Research Report

Conversation therapy for agrammatism: exploring the therapeutic process of engagement and learning by a person with aphasia

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Abstract

Background & Aims: A recent systematic review of conversation training for communication partners of people with aphasia has shown that it is effective, and improves participation in conversation for people with chronic aphasia. Other research suggests that people with aphasia are better able to learn communication strategies in an environment which closely mirrors that of expected use, and that cognitive flexibility may be a better predictor of response to therapy than severity of language impairment. This study reports results for a single case, one of a case series evaluation of a programme of conversation training for agrammatism that directly involves a person with aphasia (PWA) as well as their communication partner. It explores how a PWA is able to engage with and learn from the therapy, and whether this leads to qualitative change in post-therapy conversation behaviours.

Methods & Procedures: A 55-year-old man with chronic agrammatism and his wife took part in eight weekly sessions of conversation therapy, adapted from Supporting Partners of People With Aphasia in Relationships and Conversation (SPPARC). Language and conversation were assessed before and after therapy, and the couple's views on conversation and disability were elicited. Conversation analysis was used to analyse: (1) pre-therapy conversation patterns, (2) how the PWA engaged and learned during therapy and the forms of facilitation that aided this process, and (3) qualitative change in post-therapy conversation behaviour.

Outcomes & Results: After therapy, the PWA showed increased insight and acceptance of the use of strategies such as writing and drawing in the face of conversational difficulty. However, use was prompted by his wife and was rarely spontaneous.

Conclusions & Implications: This single case study suggests that conversation training based around an experiential learning process is able to engage a PWA directly in learning about the effects of aphasia on conversation. Key facilitators were self-study via video and experience of practising conversation whilst receiving online feedback from a speech and language therapist. However, increased insight did not automatically change conversation behaviour. Although he better understood the effects of his aphasia on conversations with his wife, learning stopped short of the ultimate goal of the conversation training programme; the spontaneous use of strategies worked on in therapy when faced with conversation breakdown. One explanation may be that limited cognitive flexibility lead to problems with switching from one strategy to another.

Keywords: conversation training, aphasia, agrammatism, communication strategy, experiential learning.

What this paper adds

It is known that conversation partner training is a successful intervention for aphasia, and that people with aphasia learn best in context. This study aimed to discover if a man with chronic agrammatic aphasia could benefit from conversation training delivered in his home with his conversation partner. The therapy helped to increase his insight and acceptance of the need for communication strategy use in the face of conversation breakdown. However, he did not learn to switch strategies spontaneously after training, possibly because of difficulty with cognitive flexibility.

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Introduction

Language-based therapies have been successful in improving specific skills in aphasia (e.g. word finding) and some have shown generalization to everyday life (Best *et al.* 2011, Conroy *et al.* 2009). However, many people with aphasia need explicit support to use newly learned strategies and skills in conversation (Kagan 1998, Turner and Whitworth 2006) and generalization to social language settings is not always spontaneous. In an attempt to promote everyday language use in aphasia, conversation training programmes have been developed for the non-impaired conversation partner (CP) (Kagan 1998, Lock *et al.* 2001, McVicker *et al.* 2009). A recent systematic review by Simmons-Mackie *et al.* (2010) has concluded that conversation training is effective at improving the communication of a CP, and having a trained partner is probably effective in also improving the participation in conversation of a person with chronic aphasia.

One body of prior research has focused on training CPs of individuals with aphasia, often in groups, without the person with aphasia (PWA) being present; the focus of intervention is clearly on the CP (Booth and Swabey 1999, Kagan *et al.* 2001, McVicker *et al.* 2009). Other researchers report positive results after training CPs and PWAs within dyads (Lock *et al.* 2001, Burch *et al.* 2002, Cunningham and Ward 2003, Sorin-Peters 2004), but in these studies the focus is still primarily on effecting change to the CP's behaviour in order to support the PWA within conversation. Only recently has research begun to focus explicitly on training the PWA to implement strategies in conversations with a regular communication partner. Initial results have been encouraging. For example, Wilkinson *et al.* (2010) reported how a PWA was taught to use topic alerters as a new and successful method of initiating topics, and Wilkinson *et al.* (2011) described an increase in the development of topics by a PWA after direct training. Fox *et al.* (2009), employing procedures used by Boles (1998) and Boles and Lewis (2003), noted improved PWA participation in conversation after training. Specifically the PWA initiated more topics, asked more questions and slowed her rate of speech. These behaviour changes were verified by PWA and CP report and by clinical observation measures. For a review of conversation therapy to date, including a discussion of whether studies target the PWA directly or the CP, see Wilkinson and Wielaert (2012).

Despite these early and promising findings, we still do not fully understand which factors influence whether a PWA is able to engage actively in direct conversation strategy training, and afterwards use those strategies effectively in conversations during daily life. Purdy and Koch (2006) found that PWA are better able to learn to use strategies when they are taught in conditions that most closely approximate the environment of expected use. This work suggests that conversation training may be highly beneficial for a PWA. However, Purdy and Koch (2006) also conclude that deficits in cognitive flexibility are common in individuals with aphasia, and that they correlate closely with difficulties in strategy use, and with conversation breakdown (also Frankel *et al.* 2007, Penn *et al.* 2010). Thus, cognitive ability, particularly problem-solving and the ability to shift from one strategy to another in the face of conversational difficulty, may be a factor in successful response to conversation therapy for a PWA. This warrants further investigation.

The work reported here focuses on the PWA and their CP as equal partners in a novel conversation therapy for agrammatism and explores the utility of working directly with a PWA on strategy use in conversation. The aim of therapy is to transform the PWA into an active learner and user of conversation strategies, rather than someone who is dependent upon the support of a skilled CP. The paper has two main aims: (1) to study the specific outcomes for a PWA of a conversation training programme aimed at changing the behaviour of both a PWA and a CP; and (2) to describe the mechanisms of behaviour change for a PWA during this intervention.

Therapeutic process and conversation-based intervention

The intervention reported here is an adaptation of the Supporting Partners of People With Aphasia in Relationships and Conversation (SPPARC) conversation training programme (Lock *et al.* 2001). SPPARC has facilitated the translation of conversation analysis (CA) research findings into a clinical programme to teach tailored conversation strategies, and is based on Kolb and Kolb's (2009) conceptualization of learning as 'the process whereby knowledge is created through transformation of experience' (p. 298). That is, learning is achieved via a reactive response to a learning situation (an experience), which triggers a recursive process of reflecting, thinking and acting. This process is presented diagrammatically in figure 1. A person must engage in all four stages of learning, beginning with concrete experience. Engaging in conversation based therapy involves: (1) (re-)experiencing one's own and others' conversations by watching videos; (2) taking part in reflective written and verbal activities; and (3) engaging in role play (to enact new strategies). These activities require a person to grasp a concrete experience, to think about it in an abstract manner and to transform reflections into new actions.
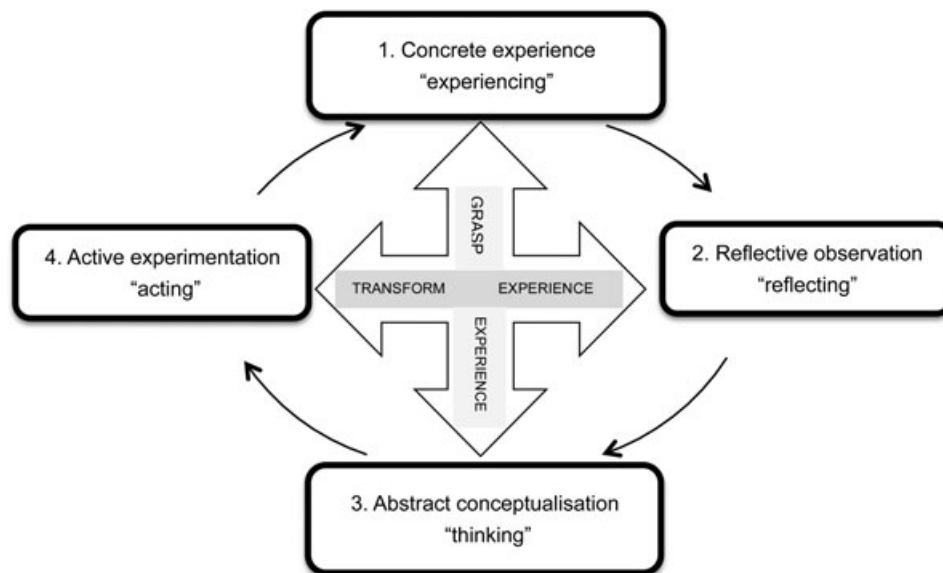
Figure 1.   Kolb Adult Learning Model (Kolb and Kolb 2009).

In other words, they require high-level problem-solving skills and an ability to initiate and switch strategy use.

