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Investigating aspects of treatment fidelity in a new conversation-based therapy programme for people with agrammatic aphasia and their conversation partners

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BCA	Better Conversations with Aphasia
CA	Conversation Analysis
CAT	Comprehensive Aphasia Test
CP	Conversation partner
DGN	Deutsche Gesellschaft für Neurologie (German Neurology Association)
FCT	Functional Communication Therapy
ICC	Intra-class correlation
ICF	International Classification of Functioning, Disability and Health
IFF	Implementation Fidelity Framework
IRR	Inter-rater reliability
MRC	Medical Research Council
NHS	National Health Service
n.s.	not significant
OANB	Object & Action Naming Battery
PACE	Promoting Aphasics' Communicative Effectiveness
PALPA	Psycholinguistic Assessments of Language Processing in Aphasia
PWA	Person(s) with aphasia
RCT	Randomised control trial
SCA	Supported Conversation for adults with Aphasia
SD	Standard deviation
SLT	Speech and language therapist

SPPARC	Supporting Partners of People with Aphasia in Relationships and Conversation
SPSS	Statistical Package for the Social Sciences
TF	Treatment fidelity
UCL	University College London
UK	United Kingdom
WHO	World Health Organization

Abstract in English

Background: When conducting a speech and language therapy intervention study, one essential part lies in the evaluation of the outcomes. The underlying therapy itself and its delivery are aspects which are mostly done in the background. There is little focus on the question: Was therapy delivered with fidelity, i.e. to what extent does the actual therapy delivery correspond to the planned delivery? If fidelity is discussed in a paper, researchers often report on therapy manuals, training and supervision of therapists, or adherence to the therapeutic techniques. However, according to Cherney et al. (2013), TF is regarded as a crucial component of any behavioural treatment study (ibid.) and should therefore be assessed in a speech and language therapy intervention study.

Aim: The present thesis is part of a wider research project in which a new conversation-based therapy - called *Better Conversations with Aphasia* (BCA; Beeke et al., 2011; Beeke et al., submitted; Beckley et al., 2013) – was designed. The therapy was provided to eight people with agrammatism and their conversation partners (CPs), together called a dyad. It is an adaptation of a conversation training programme called *SPPARC* (Supporting Partners of People with Aphasia in Relationships and Conversation; Lock et al., 2001a). Every dyad was treated by the same speech and language therapist (SLT) and all therapy sessions were videotaped. The aim of the present thesis is to examine aspects of TF retrospectively and thereby assess the degree of uniform therapy delivery as planned.

Methods: The multifaceted concept of TF is introduced and applied to the wider research project. Using this concept, the degree to which the BCA therapy programme was delivered as planned, can be measured. This can be achieved by developing a pilot fidelity tool, which is based on a conceptual framework of TF (Carroll et al., 2007), on practices reported in the TF literature and on the generic session plans of the BCA therapy. The first step was to observe 23% of the therapy sessions and rate them with the tool. These observations were conducted on data of seven dyads. In addition, descriptive data were collected to enlarge the fidelity evaluation. In a last step, inter-rater reliability (IRR) of parts of the fidelity tool was also assessed with the help of a second observer who rated 20% of the sessions already used for the fidelity check.

Results: The results indicate that, in terms of therapy content, a high fidelity level of 91.9% was reached for the BCA therapy programme. Dyad-specific fidelity scores thereby ranged between 86% and 97%, which shows a certain degree of variability, even when only one therapist was delivering the intervention. It also suggests that each dyad received a satisfactorily equivalent intervention. The duration and frequency of the therapy sessions varied across the dyads. However, this reflects the individual and interactive nature of a conversation-based therapy. Qualitatively, the therapist showed a high degree of desired behaviour associated with the delivery of the BCA therapy programme

(averaged across the dyads: 96.7%). Other potential moderators of fidelity, such as the acceptance of components of the therapy programme and the clients' motivation, were also investigated in the present thesis, providing a multifaceted evaluation of TF. In terms of the inter-rater reliability of the designed fidelity tool, acceptable levels have been reached for almost all of the sessions observed by two qualified SLTs.

Future directions: For future investigations, the procedural section of the fidelity tool could be refined in terms of fewer, essential elements of the BCA therapy. Moreover, clearer rating guidelines are necessary for rating the fidelity tool reliably. A potential next step for future research might be to identify potential essential components of the BCA therapy and to relate the outcomes of the main BCA research project to TF data. However, the importance and value of a fidelity evaluation is already being demonstrated in the present thesis.

Abstract in German

Theoretischer Hintergrund: Eine Sprachtherapieevaluation besteht typischerweise aus der Messung des tatsächlichen Therapieeffekts. Die Evaluierung der Therapiephase, also inwieweit die ursprünglich vorgesehene Therapie übermittelt wurde (z.B. wie in einem Therapiemanual beschrieben), wird hingegen oft vernachlässigt. Die englischsprachige Literatur spricht in diesem Zusammenhang häufig von dem Konzept der *treatment fidelity* (TF) (was übersetzt in etwa dem Begriff ‚Therapiegenauigkeit' entspricht). Berichten Forscher über Aspekte dieses Konzeptes, dann wird dies meist auf das Therapiemanual, Therapeutenschulungen oder -supervisionen, oder auf die Messung der Therapiekonformität des Sprachtherapeuten bezogen. Jedoch wird das Konzept der TF nach Cherney et al. (2013) als eine wichtige Komponente einer verhaltenstherapeutisch orientierten (Sprach-)Therapiestudie angesehen.

Ziel: Die vorliegende Arbeit ist Teil eines übergreifenden Forschungsprojekts, in dem ein konversationsorientierter Therapieansatz entwickelt wurde (*Better Conversations with Aphasia*; BCA; Beeke et al., 2011; Beeke et al., submitted; Beckley et al., 2013). Dieser Therapieansatz basiert auf dem bereits vorhandenen Konversationstraining *SPPARC* (Supporting Partners of People with Aphasia in Relationships and Conversation; Lock et al., 2001a). Für die Umsetzung der BCA Therapie wurden acht Paare therapiert, die jeweils aus einer aphasischen Person mit agrammatischer Sprachproduktion sowie einer primären Bezugsperson bestanden. Die Therapie wurde dabei für alle Probanden von der gleichen Sprachtherapeutin durchgeführt und alle Therapiesitzungen wurden auf Video aufgezeichnet. Das Ziel der vorliegenden Arbeit besteht in der Anwendung des TF Konzeptes auf den BCA Therapieansatz, um den Grad der Konformität mit der ursprünglich vorgesehenen Therapie zu ermitteln.

Methodik: Zunächst wird das Konzept der TF beschrieben und auf die Daten von sieben Paaren der Hauptstudie angewendet. Um die Therapieübermittlung zu quantifizieren, also inwieweit sich die Therapeutin an dem vorgegebenen Therapieprogramm orientiert hat, wird sodann ein *fidelity tool* (d.h. ein Beobachtungsinstrument) entwickelt. Dieses Instrument basiert auf einem speziellen TF-Modell (Carroll et al., 2007), weiteren Methoden aus der TF Literatur und BCA-spezifischen Therapieplänen. Es werden insgesamt 23% der Therapiesitzungen mit Hilfe dieses Instruments beurteilt. Zusätzlich werden schriftliche Dokumente der Hauptstudie analysiert, um TF möglichst umfassend zu erörtern. Abschließend werden 20% der beurteilten Sitzungen von einem zweiten trainierten Beobachter eingeschätzt, um erste Aussagen über die Inter-rater Reliabilität des *fidelity tools* treffen zu können.

Ergebnisse: Die Analyse der Videoaufnahmen mithilfe des *fidelity tools* zeigt einen sog. *fidelity score* (Genauigkeitswert) von 91,9%, was laut Literatur eine hohe Therapiekonformität der Therapeutin

anzeigt. Die individuellen *fidelity scores* liegen dabei zwischen 86% und 97%. Dies deutet einerseits auf einen gewissen Grad an Variabilität in der Therapieübermittlung hin, auch wenn ein und dieselbe Therapeutin die Therapie übermittelt. Andererseits lassen diese Ergebnisse annehmen, dass jedes Paar die Therapie zu einem zufriedenstellenden Ausmaß erhalten hat. Im Hinblick auf die Dauer und Frequenz der Therapiesitzungen zeigt sich ein eher heterogenes Muster. Dies spiegelt jedoch die interaktive Natur dieser Therapie wider. Zu durchschnittlich 96,7% wendet die Therapeutin erwünschte Therapieprinzipien während der Sitzungen an. Weitere Faktoren, die in der vorliegenden Arbeit erhoben wurden, zeigen, dass die Studienteilnehmer motiviert in der Therapie partizipieren, jedoch gibt es Hinweise auf einzelne Therapiekomponenten, die verbessert werden könnten. Fast alle der untersuchten Teile des *fidelity tools* weisen eine gute Inter-rater-Übereinstimmung auf.

Ausblick: In weiteren Forschungsbemühungen könnte angestrebt werden, die Anzahl der Items des *fidelity tools* zu minimieren, idealerweise auf die essentiellen Elemente der BCA Therapie. Außerdem wäre eine Einführung klarer Beurteilungsrichtlinien von Nöten, damit alle Teile des Instrumentes zuverlässig angewendet werden können. Ein nächster Schritt könnte darin bestehen, essentielle Komponenten des BCA Therapieprogrammes zu identifizieren, wofür die vorliegende Untersuchung eine erste Grundlage darstellt. Die vorliegende Arbeit demonstriert insgesamt die Wichtigkeit und das Potential einer *fidelity* Evaluation anhand der Anwendung des TF Konzepts auf die BCA Therapie.

1) Introduction

Treatment fidelity (TF) refers to the degree to which the provision of a therapy corresponds to the prototype therapy (Kaderavek & Justice, 2010). It has become an important concept in speech and language therapy research (ibid.). In their systematic review of the strength of evidence of studies reporting on communication partner training in aphasia, Cherney, Simmons-Mackie, Raymer, Armstrong and Holland (2013) speak of TF as a crucial element of behavioural treatment studies.

The present thesis is embedded in a research project which evaluates a new conversation-based therapy programme for people with agrammatic aphasia and their conversation partners (CPs), called *Better Conversations with Aphasia* (BCA; Beeke, Maxim, Best, & Cooper, 2011; Beeke et al., submitted; Beckley et al., 2013). Conversation-based therapy programmes such as communication partner training have become popular clinically, and yet they can be regarded as complex interventions (Beeke et al., submitted; Cherney et al., 2013; Wilkinson & Wielaert, 2012), with several interacting components and variable outcomes.

In recent years there has been an increased focus on documenting the adequate application of therapy in the fields of psychology, health behaviour interventions and medical research. This has begun to influence research into speech and language therapy interventions. In the present thesis, TF will be applied to the data of the main research project. Although the case series does not include a control group, it is nevertheless important to examine to what degree the BCA therapy was actually delivered to the clients in the way it was intended (see also Kempen, 2011). The procedure of this investigation is related to a conceptual model by Carroll et al. (2007).

Since knowledge in the area of conversation-based therapy approaches provided to both the person with aphasia (PWA) and the CP (together called a dyad) is just evolving, this thesis comprises a descriptive design including both numerical and verbal information. By assessing the adequacy of the actual delivery of the BCA therapy in detail, the uniform and adequate delivery of this new intervention to each dyad will be assessed.

The thesis is structured as follows: The first part (chapter 2, section 2.1) presents the theoretical background, giving a description of aphasia and agrammatic aphasia, followed by a review of currently existing conversation-based therapy approaches for people with agrammatic aphasia and their CPs. This will include a review of the therapy programme on which BCA is based – the SPPARC (Supporting Partners of People with Aphasia in Relationships and Conversation; Lock et al., 2001a) conversation training programme – before the BCA therapy is described in the next sub-section. After this first part, the concept of TF is introduced (chapter 2, section 2.2). This will consist

of a definition of the term, the development of the concept over time, and its measurement. Furthermore, the most sufficient conceptual framework for TF to date (Carroll et al., 2007) is characterised, and the relevance of TF to speech and language intervention research will be discussed.

Chapter 3 lists the present research questions. Next, chapter 4 introduces the design of the wider research project and will then describe the participants and the procedures of the current investigation, including the fidelity tool that has been developed by the author to evaluate TF for BCA.

By applying this study-specific fidelity tool, the extent to which the actual delivery of the therapy is in accordance with the initially planned therapy is systematically determined. This aspect of TF is known as 'adherence' to the therapy programme and is mainly related to the content of the therapy (see e.g. Carroll et al., 2007; Chan, O'Neill, McKenzie, Love, & Kissane, 2004; Lewinsohn, Clarke, Hops, & Andrews, 1990). In order to assess the quality of treatment delivery, which can be regarded as one factor that may influence adherence, therapist behaviour associated with the delivery of the therapy is examined. Situations where clients comment on the therapy programme are also covered by the fidelity tool. By highlighting such dyadic behaviour, so-called 'participant responsiveness' can be established – another aspect that can influence adherence (Carroll et al., 2007).

In a final step, inter-rater reliability (IRR) of parts of the fidelity tool will be assessed to explore whether the tool can be implemented consistently by two different raters and could be used in future studies that apply the BCA therapy programme.

The present thesis can be regarded as a first attempt to develop a fidelity tool and conduct a TF evaluation in an aphasia therapy study that evaluates a conversation-based intervention. The aim is to better understand the conversation-based therapeutic process and to give recommendations for future (larger scale) research studies.

2) Theoretical Background

2.1) Agrammatism and its treatment

2.1.1) Aphasia and its subtypes

Aphasia is traditionally defined as an acquired language impairment resulting from brain lesion (e.g. disturbed blood flow in terms of a stroke, craniocerebral injury etc.) in the language dominant hemisphere (Papathanasiou, Coppens, & Potagas, 2013).[1] This can be present for all language components (phonology, morphology, syntax, semantics, pragmatics) and across all modalities (speaking, reading, writing and comprehension) (Huber, Poeck, Weniger, & Willmes, 1983). More recently, with the influence of the International Classification of Functioning, Disability and Health (ICF; WHO, 2001), a holistic perspective on aphasia has been developed.[2] In relation to therapy this is known as the 'consequences approach' (Thompson & Worrall, 2008). Aphasia is hereby regarded as a language impairment that has a considerable impact on life participation affecting "the person's communicative and social functioning, quality of life, and the quality of life of his or her relatives and caregivers" (Papathanasiou et al., 2013: p. xx). In the present thesis, the latter understanding of aphasia is used, since the main research project on which the author's work is based (Beeke et al., 2011) evaluates a therapy programme which can be regarded as a consequences approach involving a habitual CP of the PWA, and targeting their everyday conversations.

Generally, aphasia can be divided into several subtypes characterised by typical symptom complexes (Huber, Poeck, & Springer, 2006). The standard syndromes of aphasia are as follows (ibid.):

- Global aphasia (occurring in around 20% of all PWA at the end of the acute phase),
- Wernicke's aphasia (occurring in around 15% of all PWA at the end of the acute phase),
- Broca's aphasia (occurring in around 15% of all PWA at the end of the acute phase), and
- Anomic aphasia (occurring in around 30% of all PWA at the end of the acute phase).[3]

Table 1 illustrates general characteristics of these four standard syndromes in relation to spontaneous speech classified as either fluent or non-fluent, and relative impairment in different modalities:

[1] For most adults (around 95% according to Huber, Poeck, & Springer, 2006), the left hemisphere of the brain is specialised for language compared to the right hemisphere. This reflects so-called language dominance. Consequently, lesions in the left hemisphere often cause language impairment.

[2] The ICF is a model that aims to describe any impairment as a bio-psycho-social interaction (Grötzbach & Iven, 2009).

[3] Based on different neuronal mechanisms of restitution in the brain, different phases of aphasia in relation to the time post-onset can be distinguished: The acute phase (4-6 weeks post-onset), the post-acute phase (1-12 months post-onset) and the chronic phase (from 12 months post-onset) (Wittler, 2009).

auditory comprehension, repetition and naming performance.[4] In section 2.1.2, one of the four standard syndromes, Broca's aphasia with its component called agrammatism, will be highlighted.

Table 1

Characteristics of the standard syndromes of aphasia (based on Howard & Hatfield, 1987: p. 139)

	Spontaneous Speech	**Auditory Comprehension**	**Repetition**	**Naming**
Global aphasia	Non-fluent	Poor	Poor	Poor
Broca's aphasia	Non-fluent	Good	Poor	Poor
Wernicke's aphasia	Fluent	Poor	Poor	Poor
Anomic aphasia	Fluent	Good	Good	Poor

2.1.2) Characteristics of agrammatic speech

As outlined in the previous section, at the end of the acute phase, around 15% of all PWA can be described as having Broca's aphasia. In the chronic phase (when patients are a minimum of 12 months post-onset; Huber & Ziegler, 2000; Wittler, 2009), the proportion of individuals with Broca's aphasia is around 46% according to Huber et al. (2006). This increase can be explained by the process of post-stroke recovery (ibid.): Broca's aphasia is often the result of restitution processes or recovery patterns of Global aphasia. Hence, research involving people with chronic Broca's aphasia has a high clinical relevance.

Production in individuals with Broca's aphasia typically consists of simplified syntactic structures reduced to nouns, adjectives, discourse markers (e.g. 'you know', 'well') and few if any verbs (see e.g. Goodglass, Kaplan, & Barresi, 2001; Schlenck, Schlenck, & Springer, 1995). Their functional comprehension is relatively preserved (e.g. with the help of key words; Tesak, 2007: p. 59).[5] This symptom complex, which often varies among patients (Schlenck et al., 1995; Thompson & Bastiaanse, 2012), is known as agrammatism. Generally, the disorder is characterised by non-fluent speech production. The following examples illustrate the nature of agrammatic speech production: "*Train. No no no. Bus. No…erm*", or: "*Fine. Erm…lunch. Fantastic. Yeah?*" (Examples are taken from own data used in this project).

[4] Apart from these standard syndromes patients can show certain symptom complexes that can rather be described as non-standard syndromes such as Transcortical motor aphasia, Transcortical sensory aphasia, and conduction type aphasia (Huber et al., 2006).

[5] However, for an overview of the comprehension difficulties of individuals with agrammatism, see e.g. Avrutin (2001).

2.1.3) Conversation-based therapy approaches

Mostly, the aim of speech and language therapy for individuals with agrammatism is to improve the speaker's sentence production and surface grammar within a clinical setting (for an overview, see Beeke et al., 2011). The research group around Thompson (2003; 2005), to name a prominent example of an approach targeting underlying syntax, found that people with agrammatism can profit from a therapy based on Chomsky's (1993) Government and Binding Theory.[6]

However, Beeke et al. (2011) suggest that targeting the grammar of everyday conversations may be more effective than targeting decontextualised language (e.g. that used when describing pictures). This idea is based on findings by researchers like Beeke, Wilkinson and Maxim (2007) who have shown that the language output produced by speakers with agrammatism in everyday conversations has a different grammatical structure compared to elicited speech within a task-based language assessment or therapy.

Conversation-based (sometimes referred to as interaction-focused or pragmatic-oriented) therapy approaches target the conversation behaviour of CPs and/or PWA rather than the syntactic or morphologic performance of the PWA (Wilkinson & Wielaert, 2012). Hence, the objective is to directly enhance daily and natural conversations, mainly by practising the use of conversation strategies (ibid.).

Over the past years, different researchers in the Anglo-American language area have developed approaches that deal directly with the conversation abilities of PWA and/or their CPs. Aten's (1986) 'Functional Communication Therapy' (FCT), according to Schlenck et al. (1995), can be listed among the conversation-based therapy approaches suitable for people with agrammatism and their CPs. Other approaches include 'Conversation Coaching' (Holland, 1991; 1997) and 'communication partners' (Lyon et al., 1997), training volunteers to communicate with PWA. Also Nichols, Varchevker and Pring (1996) implemented a therapy focused on training communication strategies (verbal and non-verbal strategies) where the PWA and at least two family members took part. 'Supported Conversation for adults with Aphasia' (SCA; Kagan, 1998a, 1998b; Kagan & Gailey, 1993) is another conversation-based approach focusing on CP training. 'Supporting Partners of People with Aphasia in Relationships and Conversation' (SPPARC; Lock et al., 2001a) is a conversation training based on Conversation Analysis (CA).[7] Efficacy data for SPPARC can be found in Kagan, Black, Duchan, Simmons-Mackie and Square (2001). SPPARC is described in more detail in section 2.1.3.1. Moreover, the

[6] One central assumption of this theory is that each language consists of a basic word order and that all other orders are derived by a process called 'movement'.

