation analysis can work together to inform the nature of the deficit, to determine the most interactionally valid therapy goals for impairment based work and to directly inform the use of compensatory strategies in the interaction with other partners. This has also been addressed by Lesser and Algar (1995).

11. Conversation as an Outcome Measure: Can we use conversation to capture therapeutic change?

In order to measure whether change has taken place, our assessment tools need to be "…*reliable* enough to give consistent measures; …*sensitive* enough to measure the improvement that the particular therapy involved is intended to produce; and …*valid* so that it measures changes that are of real consequence in the patients' lives (Howard & Hatfield, 1987, p.113). Given the variability of conversation, this appears to be a tall order. The naturalistic context of conversation, however, does make it appealing to an aphasiologist to want to explore this possibility.

Boles (1998) measured conversation as well as took traditional measures [e.g. the Western Aphasia Battery, WAB (Kertesz, 1982); the Communication Abilities of Daily Living, CADL (Holland, Frattali, & Fromm, 1999)] pre and post-therapy and found that changes on the latter measures were paralleled with changes in conversational measures. This study looked at such conversational measures as speaking rate, relative contribution in words to the conversation, efficiency (words per utterance) and repairs (self repairs and other repairs). Crockford and Lesser (1994) used three "functional" measures. These included a rating scale used by relatives (the Communicative Effectiveness Index; Lomas, Pickard, Bester, Elbard, Finlayson, & Zoghaib, 1989), an analysis of spoken production in simulated role-play situations (the Amsterdam-Nijmegen Everyday Language Test; Blomert, Kean, Koster & Schokker, 1994) and an analysis of selected conversational behaviours. These included (a) the number of editing elements used by the person with

aphasia (e.g. spontaneous use of circumlocution, further phonemic attempts), (b) amount and type of repair and (c) degree of conversational load carried by the conversational partner (e.g. who initiated the most topics, how often did the aphasic speaker contribute minimal turns such as “uh huh”?). They found that, of the three measures, the conversational measures were the most sensitive to detecting change. They also found, however, that, while quantification of the conversational features did reflect change, it was more illuminating to analyse the data qualitatively as this detected additional changes such as in the different strategies used by conversational partners. This gave, in some instances, a truer picture of what was happening in repair sequences and mirrored findings by Perkins *et al* (1999) who also suggested that, while quantifiable measures can detect change over time, the qualitative data provided the richest source of information.

12. CA and Aphasia – the Future?

The area of CA is still a relatively new one in clinical aphasiology. While the earliest applications date back to the 1970s, its use in the aphasia clinic is only in its infancy. Evidence for its impact on the assessment and therapeutic processes is still sparse, although this will be facilitated by the recent development of published assessment tools (e.g. CAPPA) and therapy resources (e.g. SPPARC). It has, however, already given rise to many questions about the role of conversation in aphasiology. Some of these are as follows:

- What is the relationship between conversation patterns and specific impairments, e.g. how are comprehension impairments reflected in conversation? naming deficits? or sentence processing deficits? And, are there consistent patterns?
- Can we really change peoples’ conversation? If we can, does it make a difference? If it does, to what (i.e. to conversation? to peoples’ attitudes? to peoples’ feelings?)
- Is conversation a realistic environment to be measuring therapeutic change?
- What are the cross-linguistic implications of research in this area?

In summary, with the widening focus on social models of intervention, the continued interest in establishing valid and communicatively real therapy goals for clients, and the need to prove that whatever success is achieved in therapy has an impact on contextual everyday communication, CA is likely to remain a rich bed of investigation for the clinical aphasiologist.

References

Armstrong, E. (2002). Variation in the discourse of non-brain-damaged speakers on a clinical task. *Aphasiology*, *16*, *4/5/6*, 647-658.

Bates, E. (1976). *Language in Context*. New York: Academic Press.

Blomert, L., Kean., M-L., Koster, C. & Schokker, J. (1994). Amsterdam-Nijmegen Everyday Language Test: Construction, reliability and validity. *Aphasiology*, *8*, *4*, 381-407.

Boles, L. (1998). Conversational discourse analysis as a method for evaluating progress in aphasia: a case report. *Journal of Communication Disorders*, *31*, 261-274.

Boles, L. & Bombard, T. (1998). Conversational discourse analysis: appropriate and useful sample sizes. *Aphasiology*, *12*, 547-560.

Booth, S. & Perkins, L. (1999). The use of conversation analysis to guide individualised advice to carers and to evaluate change in aphasia: a case study. *Aphasiology*, *13, 4 & 5*, 283-304.

Crockford, C. & Lesser, R. (1994). Assessing functional communication in aphasia: clinical utility and time demands of three methods. *European Journal of Disorders of Communication*, *29*, 165-182.

Crystal, D. (1987). *The Cambridge Encyclopaedia of Language*. Cambridge: CUP.

Ferguson, A. (1994) The influence of aphasia, familiarity and activity on conversational repair. *Aphasiology*, *8*, 143-157.