To date there has been no systematic investigation of how the conversation training process is 'created'; in other words, what is actually done by therapist and participants, and how they interact together, in order to achieve the goals of intervention. The lead author's discussions with speech and language therapists (SLTs) suggest that there is uncertainty about how to carry out this type of work in a clinical context. In order to be able to analyse effectively how clinicians use conversation therapy to achieve specific outcomes for and with their clients, and especially if we wish to include the PWA more actively, it seems that we need a systematic and orderly way of describing the therapy process itself. As Byng and Black (1995) state, knowing how individual clinicians structure the introduction, explanation, feedback, duration and intensity of a task, and interactions within it, is key to understanding how things get done in therapy. Greater specification at this level may help us understand the 'active ingredients' that contribute to successful therapy outcomes for conversation.

Qualitative research methods such as CA offer a structured and systematic means of analysing how therapy is constructed by members of a therapeutic dyad (e.g. Horton *et al.* 2011, Simmons-Mackie and Damico 2011). CA has proved to be a useful tool for exploring the therapeutic process in psychology and psychotherapy. For example, work by Muntigl and Zabala (2008) has demonstrated how different styles of therapeutic question can impact on a client's ability to reflect on an experience, and thus facilitate or impede therapeutic engagement. A CA exploration of the therapeutic work done by a clinician, a PWA and their CP during conversation therapy may offer an understanding of the 'black box' of this type of intervention, and how change is achieved, especially if it can then be related to measurable outcomes of therapy.

This paper reports on a tailored conversation therapy programme that was designed to allow direct work with a PWA, as well as with their CP (Beeke *et al.* 2011). The therapy aimed to educate speakers about the effects of agrammatism on conversation, and teach strategies to allow a PWA to produce more complete, and thus successful, turns at talk, thereby increasing the likelihood of mutual understanding. PWA strategies had an interactional focus, and were based on CA research into successful turn construction behaviours of individuals with agrammatism (Beeke *et al.* 2003, 2007). Strategies included the use of a keyword in turn initial position,[1] the integration of writing or drawing into a turn, and the use of verbal and non-verbal behaviours to signal turn continuation. Thus, therapy was not impairment-focused with the target of reducing agrammatic output, but rather it aimed to support both speakers in developing a facilitative conversation style in spite of the agrammatism. This paper uses CA methods to uncover specific outcomes for a PWA of a conversation training programme, and to explore mechanisms of behaviour change, i.e. how the PWA engages with and learns from this type of therapy, which forms of facilitation aid the learning process, and whether learning leads to behavioural change in conversation. Although it is beyond the scope of the current paper to present an in-depth investigation of learning and outcomes for the CP, her contributions are described where they are relevant to the investigation of PWA learning.

Phase	Pre-therapy Baseline Assessments (8 weeks)								Therapy (8 weeks)								Post-therapy Follow-up Assessments (8 weeks)							
Assessment	Pre-therapy 1			Pre-therapy 2			Pre-therapy 3										Post-therapy 1				Post-therapy 2			
Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24

Conversation   1   2   3   4   5   6   7   8   9   10   11   12   13   14   15   16   17

Figure 2. Project design. Repeated assessments are carried out on five occasions: three times prior to therapy and twice after the therapy. (Profile assessments are carried out once prior to therapy and once after.) Eight conversations are collected prior to therapy (starting between weeks 1 and 2) and two during therapy (between weeks 11 and 12, and between weeks 14 and 15). Eight further conversations are collected during follow-up after therapy (ending after the final session on week 24). Assessment and therapy sessions take place once a week for around 1.5 h for 8 weeks.

Method

Research design

This paper reports on a single case study using both quantitative and qualitative assessment at baseline and follow-up. The main project from which this case study is drawn was a case series design of eight single case studies, with each participant acting as his/her own control. Figure 2 illustrates the design of the main project, where each case study involved a PWA and their chosen CP (a dyad) in 6 months of intervention, subdivided into three phases of 8 weeks each: (1) three pre-therapy assessment baselines, (2) therapy and (3) two follow-up assessment baselines.

Assessments

Assessment sessions took place at the dyad's home, once a week for around 1.5 h. As shown in figure 2, a dyad participated in 8 weeks of pre- and 8 weeks of post-therapy assessment, split into three pre-therapy and two post-therapy assessment baselines. Quantitative and qualitative assessment methods were used. Quantitative assessment consisted of a battery of impairment, activity and participation tests and interviews, and a test of cognitive flexibility (table 1). Some tests were repeated once at each baseline (referred to as repeated measures in table 1), and others were administered once before and once after therapy (referred to as profile assessments in table 1). For the purposes of this case study, repeated measurements at baseline and follow-up have been averaged together. The Communication Disability Profile is an assessment tool in questionnaire format that allows the PWA to express their views and experiences of living with aphasia. The Conversation Analysis Profile of People with Aphasia (CAPPA) is an interview providing information about a conversation partnership's insight into their interactions, including issues such as turn-taking, repair and topic. The Brixton Spatial Anticipation Test is a non-verbal cognitive measure of the ability to detect changes in rules in a changing set of stimuli.

Qualitative assessment involved the videotaping of conversation samples. After training in how to operate a digital video camera, dyads were asked to video record approximately 20 min of conversation together, per week, at home. The research SLT was not present and no topics for conversation were suggested. Dyads were advised to record at a time when they would normally sit down for a chat, to catch up on events and news, for example. Eight pre- and eight post-therapy video conversation samples were collected from each dyad in this way, as well as two conversations during therapy (not analysed here), totalling approximately 6 h of recordings per dyad. Therapy sessions were also videotaped as a record of the therapeutic work done by the research SLT (the lead author), PWA and CP during intervention. This totalled approximately 12 h of recordings per dyad. In addition, the research SLT kept a written log of interactional behaviours and responses to therapy tasks that appeared to be of importance to the dyad's learning. The methods and published findings of CA were used to analyse qualitatively these videoed conversations and therapy sessions, with two main aims: (1) to evaluate the dyad's pre- and post-therapy conversations, particularly repeated behaviours that acted as facilitators and barriers to interaction; and (2) to explicate the mechanisms of PWA behaviour change during the therapeutic process itself.

Therapy programme

Therapy sessions took place at the participants' home once a week for 8 weeks, each lasting around 1.5 h. An overview of the topics, aims and key techniques for therapy is outlined in appendix A. During sessions, a

Table 1. Battery of assessments

Assessment	Max. Score	Norms (where available)
Repeated Measures		
Object & Action Naming Battery (Druks & Masterson, 2000)		
20 items: 10 nouns & 10 verbs	20	N/A
Psycholinguistic Assessments of Language Processing in Aphasia (PALPA, Kay, Lesser, & Coltheart, 1992)		
PALPA 53 written single words (partial)	20	N/A
Comprehensive Aphasia Test (CAT, Swinburn, Porter & Howard, 2004)		
Repetition of digit strings	14	Norm Mean: 6.44
		Post-Acute Aphasic: 3.94
Comprehension of written sentences	32	Norm Mean: 29.78
		Post-Acute Aphasic: 17.02
Spoken picture description	N/A	Norm Mean: 52.19
		Post-Acute Aphasic: 3.94
Verb and Sentence Test (VAST, Bastiaanse, Edwards & Rispens, 2002)		
Sentence production	20	Norm: 19.78
		Aphasic Norm: 10.50
Dinner Party Narrative (Fletcher & Birt, 1983)		
	N/A	N/A
Communication Disability Profile (CDP, Byng & Swinburn, 2006)		
	80	N/A
Conversation Analysis Profile of People with Aphasia (CAPPA, Whitworth et al., 1997)		
	N/A	N/A
Profile Measures		
Pyramids & Palm Trees Test (Howard & Patterson, 1992)		
	56	Controls: 98–99%
Psycholinguistic Assessments of Language Processing in Aphasia (PALPA, Kay, Lesser, & Coltheart, 1992)		
PALPA 4 minimal pair discrimination	40	Controls 39
PALPA 47 spoken word picture match	40	Controls 39.29
Verb and Sentence Test (VAST, Bastiaanse, Edwards & Rispens, 2002)		
Comprehension of spoken sentences	40	Norm: 39.9
		Aphasia Norm: 29
The Hayling and Brixton Tests of Dysexecutive Syndrome (Burgess & Shallice, 1997)		
Brixton Spatial Anticipation Test	10 (scaled score)	2 or below = abnormal

dyad viewed short clips from pre-therapy conversations to facilitate discussion about key features (both positive and negative) of their interactions. All sessions were designed to engage actively both the PWA and the CP in discussion, and in problem-solving new behaviours. For the purposes of this paper, the eight therapy sessions are reported in three phases to reflect Kolb's (1984) adult learning model.