[7] CA is a qualitative research method which is data-driven, using audio or video recordings of real life interactions. Researchers in the field of Aphasiology use this method to analyze aphasic language use in real-life conversations between PWA and their CPs (see Beeke, 2012 for an overview).

'Conversation Partner Scheme' (McVicker, Parr, Pound, & Duchan, 2009), which is practiced at *Connect*, the communication disability network, in London (www.ukconnect.org), represents another conversation-based approach, developed to train volunteers to converse with PWA who experience social isolation. Table 2 shows an overview of the therapy approaches introduced above.

Table 2

Conversation-based therapy approaches (chronologically ordered) for aphasia originating from the Anglo-American language area

Therapy approach	**Abbreviation**	**Authors**
'Functional Communication Therapy'	FCT	Aten (1986)
'Conversation Coaching'	-	Holland (1991, 1997)
'Communication Partners'	-	Lyon et al. (1997)
'Supported Conversation for adults with aphasia'	SCA	Kagan (1998a, 1998b), Kagan & Gailey (1993)
'Supporting Partners of People with Aphasia in Relationships and Conversation'	SPPARC	Lock et al. (2001a)
'Conversation Partner Scheme'	-	McVicker et al. (2009)

It should be noted, that these examples do not exclusively target agrammatism and that the listed examples are not claimed to be a complete enumeration of the Anglo-American conversation-based therapy approaches (for an overview, see Wilkinson & Wielaert, 2012). Furthermore, studies using these programmes mainly focus on the training of the CP rather than on the PWA (for a systematic review, see Simmons-Mackie, Raymer, Armstrong, Holland, & Cherney, 2010).

In the German language area, conversation-based principles such as role-plays (e.g. Bilda et al., 2008) or conversation-oriented group therapy sessions are practised (Moriz, Geissler, & Grewe, 2009).[8] Moriz et al. (2009: pp. 52-53) list examples of different approaches for aphasia therapy in relation to the ICF, targeted at the communication abilities of the CP and/or the PWA. Concerning concrete therapy approaches, the PACE programme (Promoting Aphasics' Communicative Effectiveness; Davis & Wilcox, 1981, 1985; Davis, 2005) is widely known and practised (Schlenck et al., 1995). However, this approach does not exclusively target real-life conversations. Apart from this, Steiner (1994) constructed the so-called 'TEAMWORK' consultation programme which can theoretically be applied to therapy for individuals with agrammatism and their CPs (Steiner, personal communication, April 30, 2013). Bongartz (1998) and Bülau et al. (2007) designed German CP training programmes.

[8] Bilda et al. (2008) trained prototypical everyday speech acts (e.g. buying coffee at a bakery). Their approach, focusing on PWA, reflects high frequency video-based conversation training at the computer, aiming at improving functional everyday communication.

The CP training developed by Bongartz (1998), for example, consists of four main steps including elements such as role-play, analysis and discussion of video recorded conversations (of the PWA and the CP), modified PACE principles and Conversation Coaching (Holland, 1991, 1997). To the author's knowledge, however, to date, no efficacy data are available for this approach.

The next two sections describe the Better Conversations with Aphasia (BCA) therapy programme provided in the main research project of which this thesis is a part (see chapter 4 for detailed methodology), and its origins in SPPARC (Lock et al., 2001a). This will set the scene for the fidelity tool developed for the present thesis further on.

2.1.3.1) The SPPARC conversation training programme

The SPPARC (Lock et al., 2001a) conversation training programme was developed by the 'Coping with Communicating' research project in the Department of Human Communication Science, University College London (UCL). It applies CA and is designed to be delivered either in a group setting (that is, a group of CPs) or with the PWA and the CP together as a couple; either way, it focuses on directly changing the CP's conversation behaviours.

SPPARC consists of three progressive main steps (ibid.): The first is to raise awareness of the broad idea of conversation and conversation behaviour (such as 'the aim of a turn' or 'overlapping talk') in relation to aphasic speech in general. The second step includes raising the awareness of a CP's own conversation behaviour. The third step of the programme consists of the facilitation of the identification and use of strategies for change. The key techniques included in the therapy (video feedback, role-play and conversation activities) are based on a model of experiential learning (Kolb, 1984; see Beckley et al., 2013 for an overview).[9] Several studies found mostly qualitative indicators for its efficacy (Burch, Wilkinson, & Lock, 2002; Lock et al., 2001a, 2001b; Wilkinson, Bryan, Lock & Sage, 2010), and showed that changes in a CP's behaviour could lead to indirect changes in a PWA's conversation.

SPPARC is beginning to have an impact outside the Anglo-American language area. To date, a Dutch (Wielaert & Wilkinson, 2012) and a Slovak (Cséfalvay & Brnová, 2009) adaptation have been developed. In 2013, a study on a Swedish adaptation was published, reporting indicators that the adapted CP training programme is effective (Saldert, Backman, & Hartelius, 2013).

[9] Video feedback, i.e. showing a dyad short conversation extracts of their own conversations (videotaped during the assessment process) or of conversations of other PWA and their CPs, is a method which aims at initiating discussions about aspects of the clients' own conversations.

With regard to the present investigation, it is important to know which therapist skills are associated with the delivery of SPPARC, and consequently with BCA, which is an adaptation of SPPARC.

The SPPARC manual discusses the use of general, counselling-related techniques (manual part 1: p. 84), especially in relation to the observation of video clips and discussions taking place during therapy. However, the authors of SPPARC (Lock et al.) do not fully specify exactly what is meant by counselling-related techniques. In the manual (part 1: p. 84), a few examples are given (e.g. use of active listening skills, reflection, leading questions), but it is not further explored which of them are essential or are to be expected. Also, it is not quite sure whether these skills named in the manual can be regarded as a complete listing.

Since counselling skills fundamentally underpin all speech and language therapy management of clients, defining characteristics can be found in much other literature. Parkinson and Rae (1996) provide a straightforward definition of the term counselling, based on the College of Speech and Language Therapists (1991):

> *"Counselling is described as a 'mechanism' or 'process' which assists individuals in their exploration and clarification of thoughts and feelings so that they may see difficulties more objectively and make their own decisions. This process is construed as taking place in an understanding, supportive atmosphere where the therapist practices active listening." (p. 142)*

The technique of *active listening* is listed in the short paragraph in the SPPARC manual (part 1: p. 84). Egan (1998) describes it as the foundation of understanding; to listen actively to the client's concerns and priorities, to their feelings, emotions, experiences and resources or strengths (ibid.). Brumfitt & Clarke (1983), in their work which deals with the application of psychotherapeutic techniques to the management of aphasia, highlight "giving a skilful summary of what has just been said in order to make clear to the client that it has been understood and may not need to be said again" (p. 99) as an important skill. Another aspect of counselling-related skills is the expression of warmth and empathy towards the client (Eicher, 2009; Leahy, 1995), and as the authors of SPPARC state in another publication, affirming and encouraging the dyad (Lock et al., 2001b). Further, Lock et al. (2001b) state that "the clinician should aim to instil them [the clients] with the confidence to try new strategies in their everyday conversations at home" (p. 29; see also Howard & Hatfield, 1987: p. 83).

Moreover, the SLT is expected to supply individualised advice to the dyad (Lock et al., 2001a, SPPARC manual part 1: p. 26). This is achieved by providing advice sheets or working with short video examples made before therapy started, illustrating certain conversation patterns (e.g. a repair sequence or a so-called test question by the CP, in order to raise the dyad's awareness of their own conversation behaviour). Moreover, with regard to identifying strategies for change, it is important that the SLT tries to guide the dyad to make their own choices and to avoid making judgements about

what conversation patterns the dyad should retain or change (Lock et al., 2001a, SPPARC manual part 1: p. 27 and 80). This principle is reflected by the following quote taken from the SPPARC manual (Lock et al., 2001a, part 1: p. 85): "(…) it is worth reiterating that you should be wary of being prescriptive about what is 'good/to be retained' or 'bad/to be changed' about any conversation".[10]

After having described SPPARC, the content, aims and principles of the BCA therapy programme, used in the main research project and adapted from SPPARC, will be outlined next.

2.1.3.2) The Better Conversations with Aphasia therapy programme

Beeke and colleagues (Beeke et al., 2011; Beeke et al., submitted; Beckley et al., 2013) have designed a conversation-based therapy approach called BCA based on SPPARC. It uses Kolb's adult learning model (1984) as its basis, as does SPPARC (for an overview see Beckley et al., 2013). The BCA therapy programme can be found online at https://extend.ucl.ac.uk from 5 August 2013).

However, Beeke and colleagues created two significant changes in their BCA therapy programme. The first is the focus on conversational difficulties resulting from agrammatism instead of relating the programme to aphasia in general (Beeke et al., 2011). Secondly, the team decided to work directly with the PWA to train them to use conversation strategies, instead of solely targeting the CP (as is common in most of the previous research in this area, see section 2.1.3). This was done in order to discover whether the PWA can learn from conversation therapy (ibid.; Beckley et al., 2013). Compared to SPPARC, this led to the creation of an additional therapy session focusing on strategies for the PWA (e.g. gesture, use of key words, writing and drawing), and additional therapy handouts and activities (for an overview of all the handouts used in the wider project see Appendix 1). Moreover, the PWA is an active participant throughout all sessions.

The overall aim of the therapy is to increase mutual understanding between the couple (Beeke et al., 2011). The change in a dyad's conversations associated with the therapy is expected to be both quantitative and qualitative in nature (ibid.). Beeke et al. (2011) state, "in order to evaluate the therapy, we will compare (...) conversation findings from the pre-therapy baselines and post-therapy follow-ups, and also seek the views of the dyad" (p. 226).

The BCA therapy programme consists of 8 weekly sessions of around 1.5 hours in length taking place at the clients' home (Beckley et al., 2013). Although there is evidence for the effectiveness of intensive therapy (5-10 hours of therapy per week) for people with chronic aphasia (e.g. Bhogal,

[10] However, the SPPARC manual also gives the option for the SLT to make "explicit verbal suggestions for strategies for the partner/couple to try" (SPPARC manual, part 1: p. 86).

2003; Meinzer, Djundja, Barthel, Elbert, & Rockstroh, 2005), the idea of the project leaders was to design a therapy programme that is in accord with the current practices of the National Health Service (NHS) in the UK. Furthermore, in the German guidelines for aphasia therapy (Deutsche Gesellschaft für Neurologie [DGN], 2008), the intensity of 5-10 hours a week (see above) is not regarded as mandatory for conversation training (p. 6).[11]

Fundamental principles of the BCA therapy programme follow those discussed in section 2.1.3.1 for SPPARC. Additionally, in relation to the aim of the BCA therapy programme to work with the PWA as well as the CP, the therapist should focus on both participants during therapy sessions, so that both have equal roles (Beckley et al., 2013). The specific goals for each BCA therapy session are illustrated in Table 3.

Table 3

Session goals of the BCA therapy programme (compiled following discussion with S. Beeke)

Session N^{o}	**The overall goal(s) of the session is/are...**
1	...to raise the dyad's overall awareness of conversation.
2	...to raise the dyad's awareness of different aims of turns.
3	...to raise the dyad's awareness of repair in general AND to help the dyad to identify own patterns of repair.
4	...to identify patterns of turn building in the PWA's own conversation AND for the PWA to select strategies for change and to experience them within a structured task.
5	...to identify patterns of turn building in the CP's own conversation AND for the CP to select and practice strategies for change.
6	...to facilitate the identification and implementation of strategies for change in relation to topic.
7	...to facilitate the implementation of strategies for change.
8	...to support the dyad to implement the strategies for change.

To date, although results have been published for several of the eight dyads who participated in the main study (Beeke et al., 2011; Beeke et al., submitted; Beckley et al., 2013), there currently exists no published overview of the case series results. However, in the project final report for the funder (the Stroke Association) (January 2012, updated June 2013), preliminary findings are presented for all dyads. Table 4 gives an overview of these outcomes.

[11] Please note, that the cited version of the guidelines is not the most recent one. However, in the current version from 2012, no further information could be found in relation to conversation training in aphasia.

Table 4

Preliminary outcomes (based on quantitative data) for dyads 1-8 (source: project grant final report, January 2012, updated June 2013)

Participants (names are pseudonyms)		**Quantitative conversation changes**	**Positive result? *Yes/No/?***
Dyad N^{o} 1	Kate	talks more – more agrammatic utterances (i.e. more sentence structures attempted, fewer one-word utterances)	Yes
	Shelley	fewer interruptions (but: qualitative results only)	?
Dyad N^{o} 2	Simon	talks more – more topics initiated – increased use of chosen strategies (writing, drawing)	Yes
	Cath	fewer understanding checks	Yes
Dyad N^{o} 3	Giles	uses chosen strategies (writing, drawing) when prompted by wife (but: qualitative results only)	?
	Linda	fewer test questions (ones where the answer is already known) – fewer comments on PWA ability (e.g. 'well done') – more understanding checks	Yes
Dyad N^{o} 4	Graham	increased use of chosen strategies (writing, mime, key words to introduce a topic)	Yes
	Alex	fewer test questions (ones where the answer is already known) – fewer understanding checks	Yes
Dyad N^{o} 5	Jill	talks more – more topics initiated	Yes
	David	fewer test questions (ones where the answer is already known)	Yes
Dyad N^{o} 6	Barry	increased use of chosen strategies (writing, drawing, key words to introduce a topic)	Yes
	Louise	fewer understanding checks	Yes
Dyad N^{o} 7	Maggie	decrease in use of chosen strategies (writing, drawing, gesture)	No
	Christina	no change	No
Dyad N^{o} 8	Stuart	talks more – more topics initiated	Yes
	Pamela	fewer test questions (ones where the answer is already known) fewer questions	Yes

Note: Green shading means that positive results are reported for both the CP and the PWA, whereas red shading indicates, that no positive results have been found for the PWA and the CP.

As Table 4 shows, preliminary findings indicate that the therapy resulted in positive changes for dyads 2, 4, 5, 6 and 8 (both for the PWA and for the CP), whereas for both persons of dyad 7, no positive changes have been revealed. For dyads 1 and 3 the findings indicate a positive trend (e.g. fewer interruptions) but often the changes are solely based on qualitative findings.

2.2) The concept of treatment fidelity (TF)

When building an evidence base for a new and complex behavioural treatment like the BCA therapy, researchers need to report on the treatment itself (Craig et al., 2008) as well as the therapy outcomes. In the context of designing, implementing and evaluating treatments, one key consideration is TF (Hennessey & Rumrill, 2003) which is a measure of the reliability of the administration of a treatment (Hinckley & Douglas, 2013).[12]

A considerable amount of literature on the concept of TF has been published in different research areas, such as psychology, education and medicine. Particularly in the last 20 to 30 years many researchers have discussed and developed fidelity assessment (e.g. Bellg et al., 2004; Borrelli et al., 2005; Carroll et al., 2007; Lichstein, Riedel, & Grieve, 1994; Waltz, Addis, Koerner, & Jacobson, 1993; Yeaton & Sechrest, 1981), especially in the field of health behaviour intervention research (Borrelli et al., 2005).[13] The following review of literature predominantly includes studies that investigate aspects of TF from the field of psychology, which encompasses the origin of the concept (Di Rezze, Law, Gorter, Eva, & Pollock, 2012), and has most in common with the field of speech and language therapy.

Compared to this rich body of research, little literature on TF exists in the area of speech and language therapy intervention studies. This situation may stem from the fact that TF issues are usually reported in the context of higher-level study designs such as RCTs (see e.g. Godfrey, Chalder, Ridsdale, Seed, & Ogden, 2007). Such trials are difficult to design and execute in speech and language therapy studies (e.g. communication partner training) and are therefore relatively rare (Cherney et al., 2013). Some papers, however, do report on some aspects of TF (e.g. monitoring and documenting fidelity) especially when assessing complex speech and language therapy interventions. Adams, Lockton, Gaile, Earl, and Freed (2012), for example, provide a complex speech and language therapy programme, which includes behavioural elements, to children with pragmatic language impairment within an RCT and report on TF. Also in the exploratory trial conducted by Riches (2013), providing

[12] In the present thesis, the terms *treatment, intervention* and *therapy* are used synonymously.
[13] Studies in the field of health behaviour change focus on behaviours related to e.g. physical activity or smoking (see e.g. Resnick et al., 2005).

a usage-based therapy approach to children with specific language impairment, the author discusses issues of TF, e.g. the need to use a more detailed intervention protocol and video-recording in future research. Another example is the work by Hickey, Bourgeois and Olswang (2004), in which volunteers were trained to communicate with PWA. In this study, adherence to treatment procedures was examined. In May 2013, the first review of the importance and reported frequency of TF related to aphasia treatment studies was published (Hinckley & Douglas, 2013) which undermines the growing attention which the concept attracts in this research field.

For the literature review on TF in the present thesis, a simultaneous search in several databases (ERIC (ProQuest), FRANCIS, MEDLINE, PSYCINFO, and PubMed) was conducted via *MetaLib* using the following terms: *treatment fidelity, intervention fidelity, fidelity of treatment, speech and language therapy*. [14] Research articles originating from different research fields such as health behaviour intervention research, psychology and speech and language therapy research were included to get a broad knowledge base of the development of the general TF concept over the years. In addition, the relevant studies identified by the search were scanned for further literature.

2.2.1) Definition and development

TF is a term that encapsulates a concept originally known as *treatment integrity*. It assesses whether a treatment or therapy was delivered as intended (Hennessey & Rumrill, 2003). Other terms to describe TF are *procedural reliability*, *intervention fidelity*, *implementation fidelity*, *program(me) fidelity*, *treatment adherence process research* and *therapist's* or *clinician's adherence* or *competence*. The fact that the concept of TF can be found within several expressions in the literature reflects variability in definitions and leads to confusion in terms of what exactly should be measured when assessing TF (Nelson, Cordray, Hulleman, Darrow, & Sommer, 2012). In this thesis, the term 'TF' will be used consistently to refer to this concept.

The variability found in definitions of TF is outlined with the help of the following four examples. Nelson et al. (2012) define TF as "the extent to which an intervention's core components have been implemented (and differentiated from control conditions) as planned" (p. 2). Bellg et al. (2004), on the other hand, describe TF as "the methodological strategies used to monitor and enhance the reliability and validity of behavioural interventions" (p. 852). Hogue, Liddle, Singer, and Leckrone (2005) refer to TF by relating it to the following three components: *adherence* (the degree to which an intervention

[14] *MetaLib* is a service provided by University College London, which enables one to cross-search several databases at once. More information can be found on the website: http://metalib-a.lib.ucl.ac.uk/V?RN=601006214 (last visited on 23rd April 2013).

is delivered as planned), *competence* (the level of skill with which the intervention is delivered) and *differentiation* (the theoretical distinctiveness of an intervention's essential components compared to those of control interventions).[15] For the purposes of this thesis, it should be noted that, due to the fact that there is no control group in the main research project, the aspect of differentiation is not relevant and is therefore not discussed any further. A fourth definition, from Carroll et al. (2007; based on Dusenbury, Brannigan, Falco, & Hansen, 2003), states that TF is the degree to which a therapist implements an intervention as intended, which goes back to the original concept of treatment integrity. In fact, a generally accepted understanding of TF is the original idea of treatment integrity. This highlights the objective to ensure the uniformity, consistency, and replicability of a treatment delivered in a particular research setting (Hennessey & Rumrill, 2003).

The overall development of TF during the last 20-30 years is illustrated with the help of Figure 1.