Gerber, S. & Gurland, G.B. (1989). Applied pragmatics in the assessment of aphasia. *Seminars in Speech and Language*, *10*, 263-281.

Goodwin, C. (1995). Co-constructing meaning in conversations with an aphasic man. *Research on Language as Social Interaction*, *28*, 233-260.

Green, G. (1984). Communication in aphasia therapy: some of the procedures and issues involved. *British Journal of Disorders of Communication*, *19*, 35-46

Herbert, R., Best, W., Hickin, J., Howard, D. & Osborne, F. (in preparation). *POWERS: Profile of Word Errors and Retrieval in Speech*.

Holland, A., Frattali, C. and Fromm, D. (1999). *Communication Abilities of Daily Living – Second Edition*. Austin, TX: Pro-Ed.

Howard, D. & Hatfield F.M. (1987). *Aphasia Therapy: Historical and Contemporary Issues*. London: Lawrence Erlbaum Associates.

Kagan, A. (1995). Revealing the competence of aphasic adults through conversation: a challenge to health professionals. *Topics in Stroke Rehabilitation*, *2*, 15-28.

— (1998). Supported conversation in adults with aphasia: methods and resources for training conversation partners. *Aphasiology*, *12*, 816-30.

Kertesz, A. (1982). *Western Aphasia Battery*. New York: Grune and Stratton.

Klippi, A. (1990). Conversational dynamics between aphasics. *Aphasiology*, *5*, *4 & 5*, 373-378.

— (1996). *Conversation as an Achievement in Aphasics*. Helsinki: The Finnish Literature Society (Suomalaisen Kirjallisuuden Seura).

Lesser, R. & Milroy, L. (1993). *Linguistics and Aphasia: Psycholinguistic and Pragmatic Aspects of Intervention*. London: Longman.

Lesser, R. & Algar, L. (1995). Towards combining the cognitive neuropsychological and the pragmatic in aphasia therapy. *Neuropsychological Rehabilitation*, *5*, *1/2*, 67-92.

Lesser, R. & Perkins, L. (1999). *Cognitive Neuropsychology and Conversation Analysis in Aphasia: An Introductory Casebook*. London: Whurr.

Levinson, S.C. (1983). *Pragmatics*. Cambridge: CUP.

Lock, S., Wilkinson, R. and Bryan, K. (2001). *SPPARC: Supporting Partners of People with Aphasia in Relationships and Conversation: A Resource Pack*. Bicester: Speechmark.

Lomas, J, Pickard, L, Bester, S, Elbard, H, Finlayson, A. & Zoghaib, C. (1989). The communicative effectiveness index: a development and psychometric evaluation of a functional communication measure for adult aphasia. *Journal of Speech and Hearing Disorders*, *54*, 113-124.

Manochioping, S., Sheard, C. & Reed, V. (1992). Pragmatic assessment in adult aphasia: a clinical review. *Aphasiology*, *6*, 519-533.

Milroy, L. & Perkins, L. (1992). Repair strategies in aphasic discourse: towards a collaborative model. *Clinical Linguistics and Phonetics*, *6*, 27-40.

Perkins, L. (1995). Applying conversation analysis to aphasia: clinical implications and analytic issues. *European Journal of Disorders of Communication*, *30*, 372-383.

Perkins, L., Crisp, J. & Walshaw, D. (1999). Exploring conversation analysis as an assessment tool in aphasia: the issue of reliability. *Aphasiology*, *13*, *4-5*, 259-282.

Pound, C., Parr, S., Lindsay, J. & Woolf, C. (2000). *Beyond Aphasia: Therapies for Living with Communication Disability*. Bicester, UK: Speechmark.

Schegloff, E.A. (1982). Discourse as an interactional achievement: some uses of “uh huh” and other things that come between sentences. In D. Tannen (Ed.), *Georgetown Roundtable on Language and Linguistics 93*. Georgetown: University Press.

Schegloff, E., Jefferson, G. & Sacks, H. (1977). The preference for self-correction in the organisation of repair in conversation. *Language*, *53*, 361-82.

Schriffrin, D. (1988). Conversation analysis. In J. Frederick (Ed), *Linguistics: The Cambridge Survey*. Cambridge: CUP.

Simmons-Mackie, N. (2001). Social Approaches to Aphasia Intervention. In R. Chapey (Ed.), *Language Intervention Strategies in Adult Aphasia – 4th Edition*. Philadelphia, PA: Lippincott, Wilkins and Williams.

Whitworth, A., Perkins, L. & Lesser, R. (1997). *Conversation Analysis Profile for People with Aphasia (CAPPA)*. London: Whurr.

Wilkinson, R. (1995). Aphasia: conversation analysis of a non-fluent aphasic person. In M. Perkins & S. Howard (Eds.), *Case Studies in Clinical Linguistics*. London: Whurr.

Worrall, L.E. (2000). A conceptual framework for a functional approach to acquired neurogenic disorders of communication and swallowing. In L.E. Worrall & C.M. Frattali (Eds.), *Neurogenic Communication Disorders: A Functional Approach*. New York: Thieme.