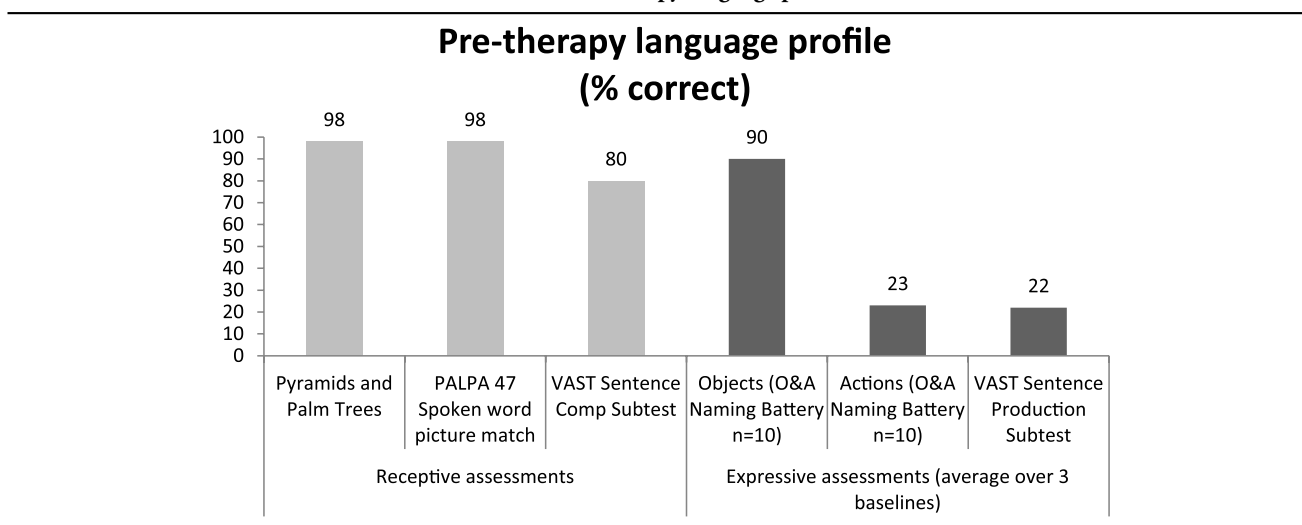### Phase 1. Experiencing and reflecting (sessions 1–3)

This initial stage of therapy focuses on building concrete experiences of conversation and facilitating reflection on conversational behaviour, to correspond with stages 1 and 2 of the experiential learning model (figure 1). Session 1 provides an introduction to conversation and agrammatism, session 2 focuses on turns, sequences and actions, and session 3 explores repair. Throughout, video clips (initially involving other couples where one person has aphasia, and later taken from a dyad's own conversations) act as a catalyst for a dyad to reflect on general con-

versational processes and their own behaviours. These clips, along with information-giving handouts, provide (1) concrete experience of typical conversation patterns and the disruptions caused by agrammatism and (2) a focus for self-reflection, facilitated through discussion with the SLT.

Phase 2. Thinking (sessions 4–6)

Sessions 4–6 form the backbone of the therapeutic process. They aim to develop strategy use by the PWA (session 4), followed by the CP (session 5; not discussed here) and then to facilitate the integration of these strategies, with a focus on topic (session 6). This stage is most challenging for the PWA, who needs to incorporate the information provided on handouts with reflection on his or her own conversation (prompted by video clips), and to problem-solve the use of new strategies. To facilitate the shift from reflection to thinking, a two-part approach is undertaken: identifying a problem and then considering an alternative solution.

Table 2. Pre-therapy language profile

Pre-therapy language profile (% correct)

Phase 3. Acting (sessions 7 and 8)

The final stage of the therapy process facilitates the creation of new conversational experiences. The dyad actively practises, via role play and immediate reflection on the consequences of their actions, the strategies they each selected in sessions 4 and 5, with support from the SLT. At this stage of the learning process no new information is given to a dyad.

Participants

Giles and Linda (pseudonyms) are a married couple. Giles was 55 years old when recruited to the project, having had a large left middle cerebral artery infarct at the age of 50. After his stroke, he received 6 months of NHS inpatient rehabilitation and a further 3 years of outpatient speech and language therapy. Prior to his stroke, Giles was a senior sales manager. He now attends a day centre and enjoys watching his local football team. Linda is a full-time manager for a large company.

As table 2 shows, prior to therapy Giles presented with intact non-verbal semantics, achieving 98% correct on the Pyramids and Palm Trees Test (Howard and Patterson 1992). He scored 98% correct on the PALPA 47 (Kay *et al.* 1992), and 80% correct on the VAST sentence comprehension subtest (Bastiaanse *et al.* 2002). Thus, his comprehension was a relative strength. Giles's expressive language profile showed a severe impairment in verb retrieval and the production of sentences. He scored on average over three baselines: 22% for the VAST sentence production subtest and 23% for verbs (versus 90% for nouns) on the Object and Action Naming Battery (Druks and Masterson 2000). These difficulties were also reflected in Giles's response to the Comprehensive Aphasia Test spoken picture description (Swinburn *et al.*

2004), reproduced below (numbers in parentheses represent pauses). His test profile is typical of someone with agrammatic aphasia.

> (3.5) a book (1) erm (2) ending (2) erm (2.5) /bɔː/ /bwa/ (SLT 'uh humm') erm (1) and (1.5) a sleeping er a sleeping (1.5) aan (5) erm (3) erm (2.5) oh erm (1) yeah er erm a kid (SLT 'yeah') aan erm erm a kitten erm bends (1) down yeah yeah yeah (SLT 'uh humm') /dær/ aan (0.5) /hʊ/ yes an erm (1) erm /h/ asleep (SLT 'yes') erm an erm (3) erm yeah. [1 minute 12 seconds duration]

Prior to therapy, the dyad completed the CAPPA (Whitworth *et al.* 1997). Results are summarized in table 3. Giles and Linda rated linguistic skills as most impaired (86%) and most problematic (71%) of the four conversational domains targeted by the CAPPA questionnaire (the other three domains being repair, initiation, and turn-taking and topic). Within this domain, word-retrieval difficulties and agrammatic speech were judged most problematic. Within the domain of topic, both rated topic maintenance as very problematic.

Table 3. Pre-therapy results from the Conversation Analysis Profile for People with Aphasia (CAPPA)

	Linguistic skills	Repair	Initiation & Turn taking	Topic
■ Impairment Rating	86	31	25	37.5
▩ Problem Rating	71	37.5	25	50
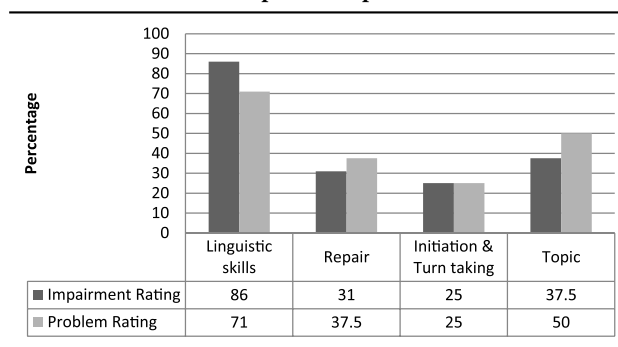
Linda reported that she and Giles often had very 'similar types of conversation' to minimize the number of 'clues' needed to help her understand what he was saying. They identified Giles's frustration at not being immediately understood as a source of repeated difficulty in conversation.

Pre-therapy conversation profile: conversation analysis (CA)

Qualitative evaluation of Giles's and Linda's conversations using CA methods involved repeated viewing of the eight pre-therapy conversation samples by the project team to locate key patterns, particularly features that acted as facilitators and barriers to interaction. Analysis found interactional strengths to be Giles's use of mime and intonation, the dyad's ability to signal to each other when they had not understood, and humour. However, four key barriers to conversation were identified within Giles's talk:

- Incomplete turns.
- Turns where the conversational function is unclear.
- Long complicated mime sequences that lack context.
- Limited insight into the impact of his conversational behaviours on his wife.

Extract 1, selected to illustrate these features, is representative of the patterns seen in pre-therapy conversations between Giles and Linda (for CA transcription symbols, see Hutchby and Woofitt 2008).

In this extract, Giles attempts to initiate a new topic in a long and complex sequence of talk, gesture and mime that lacks context (lines 01–11), and his turn is therefore ambiguous. The extract demonstrates Giles's frustration with Linda's lack of comprehension ('NO!', line 24), which may reflect limited insight into the impact of his behaviour. Prior to this extract, Linda asks Giles what he has done that week. Giles, in response, attempts a comment about the third guest on a television chat show hosted by Jonathan Ross, but this only becomes clear to Linda after a lengthy sequence of turns, extending beyond extract 1. Giles combines words ('Friday', line 01; 'thirty', line 04), singing (lines 01 and 02, an attempt at the theme tune of the show), gesture (indicating the third of three items, lines 02 and 03), skywriting numbers (line 05, possibly to convey the show's start time), and, finally, a complex sequence of direct reported speech and mime at line 06, which turns out to be an impersonation of Jonathan Ross.[2] He pauses at line 07, perhaps for Linda to respond. Linda's turn ('what was that?', line 8), delivered with marked

intonation, suggests incomprehension and amusement. As the conversation develops, Linda gives Giles three further opportunities to repair ('who's that?', line 12; 'sorry you've lost me there I'm sorry', line 14; 'who does that?', line 21), but Giles persists with the impersonation. Linda's final question 'this someone you know?' (line 23) leads Giles to an overt expression of extreme frustration 'NO!', spoken with raised volume and highly marked intonation (line 24). Her question reveals just how problematic the meaning of Giles's turn is; Linda is trying to make sense of his impersonation as someone who is part of Giles's social circle. Television is the key concept that would provide clarification but which is absent from his original turn and subsequent repair attempts. Giles attempts a clarification, saying 'standin a live' (line 24), perhaps an attempt at the show's name; *Saturday Night Live*, but the repair is unsuccessful. His head movements and a noise conveying frustration (line 26) suggest he is ready to abandon this unresolved repair sequence.