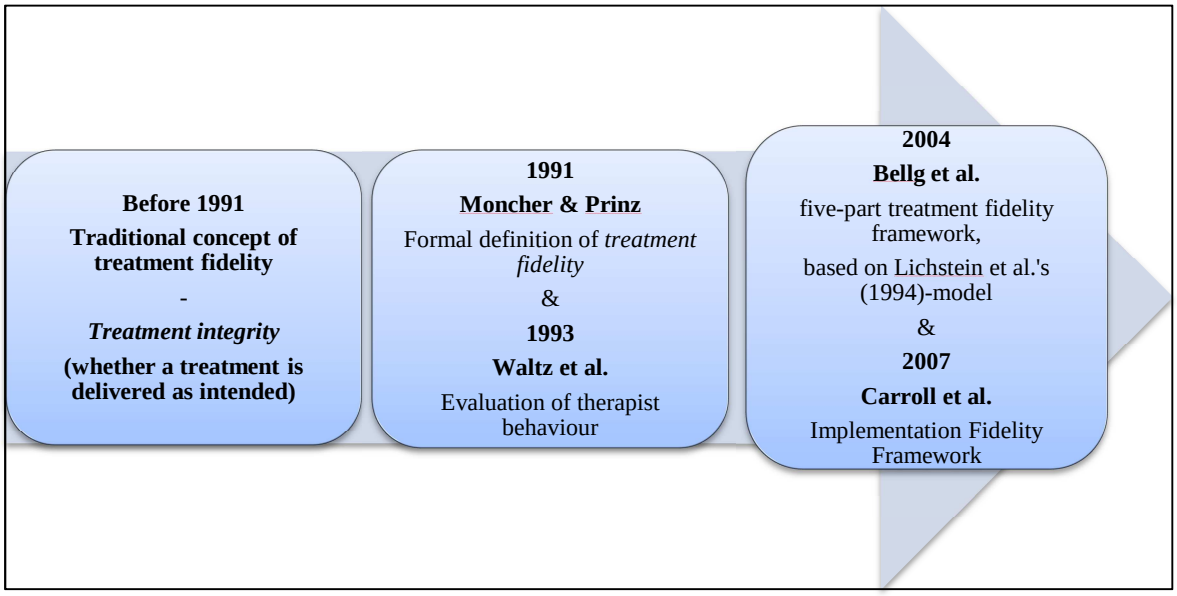

Figure 1: Development of the concept of TF over the time (author's own Figure)

The specific term *treatment fidelity* was first employed by Moncher & Prinz (1991) who, in their seminal paper, introduced a formal definition:

> *"Treatment fidelity is a relatively recent methodological consideration that refers to two related, but distinct issues. (…) treatment integrity (…) [and] treatment differentiation"*
> (p. 247 f.)

[15] However, Carroll et al. (2007) report that "differentiation actually measures something distinct from fidelity" (p. 3).

Again, it should be noted that this definition is highly relevant in the context of clinical efficacy trials (when having a control and an experimental condition). Two years later, the paper by Waltz et al. (1993) emphasised the evaluation of therapist behaviours. The conceptualisations by Moncher & Prinz (1991) and Waltz et al. (1993) have then been enlarged by Lichstein, Riedel, & Grieve (1994), who criticised previous research. According to these authors, there had been a failure to address client-focused issues when investigating TF. Therefore, in their treatment implementation model, they added two aspects to the previous definitions: *receipt of treatment* (e.g., that the client understands and uses the skills that are delivered) and *enactment* (e.g., that the client implements the treatment skills into his or her daily life).

The addition of client-focused behaviour to the conceptualisation of TF reflects a development that enlarges the traditional understanding of treatment integrity, in which therapist behaviour is emphasised and related to adherence (i.e. has the therapy been delivered as intended?) and competence (i.e. in what way has the therapy been delivered?). The rationale to include client-focused behaviours when assessing TF is to uncover if a client did or did not understand how to perform cognitive or behavioural skills learned within a session (Borrelli et al., 2005). One could, for example, have high levels of adherence but weak outcomes. Without assessing client behaviours, researchers would not know whether this result occurred because of an ineffective treatment or because the client did not understand how to use the skills taught.

Based on the conceptualisation of Lichstein et al. (1994), the research group around Bellg (2004) designed a framework consisting of five main areas for the assessment of TF. This framework is described in detail in section 2.2.2, because it pertains to TF measurement.

A widely accepted framework, created by Carroll et al. (2007), is considered the most sufficient one to integrate TF into the main research process and to describe the ingredients and influencing factors of TF (Hasson, 2010). This so-called Implementation Fidelity Framework (IFF) including both therapist-focused and client-focused behaviour will be outlined in section 2.2.3.

In the aforementioned definition of TF given by Bellg et al. (2004), the terms *reliability* (consistency) and *validity* (accuracy of what a variable measures) are stated. Often, researchers report on TF within the ‘reliability’ section of their paper. This can be explained by the fact that checking fidelity means determining the so-called procedural reliability (i.e., reliability on the treatment) (see e.g. Marshall, Capilouto, & McBride, 2007). Furthermore, TF belongs to the broader concept of validity, because ensuring that a treatment is provided the way as it was pre-planned makes it more feasible to be able to relate the effects of a study to the treatment itself (Hennessey & Rumrill, 2003). Validity can be divided into the two umbrella terms: internal and external validity. Internal validity of a study reflects the cause-and-effect relationship between a treatment and predicted outcomes (Bellini & Rumrill,

1999), and "external validity necessitates the creation of reproducible procedures that can be generalised across research samples and settings" (Hennessey & Rumrill, 2003: p. 124).

Another important aspect of the multifaceted concept TF is its role within the systematic 'scale-up' process (Kaderavek & Justice, 2010). This process includes different hierarchically ordered steps ranging from small scale studies, efficacy studies (implementation under highly controlled settings) to effectiveness studies (implementation under conventional conditions). By assessing TF, an intervention is enabled to move through this process (ibid.: p. 370). The authors also state that throughout this process, TF should be measured so that possible effects of fidelity variation are uncovered. The Complex Interventions Guidance, published by the Medical Research Council (MRC, 2008), and summarised by Craig et al. (2008), also encourages researchers to record TF in relation to the development and evaluation of complex interventions.[16] However, in the guidelines, strict fidelity to a therapy manual is regarded as problematic, if adaptations of a therapy to local settings are relevant.

To summarise the aspects outlined above, the basic idea of TF is to ensure valid and reliable data by comparing a specific intervention and its delivery to a standard of the intervention, i.e. a description of the intended intervention and its implementation (Rossi, Lipsey, & Freeman, 2004).[17] This conceptualisation overlaps with process evaluation (Hulscher, Laurant, & Grol, 2003) which can be described as an exploration of the way in which an intervention is implemented (Craig et al., 2008). Process evaluation, according to Craig and colleagues (ibid.), can "provide valuable insight into why an intervention fails or has unexpected consequences, or why a successful intervention works and how it can be optimised" (p. 982). In the case of a new programme, "process evaluation may be appropriate […] to answer questions about how well it has established its intended operations and services" (Rossi et al., 2004: pp. 175-177).

In fact, process evaluation and fidelity assessment have the same objective (Hasson, 2010), but are different in terms of their focus. The difference between the two overlapping concepts is outlined by Hogue, Liddle, & Rowe (1996: p. 335): According to these authors, a fidelity-focused research question within a study might be "Did the therapy occur as it was planned?" whereas a more process-related research question might be "What exactly occurred in the sessions?" The former reflects the main goal of confirming a specific model and cataloguing certain therapist behaviours, the latter embodies a discovery-oriented focus. The authors (ibid.) point out that the so-called adherence process research is one part of a whole process research framework (including more aspects, for example therapeutic context which includes client behaviour or therapist-client interactional

[16] The Complex Interventions Guidance can be found online at: www.mrc.ac.uk/complexinterventionsguidance (last visited on 10th August 2013)
[17] The term *implementation* describes "what a program consists of when it is delivered in a particular setting" (Durlak & DuPre, 2008: p. 329).

processes).[18] In a more recent paper, Hogue et al. (2005) use the term *fidelity process analysis* and describe it as a subcategory of *intervention process research.* Furthermore, fidelity process analysis "draws upon quantitative measurement procedures that generate multivariate data on the degree or intensity of program implementation, including dimensions such as breadth and depth of program content, frequency and skilfulness of intervention techniques, and number and timing of sessions" (ibid.: p. 193).

For the purposes of this thesis, TF is defined as the degree to which a therapy programme is delivered as intended (adherence in relation to therapy content) and the skilfulness with which the programme is delivered (competence). Furthermore, these two aspects are expected to be related to the context of client behaviours within a session. In the next section, the measurement of TF will be discussed. This definition includes the major elements from TF literature.

2.2.2) Measurement

As outlined above, a variety of definitions can be labelled by the term 'TF'. As a consequence, the same heterogeneity occurs regarding the measurement of TF (Mowbray, Holter, Teague, & Bybee, 2003), i.e. TF is measured variously among different interventions (see e.g. Chan et al., 2004; Kiran & Thompson, 2003; Lichstein et al., 1994; Peach & Reuter, 2010). Bellg et al. (2004) go even further and speak of an inconsistency of TF measurement, in particular within the field of health behaviour research.

Fidelity measurement can take place either once (e.g. at an initial stage of a new therapy or at any stage after implementation), or repeatedly (Bond, Evans, Salyers, Williams, & Kim, 2000). There are various purposes of fidelity measures: Researchers might aim for documenting and monitoring adherence or for the facilitation of communication in the literature (e.g. discrimination of different treatments which share similarities), the synthesis of a body of research, or the identification of critical ingredients of a therapy (ibid.). Hogue et al. (1996) distinguish between three main categories in order to measure adherence: (a) procedures necessary to accomplish *quality control* (therapist training or supervision prior to or during treatment provision), (b) procedures to *catalogue therapist-in-session behaviour* along specified parameters (e.g., document analyses or therapist self-reports of activities related to adherence), and (c) *observational review methods* (observing the therapist during a session). According to the authors, observational review methods embody the best way to

[18] An in-depth analysis of the interaction of the SLT and the PWA during therapy is for example provided by Horton & Byng (2000) who therefore made use of a certain coding system. Their paper can be regarded as an example of a process evaluation.

investigate treatment adherence research. Moreover, when researchers aim to capture interactive data (e.g. when measuring competence), continuous observation of therapy sessions is the preferred sampling method (Eames et al., 2008).

There are a number of strategies or methods for quantifying TF, which range from direct to indirect approaches. Among the practicable fidelity tools are: direct observation (the 'gold standard'), check-sheets, indirect observation via videotapes, ratings by experts based on documentation data, and self-report checklists (e.g. Kaderavek & Justice, 2010; Mowbray et al., 2003; Resnick et al., 2005). Fidelity tools to quantify TF are normally ones that raters score while observing sessions or interviewing participants (Parham et al., 2007). Such tools are easier to develop if "detailed practice manuals" exist (Bond et al., 2000: p. 78).

In their literature review of studies in the fields of mental health, health, substance abuse treatment, education and social services, Mowbray et al. (2003) provide a variety of examples of the measurement of TF. The authors state that two different dimensions of TF should be considered when measuring TF: the *structure* dimension and the *process* dimension. The structure dimension of fidelity involves the examination of essential components of the intervention such as treatment adherence or treatment completion. Johnson et al. (2007), for example, included elements of each therapy session, session goals (therapeutic aims) and participant goals (e.g. homework completion) in their fidelity checklist (see Appendix 2). According to Kaderavek & Justice (2010), the measurement of treatment procedure (as these authors call the structure dimension) is relatively uncomplicated (e.g. using a checklist). The process dimension, on the other hand, embodies aspects such as the quality of the treatment delivery, and other aspects such as client-client interactions, emotional climate or values and principles (Mowbray et al., 2003). With regard to this dimension, researchers distinguish between treatments that are delivered well or appropriately and treatments that are delivered poorly (Kaderavek & Justice, 2010). Thus, this factor evaluates therapist competence with respect to the therapy provided (Di Rezze et al., 2012).

More and more researchers use a multidimensional approach to fidelity including structural as well as procedural dimensions in order to investigate TF as sufficiently as possible (e.g. Hasson, Blomberg, & Dunér, 2012; Odom et al., 2010). The application of a multidimensional approach is also supported by Mowbray et al. (2003: p. 333), Kaderavek and Justice (2010: p. 375) and Parham et al. (2007: p. 218).

Clarke (1998) agrees that the "assessment of intervention fidelity should distinguish between fidelity to the program [which reflects adherence] versus competence in the delivery of the program" (p. 30). Although Carroll et al. (2007) argue that competence is often not assessed, this aspect was found in some of the reviewed studies (e.g. Adams et al., 2012; Chan et al., 2004; Eames et al., 2008, 2009, Hildebrand et al., 2012): Chan et al. (2004), for example, investigated TF in a RCT and constructed scales that reflect both the content and the process of the therapy programme. One example of an item

reflecting the competence of a therapist, related to empathy, is: '*The therapist expressed warmth toward family members*'. This is part of the category '*therapeutic relationship*'. However, the authors did not explain which concrete therapist statements can be regarded as an indicator of the expression of warmth. Eames et al. (2008) included a similar item in their so-called *Leader Observation Tool*. These authors relate empathy to the behavioural categories '*feelings acknowledgement'* and '*self-reflection'* and illustrate these categories with concrete examples of therapist statements. According to Carroll et al. (2007), researchers need a benchmark (e.g. prescribed techniques) to be able to assess quality of treatment delivery. For initial evaluations of programmes and when fidelity criteria are first developed, it is recommended to focus on the structure dimension (Mowbray et al., 2003). Furthermore, "if essential components of an intervention are not known, then fidelity of the whole intervention is needed" (Carroll et al., 2007: p. 5/9).

TF is regarded as a potential moderator between an intervention and its intended outcomes (Carroll et al., 2003; Clarke, 1998), i.e. fidelity can affect the success of an intervention. There is evidence that maximising TF leads to the best outcomes (Hasson et al., 2012). However, Mowbray et al. (2003) state that outcomes may vary with fidelity only if the fidelity tool is reliable and valid, and if one knows that the properly implemented intervention can produce the intended outcomes. Borrelli et al. (2005) emphasise that TF provides researchers with more confidence that their intervention was administered as planned, but that higher fidelity is not automatically associated with better outcomes. As a result of their review of 542 empirical implementation studies, Durlak & DuPre (2008) find that positive outcomes have often been obtained with 60% implementation (whereas a few studies suggested a level of 80% or above). The authors argue that the level of fidelity necessary to achieve better outcomes depends on whether the core components of the interventions have already been effectively delivered.

At this point, an excursion into the area of process evaluation (i.e. the exploration of the way in which an intervention is implemented) is useful. In her book about issues in the context of planning, delivering and evaluating speech and language therapy interventions, Eicher (2009) outlines four factors that influence the success of a therapeutic intervention (based on Hubble, 2001, see also Lambert, 1992): (1) factors that cannot be influenced by the SLT such as client resources (40%); (2) the therapeutic relationship (30%); (3) effects that stem from the expectations a client has of the intervention (15%); and (4) the methods of the intervention itself (15%). This conceptualisation (identified through meta-analyses of psychotherapy studies) is demonstrated graphically in Figure 2.

As previously discussed, TF mainly covers aspects in relation to techniques and methods (e.g. assessment of adherence), though it often does include certain elements of the therapeutic relationship (e.g. assessment of the competence of therapy delivery).

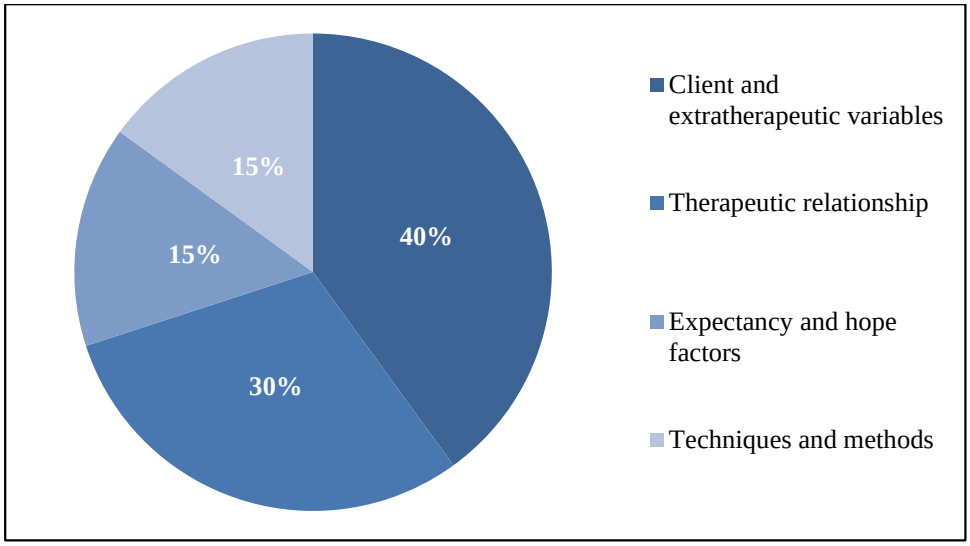

Figure 2: Factors that influence the success of an intervention (source: Eicher, 2009, based on Hubble, 2001)

To return to the measurement of TF, Di Rezze et al. (2012), in their paper on paediatric rehabilitation research, distinguish between *specific* and *generic* measures. Specific measures are used if therapist adherence to one intervention is to be examined, and generic measures are used if both adherence and differentiation of more than one intervention is the focus. The work of Di Rezze et al. (2012) suggests that the type of measure researchers should consider depends on the research question. Specific measures, according to the authors, are best suited for the evaluation of a new therapy programme (ibid.).

In 2004, Bellg and colleagues advocated a widely cited fidelity measurement approach that subdivided the assessment of TF into five main areas which can be regarded as "mutually exclusive" (Borrelli et al., 2005: p. 853): (1) design of study; (2) monitoring and improving provider training; (3) monitoring and improving delivery of treatment; (4) monitoring and improving receipt of treatment; and (5) monitoring and improving enactment of treatment skills. Their five-part framework is illustrated in Figure 3 with examples of suggested measurement strategies. This framework differs from other conceptualisations in that it provides researchers with advice in terms of designing a study and training providers (ibid.). A critical discussion of the Bellg et al. (2004) framework can be found in Leventhal & Friedman (2004).

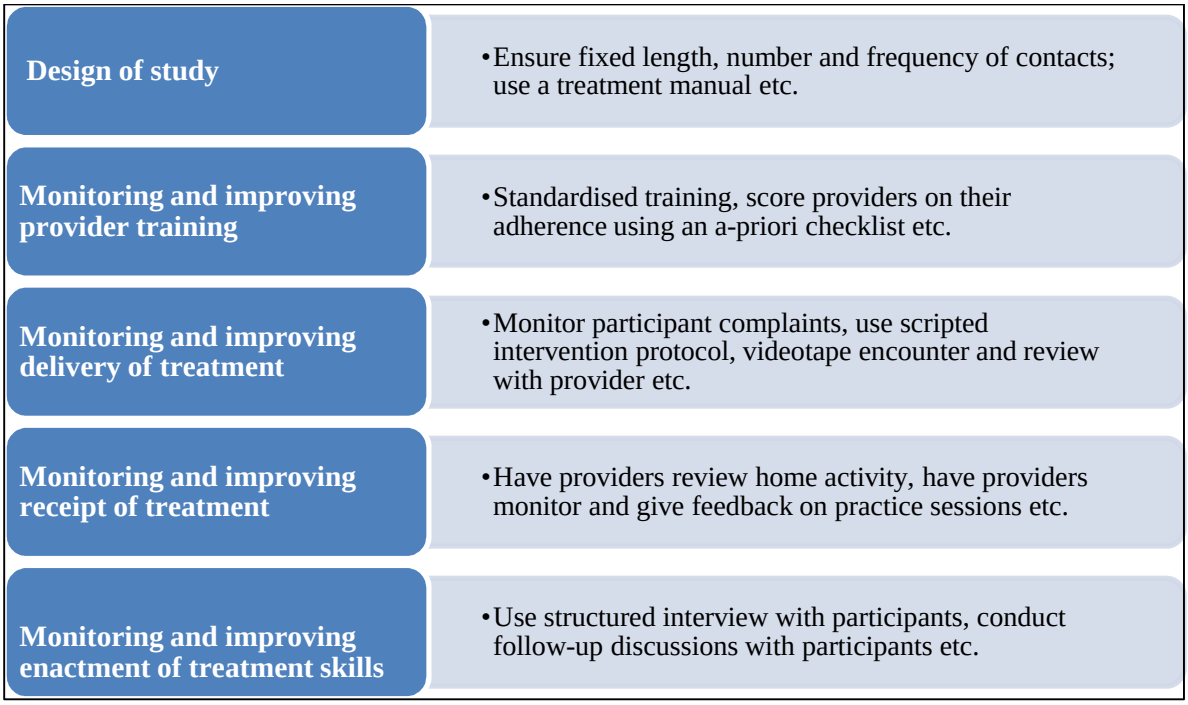

Figure 3: The Bellg et al. (2004) five-part framework for TF (author's own illustration)

The conceptualisations and recommendations of Bellg et al. (2004) provide an important overview of the broad horizon of measuring TF. However, practical questions such as the number of therapy sessions to examine in order to check fidelity, or an acceptable degree of fidelity, still remain. Concerning the amount of therapy sessions that need to be checked in a TF evaluation, some papers do not specify the exact proportion (e.g. Clarke, 1998). In others, the range of the percentage of randomly selected therapy sessions lies between 15% and 40% (e.g. Chan et al., 2004; Hickey et al., 2004; Hinckley & Carr, 2005; Kaderavek & Justice, 2010; Lewinsohn et al., 1990). Rating scales used in order to execute a fidelity check most commonly consist of Likert-type scales, i.e. ordered scales for categories with a middle category (e.g. Chan et al., 2004; Clarke, 1998; Johnson et al., 2007; Lewinsohn et al., 1990; Lichstein et al., 1994), or scales that capture the occurrence or non-occurrence of a behaviour or an event (e.g. Adams et al., 2012; Hildebrand et al., 2012; Justice, 2002). In order to illustrate the structure of TF checklists, two examples (from Lewinsohn et al., 1990 and Johnson et al., 2007) are presented in Appendix 2. The raters themselves are often experienced with the therapy programme that is being evaluated and mostly are independent members of the research team (e.g. Edmonds & Babb, 2011; Hildebrand et al., 2012; Lewinsohn et al., 1990). Re-rating of therapy sessions in order to check on the quality of fidelity measures is reported to be examined for 10% (Johnson et al., 2007), 20% (Rose & Sussmilch, 2008) and sometimes even 30% of the sessions already coded (Eames et al., 2008; Lewinsohn et al., 1990). Second raters are often students (e.g. Lewinsohn et al., 1990) who usually receive coding training (e.g. Eames et al., 2008). According to

Aspland and Gardner (2003; as cited in Eames et al., 2008), a level of inter-rater agreement of 70% and above can be regarded as acceptable. One criticism of some papers is that inter-rater reliability (IRR), using statistical coefficients such as Cohen's kappa or intra-class correlation, is not always calculated (e.g. Justice, 2002; Johnson et al., 2007).[19] If IRR is reported, methods vary among different studies depending on the rating scales used. Kappa is commonly used for nominal scales, whereas intra-class correlation is suitable for ordinal scales (see e.g. Eames et al., 2008; Lewinsohn et al., 1990). In terms of what constitutes an acceptable degree of fidelity, Carroll et al. (2007) state that a high level of fidelity is an intervention that "adheres completely to the content, frequency, duration and coverage prescribed by its designers" (p. 4/9). Odom & Strain (2002), in their paper on the strength of scientific evidence from single-subject research, speak of a "quite high" (p. 157) degree of fidelity for a mean score of 1.79 (maximum: 2.00); this reflects a percentage of 89.5%. Clarke (1998) regards fidelity levels between 78% and 100% as high. In the current thesis, with the information gained from the TF literature, a high level of TF is construed as 80% and above (see also Borrelli et al., 2005; Johnson et al., 2007). The suggested benchmarks for fidelity procedures discussed above are summarised in Table 5.