Complex and poorly contextualized talk and mime sequences, Giles's frustration at not being immediately understood and repair initiations from Linda, were found to be typical of this dyad's pre-therapy conversations. Although Giles's highly skilled and creative mime sequences demonstrated an ability to recall and mentally manipulate past events, his inability to provide context to identify the topic, and his tendency to merely repeat a mime sequence in response to a request for repair, rather than switching strategy, meant that long, emotionally charged repair sequences were frequent and often unresolved.

Results

What follows is a qualitative analysis of extracts from Giles's and Linda's therapy sessions, with a focus on the therapeutic mechanisms underpinning PWA behaviour change, i.e. how Giles was able to engage and learn. Subsequent to this, Giles's post-therapy language profile is presented and post-therapy behaviour change results are discussed.

Each therapy extract below shows an activity designed for a particular stage of the experiential learning cycle, and has been chosen in order to demonstrate how different forms of facilitation aid engagement and learning. Findings are reported with reference to the three phases of therapy as outlined above in the Method.

Experiencing and reflecting: sessions 1–3

Extract 2 is taken from therapy session 1 which provides an introduction to typical (non-aphasic) conversation and an explanation of how agrammatic conversation

Extract 1: Jonathan Ross - Conversation 6, 09:10-10:05

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01   Giles   Friday, (1.7)    ⌈der der der der der der der der         sings
                              ⌊((points over left shoulder))
02           ⌈deeh d eheh (0.1) eh     ⌈(0.4)                        ⌉
                                       ⌊((holds up three fingers))   ⌋
03           ⌈wiwa                                        ⌈oh!       counts 1,2, 3on
             ⌊((touches index finger to thumb, then middle finger...   ⌊then third finger))   fingers
04           (0.9) doh (1.1) thirty durm
05           ⌈(3.8)                                     ⌉(0.2)
             ⌊((sky writes numbers 9, 3 and 5 then looks at Linda))⌋
06           ⌈oh er HI yeah yeah yeah ⌉⌈(0.7) (snorts)                  ⌉   begins
             ⌊((waves))             ⌋⌊((pretends to flick hair back from face))   ⌋   impersonation
07           ⌈(0.7)                 ⌉
             ⌊((looks at Linda))    ⌋
08   Linda   what was that?
09   Giles   yeah eh ⌈(1.4)                        ⌉⌈HELLO            impersonation
                     ⌊((lowers head and then flicks head up))  ⌋⌊((waves))
10   Linda   haha!
11   Giles   ⌈yeah
             ⌊((runs hand through hair))                              impersonation
12   Linda   who's that?
13   Giles   (1.5)   ⌈ohh
                     ⌊((frowns and looks down))
14   Linda   sorry you lost me there I'm sorry=
15   Giles   ⌈=yeah,                              ⌉⌈(0.3)              ⌉   indicates a tie
             ⌊((brings hand up and points to collar))  ⌊((moves fingers down chest))⌋
16           ⌈(0.5)                        ⌉⌈tie                 ⌉
             ⌊((moves fingers back up to collar...⌋⌊((opens hand across collar))   ⌋
17   Linda   yeah?
18   Giles   ⌈ai ai yeah yeah
             ⌊((looks up, smiles, moves hand to and from mouth))
19           ⌈(snorts)
             ⌊((dips and flicks head back))
20           (3.0)                                                    impersonation
21   Linda   (tuts)   ⌈who does that
22   Giles            ⌈ohh                      ⌈(1.8)
                      ⌊((places head in hand))  ⌊((shakes head))
23   Linda   this someone you know?
24   Giles   (0.7) NO! (0.7) ⌈(standin a live)                        frustration
                             ⌊((shakes hand at Linda))
25           (0.9)
26   Giles   ⌈grrrrhh
             ⌊((closes eyes and moves head right and down))
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differs. It illustrates Giles's engagement and learning in the therapeutic process, facilitated by the use of a handout.

In this extract Giles receives information about agrammatism from a handout read aloud by the SLT.

The SLT divides the information into three statements (lines 01, 03 and 05), and Giles responds to each when the SLT looks up to signal the end. His acknowledging 'yes' is accompanied by a thumbs up gesture (line 02), and a clenched fist (line 04). His response to the third

Extract 2: Experiencing and reflecting using a handout - Therapy Session 1, 32:10- 32:44

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01   SLT    people who have agrammatism often speak in 1 or 2 word  utt⌈erances        SLT reads
                                                                    ⌊((looks at Giles))  handout, points
                                                                                         to text