Table 5

Summary of suggested benchmarks in relation to fidelity procedures (based on a synthesis of TF literature)

Question regarding fidelity procedures	***Suggestion derived from the TF literature***
Amount of therapy sessions to be checked?	Between 15% and 40%, randomly selected
Type of rating scale used in order to conduct a fidelity check?	Likert-type scale **or** occurrence/non-occurrence
Characteristics of rater(s)?	Trained, independent, familiar with the intervention
High fidelity level?	80% and above
Amount of therapy sessions to be checked by a second rater?	10-30%
Acceptable level for inter-rater percentage agreement?	70% and above
Computing inter-rater reliability (IRR)?	Intra-class correlation, Kappa

However, most of these examples report on studies that include an experimental and a control condition as well as more than one therapist or provider delivering an intervention. This is important

[19] Cohen's Kappa and intra-class correlation are statistics that are used in order to compute IRR. They measure the level of agreement between observers and correct for agreement that would be expected by chance (Hallgren, 2012).

to keep in mind because it embodies a difference to the wider research project the data for the present thesis are taken from (a case series investigating the effectiveness of a single therapy programme).

Finally, there exist several problems associated with the measurement of TF. First of all, TF research is time-consuming in nature (Hogue et al., 1996). Moreover, fidelity ratings often involve a bias in terms of voluntary raters being too positive or negative (Mowbray et al., 2003). It is suggested that different fidelity criteria are measured with a different reliability, feasibility or cost (i.e., competence may be more challenging to measure reliably, ibid.: p. 329), for example structure criteria are regarded as less subjective and more reliable than process criteria. Another issue mentioned in the review by Mowbray and colleagues (2003) is related to the validation of fidelity measures (i.e. assessing the reliability or validity of fidelity criteria). If researchers wish to use fidelity tools on an ongoing basis, for example, one must note that programmes could change over time. This could lead to the necessity to redesign or rescale such a tool. These issues, however, are only a small selection of those mentioned in Mowbray et al.'s paper (ibid.). Eames et al. (2008), moreover, discuss the use of Likert-type scales, which can – due to the potential mid-range tendency – produce confounding results. The use of fidelity measures as self-monitoring tools is also considered problematic in terms of a subjective bias.

2.2.3) Implementation Fidelity Framework (IFF)

As mentioned in section 2.2.1, Carroll et al. (2007) constructed a conceptual framework for the evaluation of TF (the authors use the term *implementation fidelity*) which is currently regarded as the most sufficient framework for TF (Hasson, 2010).[20] The IFF includes traditional components of TF (adherence in terms of therapy content) as well as so-called moderating factors, which are expected to influence the degree of TF. The advantage of this framework is that it explains the functions of different aspects of TF and the relationship to one another within the research process as a whole. This framework will now be discussed in more detail, with reference to Figure 4.

According to the IFF, the main part of TF consists of *adherence* with its subcategories content, coverage, frequency and duration. The assessment of adherence therefore refers to whether the core elements of the intervention have been implemented as intended and if the participants (all participants who should be participating in a study) received these elements as often and for as long as

[20] However, the research group around Carroll (2007) states that more empirical research is needed to test it.

designed by the developers.[21] As already mentioned, adherence may be affected by moderating factors.

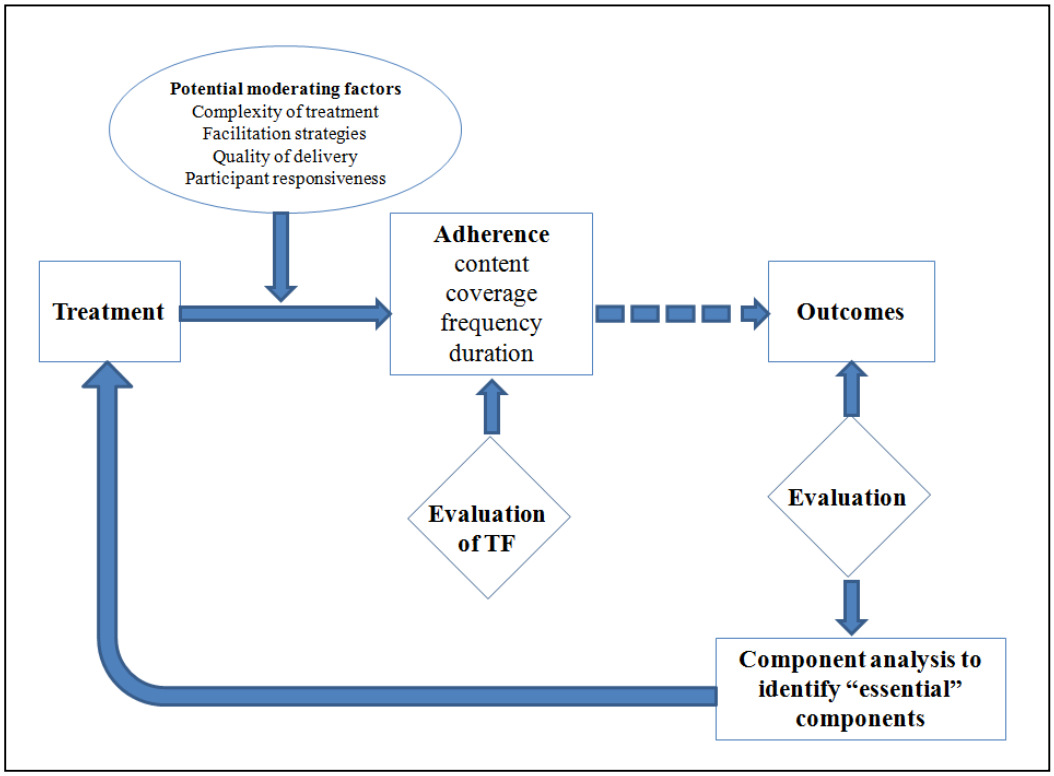

Figure 4: IFF (adapted on the basis of Carroll et al., 2007)

Potential moderating factors include the complexity of the intervention, facilitation strategies, the quality of delivery and participant responsiveness. Complexity of an intervention refers to both the nature of the therapy and to the (specific or vague) description of it. Previous studies have found that the degree of complexity of an intervention has an influence on the degree of TF (see e.g. Dusenbury et al., 2003). The statement "specificity enhances adherence" (Carroll et al., 2007: p. 5/9) reflects perfectly the idea behind this moderating factor. Facilitation strategies consist of a number of strategies included in Bellg et al.'s (2004) model (see section 2.2.2) such as training of therapists or the use of treatment manuals. These may optimise the degree of TF and standardise therapy delivery (Hasson, 2010). According to the IFF, quality of the delivery (i.e. how therapy is delivered) is regarded as another moderating factor, reflecting the extent to which a therapist approaches a theoretical ideal associated with therapy delivery (Carroll et al. 2007). The fourth moderating factor is

[21] Core components, known as 'active ingredients', include specific treatment targets (e.g. specific grammatical forms), therapeutic techniques (e.g. modelling these forms during interactive play) and the requirements for dosage (e.g. highly concentrated exposures several times a week)" (Kaderavek & Justice, 2010: p. 371).

participant responsiveness, referring to both the participant(s) receiving the intervention and the therapists delivering the intervention. This includes for example statements made by participants on the relevance or outcomes of the intervention or their engagement in the activities of the therapy. An example would be a less enthusiastic participant leading to a reduced likelihood of implementing an intervention's components properly. Carroll et al. (2007) describe different possibilities concerning the relationships between these moderating factors (e.g. quality of delivery might affect participant responsiveness).

The link between TF and therapy outcomes is visualised with the help of a broken line (see Figure 4). This indicates that the relationship between a treatment and its outcomes is external to TF, although, according to the authors, the degree of TF can in theory affect the outcomes.

The notation "component analysis to identify 'essential' components" (see Figure 4) implies that the aspect of programme differentiation in the model, other than suggested in the literature (e.g. Moncher & Prinz, 1991), is regarded as separate from TF. The authors argue that unique elements of a programme need to be identified separately from TF, for example with the help of TF data and outcome data of several studies which all test the same intervention.

2.2.4) Relevance to speech and language intervention research

Sections 2.2.1 to 2.2.3 defined TF, outlined possibilities for its measurement and introduced a conceptual model of TF (the IFF). The next step is to discuss the extent to which TF is relevant to speech and language intervention research.

Possibly the most useful paper to date on TF in aphasia treatment is the review of Hinckley and Douglas (2013). With the aim of examining the frequency with which TF aspects are reported in aphasiology, they reviewed 149 studies published in the journals *Aphasiology, American Journal of Speech-Language Pathology* and the *Journal of Speech, Language, and Hearing Research* between 2002 and 2011. These constitute experimental studies that mainly apply multiple baseline designs or single subject designs. The results are illustrated in Figure 5.

The authors found that 14% (N=21) of the studies explicitly reported some aspect of TF. One example is the study by Hickey et al. (2004). These authors report on 'procedural reliability', in other words adherence to treatment procedures, since they aim to ensure that each volunteer in their study received a specific training in a uniform manner. The majority of the 21 studies checked for adherence, having one or more rater(s) to observe a proportion of videotaped sessions (mostly an amount of 10-25% of

all therapy sessions). There was no obvious trend towards an increasing proportion of studies reporting on TF over time.

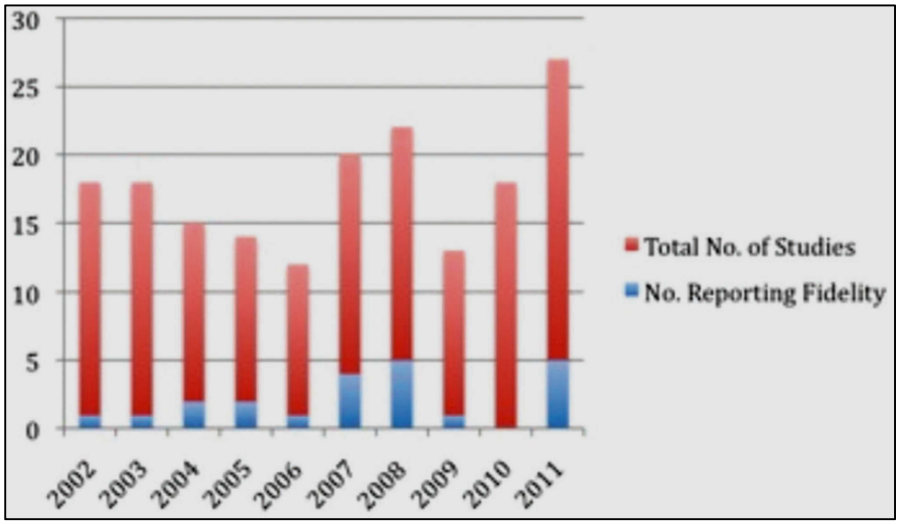

Figure 5: Hinckley & Douglas, 2013 – Proportions of aphasia studies reporting on fidelity by year

Kaderavek & Justice (2010) suggest that TF is a construct that is not only important in clinical practice of speech and language therapy, but also in research contexts. However, the authors also argue that SLTs are more familiar with validity and reliability issues in relation to outcome measures, whereas issues related to the treatment itself are often disregarded (ibid.: p. 370).

Why is TF relevant to research in communication disorders? First of all, TF can help to create replicable methods and provides empirical evidence to support the use of a specific treatment (Hennessey & Rumrill, 2003: p. 124). Moncher & Prinz (1991: p. 249) argue that documenting treatment delivery helps to interpret the results of a study more properly: If significant results are found, for example, they could be due to unknown components of a treatment that have been added, or due to components seen as inactive which have been omitted, or due to an effective intervention. By assessing TF, these connections should become clearer – an aspect which is relevant to any research study.

Relevance of TF to speech and language intervention research is furthermore justified by the fact that psychotherapy research and rehabilitation research share many characteristics: Hildebrand et al. (2012: p. 716) report on the suggestion of Whyte and Hart (2003), namely that psychotherapy research and rehabilitation face similar challenges in attaining and demonstrating TF because the

therapy programmes in both fields are difficult to quantify and highly depend on therapy delivery and the interactions between the therapist and the client(s).

Cherney and co-workers (2013), in a recently published systematic review of communication partner training, argue that TF is a crucial element of any behavioural study. However, their results indicate that almost all of the studies included in their evaluation of methodological quality and outcomes omitted TF. According to Cherney et al., only 13% of the reviewed studies (those by Hickey et al., 2004, Kagan et al., 2001, and Legg, Young, & Bryer, 2005) included TF in their papers.[22] This percentage is similar to that identified by Hinckley & Douglas (2013), which was 14%.

In summary, the importance of assessing aspects of TF is being highlighted by a growing number of researchers in the area of (adult) speech and language therapy. In order to sufficiently report on therapy studies, it is expected that future speech and language intervention papers will include TF as an essential component.

[22] The authors (Cherney et al.), however, do not clearly define which aspects of TF were investigated in these three papers.

3) Research questions

As outlined above, the evaluation of TF is a growing issue regarding the methodological quality of a study targeting behaviour change. Especially with regard to future investigations of conversation-based therapy approaches, it is therefore necessary to develop adequate fidelity tools.

The objective of the present thesis is to construct a fidelity tool specific to the BCA therapy programme and to conduct a TF evaluation of the case series that was carried out by Beeke and colleagues. Their study design did not include a control group and only one therapist delivered the therapy (for details of the design of the wider research project see chapter 4). The main motivation of the current investigation is to check whether each of the dyads involved in the case series received therapy as planned in a uniform manner. The aim is to increase confidence in attributing outcomes to the intervention itself, and to facilitate a potential future report on the outcomes at a group level.

Based on the author's review of the TF literature, a multidimensional fidelity tool including structure and process components was designed with the intention of capturing as complete a representation of TF as possible for BCA. Structure components, however, build the focus, as suggested by Mowbray et al., 2003. The IFF (Carroll et al., 2007), described in chapter 2, section 2.2.3, served as a conceptual model, because it covers important aspects of TF and is regarded as a promising model for research projects as well as for clinical practice. The present thesis addresses the following research questions:

1. To what degree have the planned components of the BCA therapy programme been delivered to the participants of the case series?
2. Was the therapy delivered as often and for as long as planned?
3. To what degree does the behaviour of the therapist reflect desired BCA intervention principles?
4. What can be found out about the participants' satisfaction and motivation for the BCA therapy programme during the sessions?
5. What strategies have been used to support the accurate delivery of the BCA therapy programme?

Moreover, three sub-questions shall also be answered:

6. Can the findings of the fidelity evaluation be used to refine the new therapy programme?
7. Does the fidelity tool have an acceptable level of IRR?
8. Do the findings of the current fidelity evaluation indicate an influence of moderating factors on adherence?

4) Methodology

4.1) The Better Conversations with Aphasia-research project

The research group around Beeke (2011) conducted a study (from 2008 until 2012) in which the effectiveness of the BCA therapy programme (see chapter 2, section 2.1.3.2) was tested. The study design of the main research project comprises a case series evaluation of eight dyads (Beckley et al., 2013). Figure 6 shows the design of the therapy study. Multi-site NHS ethical approval was obtained from Cambridgeshire 1 Research Ethics Committee (Project-ID: 08/H0304/40). A pro-forma summarising key ethical issues is enclosed in Appendix 3.

<table>
<tr><td colspan="8">Pre-therapy Baseline Assessments
(8 weeks)</td><td colspan="8">Therapy

(8 weeks)</td><td colspan="8">Post-therapy Follow-up Assessments
(8 weeks)</td></tr>
<tr><td colspan="8">Pre-therapy Assessment 1, 2 and 3</td><td colspan="8">Weekly therapy sessions 1-8</td><td colspan="8">Post-therapy Assessment 1 and 2</td></tr>
<tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td><td>16</td><td>17</td><td>18</td><td>19</td><td>20</td><td>21</td><td>22</td><td>23</td><td>24</td></tr>
<tr><td colspan="8">week 1-8</td><td colspan="8">week 9-16</td><td colspan="8">week 17-24</td></tr>
<tr><td colspan="8">Conversation video 1-8</td><td colspan="8">Conversation video 9-10</td><td colspan="8">Conversation video 11-18</td></tr>
</table>

Figure 6: Study design of the main research project (adapted from Beeke et al., 2011)

Each dyad participated in the main study for 24 weeks, divided into three main phases: pre-therapy phase (8 weeks) to gather an assessment baseline for each PWA; therapy phase (8 weeks); and post-therapy phase (8 weeks) to carry out follow-up assessment. Each participant acted as his or her own control (Beckley et al., 2013). In addition to the assessment (see section 4.2.1), each dyad was asked to videotape 18 natural conversations in their home over the six months. Participants videotaped their daily conversations on their own without being given a specific topic of talk (each video lasted around 20 minutes). These videotapes were then analysed with the objective to show stability in pre-therapy conversations and change in post-therapy conversation behaviour. The outcomes of the therapy are currently being evaluated (see chapter 2, section 2.1.3.2 for an overview).

The BCA therapy consisted of 8 weekly sessions each of around 1.5 hours in length. For the content and session goals, see chapter 2, section 2.1.3.2 (Table 3) again.

4.2) Applying aspects of TF to the Better Conversations with Aphasia-research project

4.2.1) Participants

A total of 18 participants were recruited for the wider research project from aphasia support groups, private speech and language therapists, university aphasia clinics and speech and language therapists working in the NHS. The group of participants originally consisted of 9 dyads: in each case one person classified as agrammatic and his or her significant other (spouse or family member). All PWA suffered from lesions in the left hemisphere of the brain. They were classified agrammatic according to their spoken output in conversation with the research SLT and from their verbal description of the Cookie Theft picture from the Boston Diagnostic Aphasia Examination (BDAE, Goodglass & Kaplan, 2001). All participants were English native speakers. The dyads received the BCA therapy programme.[23] Each dyad was treated by the same research SLT with more than ten years of clinical experience. One dyad (dyad 9) withdrew from therapy and has been excluded from further analysis. Furthermore, dyad N^{o} 8 wanted their data to be destroyed after the main project ended, and so they have also been excluded from this thesis.

Therefore, the participants analysed in the current thesis consisted of 7 people with agrammatic aphasia (3 females and 4 males, time since stroke Ø 40 ± 16 months, age Ø 56 ± 10 years, age left education Ø 18 ± 2 years) and their 7 CPs (5 females, 2 males). An overview of key characteristics of the participants is illustrated in Table 6. A table with additional information on the PWA (e.g. previous treatment) can be found in Appendix 4.