02   Giles  ⌈yes
            ⌊((thumb up, looks at Linda))
03   SLT    heh because they can't put words together (.)⌈to form a sentence
                                                         ⌊((looks at Giles))
04   Giles  ⌈yes
            ⌊((makes a fist and raises it, slight head turn towards Linda))
05   SLT    ((nods)) this can make their speech (.) sound (.) like a        ⌈telegram
                                                                            ⌊((looks at Giles))
06   Giles  ((looking at handout gives a thumb up))
07   SLT    ((nods))⌈so for example here=
                    ⌊((traces finger along example of agrammatic speech))
08   Giles  =yeah (.)       ⌈((points to example))              ⌉erm car=      Giles reads
                            ⌊((SLT removes hand from text))      ⌋              example
09   SLT    =yeah
10   Giles  broken (.) late (.) sorry (.) Fred ((looks up at SLT))
11   SLT     exactly
12   Giles  ((does thumbs up))
13   SLT    well read=
14   Giles  =⌈yeah zactly exactly
             ⌊((looks up at Linda))
15   SLT    so that's exactly what happens to you
16   Giles  yes.
```

statement is non-verbal, another thumbs-up gesture (line 06). Giles produces a positive non-verbal acknowledgment token (a thumbs up) when statements are framed positively (lines 01 and 05), and a negative token (a clenched fist) when a statement conveys an overt problem ('because they can't put words together to form a sentence', line 03). The effect is one of Giles paying close attention to each statement, and recognizing his own difficulties. He also turns towards Linda (lines 02 and 04) to include her in the experience. After the SLT has said 'so for example here', tracing her finger over an example of agrammatic speech (line 07), Giles takes an opportunity to move from receiver of information to a role involving active control of and engagement with the learning environment. He points to the same part of the handout; in response the SLT immediately removes her hand from the text (line 08) and relinquishes control. Giles then reads the example aloud ('car broken late sorry Fred', lines 08 and 10). As he finishes reading, he looks up at the SLT who acknowledges the meaning of what he has read ('exactly', line 11) and then comments on Giles's success ('well read', line 13), after he gives a thumbs up (line 12). Although it is not entirely clear whether Giles's response at line 14 ('yeah zactly exactly') is an

acknowledgement of his success at reading or a comment linking what he has read to his own experience, the SLT's subsequent question ('so that's exactly what happens to you?', line 15), treats it as the latter. Giles accepts this version of his meaning, responding with 'yes' (line 16).

In summary, this extract illustrates how the therapeutic process prompts Giles to match the concrete example of agrammatism on the handout with his own experience. He retains and actively reflects on the information offered, facilitated by the joint focus on the handout, which also provides a scaffolded opportunity to participate actively in the learning experience. When Giles demonstrates his understanding and recognition of the characteristics of agrammatic conversation presented to him, firstly by giving a thumbs up or raising a fist as appropriate, and then by responding in the affirmative when the SLT checks that this sums up his experience, the learning outcome of this therapeutic interaction is achieved. He has moved between experiencing (stage 1 of the experiential learning model) and reflecting (stage 2).

Learning by experiencing and reflecting, both in and between sessions 1–3, provides a foundation for stage

3 of the experiential learning process, thinking. This underpins sessions 4–6.

Thinking: sessions 4–6

The two extracts that follow have been selected to demonstrate the types of task that characterize this stage of therapy, i.e. identifying a problem (extract 3) and considering an alternative solution (extract 4). Extract 3 (therapy session 4) aims to facilitate the PWA's ability to identify behaviours that act as barriers within conversation and then select strategies to practise when a similar situation is next encountered. The SLT had pre-selected the barrier: Giles's use of long, complicated mime sequences that lack context. The goal is for Giles to identify what is problematic about the turn he takes during the 'Jonathan Ross' video clip (see extract 1). His thinking is scaffolded by a handout entitled 'Common problems in agrammatic turns'.

As extract 3 begins, Giles has just finished reading about three common problems in agrammatic turns and has watched the 'Jonathan Ross' video clip twice. He is then asked to use the three 'options' on the handout to identify the problem with his turn in the clip. Giles initially points to option 1 (*you started a turn and could not finish it*), saying 'definitely this' (line 03). The SLT does not acknowledge his answer (a pause, line 04), and moves on to option 2 (*the aim of your turn was not clear)* (line 05), suggesting either that option 1 was not the required response, or that it is necessary to listen to all three options before responding. Giles persists with his answer (line 06) to which the SLT replies ('okay', line 07) before presenting the other two options (lines 09–16). After a pause, she requests an answer ('what do you think the main thing was', line 18). In response, Giles continues to select option 1 (line 19) but now also chooses option 3 (*stopping the conversation to solve a problem*, line 20). The SLT laughs in response (line 21), at which point Linda says 'it's the one in the middle I think' (line 22), (option 2, *the aim of your turn was not clear*). The SLT agrees (line 23), and the learning objective of the task is revealed; the main problem with the out-of-context mime shown in the video clip is its lack of clarity because the topic of television has not been introduced. Here, Giles is not yet able to use new information on a handout to reflect on his behaviour and arrive at the same judgement as his wife and the SLT. His perception appears to be focused on his communication difficulty rather than on shared conversation, and thus his decision is based solely on the problem *he* was having; naming Jonathan Ross. An ability to think and reason from the perspective of his wife is not yet in evidence despite the SLT's subtle hints that option 1 is not the target response.

Giles's apparent difficulty with this stage of the therapeutic process is further highlighted in extract 4 (taken from the same session). This is an example of a task that targets the second part of the thinking process: considering an alternative solution. In this extract, Giles has been asked to provide an alternative solution to the problem identified in extract 3; a turn with an unclear aim. Again his responses are scaffolded by a handout, this time one providing a list of three possible strategies (using a keyword; writing or drawing; mime),[3] and he has the option of viewing the video clip several times.

Just prior to the sequence shown, Giles has selected the strategy of 'writing and drawing' as an alternative solution—a means of making the aim of his turn clearer—from the handout that accompanies the task. In lines 01 and 04, the SLT prompts Giles to think about *how* the strategy could be used to solve the problem; the selection of an alternative strategy alone is not sufficient. In response Giles writes 'J O O S' in the air (line 05), in an attempt to spell Jonathan Ross's name. Despite choosing an alternative strategy, his focus remains on naming the television presenter, not on trying to convey the meaning of his turn (actually a comment about one of the guests on the presenter's television show) in a different way. Thus, his solution does not deal with the fact that his turn lacks context, which could be supplied by a keyword such as *television* to alert the listener as to the general topic of his talk. At line 06, surprised by Giles's suggestion of writing the name, Linda instigates a side sequence about writing and naming (lines 07–27), which has been omitted. After this, the SLT attempts to redirect the therapeutic conversation back to Giles's alternative solution (line 28), whilst Giles suggests another strategy, using a keyword (also on the handout) (line 29). Once again, Linda comments at length on the strategy of writing (lines 30–63, omitted). Having redirected talk back to the keyword strategy, the SLT explains (lines 64–78) why 'another word' (line 77) is needed. She asks Giles to think about helping Linda by saying the 'subject' (line 67) or 'topic' (line 68), but Giles appears unable to shift away from 'Jonathan Ross' (line 71). Finally he gives up, saying 'I don't know' (line 79). The SLT then tries to scaffold his understanding by getting him to consider whether places within his social sphere were the topics of his talk, but it is only when she asks a direct question about the context in which Jonathan Ross was seen ('where did you see Jonathan Ross . . . in the street?', lines 83–85), that Giles provides 'TV' (line 86). The SLT reinforces this response before explicitly relating it back to the therapy task ('keyword (0.4) TV'), while pointing to the handout (line 88).

Sessions 4–6, with a focus on thinking, feed directly into the fourth and final stage of the experiential learning

Extract 3: Identifying a problem - Therapy Session 4, 31:31- 32:12

```
01   SLT    ((looks at handout)) ⌈so is it that (.) your turn            ⌈was started
                                 ⌊((points to option 1 on handout...     ⌊...looks up at Giles...
02          ⌈but you couldn't finish it?
            ⌊ ...looks at handout))
03   Giles  ⌈definitely this
            ⌊((points to option 1 on handout))
04          (1.0)
05   SLT    ⌈is it (.) that you
            ⌊((points to option 2 on handout))
06   Giles  ⌈definitely this
            ⌊((points to option 1 while looking at SLT))
07   SLT    okay
08          (0.5)
09   SLT    ⌈is it (.)                  ⌉⌈that you took your turn ⌉(0.1)
            ⌊((looks at handout))       ⌋⌊((looks at Giles))      ⌋
10          ⌈but we weren't sure
            ⌊ ((looks down and points at handout, shakes head))
11          ⌈(0.5) what the point (0.1) of your turn was
            ⌊((looks at Giles, slight shake of head, still pointing at option 2))
12          what the aim of it was were you asking a question (0.1)
13          were you telling a story
14          were you (0.6) what were you doing?
15          ⌈or was it that you ha- you had to stop the conversation        ⌉
            ⌊((points at option 3 on handout))                              ⌋
16          ⌈to solve a problem?
            ⌊((looks up))
17          (0.7)
18   SLT    what do you think the main    ⌈thing was?          ⌉
19   Giles                                | dere
                                          ⌊((points at option 1))⌋
20                  ⌈(0.7)              ⌉ dere
                    ⌊((points at option 3)) ⌋
21   SLT    ((laughs))
22   Linda  it's the one in the middle I think
23   SLT    er yeah ⌈((laughs))
24   Linda          |((laughs))
25   Giles          ⌊((sits back in chair, laughs))
```

process within this therapy, 'acting', which is the focus of sessions 7 and 8. Work in these sessions prompts activity directly based on insights gained in previous sessions; Giles is now encouraged to actively trial the strategies he selected and reflected on in session 4, using video clips of problematic conversation. According to Kolb (1984), action is necessary for new learning to take place; perception is not enough.

Acting: sessions 7 and 8

Next are two consecutive extracts taken from a single role play conversation that took place during session 7.

The topic under discussion—UK political party losses in European Union elections—was selected by Giles. Extract 5 has been chosen to illustrate how the therapy process attempts to scaffold behaviour change, specifically Giles's deployment of his chosen strategies, via on-line feedback or 'coaching' by the SLT. Extract 6 shows how this role play conversation continues after the SLT's feedback has been acted on, and has been chosen to illustrate Giles's first *spontaneous* use of a therapy strategy in response to a trouble source.

At line 20, Linda launches a repair, checking her understanding with 'so La- Labour what came second'. This is the first indication that the meaning of Giles's

Extract 4: Considering an alternative solution - Therapy Session 4, 36:10- 38:57

01	SLT	so if you're yur pointing at writing and drawing=	strategy on handout
02	Giles	=yes	
03		(0.4)	
04	SLT	what could you have done with writing and drawing in that situation=	
05	Giles	=((starts sky writing J O ⌈O S))	attempts J Ross
06	Linda	⌊you think you could have written his name down	

side sequence between G and L about writing and naming omitted (lines 07-27)

28	SLT	so what=	attempts to redirect discussion
29	Giles	=key words	strategy on handout

Linda continues to comment on strategy of writing for naming (lines 30-62)

63	SLT	so I know your ta- you said Jonathan Ross but that was the name you couldn't get out	resumes discussion of key word strategy
64		(0.2)	
65	Giles	yeah=	
66	SLT	=wasn't it (.) what other word could you have used	
67	SLT	⌈to help Linda ⌈ realise ⌈the subject ⌉(0.9)	
		⌊((points at Linda)) ⌋ ⌊((moves hands to gesture a globe shape)) ⌋	
68		you were talking about or the topic	
69	Giles	(2.1) well	
70	SLT	cos she was li⌈ke ⌉	
71	Giles	⌊((lifts hand palm upwards)) ⌋ Jonathon Ross	
72	SLT	yeah ((nods)) but (0.6)	
73		⌈that was a no go (0.2) at that time ⌉	
		⌊ ((moves both hands back and forth across each other to signal 'no')) ⌋	
74		⌈you couldn't say his name ⌉	
		⌊((points to computer screen)) ⌋	
75	Giles	((sighs and rubs nose))	
76	SLT	⌈it wasn't there ⌉(0.5)	
		⌊((points to head with both hands)) ⌋	
77		so what OTHER WORD could you have used (0.7)	
78		⌈so Linda ⌉ could at least have guessed a bit better	
		⌊((points to Linda)) ⌋	
79	Giles	(0.4) ⌈(2.4) ⌉I don't know	
		⌊((shakes head, shrugs)) ⌋	
80	SLT	what well what ⌈were you talking about, being outside at the leisure centre	
		⌊((lifts both hands...⌊...gestures over towards window))	
81		were you talking about the day centre. what were you talking about?	
82		(3.6)	
83	SLT	where where did you see Jonathan Ross	
84		(2.2)	
85	SLT	in the street?	
86	Giles	well erm (2.7) erm (0.2) ((laughs and looks up)) (2.1) TV	1st mention of TV
87	SLT	⌈yes ⌉⌈(0.4) ⌉that's it ((laughs))	
		⌊ (points to Giles)) ⌋⌊⌊((slaps leg))⌋	
88		⌈keyword ⌉ (0.4) TV	reinforces strategy
		⌊((points to handout))⌋	

prior multimodal turns may have been somewhat problematic for her. Giles's first repair attempt is a gesture—he points to his third finger and looks intently at Linda (lines 21 and 22), but he rejects Linda's guess 'came third' (line 23). His subsequent repair attempts over lines 24–27 are reminiscent of his behaviour in extract 1; he repeats the same gesture, despite this not having worked as a repair in line 21, and his levels of frustration rise visibly (line 26). At this point the SLT steps in to provide feedback ('okay Giles so there's a problem . . . going

Extract 5: Role play with on-line feedback - Therapy Session 7, 12:54- 13:39

```
01   Giles   Conservatives
02   Linda   (0.4) yes
03   Giles    yes
04   Linda   they won did they
05   Giles   yes
06   Linda   did they ⌈win overall
07   Giles         ⌊yes massive      ⌈brrrrrr
                                     ⌊ ((raises left hand, palm down, moves hand down vertically))
08   Linda   oh did they
09   Giles   (0.1)            La ⌈bour
                                ⌊((raises palm vertically to mid point))
10   Linda   they beat everybody
11   Giles   ⌈brrrrr
             |((moves hand down vertically))
12   Linda   ⌊be anyway
13           (1.2)
14   Giles   gone
15   Linda   oh dear
16   Giles   indeed
17           (0.8)
18   Linda   oh dear
19   Giles   and erm=
20   Linda   =so La- Labour what came second?
21   Giles   (1.4) (tuts) no (0.2)      ⌈(1.4)                                               indicates
                                        ⌊((raises hand, points to third finger with thumb of same hand...   third?
22           ⌈(0.3)
             ⌊...continues gesture and looks up at Linda...
23   Linda   ⌈came third
             ⌊...Giles continues gesture, still looking at Linda...
24   Giles   (0.2)  ⌈no                                ⌈(0.8)                                 same
                    ⌊((shakes head while continuing gesture...   ⌊...looks up at Linda))      gesture
25   Linda   came fourth?
26   Giles   (0.7)  ⌈NO:                                                                      same
                    ⌊((frowns, looks at his hand and increases movement of third finger))     gesture
27           (0.9) ((looks at Linda))
28   SLT     ⌈okay Giles,    ⌈so there's    ⌉a problem            going on here   ⌉           same
             ⌊((Giles continues to look at Linda and point to his third finger...   ...drops gesture)) ⌋   gesture
29   Linda                   ⌊came fifth         ⌋
30   SLT     yeah   ⌈that's not working
                    |((SLT copies Giles' gesture, Giles repeats gesture, looks at SLT then stops))
31           ⌈what else                 ⌉⌈could you do                                        switch after
             ⌊((Giles moves to pick up pen...   ⌋⌊...starts to use it))                       prompt
32   Giles   ⌈(2.5) ((writes letter C)) Conservatives ((glances up at Linda))
33   Linda   yeah=
34   Giles   =erm (0.4) erm (1.2) National Party ((draws dot under C)) (0.3) and ((draws))
35   Linda   there was the National Party there, ⌈was there
36   Giles                                       ⌊Labour ((draws asterisk)) (0.5) ((points to paper))
37   Linda   Labour was third?
38   Giles   yes
```

on here', line 28). As Giles stops gesturing, the SLT makes her feedback explicit by imitating his gesture and commenting 'that's not working' (line 30). Giles repeats his gesture one more time, but then stops when he sees what the SLT is doing. The SLT takes this as a cue to prompt Giles to move to the next stage of the problem-solving process, asking 'what else could you do?' (line 31). In overlap Giles switches strategy, reaching for a pen and starting to write. In line 32, he writes the letter C, says Conservatives and then checks Linda is attending. She responds with 'yeah' (line 33). He then says 'National Party', whilst putting a dot on the paper under the C (line 34); this appears to indicate second place for that party. After saying 'and' to indicate there is more to come, Giles draws something (it is not possible to see what he draws). Whilst he is drawing, Linda offers a version of what he has said so far, 'there was the National Party there, was there' (line 35). Instead of acknowledging this, Giles says 'Labour' (line 36), and adds an asterisk to his drawing, to which Linda offers the guess 'Labour was third?' (line 37). Giles confirms that this is correct (it seems he erroneously rejected her guess 'came third', offered at line 23). Thus, Giles has been coached to use an alternative strategy (writing/drawing) in order to successfully convey his knowledge of the election results, and correct their misunderstanding.

His response to the next trouble source that he encounters in this same role play conversation is of great interest because it is markedly different—he spontaneously uses an alternative strategy instead of needing to be prompted by the SLT. This is shown in extract 6.

In this extract, Giles spontaneously switches from talk and gesture to drawing (lines 10 and 11) in response to a failed attempt to convey his meaning about individual Conservative MPs having lost their seats (due to a scandal about inappropriate expenses claims), begun in lines 01–03, with repair attempts at lines 05, 07 and 09. This switch from talk and gesture to drawing is the first time he independently makes use of a therapy strategy to solve a conversational problem within a therapy session, and his switch provides immediate success, as Linda recognizes his drawing as a duck house, one of the expenses claimed by one Conservative MP (line 12). Linda has been very explicit about the problem she is having (lines 04 and 06) and in line 08 offers an understanding check ('was a draw . . . '), in an attempt to reconcile the competing concepts of 'lost' and 'won'. Giles launches several repair attempts without visible frustration, and after word searching (line 09), and a failed attempt to repair verbally (line 10), he loudly exclaims 'OH', whilst pointing to his therapy folder. He then spontaneously starts to draw a picture (line 11) to which Linda responds 'oh is that a duck house?' (line 12). Giles immediately stops drawing, and loudly exclaims

'DUCK HOUSE!'. Much laughter ensues, and subsequently Giles and Linda collaborate (lines 19–28) to make explicit an understanding of Giles's original point; that although an individual Conservative MP lost his seat, after purchasing a duck house on expenses, the Conservative party won the election.

Extracts 5 and 6 illustrate how the therapy process attempts to scaffold Giles's use of strategies in the face of conversational trouble, using role play conversations. In extract 5, Giles does not consider using an alternative strategy until the SLT steps into the conversation to point out the problem with his repair attempt. However, in extract 6, Giles shows signs of progressing towards spontaneous strategy use for the first time during therapy, initiating the use of drawing without the SLT needing to intervene, albeit in the immediate aftermath of coaching.

Post-therapy conversation profile: conversation analysis (CA)

A qualitative analysis of Giles's post-therapy conversations shows that strategies targeted in therapy, namely writing and drawing, are being used effectively in the face of conversation breakdown. Fewer episodes of overt frustration, directed towards his wife when she asks for clarification, suggest that therapy has helped Giles to achieve an increased acceptance of the need for strategy use. However, he does not appear to have learned to use writing and drawing entirely spontaneously. Extract 7 illustrates how Linda often needs to prompt and shape Giles's strategy use.

In extract 7 (from conversation 13, recorded 3 weeks post-therapy), Linda introduces a topic of conversation by asking Giles about his plans to attend a football match (he is a keen supporter of his local team). Despite her tongue in cheek response ('how very boring', line 03), Giles attempts to develop the topic at line 04. However, he immediately encounters a word finding difficulty, marked by fillers, a tut of frustration and a pause ('erm um tut (0.5) . . . '). This is followed by 'oh', a marker of a speaker's change of knowledge state (Heritage 1984), and a longer pause during which Giles begins to write letters in the air (line 04). The fact that this non-verbal behaviour appears to occur to him spontaneously (marked by 'oh') mid way through a verbal turn that has clearly run into difficulty, suggests that the skywriting represents a strategy deployed in the face of a word finding difficulty (one of few examples of strategy initiation in post-therapy conversations). Although Giles was making occasional use of skywriting in pre-therapy conversations, it was often unsuccessful as a strategy because it was hard for Linda to interpret; we see the problem reflected here in her comment 'I can't read

Extract 6: Spontaneous switch of strategy during role play - Therapy session 7, 14:13- 15:10