[23] However, dyads N^{o} 1 and 2 received the therapy programme in a slightly different sequence: For them, session 2 was actually session 3 and vice versa. The principal investigator and the research SLT decided to reverse these sessions from dyad N^{o} 3 on, because of emotional reactions of the first two PWA when talking about 'repair' (rather problematic aspects of conversation) too early in the therapeutic process.

Table 6

Sociodemographic and clinical parameters of the participants

Dyad N^{O} & PWA pseudonym	***Age (in years at time of recruitment)***	***Sex***	***Duration of aphasia (in months at time of 1st session)***	***Previous employment***	***Age left education***	***CP pseudonym and relation to PWA***
1: Kate	49	F	33	Jazz singer	21	Shelley (twin)
2: Simon	39	M	30	Own business	17	Cath (wife)
3: Giles	55	M	59	Senior sales manager	18	Linda (wife)
4: Graham	63	M	60	Hospital manager	16	Alex (partner)
5: Jill	57	F	39	Cashier at bookmakers	16	David (son)[a]
6: Barry	60	M	17	Gardener/book illustrator	18	Louise (wife)
7: Maggie	71	F	40	Deputy head teacher	22	Christina (daughter)

Note: M=male, F=female.

[a]*This CP does not live with the PWA.*

A series of language assessments was administered to all PWA (for the whole assessment battery see Beeke et al., 2011). An overview of selected expressive and receptive language abilities as well as the results of an assessment that examines the non-verbal semantics of each PWA is given in Figure 7. Appendix 5 shows the corresponding raw data and norms (where available). Expressive language abilities are represented by the results of the Object & Action Naming Battery (OANB, Druks & Masterson, 2000), and the subtest 53 (written single words) of the Psycholinguistic Assessments of Language Processing in Aphasia (PALPA, Kay, Lesser, & Coltheart, 1992). Receptive abilities are represented by subtests 47 (single word to picture matching) and 4 (minimal pair discrimination) of the PALPA (ibid.) as well as the Comprehensive Aphasia Test (CAT, Swinburn, Porter & Howard, 2004). Finally, the PWA's results on the Pyramids and Palm trees Test (Howard & Patterson, 1992) reflect the integrity of semantic representations (non-verbal semantics). It should be noted that the scores of the Object & Action Battery, the CAT and the PALPA subtest 53 each are an average of scores over three pre-therapy baselines.

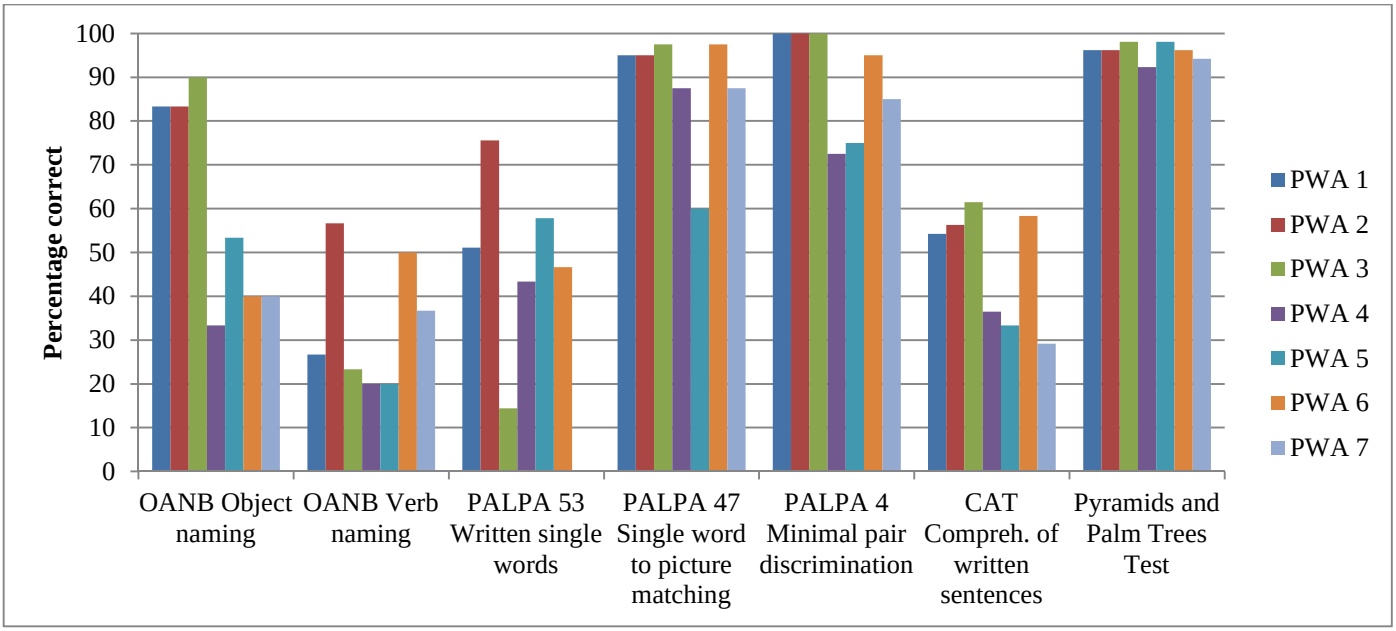

Figure 7: Overview of the results of the pre-therapy assessments (expressive language abilities, comprehension and non-verbal semantics) for each of the seven PWA (source: author's summary of the data from the wider project)

4.2.2) Description of the data

Each therapy session of the main research project has been videotaped. For these videos, a Panasonic Digital Video Camera (NV-DS28) was used. It has been set up in a way that the dyad and the SLT have been clearly visible. Data analysed in the current investigation consisted of a randomly selected sample (identified via Microsoft Excel with the help of the 'RAND'-function) of 25% (N=14) of all videotaped therapy sessions (two sessions for each dyad), based on indications found with the help of the TF literature review. This refers to a total of 17.3 hours of randomly selected therapy sessions. The video data have been stored on encrypted external hard drives at UCL. Furthermore, written notes by the research SLT have been collected in order to get additional information on the therapy phase of each of the seven dyads. Data for the present thesis were collected retrospectively after the end of the intervention which was May 2010 for dyad N^{o} 7. This allows studying TF independently, and adequate implementation of therapy components can be verified (Chan et al., 2004).

In order to construct a fidelity tool, generic session plans have been used as a foundation. The fidelity tool will be described next.

4.2.3) Fidelity tool

A fidelity tool was devised in order to conduct a fidelity evaluation of the case series. Generally, almost all components of the IFF (Carroll et al., 2007; see chapter 2, section 2.2.3) have been applied: adherence with its subcomponents content and dose, as well as a selection of the potential moderating factors. An exception was the subcategory 'coverage' (i.e. what proportion of the target group participated in a study, see Hasson, 2010) belonging to the category of adherence. It was not regarded as important to investigate this aspect in the present investigation. Furthermore, the moderating factor 'complexity of the intervention' was not investigated, since it was not regarded as essential for the TF evaluation of such a new therapy programme for which a manual has not been developed yet.

Table 7 gives an overview of the research questions mentioned in chapter 3, the areas to measure in relation to the underlying TF model, and the sources and methods to collect the data.[24] This partly follows the structure outlined in the paper by Hasson (2010). Since the development of a pilot observational fidelity tool builds the foundation of the current investigation, one column of the table defines whether that specific area was included in the tool or not. The aspects of dose and facilitating strategies are not included in the tool as these variables could not be observed within sessions.

[24] Research question N° 6 ("Can the findings of the fidelity evaluation be used to refine the new therapy programme?") is not mentioned in Table 7, as it accompanies the majority of the whole analysis. Research question N° 8 ("Do the findings of the current fidelity evaluation indicate an influence of moderating factors on adherence"), moreover, does not belong to the general TF plan and is therefore not included in Table 7.

Table 7

General TF plan including areas to measure, general process questions, data sources and data collection method (following the structure by Hasson, 2010)

Area to measure - related to the model by Carroll et al. (2007)	**Current research question (see chapter 3)**	**Data source and data collection method**	**Included in fidelity tool?**
Evaluation of Adherence			
Content	**(1) T**o what degree have the planned components of the BCA therapy programme been delivered to the participants of the case series? **(7) D**oes the fidelity tool have an acceptable level of IRR?	▪ Development of a procedural section with the help of the generic a priori session plans ▪ Retrospective observation of 25% of all the videoed therapy sessions (N=14) ▪ Rating of a selection of items of the procedural section by a second, trained rater in order to investigate IRR (N=3 therapy sessions)	☒
Dose (frequency, duration)	**(2) W**as the therapy delivered as often and for as long as planned?	▪ Dates on and timing of the video clips of the therapy sessions ▪ Notes of the SLT on the dyad session plans	☐ *Descriptive data collected*
Potential moderating factors			
Quality of the delivery	**(3) T**o what degree does the behaviour of the therapist reflect desired BCA intervention principles? **(7) D**oes the fidelity tool have an acceptable level of IRR?	▪ Development of a qualitative section with the help of identifying fundamental principles of the therapy programme ▪ Retrospective observation of 25% of all the videoed therapy sessions (N=14) ▪ Rating of a selection of items of the qualitative section by a second, trained rater in order to investigate IRR (N=3 therapy sessions)	☒
Participant responsiveness	**(4.1) W**hat can be found out about the participants' satisfaction with the BCA therapy programme during the sessions? **(4.2) W**hat can be found out about the participants' motivation during the sessions?	▪ Development of a client-focused section to uncover statements reflecting the participants' satisfaction with the treatment ▪ This is included in the main fidelity check of the 14 therapy sessions ▪ Rating of the review of the home activities that the participants should have done outside the sessions	☒
Facilitating strategies	**(5) W**hat strategies have been used to support the accurate delivery of the BCA therapy programme?	▪ Email-survey for the research SLT	☐ *Descriptive data collected*
Complexity of the intervention	**H**ow complex was the intervention? How specific is the intervention's description?	▪ Email-survey for the project leaders	☐ *Not included in the current investigation*

The pilot version of the fidelity tool is divided into three sections. These sections cover adherence to the content of the therapy programme (procedural section), competence of the therapist in terms of quality of therapy delivery (qualitative section) and participant responsiveness (client-focused section to cover the interactive dynamics of the BCA therapy programme). The content of the three sections is described in the following paragraphs.

4.2.3.1) The procedural section

The *procedural section* of the fidelity tool created to carry out the main 'fidelity check' is targeting small units chronologically ordered over a relatively long period of time (whole session). As the essential components of the intervention, i.e. those that are expected to create therapeutic change, are not known yet, fidelity to each component of the therapy programme was examined (Carroll et al, 2007). The section is designed to enable an external rater to fill in the tool via observation of therapy videos. Almost all of the items identify adherence, but some items are expected to indicate both adherence and competence (e.g., when the therapist leads a discussion with the dyad).[25] If an item is classified with both adherence and competence, this serves as a clue for the rater to look at desired behaviour (see below; qualitative section). The items of this section are based on the a priori constructed generic session plans that exist for each session, i.e. they are specific to the activities and materials of the BCA therapy programme. They are therapist-oriented (following the recommendations by Hogue et al., 1996 to rate only therapist behaviour when assessing adherence). The aim for this procedural section is to catalogue therapist in-session behaviour to get an **overall** fidelity score of the therapy delivery. A separate coding sheet was used for each session since different materials have been planned for the eight individual sessions. An example of the procedural section is given in Figure 8; the whole procedural section is illustrated in Appendix 6.

[25] In this thesis, the term *item* is interchangeably used with the word *observation*. Each item or observation refers to one component of the therapy, such as a discussion, a handout or a practice conversation.

Session 2 – turns, sequences and actions 1 - introduction					
Procedural section: Essential content of the therapy programme					
Item	*Rating*	*Classification*		*Notes (timing is important)*	*Domain*
The therapist reviewed the home activity.	0 / 0.5 / 1	E16	adh		Assigning/ Reviewing home activity to raise awareness of conversations with aphasia in general
The therapist asked the dyad to remember 2 things from session 1 about agrammatism and conversation.	0 / 0.5 / 1	E17	adh		Reviewing the last session(s)
The therapist had a discussion with the dyad on turns and sequences.	0 / 0.5 / 1	E18	adh/com		Having a discussion to support identification of own conversation behaviour
The therapist introduced SPPARC-handout C27 (About Turns).	0 / 0.5 / 1	E19	adh		Talking through handouts to raise awareness of conversation behaviours in general
NOTE: In the session this SPPARC-handout was originally split into 2 separate aphasia-friendly handouts, so the therapist introduced 2 handouts.	0 / 0.5 / 1	E20	adh		Talking through handouts to raise awareness of conversation behaviours in general

Figure 8: Example of the procedural section of the fidelity tool (parts of session 2)

The three-point rating scale that is applied to the procedural section distinguishes between therapy content that was *fully*, *partly* or *not* delivered as planned (1=fully delivered, 0.5=partly delivered; 0=not delivered) following the procedure as examined by Lewinsohn et al. (1990). Furthermore, the rater should make use of the 'Notes'-column for inserting the timing of each item and for additional (qualitative) comments (e.g. why an item is rated with 0.5). It was decided to use this Likert-type scale as it is expected that in theory, items could be delivered, but maybe not properly (e.g. because of a certain participant reaction), i.e. the interactive nature of this kind of therapy is aimed to be reflected with the help of this scale. Furthermore, as the construct of TF is understood as a 'degree' (Di Rezze et al., 2012: p. 442), Likert scaling was chosen.

Each item of the procedural section is given a letter "E" (essential content of the therapy programme) and a number which reflects its order in the original therapy programme (see Figure 8). Firstly, this helps to relate items of the *client-focused section* (see below) to the actual procedural item (e.g. a client complaint related to E22). Secondly, the content-items (N=133 over all of the eight sessions) can be clustered into 22 major domains based on the main elements of the SPPARC therapy programme (Lock et al., 2001a) and the adaptations of the wider research project. This reflects a macroanalytic system behind the 133 essential content-items (see Appendix 6 and Figure 8). In general, the major domains involve the following elements: providing a structure of the therapy, assigning/reviewing a session or a home activity, talking through a handout, having a discussion, showing a video, doing role play, selecting strategies for change, providing material. [26]

[26] There are 3 items in the whole therapy programme for which no specific domain was identified (see Appendix 6).

It must be taken into account, that within the 133 items, three items were optional, i.e. the therapist only delivered these items if she regarded it as relevant. These items are E8 in session 1 and E81 and E82 in session 5 and they are shaded orange in Appendix 6.

4.2.3.2) The qualitative section

Quality of delivery was checked although to date, for this specific therapy programme, there is no official benchmarking available (see Dusenbury et al., 2003). The qualitative section of the fidelity tool can therefore be regarded a very first attempt to get an idea of the manner the therapy has been delivered.

For the purpose of examining the degree to which the SLT shows desired behaviour associated with the therapy delivery, the fundamental principles of the BCA programme (for theoretical rationale see chapter 2, section 2.1.3.1) were listed for rating after discussion with S. Beeke. These principles are theoretically derived from the SPPARC manual and the adaptations of the BCA therapy:

- "*The therapist supplied individualised advice (based on analyses of conversation between the PWA and the CP)*"
- "*The therapist guided the dyad to make their own choices*"
- *"The therapist focused both on the PWA and on the CP, so that the PWA and the CP had equal roles during the session"*
- *"The therapist avoided making judgments about what conversation patterns the dyad should retain or change".* [27]

These items should give an idea of the degree to which the therapist showed desired behaviour and almost all of these items are expected to be present within all of the eight therapy sessions.[28]

In addition to these intervention-specific principles, counselling-related techniques were included in the qualitative section of the fidelity tool (after discussion with S. Beeke). The counselling-related techniques included in the tool are the following (for theoretical rationale see chapter 2, section 2.1.3.1):

[27] This last principle can also be described as "orchestration not conscription" (Lyon, 1997: p. 142). By this, it is meant, that the therapist tries to avoid being prescriptive or judgmental about what is good conversation, but rather that the therapist tries to provide the couple with the resources and opportunities to discuss their conversation habits and to achieve new ways of conversation that work well for them (see also SPPARC manual, part 1: p. 27).

[28] The behaviour "The therapist avoided judgements about what conversation patterns the dyad should retain or change" is not expected to be present in session 1 and in session 8. In the same two sessions, moreover, the item "The therapist guided the dyad to make their own choices" is not listed for rating.

- *"The therapist used active listening skills"*
- *"The therapist gave skilful summaries of what has been said"*
- *"The therapist expressed warmth and empathy towards the dyad"*
- *"The therapist affirmed and encouraged the dyad"*

It is important for the rater to know that these counselling-related skills are associated with discussions within a therapy session.

Eames' approach (Eames et al., 2008; see chapter 2, section 2.2.2) was taken as a guide to explain what is meant by each of the qualitative items listed in the present fidelity tool: In order to get a better imagination of what SLT statements related to each of these qualitative items could look like, Table 8 was created, including the item itself, expected categories (derived from Eames et al., 2008) and examples.

The scale of the qualitative items (counselling-related skills and fundamental principles) distinguishes between therapist behaviour which the rater observes *not at all* (0), *occasionally* (0.5) or *most of the time* (1). It follows Chan et al.'s (2004) rating scale for their items included in the category '*therapeutic relationship'*. The items are given the letter "P" (fundamental principles of the therapy programme) or "C" (counselling-related skills). Although this list of desired behaviour is used to assess the quality of therapy delivery, the author appreciates that this is a highly complex variable which refers to a huge amount of literature, often described as therapeutic relationship or alliance. Thus, the results of this sub-section need to be interpreted cautious.

Table 8

Qualitative items of the fidelity tool with potential categories and illustrative examples (structure following Eames et al., 2008)

Qualitative item	**Category**	**Illustrative example (e.g. SLT statement)**
The therapist supplied individualised advice (based on analyses of conversation between the PWA and the CP).	Referring to dyad-specific behaviour	o Showing and reflecting on video clips of the dyad's own conversations
The therapist avoided making judgments about what conversation patterns the dyad should retain or change.	Not being prescriptive	*No concrete example identifiable, but: in a way connected to the item "The therapist guided the dyad to make their own choices."*
The therapist focused both on the PWA and on the CP, so that the PWA and CP had equal roles during the session.	Directing questions to both the PWA and the CP	o "Something goes wrong [in this clip]. Can you tell me – either of you – what it is?" o "What do you both think?"
The therapist guided the dyad to make their own choices.	Opportunities for the dyad to choose what to work on	o "No, it's purely what you guys think." o "It is what you would like to be doing, what works for you two. (…) And that you feel confident with what you're doing."
The therapist affirmed and encouraged the dyad.	Positive body language Praise	o Thumbs up, nodding o "Excellent" o "And when you use them [the strategies], it works. Fantastic!" o "It's really good" o "Don't give up on it yet" o "That's a brilliant drawing"
The therapist expressed warmth and empathy towards the dyad.	Feelings acknowledgement Self-reflection	o "If you want to have a break, tell me." o "Are you alright with watching it [the clip] again?" o "It **is** hard." o "It's not easy. It has taken me a while to get the hang of this stuff".
The therapist gave skilful summaries of what has been said.	Rewording client statements (reflective)	o PWA is drawing something. SLT: "It's like you wanting a van. Is that what you're thinking?" – PWA agrees. o Summary of what the CP or PWA describe, for example when talking about home activity
The therapist used active listening skills.	Acknowledgement Clarifying question	o "As you said, it is a lot of information today" o "Yes", "Hmm" o "But I've understood you right; this is what you're saying? For you it's not the most frustrating thing?" o "So that's what you guys are calling it, the 'focus word'?"

Note: The exemplary statements are taken from own data used in this project.

Another aspect that is included in the qualitative part of the measure (and can be defined as a fundamental principle) is the overall aim of a session. Every session has its own goal(s), which is also reflected in each session title (see chapter 2.1.3.2 and Appendix 6). Each session aim should again be rated with a three-point scale, where 0 corresponds to *I don't agree*, 0.5 corresponds to *I partly agree* and 1 means *I fully agree* (to a specific statement such as "The overall aim of the session, to raise the dyad's awareness of different aims of turns, was achieved", or "The overall aim of the session, to identify patterns of turn building in the CP's own conversation, was achieved").

Appendix 6 includes the qualitative section of the fidelity tool.

4.2.3.3) The client-focused section

As outlined above, the procedural section consists of small units of the therapy content. By rating these small units instead of more broad categories, situational influences that might have changed or hindered the delivery of the programme as planned should be uncovered. Such influences (e.g., a discussion on an issue that was not planned) can then be inserted in the *client-focused section* (the so-called extemporised items).