```
01    Giles   ⌈Conservatives (1.7) lose (0.3) but more (1.0) erm (1.4)
              ⌊((looks into distance & points))
02            ⌈Conservatives              ⌉⌈won                        ⌉
              ⌊((forms 'C' with left hand...  ⌋⌊...shakes hand looking at Linda)) ⌋
03            ⌈(2.0)
              ⌊((holds eye contact with Linda))
04    Linda   okay so you've said to me Conservatives lose but the Conservatives won
05    Giles   ⌈no
              ⌊((forms 'C' with hand))
06    Linda   what do you mean by that?
07    Giles   ⌈(0.9) erm Conservatives (1.5) erm (2.0) (tuts) oh er
              ⌊((holds up hand making 'C'))
08    Linda   was a (draw) (2 syllables)
09    Giles   no erm ⌈(12.8)
                      ⌊((looks to the side, then opens eyes and looks up, opens hand, turns palm up))
10            lost (0.7) erm (0.3) (tuts) k(.)servtives (0.6) erm (tuts) ⌈OH
                                                                          ⌊((points to therapy folder))
11            ⌈(1.7)                    ⌈(53.2)                                         spontaneous
              ⌊((takes pen and starts drawing...  ⌊...draws a picture...                strategy
                                                                                        switch
12    Linda   oh is that a duck house?
13    Giles   ⌈DUCK HOUSE!
              ⌊((stops drawing, points at picture and looks at Linda))
14    Linda   ⌈((laughs))⌉
15    SLT     ⌊((laughs))⌋ see it's good innit
16    Giles   ((laughs))
17    SLT     that was a damn good guess
18            ((joint laughter))
19    Giles   ⌈yeah Conservatives=
              ⌊((points at drawing))
20    Linda   =and the duck houses
21    Giles   yeah- (.)⌈NO, GONE.
                        ⌊((shakes head and waves hand))
22    Linda   he's gone=
23    Giles   =yes
24    Linda   the man that had the duck house=
25    Giles   =yes=
26    Linda   =who was a Conservative
27    Giles   yes
28    Linda   so they've they've all been a bit naughty
```

that' (line 05). Therapy however, focused on writing with pen and paper, and Linda subsequently shapes his strategy use by explicitly asking 'can you write it down please'. Giles, in turn, does not react with frustration, a common response before therapy, but reaches for pen and paper (line 06). As he is doing so, he finds the referent he was searching for, saying 'Nottingham Forest' (a football club, line 07). However, he then rejects this (line 09), but continues to attempt a verbal rather than a written solution (line 10). Although he has already been prompted to write, interestingly he then independently prompts himself to 'write it down' (line 11) and picks up his notebook (line 12). He writes for 20 s (line 16), before looking up at Linda and saying 'County'. A sequence of turns then confirms the referent as Nottingham County (another football club in the same city, lines 17–20). Here, writing allows Giles to verbally repair a part of his turn ('Forest' to 'County') for Linda to then combine with the relevant prior information (and also to read herself what he had written); they have arrived at an understanding of which team his local club is playing on Saturday (lines 21–23).

Extract 7: Conversation 13: 04:14- 05:51

01	Linda	and then you've got more football have you, on Saturday	
02	Giles	⌈yes!	
		⌊((thumbs up))	
03	Linda	how very boring	
04	Giles	erm um tut (0.5) oh ⌈(2.9)	initiates
		⌊((starts to sky write - letters unclear))	strategy use
05	Linda	I can't read that ⌈can you write it down ⌉please	modifies
		⌊((nods towards side table)) ⌋	strategy use
06	Giles	⌈(8.0)	accepts
		⌊((takes glasses from side table, puts them on, reaches for notebook, looks up))	proposal
07		Nottingham Forest	
08	Linda	you've remembered heh ⌈okay=	
		⌊((Giles takes off glasses))	
09	Giles	⌈=NO (3.0)	
		⌊((looks to middle distance))	
10		Nottingham Forest, (0.6) ⌈garbi- (1.2) god	
		⌊((closes eyes))	
11		⌈(3.4) °write it down°	re-engages
		⌊((talking to himself, reaches for notebook on side table))	with
			suggested
			strategy
12		⌈(11.0)	
		⌊((picks up small notebook and puts it on his lap, looks for a pen on side table))	
13	Linda	the pen's down the side	
14	Giles	⌈(2.0) indeed (2.5) kor	
		⌊((takes pen out of holder on side of notebook with some difficulty))	
15	Linda	d'you want me to do it (1.0) is it stuck	
16	Giles	⌈(20.0) ⌉erm (2.0) Coun⌈ty	not clear if
		⌊((writes in notebook, Linda strokes cat)) ⌋ ⌊((looks up))	writes
			Nottingham
			County or
			just County
17	Linda	Nottingham County	
18	Giles	yeah, ⌈Nottingham County ⌉	
		⌊((looks down at notebook, reads from it)) ⌋	
19	Linda	right	
20	Giles	yeah	
21	Linda	they're play- that's who ⌈you're playing next Saturday	
22	Giles	⌊yeah	
23		yeah	
24	Linda	how thrilling!	
25	Giles	heh heh heh	

Post-therapy language profile and dyad self report on conversation

No change was expected in Giles's receptive or expressive profile since the therapy did not aim to improve aphasic language impairment and post-therapy language test results confirm no change (table 4). However, post-therapy, dyad self report on conversation via the CAPPA does show change (table 5). For the domain of linguistic skills—most impaired and most problematic of the four domains pre-therapy—the rating of impairment has decreased from 86% to 73.5%, and of level of perceived problem from 71% to 49%. For the domain of repair, there was no change in impairment and problem ratings. However, the impairment rating for the domain of initiation and turn-taking *increased* from 25% to 38.5% (the problem rating remained stable at 25%). For the domain of topic, the impairment rating increased, from

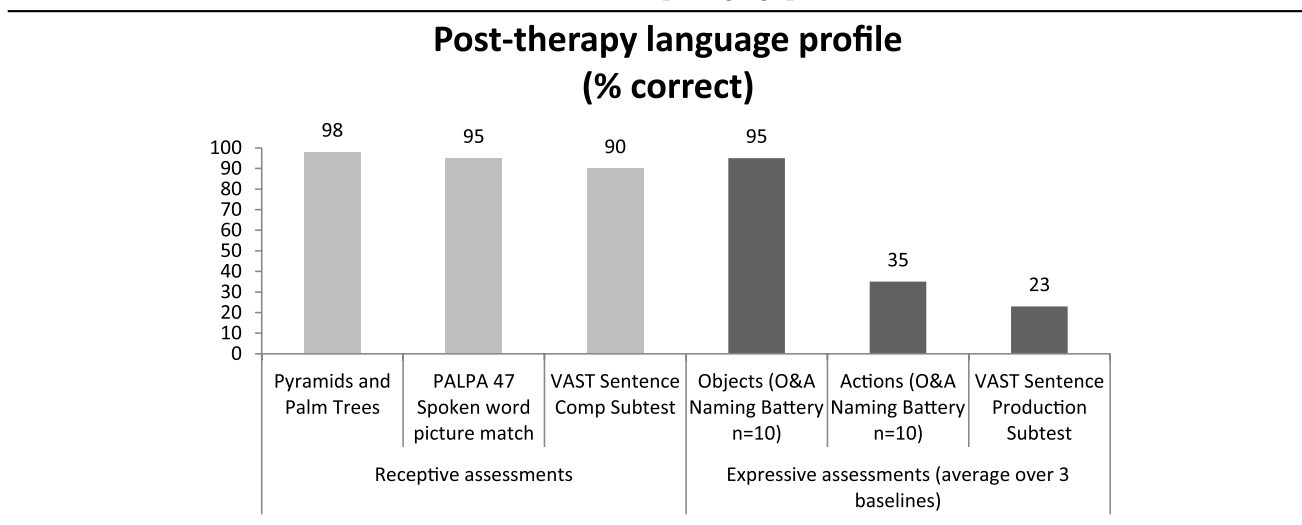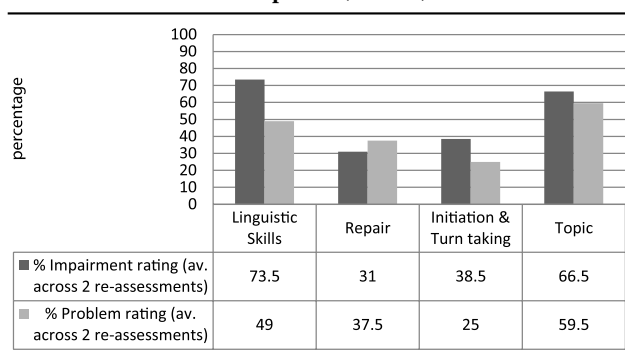Table 4. Post-therapy language profile

Post-therapy language profile
(% correct)

98	95	90	95	35	23
Pyramids and Palm Trees	PALPA 47 Spoken word picture match	VAST Sentence Comp Subtest	Objects (O&A Naming Battery n=10)	Actions (O&A Naming Battery n=10)	VAST Sentence Production Subtest
Receptive assessments			Expressive assessments (average over 3 baselines)		

Table 5. Post-therapy Conversation Analysis Profile of People with Aphasia (CAPPA)

	Linguistic Skills	Repair	Initiation & Turn taking	Topic
■ % Impairment rating (av. across 2 re-assessments)	73.5	31	38.5	66.5
▨ % Problem rating (av. across 2 re-assessments)	49	37.5	25	59.5

37.5% to 66%, and the problem rating increased from 50% to 59.5%. Linda and Giles's perception of *increased* impairment after therapy in initiation, turn-taking, and topic can be explained in terms of increased awareness; both acknowledged that Giles was more frustrated with himself after therapy, having become more aware of his errors. However, to balance this, Linda reported that they had, post-therapy, had some good conversations. This contrasts with the comment about conversations pre-therapy being very similar to each other, and reflects increased attempts by Giles, post-therapy, to introduce and develop topics.

As yet, we have not been able to capture these qualitative indications of post-therapy conversation change quantitatively. Quantification of change across pre and post-therapy conversation samples is ongoing for all participants in the main project. However, initial results suggest that, for Giles, there was no change in general aspects of his conversation (e.g. number of turns taken, number of initiations), and for the samples analysed to

date, no significant increase in his use of strategies chosen and worked on in therapy (keyword, writing or drawing, mime). Nevertheless, the results appear to show a significant decrease in his wife's use of a behaviour she identified as a barrier to their pre-therapy conversations, 'test questions' (ones to which she already knew the answer), which are a common feature of teacher–pupil talk.

Discussion

The aim of this paper is to describe, using CA, how a PWA might engage with, and learn during conversation training, and to investigate whether this leads to changes in his conversation behaviour. While Giles demonstrates an increased acceptance of the need for strategy use in post-therapy conversations, it often falls to his wife to prompt him. Giles appears to have engaged with the therapy, as illustrated by his response to specific therapy tasks, and to have developed an understanding of the conversational problems caused by his aphasia and their effects on his wife, but his learning appears to have stopped short of the goal of spontaneous strategy use in the face of conversational difficulty. This is not to suggest that strategies worked on in therapy are absent from post-therapy conversations, but rather initiation of their use appears to remain the responsibility of Giles's wife; a situation that seems to be acceptable to him.