Another reason for including this section is the examination of a moderating factor of TF, participant responsiveness. If, for example, the rater documents whenever a client talks about his or her opinion about a certain activity or video clip during the session, this knowledge can help to evaluate aspects of participant responsiveness (i.e. satisfaction of the participants). The rater is asked to describe the item, to relate it to the essential content (e.g. in relation to E22), and insert the timing of the item and any additional notes if considered necessary.

The aim of this section is to explore in-session utterances by the clients that refer to the client's satisfaction with the therapy programme or to their opinion about therapy content such as a specific material or video clip. However, observation of therapy sessions to assess participant responsiveness is an uncommon method compared to the literature (see e.g. Carroll et al., 2007; Hasson, 2010), but for the current thesis, these client behaviours were tried to be covered alongside the main fidelity check.

Furthermore, in order to reveal participant motivation, the rater should evaluate the home activity which the participants are asked to work on outside the sessions. It should be noted down, whether the dyad *did*, *partly did* or *did not* do their home activity.

Appendix 6, in which the whole fidelity tool for each of the eight therapy sessions can be found, also includes the client-focused section.

4.2.4) Procedures

A mixed-methods approach was conducted in order to answer the research questions. In accordance with the IFF (Carroll et al., 2007), data concerning adherence as the main part of TF and some of the potential moderating factors (quality of delivery and participant responsiveness) were obtained via observation of the video-recorded therapy sessions. Additionally, secondary data sources (an email survey and document analyses such as notes on individual session plans or dates on video tapes) were conducted in order to examine other aspects of TF (see Table 7, section 4.2.3).

The author of the present thesis observed the videotaped therapy sessions (rater 1, a qualified SLT) for the rating of adherence, quality of delivery and client-focused behaviours during sessions. Table 9 provides an overview of the sessions observed with the fidelity tool.

Table 9

Sessions observed with the fidelity tool

	Dyad 1	**Dyad 2**	**Dyad 3**	**Dyad 4**	**Dyad 5**	**Dyad 6**	**Dyad 7**
Session 1				**X**			
Session 2		**X**					
Session 3		**X**				**X**	**X**
Session 4	**X**					**X**	**X** *IRR*
Session 5			**X** *IRR*				
Session 6	**X**			**X**			
Session 7					**X** *IRR*		
Session 8			**X**		**X**		

Note: X=session observed; IRR=session observed by a second rater in order to assess inter-rater reliability.

A second rater (a former Speech and Language Therapy student from UCL already familiar with the main research project) additionally observed and rated 20% of the previously coded 14 sessions in order to investigate inter-rater reliability of the procedural and the qualitative section of the fidelity tool. An amount of 20% was regarded as acceptable according to the literature (see chapter 2.2.2). The author of this thesis provided a tutorial (1.5 hours in length) in which the second rater received a structured training. This training session consisted of the following steps: (a) provision of general information of the BCA therapy programme, (b) short description of the importance to document fidelity and introduction to the concept of TF, (c) explanation of the different sections and items of the

fidelity tool and (d) practice of rating a 10-minute video excerpt of a therapy session. Unfortunately, it was not possible to conduct a longer rating trial, since the whole training session was restricted to a maximum of 1.5 hours. This was because the second rater observed the sessions on a voluntary basis and therefore her maximum availability of time to spend on this project was around 8 hours (including the rating process itself).

The collected data have been analysed using Microsoft Excel (2007 and 2010; Microsoft Corporation, WA, USA), and the Statistical Package for the Social Sciences (SPSS, version 19 and 21; SPSS Incorporated, IL, USA). For particular segments within therapy sessions, the transcription programme *F4 plus* (Dresing, Pehl & Schmieder, 2012; available at http://www.audiotranskription.de/) was used in order to analyse these conversations further. An example of a transcribed segment of a therapy session (dyad 7, session 3) is given below:[29] Maggie, a PWA, and the SLT are reflecting on an exercise, the so-called 'Talking pen challenge' (see Appendix 1).

SLT: and then you had the pen

Maggie: yes

SLT: so did that feel that was difficult?

Maggie: yes=no! no

SLT: no. (1.0) so (.) ((writes something down)) if we're talking about the activity. (3.5) did you think (.) did you find that it was: ((writes something down)) it was **good** [it was useful?]

Maggie: [good] yeah

[29] *Transcription conventions:* (( )), comments by the transcriptor; (.), pause shorter than one second; (3.5), pause took approximately 3.5 seconds; **good**, words in bold are emphasised by the speaker; was:, colon indicates prolonged sound; yes=no, equal sign indicates that two words or syllables are immediately following each other without a pause; [ ], overlapping talk; ( ), the transcriptor is not sure what exactly has been said

5) Results

In this chapter, the results of the TF examination will be illustrated, alongside the research questions. Section 5.1 will focus on adherence and section 5.2 on moderating factors. Two perspectives will be applied: a dyad-focused perspective, in order to report on the degree of accurate therapy delivery and to find out whether the therapy programme was provided to each dyad in a uniform manner, and a session-focused perspective which might help refine the therapy programme. In section 5.3, a first attempt to validate the study-specific fidelity tool will be made by outlining the results of the assessment of IRR. Whenever a statistical test is reported, values of $p<.05$ are regarded as statistically significant.

5.1) Adherence

(1) To what degree have the planned components of the BCA therapy programme been delivered to the participants of the case series?

A randomly selected sample of 25% of the therapy sessions (N=14) was observed with the so-called procedural section of the fidelity tool in order to investigate the subcategory 'content' (corresponding to research question 1). In sum, this refers to 17.3 hours of video-recorded therapy. Parts of the procedural section of the fidelity tool have also been used to investigate IRR (see chapter 5.3). In the present subchapter, the ratings conducted by rater 1 (the author of this thesis) will be presented.

As mentioned in chapter 4, section 4.2.3.1, there are three optional activities in the procedural section of the tool (E8 in session 1; E81 and E82 in session 5, see Appendix 6). These three items (or observations) were excluded from the following calculations because the research SLT could decide whether she wanted to conduct these or not; i.e. these three observations are not mandatory. The overall number of observations across the sample of 14 sessions was 232. Across the eight individual sessions of the therapy programme, the numbers of observations vary, since each session includes a different number of materials or activities and follows different aims.

However, for dyad N° 3, there was not enough evidence for one session (session N° 8) to carry out the fidelity check properly. The reason for this was that the SLT could not videotape the whole session due to technical problems. Furthermore, the original session plan with handwritten notes by the SLT did not include enough information on the missing items. The resulting percentage of delivery

(50.0%) for this session was therefore removed from the data for further analyses since it was not regarded as representative.

After removing this particular session from the data, the mean number of observations per dyad is 32 (SD=9.7) with a range between 18 for dyad N° 3 (session 5) and 41 for dyad N° 1 (sessions 4 and 6). Per session across all dyads, the mean number of observations is 18 (SD=5.2; range: 5-25). Table 10 reflects these patterns.

Table 10

Number of observations included in the main fidelity check for each dyad and across sessions

Dyad N°	**Session number checked**	**Number of observations (session-specific)**	**Number of observations (dyad-specific)**	**Mean number of observations per session (dyad -specific)**
1	4	16	41	21
	6	25		
2	2	18	38	19
	3	20		
3	5	18	18	18
4	1	14	39	20
	6	25		
5	7	14	19	10
	8	5 [a)]		
6	3	20	36	18
	4	16		
7	3	20	36	18
	4	16		
Overall		**227**	**227**	
Mean		**17.5**	**32.4**	
Standard deviation		5.2	9.7	

Note: For dyad N° 3, only one session has been included in the analysis as the second session could not be checked in a sufficient way.

[a)] Session 8 for dyad N° 5 is not regarded as an outlier since the number of observations (n=5) is not more than 2.5 standard deviations below the mean (17.5), although this was almost the case; however, this needs to be taken into account when interpreting results.

The results of the ratings for the procedural section of the fidelity tool are shown in Table 11. The final data include 13 sessions and a total of 227 observations which refer to a maximum overall

fidelity score of 227. The achieved score given by the rater is 208. This represents 91.9% (SD=3.9), i.e. the overall fidelity score across all dyads related to the subcategory 'content' is 91.9%, based on the analysis of 23% of the 56 therapy sessions.

Table 11

Dyad-specific fidelity scores and overall fidelity score

Dyad N°	**Session N° checked**	**Activities planned, Maximum score**	**Activities delivered, Actual score**	**Percentage** $\frac{Actual\ score}{Maximum\ score} * 100$
1	4 6	41	37.5	**91.5**
2	2 3	38	35.5	**93.4**
3	5	18	17.5	**97.2**
4	1 6	39	35	**89.7**
5	7 8	19	17	**89.5**
6	3 4	36	34.5	**95.8**
7	3 4	36	31	**86.1**
Mean		**32.4**	**29.7**	**91.9**
Standard deviation		9.7	8.7	3.9

Note: For dyad N° 3, only one session score has been included in the analysis as the second session could not be checked in a sufficient way.

When having a closer look at the dyad-specific fidelity scores (see Table 11), four of these are above 90% (for dyads N° 1, 2, 3 and 6). For two dyads, the scores lie just below 90% (dyads N° 4 and 5). The fidelity score for dyad 7 is the lowest at 86.1%. Table 12 summarises fidelity scores related to this cut-off value of 90%. It must be kept in mind that the scores of the dyads are based on different numbers of observations.

Table 12

Fidelity scores related to a cut-off value of 90%

		Dyad 1	Dyad 2	Dyad 3	Dyad 4	Dyad 5	Dyad 6	Dyad 7
fidelity score	>90%	☒	☒	☒	☐	☐	☒	☐
	≤90%	☐	☐	☐	☒	☒	☐	☒

Averaged across sessions and dyads, 88.5% of the items were given a rating of 1 (*fully delivered,* N=201), 6.2% of the ratings indicated *partial adherence* (corresponding to a rating of 0.5, N=14) and 5.3% of the items were given a rating of 0 (*not delivered,* N=12). A list of the items which have been rated as *partly delivered* or *not delivered* is given in Appendix 7.

In terms of the major domains (Appendix 6) that have been assigned to each of the items of the procedural section, there is no particular pattern of activities that have been rated as *not delivered.* However, out of the 14 ratings classified as *partly delivered,* 50% of these 14 items (N=7) belong to the major domain of *having a discussion.*

An overview of the ratings for each dyad is shown with the help of Table 13. If the 0- and 0.5-ratings are summed up and divided by the individual sum of all ratings, dyad N° 7 shows the highest proportion of items rated with 0 and 0.5 at 0.17, followed by dyad 4 with 0.16, and dyad 1 with 0.15.

Table 13

Dyad-specific ratings of the procedural section of the fidelity tool

Dyad N°	Number of items rated as '*fully delivered*'	Number of items rated as '*partly delivered*'	Number of items rated as '*not delivered*'	Proportion $\frac{\text{not delivered + partly delivered}}{\text{all observations}}$
1	14	2	0	0.15
	21	3	1	
2	17	0	1	0.08
	18	1	1	
3	17	1	0	0.06
4	13	0	1	0.10
	22	0	3	
5	13	1	0	0.16
	3	1	1	
6	19	1	0	0.08
	14	2	0	
7	17	1	2	0.17
	13	1	2	
Sum	201	14	12	

Next, a session-focused perspective is applied. Figure 9 shows the fidelity scores for each of the eight sessions. Note that the percentages of sessions 1, 2, 5, 7 and 8 are based on one single session that has been observed. Sessions 3, 4 and 6 reflect averages of two (session 6) and three observed sessions (sessions 3 and 4).

The lowest fidelity score becomes evident for session 8 (70.0%). It must be kept in mind, however, that this value is based on one single session with only 5 observations. For this reason, this value has to be considered with caution. The session with the second lowest fidelity score, based on two observed sessions and therefore a total of 50 observations, is session 6 (89%). These results are relevant to the potential refinement of the therapy programme, and this issue will be explored further in the Discussion chapter.

Appendix 8 lists all ratings for the 13 sessions (227 observations) of the procedural section by the first rater (and the second rater where available, see also chapter 5, section 5.3).

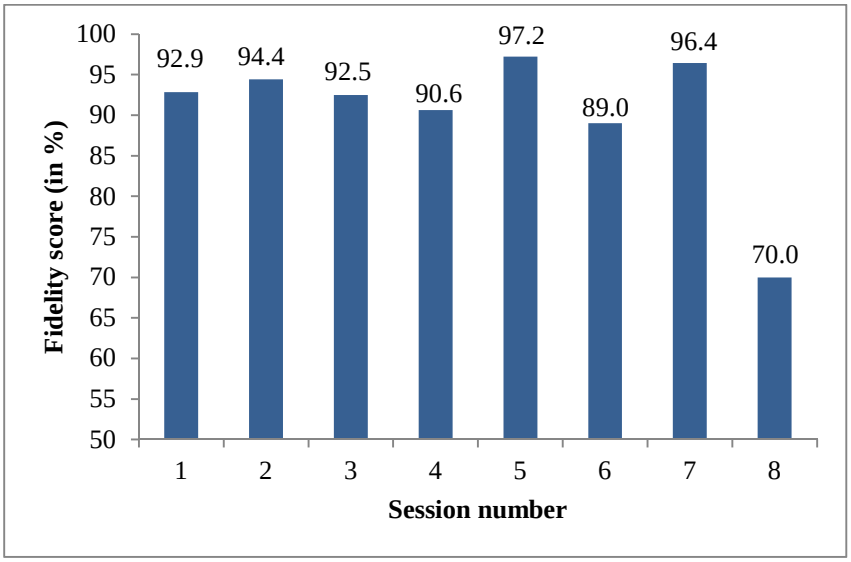

Figure 9: Session fidelity scores across all dyads

(2) Was the therapy delivered as often and for as long as planned?

Secondary data sources (documents and materials such as the notes written by the SLT on the dyad's individual session plans and the dates and timings of the video clips of the therapy sessions) were reviewed with the aim to report on the frequency and duration of the treatment (also referred to as 'dose'), to document whether the BCA therapy actually was delivered as eight 1.5-hour sessions over eight weeks.

The corresponding research question (listed above) can be divided into three sub-aspects: (a) Did each dyad receive eight therapy sessions? (b) Did each therapy session take around 1.5 hours? (c) Were the sessions done approximately once a week? Raw data can be found in Table 14. The findings indicate that each dyad did receive a total of eight therapy sessions.

Table 14

Raw data of the duration of therapy sessions gained from document analyses

		Length of therapy sessions (in minutes)								
		Session 1	Session 2	Session 3	Session 4	Session 5	Session 6	Session 7	Session 8	**Mean dyad-specific**
Dyad Number	1	68	150	83	87	73	73	75	64	**84**
	2	80	62	75	77	62	91	62	62	**71**
	3	54	90	62	83	83	107	83	90	**82**
	4	31	83	57	90	116	89	90	120	**85**
	5	32	51	53	70	53	80	71	59	**59**
	6	52	60	60	76	54	122	114	56	**74**
	7	47	51	76	93	62	80	52	56	**65**
Mean session-specific		**52**	**78**	**67**	**82**	**72**	**92**	**78**	**72**	**Overall: 74**

The mean length of a session was 74 minutes (SD=22.5; range: 31-150; interquartile range: 58-86).[30] Thus, sessions were generally shorter than originally expected (the main research team expected sessions to take 1.5 hours), with the exception of session 6 which took 92 minutes on average (SD=17).

There is considerable variation among the dyads. Whereas for dyads 1 to 4 and 6 to 7, therapy sessions took 65 minutes or more on average, dyad 5 received less than 60 minutes of therapy on average. Figure 10 illustrates this variation. The outlier in the Figure (for dyad 1) reflects a length for 150 minutes in session 2. Performing a Kruskal-Wallis one-way ANOVA on the duration of therapy sessions for the seven dyads, it can be assumed that there is no significant difference among the dyads (Kruskal-Wallis Test, $\chi^2(6, N=56)=12.477$; $p=0.052$).[31]

[30] The interquartile range reflects the spread of scores in the middle 50% of all data and is therefore not influenced by outliers or extreme cases.

[31] A Kruskal-Wallis one-way ANOVA does not assume normally distributed data; it is the non-parametric equivalent of ANOVA (Dancey & Reidy, 2002).

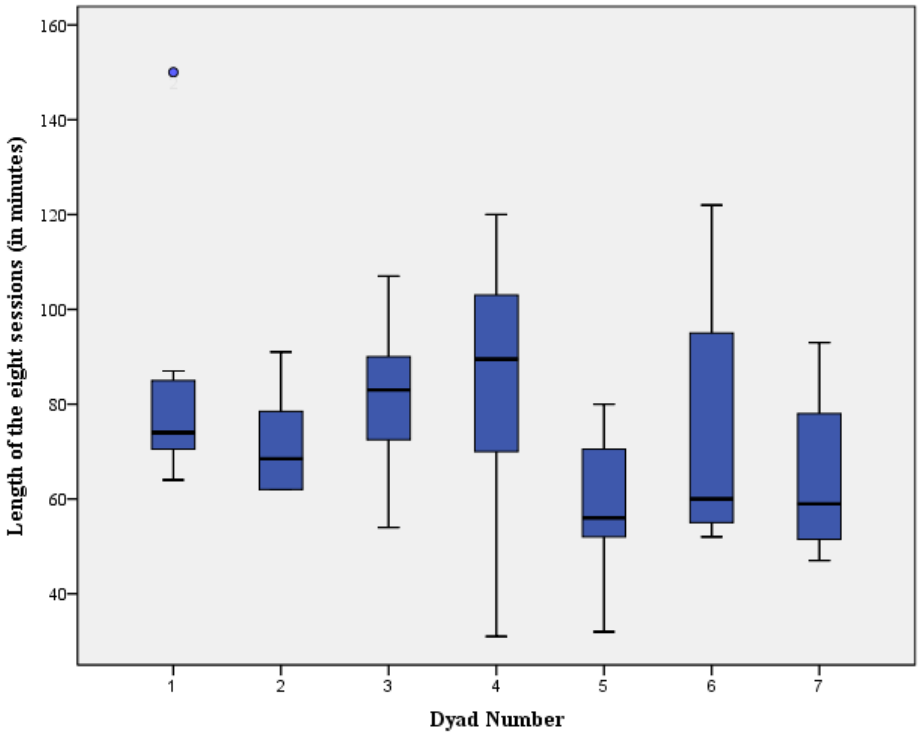

Figure 10: Distribution of the length of the eight therapy sessions for each of the seven dyads

The plan to deliver weekly therapy sessions was successful only for dyads 2, 4 and 6. For all other dyads, the planned time span between two consecutive therapy sessions actually lasted longer than one week mostly due to life events (e.g. holidays), resulting in an overall duration of therapy from 8 to 15 weeks. A summary of these aspects can be found in Table 15.

Table 15

Results of the analysis of the category 'dose' based on aspects of frequency and duration of the therapy programme

Dyad N°	**Eight therapy sessions received?** √ **Yes;** ✗ **No**	**Range of the length of therapy sessions in minutes**	**Mean length of therapy sessions in minutes (SD)**	**Number of weeks over which eight sessions were delivered**
1	√	64-150	84 (28)	12
2	√	62-91	71 (11)	8
3	√	54-107	82 (17)	15
4	√	31-120	85 (29)	9
5	√	32-80	59 (15)	10
6	√	52-122	74 (28)	9
7	√	47-93	65 (17)	11
Across all	√	**31-150**	**74 (23)**	**11**

From a session perspective, there is variability in terms of the length of the individual sessions across dyads: Figure 11 reflects the session length of the eight sessions across dyads and shows a peak length in session 6 (Median=89 minutes). After this session, there is a steady fall in the duration of the last two sessions. When comparing the mean length of session 1 (52 minutes, see Table 14) with the mean length of session 6 (92 minutes), for example, a considerable difference is identifiable. This time, a Kruskal-Wallis one-way ANOVA reveals a significant difference among the eight therapy sessions ($\chi^2(7, N=56)=16.786$; $p<.05$). This means that the therapy programme varies significantly in terms of length among the eight individual sessions.

These results are relevant to the potential refinement of the therapy programme (e.g. enlarging session 1 in terms of adding more content), and this issue will be explored further in the Discussion chapter.