One factor that may offer an explanation for why Giles did not learn to use his chosen strategies spontaneously after conversation training is cognitive flexibility, particularly problem-solving and the ability to shift from one strategy to another in the face of conversational difficulty. Pre-therapy, key characteristics of Giles's conversation—abrupt topic change, perseverative

repair strategies and high levels of frustration with his wife—are suggestive of deficits in cognitive flexibility, which can include impaired response inhibition, interference control, planning and problem-solving (Penn *et al.* 2010). The Brixton Spatial Anticipation Test (Burgess and Shallice 1997), a non-verbal pattern recognition task, was administered after therapy. Giles's performance was classified as 'abnormal' (an error score of 27/55). Given this result, one might predict that Giles would struggle to engage in an experiential learning process such as the one presented in this therapy. And indeed, the analysis reveals that Giles experienced particular difficulty with stage two of the learning process (thinking), particularly with switching his train of thought to consider the use of alternative strategies to solve a conversational difficulty. The therapy attempted to support engagement in this activity by breaking a task into two clearly defined phases: identifying a trouble source, and then solving the conversational problem by coming up with an alternative solution. Within these phases, the process was scaffolded by (1) aphasia-friendly handouts which focused attention on specific aspects of each task and left a permanent trace of information to which Giles could refer; and (2) off-line questions by the SLT to facilitate Giles's ability to review a specific past behaviour, and to shape the context of his problem-solving attempts. Although this structure appeared to help Giles to think through and then verbalize his actions with support, he was clearly challenged by this aspect of the therapy.

A feature of therapy that more successfully supported Giles to consider alternative strategies was online intervention by the SLT during role play conversations, to prompt reflection and a switch of strategy. Giles's ability to instigate strategy use subsequent to specific online SLT feedback appears to support the idea that PWA are better able to learn and use strategies when they are taught in a situation that closely approximates the target environment of use (Purdy and Koch 2006). Experiences such as these created an opportunity for Giles to test out a new strategy—the example discussed here is of drawing and writing—and thus to have a positive experience of self-repair. On one occasion during therapy, SLT-prompted use of writing was followed a few minutes later by spontaneous use of this same strategy. However, in post-therapy conversations, Giles tended to use strategies only after prompting by his wife.

In addition to cognitive (PWA-internal) considerations, there may be interactional explanations as to why Giles did not spontaneously use his chosen strategies after therapy, and the nature of the strategies themselves may also be relevant. Using a strategy spontaneously within a sequence of talk requires a speaker to be able to identify reliably the conditions in which strategy use

or change is appropriate or necessary. Whilst this clearly has something to do with a PWA noticing that his or her own turn has encountered a difficulty, the behaviours of the CP are also highly relevant. It may be the case that when speaking to Linda, Giles remains unsure when something he has said is problematic for her, because her behaviour does not consistently reflect such problems back to him. Although it was beyond the scope of this paper to report on CP behaviours, it is relevant to mention that before therapy, their conversations consisted almost entirely of Linda asking questions and test questions (ones to which she already knew the answer) and then cueing Giles to provide the (mostly) one word answers required. Thus their conversations did not permit Giles to initiate or develop topics of talk very often; as a result there were few contexts in which Linda needed to signal to Giles that his turn required repairing (she already knew what he was attempting to convey). This pre-therapy habituation to interactions devoid of natural repair sequences may have desensitized Linda to showing Giles when she was having problems understanding him, and desensitized Giles to the cues that signal a need to clarify his meaning, and which would on occasion license the spontaneous use of a strategy. This idea could be explored further by qualitatively analysing those few sequences where Giles does spontaneously use a strategy, to uncover features of the interaction that appear to support this. With reference to the nature of the strategies themselves, it is interesting to note that of the three strategies Giles chose to work on (keyword, writing or drawing, mime), the one they both appeared most comfortable with (and the one that was most visible to the analysts) was writing. This is also the most acceptable (i.e. the least reflective of aphasia) and fast-flowing option of the three, in terms of conveying meaning in conversation. During therapy, it became apparent to the SLT (the first author) that Linda believed, wrongly, that if Giles was having difficulty trying to say a word, then he would not be able to write it down either. To see Giles successfully using writing during therapy appeared to have a great impact on Linda's prior beliefs about his aphasia, and on her willingness to integrate this into conversation.

A final factor that may be relevant to Giles's failure to implement spontaneously strategies post-therapy is the amount or intensity of therapy he received, since dose is known to be crucial to the reacquisition of behaviours in post-stroke aphasia. Future research is clearly warranted to address the issue of the optimal intensity and length of conversation therapy that is required to achieve behavioural change reliably.

In general, written and visual materials appeared to promote Giles's engagement with and control over the learning environment. As observed in extract 1, it was joint focus on an aphasia-friendly handout that allowed

Giles to initiate a switch from passive to active learner by taking charge of reading the handout aloud. Such resources facilitated Giles in establishing ownership of the learning environment and developing his reflective skills. His engagement with them set the tone for future sessions; he promoted himself as an equal within the therapeutic process.

In summary, this single case study suggests that therapy based around an experiential learning process is able to engage directly a PWA in learning about the effects of aphasia on conversation. However, for this man, increased insight, as revealed by his responses to online coaching by the SLT during therapy, and by his responses to the CAPPA interview post-therapy, did not automatically change his conversation behaviours. This suggests learning may occur in stages during conversation training, reflecting component parts of the therapeutic process such as education (how conversation works, the effects of aphasia), and training (strategy development and practice). In addition, the cognitive flexibility of a PWA may be a factor in response to therapy. Clearly, further research is required to explicate fully the conversation training process for people with aphasia. This endeavour will not only give a better understanding of how communication strategies are learned and applied in the real world, but also will reveal how SLTs can facilitate the process as efficiently and effectively as possible, with the end goal being more explicit and efficacious therapy programmes.

Acknowledgements

Notes

1. Akin to topic–comment structure, where a turn is constructed with a noun phrase in the initial position, followed by a juxtaposed word or phrase that serves to comment on the initial noun phrase, e.g. 'Edinburgh, lovely city'.
2. It eventually becomes clear to Linda that the impersonation is of Jonathan Ross, as is seen by a guess she makes much later in the sequence (not shown in extract 1). We also have Giles's confirmation of this when he viewed extract 1 during therapy. With analytical hindsight it is a very good impersonation, but at this stage in the extract the lack of context for it—there has been no mention of television—causes Linda significant problems.
3. Giles chose these three strategies earlier in the therapy session, with the help of the SLT, from a list of potential conversational strategies that a PWA may wish to practise.

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Appendix A: Therapy programme: an overview of the topics, aims and key techniques