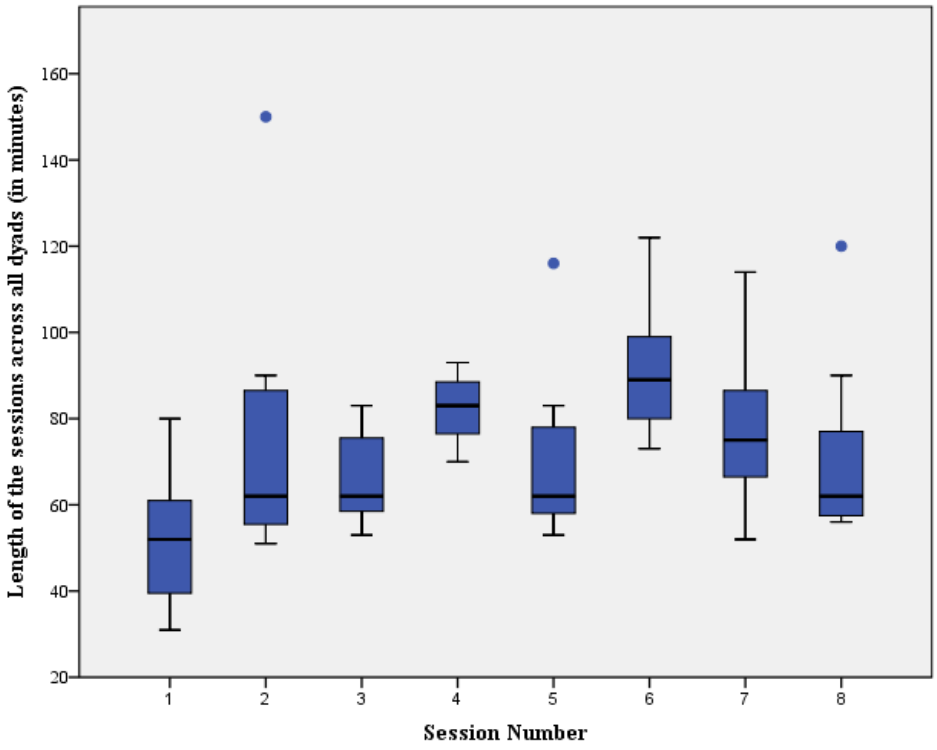

Figure 11: Distribution of the length of each of the eight sessions across the seven dyads

Summary of adherence:

For the subcategory 'content', the final fidelity check including a sample of 13 sessions out of 56 (23%) reveals an overall fidelity score of 91.9%, i.e. across all dyads, a degree of 91.9% of the therapy content has been delivered as intended. This score is based on a total of 227 observations that

have been rated as *not delivered, partly delivered*, or *fully delivered*. An amount of 88.5% of all the observations has been rated as *fully delivered* (which refers to the rating '1'). 6.2% of the observed activities have been rated with 0.5 (*partly delivered*) and 5.3 % with 0 (*not delivered*). From a dyad-specific perspective, only the fidelity score of dyad 3 is based on a single session (since the second session could not be satisfactorily checked), whereas for all other dyads, the fidelity scores reflect an average across two observed sessions. The total number of observations for the dyads range between 18 (dyad 3) and 41 (dyad 1). Dyad-specific fidelity scores range between 86.1% and 97.2%. From a session-perspective, session 8 manifested with a fidelity score of 70%. This value relies on only 5 observations conducted by observing one session of a single dyad. Thus, it needs to be interpreted with caution. The remaining sessions 1 to 7 show high fidelity scores ranging from 89.0% to 97.2%.

The findings related to the subcategory 'dose' show that each dyad received eight sessions, but a variation of session length among the dyads (n.s.) became evident. The frequency of the therapy, however, was less than once a week for most of the dyads; the time management was consistent with the planned frequency of one session a week for dyads 2, 4 and 6. Across all dyads, a significant variation of session length among the eight sessions was found. Session 6 was the only session with an average length of 1.5 hours; all other sessions lasted shorter on average.

5.2) Moderating factors

A selection of Carroll et al.'s (2007) suggested moderating factors ('quality of delivery', 'participant responsiveness' and 'facilitating strategies') will now be reported to address research questions 3, 4 and 5.

(3) To what degree does the behaviour of the therapist reflect desired BCA intervention principles?

The qualitative section of the constructed fidelity tool has been used for rating the same 14 videos as for the procedural section in order to analyse the quality of therapy delivery. Again, 17.3 hours of video data have been observed in order to rate desired therapist behaviour which is associated with the delivery of the BCA therapy programme. Moreover, this section has also been used to perform an assessment of IRR (reported in section 5.3).

A similar 3-point rating scale to that one used in the procedural section (0, 0.5 and 1) has been applied. The rater should to decide whether certain behaviour has been shown by the therapist '*most of the time*' (which refers to 1), '*occasionally*' (which refers to 0.5) or '*not at all*' (which refers to 0).

These qualitative items have to be rated quite subjectively, compared to the items included in the procedural section (e.g. talking through handouts or showing video clips) which can mostly be observed easily. An attempt to describe SLT statements that can be categorised as a specific qualitative behaviour has already been shown in chapter 4, section 4.2.3.2 with the help of Table 8.

Again, dyad N° 3's session 8 was removed from the analyses (see above). The results of the TF check for the qualitative section, based on the remaining 13 sessions, show high scores: They range between 90% (dyad 7) and 100% (dyads 3, 4 and 5). The overall score that indicates the degree to which desired therapist behaviour was present is 96.7% (SD=4.1). These findings are illustrated in Table 16.

Table 16

Dyad-specific quality scores and overall quality score

Dyad N°	**Session N° checked**	**Maximum score of desired behaviour**	**Actual score**	**Percentage** $\frac{\text{Actual score}}{\text{Maximum score}} * 100$
1	4 6	19	17.5	**92.1**
2	2 3	19	18.5	**97.4**
3	5	10	10	**100**
4	1 6	16	16	**100**
5	7 8	16	16	**100**
6	3 4	20	19.5	**97.5**
7	3 4	20	18	**90.0**
	Mean	17.1	16.5	**96.7**
	Standard deviation	3.6	3.1	4.1

Table 16 also shows, that on average, 17 qualitative items were rated for each dyad (SD=3.6; range: 16-20). The items were the same across all sessions. However, there are some exceptions. In sessions 1 and 8, two of the items are not listed for rating ("*The therapist avoided judgments about what conversation patterns the dyad should retain or change*" and "*The therapist guided the dyad to make their own choices*") because these behaviours are not expected to be present within the first and last session of the BCA therapy. Furthermore, for some sessions, only one overall aim was identified

(sessions 1, 2, 6, 7 and 8), for others two overall aims were listed (sessions 3, 4 and 5). Appendix 6 can be consulted for a detailed listing of the qualitative items across the eight sessions.

The frequency with which each item has been rated with 0, 0.5 or 1 can be found in Figure 12. The behaviour "The therapist avoided judgements about what conversation patterns the dyad should retain or change" was the one most frequently rated with 0.5 compared to the other items. No single item in the fidelity check, however, was rated with a 0 (*'not at all'*). This suggests that, for this section, Likert-scaling turned into a binary rating system. The most consistent qualitative items are "*The therapist used active listening skills*", "*The therapist gave skilful summaries of what has been said*", "*The therapist expressed warmth and empathy towards the dyad*" and "*The therapist affirmed and encouraged the dyad*", each of which reached the maximum score of 13 across all observations. These four items reflect counselling-related behavioural items.

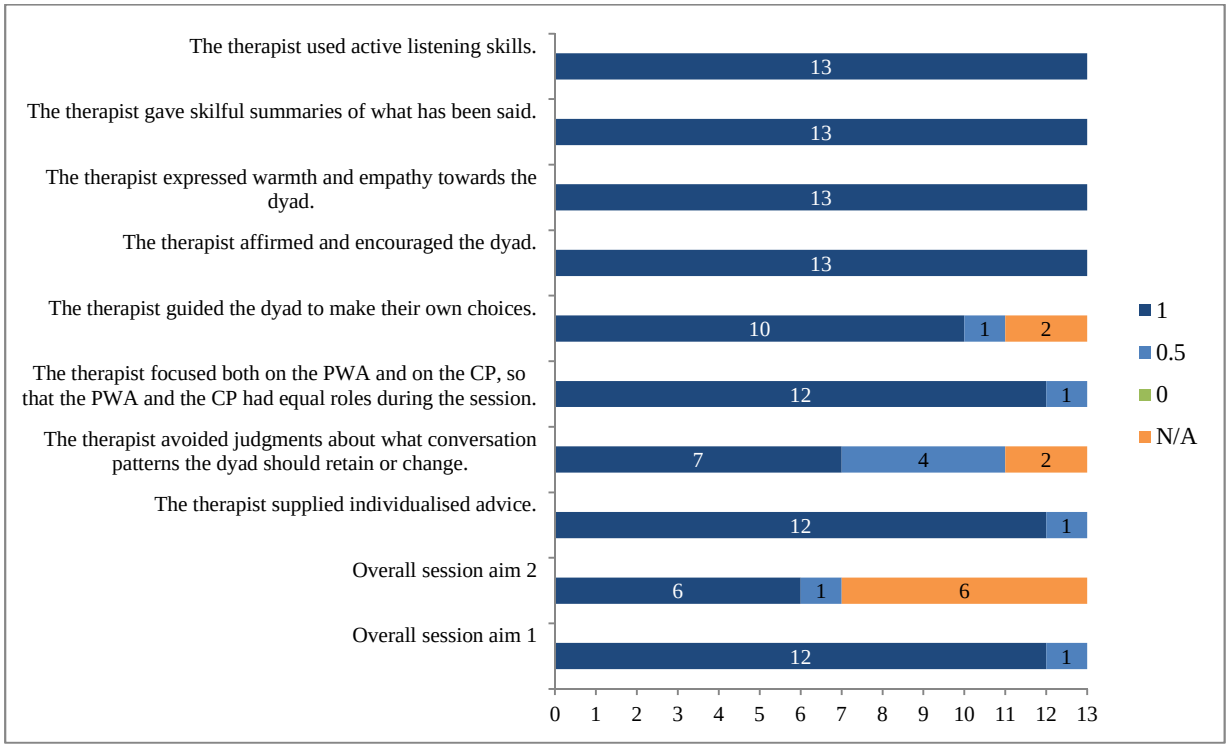

Figure 12: Frequency of ratings (0=*not at all*; 0.5=*occasionally*; 1=*most of the time*) of therapist behaviour across the observed sessions (N=13); N/A=not applicable

(4) What can be found out about the participants' satisfaction and motivation for the BCA therapy programme during the sessions?

The client-focused section of the fidelity tool addresses research question N° 4. It underlines the interactive nature of this kind of therapy and permits the analysis of client statements that might give insights into satisfaction with components of the therapy, i.e. it aims to monitor positive comments or complaints made by the clients during the observed therapy sessions (to monitor client complaints is a TF strategy suggested by Bellg et al., 2004; see chapter 2, section 2.2.2, Figure 3). Moreover, it might also help to relate findings of the procedural section to influences by participant behaviour (e.g. the items that have been rated as *not delivered* or *partly delivered*).

It is important to keep in mind that in the TF literature, self-report (e.g. Carroll et al., 2007) or interviews (e.g. Hasson, 2010) are common techniques to examine participant responsiveness. In the current investigation, however, it was not possible to do this, so evidence was sought by observing participant comment during videotaped therapy sessions.

The next paragraphs consist of a selection of pertinent positive and negative client statements regarding their satisfaction with certain parts of the BCA therapy programme. The quotes are structured chronologically from session 1 to session 8 across dyads. Whenever a statement had a negative influence on therapy delivery, the corresponding ratings (by rater 1) of the procedural section will be shown. There are no comments by dyad 2 in the following paragraphs as they did not make meaningful comments on therapy content in the sessions observed.

Transcript 1 - Session 1

Alex: ( ) yeah I really thought we will get some **therapy** today

SLT: mmh

Alex: because it

SLT: it's a **very** [different type of therapy]

Alex: [yeah yeah]

The statement 'yeah *I really thought we will get some **therapy** today*' (Transcript 1) was made by Alex (CP, dyad 4) at the end of the first therapy session. The content of this session apparently has not been in accordance with his wishes or expectations. It seems that 'therapy' for this client means something different from what was actually happening. It is important to note that the content of BCA therapy session one mainly consists of exploring the dyad's understanding of conversation (with

aphasia) in general and the SLT talking through handouts about conversation, aphasia and agrammatism. It is about raising the dyad's overall awareness of conversation (which is the overall aim of the session), and there are no exercises (e.g. practising a certain non-verbal strategy) for the PWA or the CP. After Alex states this, the SLT explains the aim of the therapy programme to him and clarifies the nature of this therapy approach. A more detailed transcript of this situation can be found in Appendix 9. This situation is not regarded as an influencing factor on the degree of fidelity for this session (probably because it was made at the end of the session and the consequence was an explanation of the nature of the therapy approach).

Transcript 2 - Session 3

SLT: no. (1.0) so (.) ((writes something down)) if we're talking about the activity. (3.5) did you think (.) did you find that it was: ((writes something down)) it was good [it was useful?]

Maggie: [good] yeah

SLT: or:

Maggie: good.

SLT: ( )

Maggie: no.

SLT: so you find that it was (.)

Maggie: yeah

SLT: it was good.

Maggie: good.

Transcript 2 stems from a conversation at the beginning of therapy session 3, when the SLT and the dyad (N^{o} 7) are reflecting on the home activity, the so-called 'Talking pen challenge' (see Appendix 1, handout 2.4, for an explanation). It seems that Maggie (PWA) liked this activity ("*Good*") which she confirms when the SLT was asking her again ("*Yeah. (...) Good*").

Transcript 3 - Session 4:

SLT: fantastic right. ((laughing))

Shelley: was that=was that supposed I'm just **think**ing about holding the **pen**

SLT: mmh

Shelley: but it doesn't [make you aware that it is your turn to speak]

Kate: [yeah yeah yeah]

Shelley: 'cause I asked my con (.) my conversation was (around) questions **really**

SLT: yeah

A different opinion about the 'Talking pen challenge' home activity (see Appendix 1) becomes evident in Transcript 3. The comment by Shelley (CP, dyad 1) shows that this specific home activity (which was done by this dyad at the beginning of session 4 because they did not have time in between sessions) was not considered useful by her.[32] The aim of this activity, to raise the dyad's awareness of turn-taking, was apparently not achieved, according to Shelley ("*but it doesn't make you aware that it is your turn to speak*").

The two former statements (Maggie and Shelley) serve as examples of how individually certain activities of a conversation-based therapy are perceived by different clients. These two statements, however, are not regarded as having a direct influence on the session fidelity scores.

Transcript 4 - Session 4

((SLT explaining home activity handout))

SLT: any questions?

Barry: no.

Louise: no: no. [that's very useful]

SLT: [that's great that's alright]

Louise: [( )] very good.

[32] Moreover, since for dyads 1 and 2, sessions 2 and 3 were switched around, the actual 'Talking Pen Challenge' home activity was supposed to be done between sessions 3 and 4 for this dyad.

Barry: yeah

After the SLT talks through the home activity handout (BCA handout 4.3, see Appendix 1), Louise (CP, dyad 6) emphasises that she finds this handout useful (see Transcript 4). This statement suggests that the satisfaction of clients with a certain activity, in this case the home activity, makes it more likely that the clients do the activity outside a session.

Transcript 5 - Session 4

((SLT and Maggie are reflecting on conversations for the PWA))

SLT: ((smirks)) some of these aren't (.) brilliant.

Maggie: yeah

SLT: some of these there's not much (.) to work with.

Maggie: yeah

Transcript 5 originating from a conversation within therapy session 4 reflects the opinion by Maggie (PWA, dyad 7) about the conversation strategies (more specifically about BCA handout 4.2, see Appendix 1). It seems that she does not like these strategies, and in a situation before this excerpt, the SLT already got the feeling that it might be hard for Maggie to think about different ways to take a specific turn (regarding a turn in a video clip shown during this session).[33] In terms of an influence on the therapy content, it is striking that the SLT leaves out a discussion on the ease of strategy use after a practice conversation at the end of this session (see Figure 13, E68). Thus, it might be that the negative criticism by Maggie influenced subsequent therapy delivery. Because the process of the discussion between the dyad and the SLT is considered remarkable in terms of the potential consequences for therapy delivery, a more detailed transcript can be found in Appendix 10 and the relevant part of the procedural section of the fidelity tool is shown in Figure 13 (see rating of E68).

[33] However, it might also be, that the video clip which builds the fundament for the discussion or for thinking about different ways to get a message across (i.e. to think about different strategies), is interpreted differently by the dyad and the SLT in this session.

The therapist asked the PWA to pick three strategies to practice.	1	E63	adh	05:38-06:23: SLT explains the aim of the session: To pick three strategies; 24:48-28:00 (gesture, mime and facial expression) Then: SLT asks CP. Then, the third strategy is key word chosen by CP and agreed with by PWA
The therapist had a practice conversation with the PWA (or CP and PWA if appropriate) which was videoed separately.	0.5	E64	adh/com	28:01-28:11 and 02:26-14:55; done, but I guess not videoed separately. Would probably have been too much.
Therefore, the therapist offered a choice of 3 pictures, PWA to choose one.	1	E65	adh	03:05-03:17
The therapist explained to the PWA that he/she has to describe the picture to the therapist (or CP).	1	E66	adh	02:26-03:18
The therapist asked the PWA to put a strategy into practice (and coaches as necessary).	1	E67	adh	03:05-14:55
The therapist discussed the ease of strategy use with the dyad after the practice conversation.	0	E68	adh/com	Not done I guess: Probably this was not done **because** of emotional reaction/state by PWA
The therapist assigned the home activity and introduced BCA-handout 4.3 (Building turns in conversation).	1	E69	adh	14:56-17:19

Figure 13: Parts of the procedural section of session 4 (dyad 7) including the name of the item, the score given by rater 1, the classification (e.g. E67; adh=adherence, com=competence) and qualitative notes

Transcript 6 - Session 5:

SLT: any questions about that at all?

Linda: no. no it's clear I think there are some very good tips

SLT: great

Giles: indeed very nice

At the end of session 5, Giles (PWA) and Linda (CP, dyad 3) signal their satisfaction with the home activity for the following week, which is shown in Transcript 6. They seem to be happy with the handout (BCA handout 5.3, see Appendix 1) and show their positive attitude towards this when the SLT asks whether there are some questions left. This situation is similar to Louise's comment at the end of session 4 (see Transcript 4) and again, the positive attitude towards this home activity might enhance the likelihood of a dyad actually working on it during the week.

Transcript 7 - Session 6:

Alex: to be honest this session (I have to say) is quite overwhelming today [(whether) I'm tired]

SLT: [oh I'm sorry]

Alex: no [no I'm not] I'm being honest.

SLT: [that's alright] that's fine

Alex: it's=it's=it's=it's (.) it's a lot of information overload. [To **me**.]

SLT: [yeah] yeah

Alex: what do **you** feel. ((looks at Graham))

Graham: yes ye:s

Transcript 7 probably includes the statement with the most obvious influence on therapy delivery. This client, Alex (CP, dyad 4), says that he feels overwhelmed and Graham, his partner, agrees. The SLT states "*Well we leave it there for today*", although originally, a practice conversation was planned after this situation. A detailed transcript of this specific conversation can be found in Appendix 11. The resulting ratings of two subsequent items, judged as being not delivered (E112 and E113) illustrated in Figure 14, can therefore be explained by this client statement.

The therapist introduced SPPARC-handout C47a+b (Follow the Conversation Leader).	1	E111	adh	01:50-02:02, then until 16:05 FIRST CLIP Paraphrasing/question is a bit problematic to understand for CP; 16:05-23:18 SECOND CLIP; then: CP comment!
The therapist asked the dyad to do a practice conversation with each other – each to put strategy into practice.	0	E112	adh	Not done
The therapist videoed this conversation and discussed it with reference to topic strategy sheet (SPPARC-handout C46c).	0	E113	adh/com	Not done
The therapist assigned the home activity and introduced BCA-handout 6.2 (Joining forces).	1	E114	adh	56:10: "Have a think about this week" (How could you start a new topic?); 23:18 CP: This is too much information; SLT: "Take it away, have a look through it again" and 26:14-26:30

Figure 14: Parts of the procedural section of session 6 (dyad 4) including the name of the item, the score given by rater 1, the classification (e.g. E111; adh=adherence, com=competence) and qualitative notes

Transcript 8 - Session 6

SLT: okay does the topic keep **go**ing. so when you guys start a conversation is it easy to keep (1.0) keep it going.

Kate: yeah! yes

SLT: (1.0) would you agree with that? ((looking at Shelley))

Kate: ((looking at Shelly)) yes.

Shelley: (2.0) well yeah I mean it depends. if you (1.0) can get your **words** out. (and if) **I** can (.) we can con**tin**ue it.

SLT: mmh

Shelley: I mean obviously it's **all** about what we've been talking about be**fore**.

SLT: yeah yeah.

In Transcript 8, Shelley (CP, dyad 1) comments on a handout (SPPARC handout C46b, see Appendix 1) and states that she has the feeling that it is nothing new that they are talking about ("*I mean obviously it's all about we've been talking about before*"). However, this statement does not influence the session fidelity score; it is rather a sign that Shelley does not find this component of the therapy programme (handout) beneficial.

Transcript 9 - Session 6

SLT: okay. so **who** (.) if (.) **who keeps** the topic going. (what) would you say. (3.5) is it-

Shelley: (we) **both** isn't it. (1.5) both? (3.0) well it de**pen**ds. [doesn't it?] you **can't**

Kate: [( )]

SLT: [yeah no there's]

Shelley: [(they're just sort of like)] very **vague vague** questions.

SLT: well it's just a way of sort of stimulating conversation and again. getting (.) all of us I guess to sort of re**flect** on what what we **do** when (.) when you **star**ting a topic **who** (1.0) you know so it's (.) you're saying that you (.) you **do** start topic sometimes Kate which is **great** and then ((breathing out)) (2.0)

The comment '*They're just sort of like very vague vague questions*' (see Transcript 9) refers to SPPARC handout C46b. Shelley (CP, dyad 1) seems to have problems to answer some of the questions because she feels they are too "*vague*". Such feedback is important not only to know as a therapist that a client has problems to work through an exercise, but also in terms of the therapy programme itself. It might be worth having a look at the reactions of other dyads with this specific component of the therapy programme and to find out whether it should be adjusted.

Transcript 10 - Session 8:

SLT: I hope it's been useful to you both

Jill: yeah yeah

SLT: yeah?

David: Do you think it's been useful? ((looking at Jill))

Jill: yeah

David: good

This last quote from Transcript 10 taken from session 8 shows that Jill (PWA, dyad 5) finds session 8 beneficial. This indicates that the content of this last session of the BCA therapy programme is accepted by this client, which is important for the therapy designers to know for future investigations using the BCA therapy. However, the reader should note that this transcript reflects the opinion of a single participant, which is hard to generalise.

After illustrating the indications for the clients' acceptance of components of the BCA therapy programme, the next step is to highlight the clients' *motivation* during the therapy. The completion of home activities was defined as an indicator for their motivation. By analysing the beginning of each of the 13 observed therapy sessions, it was rated whether the participants have (partly) done their home activity or not. Whenever a dyad could report on the home activity or present their notes on the correspondent handouts, it was judged that the dyad did do their home activity. This was the case for almost all the sessions that have been observed. However, for one dyad (dyad N^{o} 1), the home activity has not been made or has been rated as '*partly done'*, apparently due to time restrictions. Table 17 shows the results.

Table 17

Results of the analysis of home activity for the 13 observed sessions

Dyad Number	Session checked	Did their home activity	Partly did their home activity	Didn't do their home activity
1	4	☐	☐	☒
	6	☐	☒	☐
2	2	☒	☐	☐
	3	☒	☐	☐
3	5	☒	☐	☐
4	1	N/A	N/A	N/A
	6	☒	☐	☐
5	7	☒	☐	☐
	8	☒	☐	☐
6	3	☒	☐	☐
	4	☒	☐	☐
7	3	☒	☐	☐
	4	☒	☐	☐

The relevant transcripts of the reviews of home activities from dyad 1 (sessions 4 and 6) are shown in Appendix 12.

(5) What strategies have been used to support the accurate delivery of the BCA therapy programme?

With the aim to document which strategies have been applied by the wider research team in order to ensure an accurate therapy delivery, a short email survey was conducted with the research SLT who provided the therapy to the dyads. The questions were:

- Which strategies (e.g. provision of a manual, guidelines, training, and feedback) have been used to support the accurate delivery of the therapy programme?
- How did you as the research SLT perceive these strategies?

The research SLT mainly answered the first question by reporting that she created generic session plans on the basis of ones that the principal investigator of the wider project provided. Then, the

content was personalised for each dyad (e.g. identifying video clips from the dyad's own conversations) by her (the research SLT) in close collaboration with the principal investigator. The research SLT and the principal investigator also talked through the important elements of particular video clips for each dyad.

To summarise, it appears that guidelines and expert feedback were the main facilitating strategies used to support the accurate delivery of the BCA therapy programme. However, apart from the designed session overviews there was no manual as such.

Summary of the moderating factors:

In summary, the SLT showed desired BCA intervention principles to a high degree across the observed sessions (96.7%). In terms of participant responsiveness, the client statements associated with session 6 indicate negative opinions on the content (session feels overwhelming or redundant). Positive statements demonstrating the clients' acceptance of the therapy were also documented. The motivation of the clients was measured with the help of a rating of home activities, which shows positive results for almost all dyads. Facilitating strategies such as the creation of generic session plans and expert feedback have been used in the wider research project to optimise uniform and competent therapy delivery.

5.3) Inter-rater reliability (IRR)

(7) Does the fidelity tool have an acceptable level of IRR?

After outlining the main aspects of the TF evaluation, a final step is to explore the quality of the fidelity tool, i.e. the consistency among the observational ratings conducted by two different observers.[34] This assessment is known as inter-observer reliability, inter-coder reliability or inter-rater reliability (IRR), and can be regarded as a first step to validate the pilot fidelity tool.

IRR reflects whether the fidelity tool can be implemented by different independent raters in the same way on the basis of the same video samples. As mentioned in chapter 2, section 2.2.2, a generally accepted level of inter-rater agreement is 70% according to Eames et al. (2008).

IRR was examined for the pairs of dual-rated video tapes. Using the procedural and the qualitative section of the tool, ratings from the first rater (the author of the present thesis) have been compared

[34] The terms *observer*, *coder* and *rater* are used interchangeably.

with those from the second rater (a qualified SLT and volunteer) who received a training session of 1.5 hours in length (see chapter 4, section 4.2.4). After the training session took place, the author of the thesis enlarged the explanation of the qualitative section of the fidelity tool with illustrative SLT statements. This means that after the training, rater 2 observed the sessions (see below) with a more vague explanation of the qualitative section (i.e. no concrete SLT statements to illustrate what is meant by the items), since at the time of the training session, the illustrative examples of the items have not been created yet. This is important to keep in mind when interpreting the results of the qualitative section of the tool.

20% of the sessions (which is regarded as an acceptable amount according to the TF literature) observed by the first rater were coded a second time by rater 2 (session 4 for dyad 7; session 5 for dyad 3; session 7 for dyad 5, see Table 9 in chapter 4, section 4.2.4). This is according to a fully crossed design (Hallgren, 2012), as all the items of each of the three sessions have been rated by the same two raters. An illustration of two variants of a fully crossed design is provided in Table 18.

Table 18

Fully crossed design of an IRR study (source: adapted on the basis of Hallgren, 2012: p. 25)

	All subjects rated by multiple coders[a]		**Subset of subjects rated by multiple coders**	
	Rater 1	Rater 2	Rater 1	Rater 2
Observation 1	**X**	**X**	**X**	**X**
Observation 2	**X**	**X**	**X**	
Observation 3	**X**	**X**	**X**	**X**
Observation 4	**X**	**X**		**X**

[a]*This reflects the design of the present investigation from a session-focused perspective, since the same raters were used across all observations of a session included in the IRR assessment*

After calculating percentage agreement, an intra-class correlation (ICC; two-way random, consistency, single-measures; Shrout & Fleiss, 1979) was performed. ICC was used as well as percentage agreement because the latter does not correct for agreements expected to be made by chance (Hallgren, 2012). However, the calculation of ICC, Kappa values or other IRR-statistics varies among different papers in the TF literature. Sometimes, researchers just report on percentage agreement (see chapter 2, section 2.2.2). ICC calculation was also chosen because the fidelity tool rating system categorises high, medium and low presence of behaviour (1, 0.5, 0), which is

categorical data with an ordinal structure (Hallgren, 2012; Agresti, 2010). For this kind of data within a fully crossed design, ICC (two-way model, single measures, consistency) can be regarded as appropriate, according to Hallgren (2012: p. 27).

Guidelines for determining levels of Kappa or the ICC statistic, as suggested by Cicchetti (1994), describe *poor* intra- or inter-examiner levels of agreement for values below .40, for a range between .40 and .59 the level is described as being *fair*, from .60-.74 it can be regarded as *good* and from .75-1.00, the inter-rater agreement is in the *excellent* range.

First, percentage agreement and ICC will be described in relation to the procedural section of the fidelity tool. This will be followed by a qualitative analysis of the items that have not been agreed on. After this, the findings regarding IRR for the qualitative section of the tool will be presented.

IRR for the procedural section of the fidelity tool:

Individual observations between the first and the second rater for the three sessions (which refers to 20% of the sessions rated by the first observer) were compared. A total of 50 items (E54-E69, E70-E89 and E115-E128) were rated by both observers across the three sessions. For this analysis, the optional items E81 and E82 (session 5) were included since overall fidelity is not affected by this calculation. The distribution of the ratings given by rater 1 and rater 2 are illustrated in Figure 15. Surprisingly, there is no single item for which rater 2 gave a rating of 0.5, which is a pattern that turns the rating scale into a binary one. Both raters rated most of the items with 1.

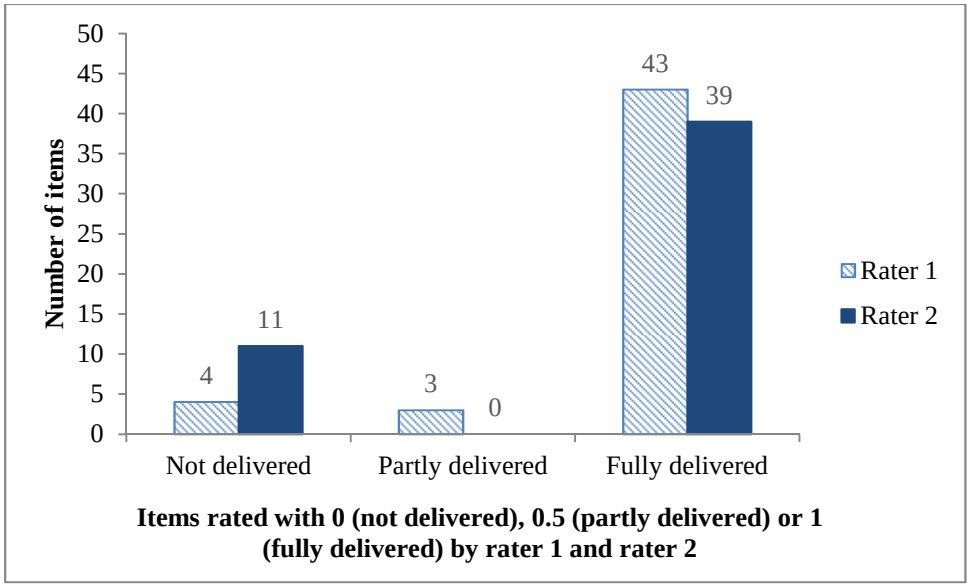

Figure 15: Ratings given by rater 1 and rater 2 for the three sessions included in the IRR investigation

Percentage agreements were determined to ascertain IRR. Session-specific percentage agreement was calculated by dividing the overall number of occasions where both raters gave the same rating (i.e. agreed on 0, 0.5 or 1), with the total number of observations (referred to as maximum score). As illustrated in Table 19, the overall percentage agreement of 86.8 (range: 80.0-92.9; SD=6.5) reflects acceptable IRR (as already outlined in chapter 2.2.2). The lowest percentage agreement is found for session 5 (dyad 3), whereas the highest agreement is reached for session 7 (dyad 5).

Table 19

Results of the ratings conducted by rater 1 and rater 2, session-specific percentage agreement and intra-class correlations for the procedural section

Session checked	Rater 1 score	Rater 2 score	Number of agreed items	Maximum score	Percentage agreement	ICC[a]
D7TH4	14.5	12	14	16	87.5	.772
D3TH5	17.5	14	16	20	80.0	.570
D5TH7	13.5	13	13	14	92.9	.800
				Overall	**86.8**	
				Standard deviation	6.5	

Note: 'D7TH4' corresponds to therapy session 4 of dyad 7.

[a]*Two-way random, single-measures, consistency ICC (i.e., an estimate of inter-rater reliability that would generalise to an independent sample of raters (qualified SLTs).*

In a next step, a two-way model of ICC was calculated with SPSS, based on the steps that are suggested in the paper by Hallgren (2012). The resulting ICC was in the excellent range (Cicchetti, 1994) for the 16 items of session 4 and the 14 items of session 7 (see Table 19). The ICC level for the 20 items of session 5 indicates fair agreement between the two raters (ICC=.570). This suggests that fidelity to the content of the therapy programme can be rated consistently across raters for the items of sessions 4, 5 and 7.

The relatively low ICC value for session 5 might be explained by the fact that there seems to be a systematic pattern in the ratings of the non-agreed observations: In three out of four cases with disagreement, rater 1 coded the observation with 1, rater 2 with 0. For the fourth observation that differed between the two raters, rater 1 gave a 0.5, rater 2 a 0 (see Appendix 8).

In the following paragraphs, a qualitative analysis for all the items that have not been agreed on will be undertaken.

E56 (dyad 7, session 4): This item is rated as *fully* delivered by rater 1, whereas rater 2 suggests it has *not* been delivered. Probably this discrepancy originates in the vague nature of the item ("*The therapist had a discussion with the dyad on issues with turn taking in general*").

E64 (dyad 7, session 4): Rater 1 suggests this activity has been *partly* delivered. The explanation the rater noted down is that the practice conversation has been done, but not videoed separately. On the other hand, rater 2 rates this item as *not* delivered without additional notes.

E71 (dyad 3, session 5): This discrepancy (1 by rater 1; 0 by rater 2) possibly results from the previous item E70 "*The therapist reviewed the home activity*". It would be better to describe which home activity this was supposed to be so that the rater is more aware of the difference between discussing home activity and reviewing the content of the previous session.

E77 (dyad 3, session 5): This indicates that the rating procedure is quite subjective. While rater 1 gives a 1, because of the SLT asking "*Again, have a look at what type of turn you are taking*", rater 2 rates this item with a 0. Her explanation is that the CP identifies straight away, what she is doing and the SLT consequently asks a different question.

E83 (dyad 3, session 5): Rater 1 gives a 1 for this item, whereas rater 2 regards this as being *not delivered*. Rater 2 had problems with the similar item E78, so this is a sign for refining this item in terms of explaining more detailed what it aims for.

E88 (dyad 3, session 5): Rater 1 gives a 0.5 because the practice conversation was not videoed, but they discussed the ease of strategy use. However, rater 2 suggests this item has *not* been delivered, resulting in a 0.

E121 (dyad 5, session 7): Rater 1 suggests that this activity ("*The therapist asked the dyad if they think they have been using these over the last few weeks in their daily conversations, and if not, why not*") has been *partly* delivered (corresponding to 0.5). Rater 2, however, rated this item with a 0.

To sum up, the outlined differences between the two raters suggest that rater 1 tended to give a 1, whereas rater 2 rated the items not agreed on rather with a 0 (note that rater 2 never rated with 0.5 at all). This pattern implies that refinement of the training session for raters is needed.

IRR for the qualitative section of the fidelity tool:

Again, based on the observations of the first and the second rater, percentage agreement was calculated by dividing the overall number of occasions where both raters agreed on 0, 0.5 or 1, with the total number of items (referred to as maximum score). In sum, 29 items have been rated by both

raters. However, rater 2 has not rated two items in session 4 (dyad 7), and one item in session 7 (dyad 5). The overall percentage agreement of 87.5% (range: 62.5-100.0; SD=21.7) reflects acceptable IRR across the three sessions, but it must be noted that there is high variability among the sessions, possibly due to subjectivity. Furthermore, it should be taken into account that the percentage agreement of session 4 lies under the acceptable level of 70%. ICC was calculated for session 4 with a value indicating poor inter-observer agreement (Cicchetti, 1994). Although inter-rater percentage agreement was 100%, SPSS could not compute ICC for sessions 5 and 7, because variability in the raw data was lacking. Raw data of the ratings of the qualitative section can be found in Appendix 13. In Krippendorff (2011), the issue of lack of variability is explained more detailed. Table 20 reflects the results for the IRR assessment of the qualitative section.

Table 20

Results of the ratings conducted by rater 1 and rater 2, session-specific percentage agreement and intra-class correlations for the qualitative section

Session checked	**Rater 1 score**	**Rater 2 score**	**Number of agreed items**	**Maximum score**	**Percentage agreement**	**ICC[a]**
D7TH4	8	6.5	5	10 (8)	62.5	.258
D3TH5	10	10	10	10	100.0	-[b]
D5TH7	9	8	8	9 (8)	100.0	-[b]
				Overall	**87.5**	
				Standard deviation	21.7	

Note: 'D7TH4' corresponds to therapy session 4 of dyad 7.

[a]*Two-way random, single-measures, consistency ICC (i.e., an estimate of inter-rater reliability that would generalise to an independent sample of raters (qualified SLTs).*

[b]*Due to the lack of variability in the raw data, SPSS could not calculate ICC.*

Table 21 summarises the results of the IRR investigation. It shows that the overall percentage agreement of both sections is similar, but the range indicates higher variability in the qualitative section of the fidelity tool. Averaged across all three sessions, ICC values indicate good agreement across the raters for the procedural section, but poor agreement for the qualitative section, as expected.

Table 21

Inter-rater reliability of the independent ratings for the procedural and the qualitative section of the fidelity tool averaged across the three sessions observed by both raters

Section of the fidelity tool	Percentage agreement	Range	ICC
Procedural section (adherence/content)	86.8%	80.0-92.9%	.674 (good)
Qualitative section (competence)	87.5%	62.5-100%	.258 (poor)[a]

[a]*This ICC value is not an average but reflects the ICC of one session.*

5.4.) Summary of the results

Table 22 summarises selected results in relation to the components adherence, quality of delivery and participant responsiveness to provide an overview of main fidelity aspects investigated in the current study. The results suggest that the therapy programme was most properly implemented for dyads 2, 4 and 6. For dyads 1, 3, 5 and 7, at least one aspect out of the following was not implemented as it was planned by the team of the main research project: fidelity score in relation to therapy content (lowest score for dyad 7 compared to the other dyads), dose in terms of therapy frequency (not provided as planned for dyads 1, 3, 5, 7), and completion of home activity (not or only partly done by dyad 1).

Although the fidelity evaluation might not cover all the parts that have an influence on the success of therapy (see Figure 2, chapter 2, section 2.2.2), an attempt (see below) will be made to explore possible links between fidelity scores and outcome, quality scores and outcome and quality scores and fidelity scores to test the assumptions of a link as stated in Carroll et al. (2007; see chapter 2, section 2.2.3).

Table 22

Summary of selected fidelity evaluation-results in relation to adherence, quality of delivery and participant responsiveness

	Adherence		***Quality of delivery***	***Participant responsiveness***
Dyad N°	**Fidelity score related to therapy content (%)**	**Therapy delivered over a period of 8 weeks?**	**Quality score (%)**	**Home activity done?**
1	91.5	✗ (12 weeks)	92.1	✗
2	93.4	✓ (8 weeks)	97.4	✓
3	97.2	✗ (15 weeks)	100	✓
4	89.7	✓ (9 weeks)	100	✓
5	89.5	✗ (10 weeks)	100	✓
6	95.8	✓ (9 weeks)	97.5	✓
7	86.1	✗ (11 weeks)	90.0	✓

Note: Fidelity score and quality score is based on only one session for dyad N° 3; home activity data are based on only one session for dyad N° 4.

When relating the fidelity scores (subjective cut-off value 90%) to the preliminary outcomes as reported in chapter 2, section 2.1.3.2, the following pattern, which is illustrated in Table 23, can be found: For those dyads with a fidelity score of > 90%, positive outcomes are reported, at least for one person of the dyad. For dyad N° 7 with a fidelity score below 90%, no positive outcomes have been identified after therapy for either member of the dyad. However, for dyads 4 and 5, a fidelity score of below 90% has been found (89.7% and 89.5% respectively), but positive outcomes for both members of the dyad are reported. It must be taken into account that these two fidelity scores almost reach the subjectively set cut-off value of 90%.

Table 23

Relationship between dyad-specific fidelity scores and individual, preliminary quantitative therapy outcomes

		Positive quantitative outcomes: both CP and PWA	**Positive quantitative outcomes: either CP or PWA**	**No change after therapy**
Fidelity Score	**> 90%**	2, 6	1, 3	-
	≤ 90%	4, 5	-	7

(8) Do the findings of the current fidelity evaluation indicate an influence of moderating factors on adherence?

Finally, research question N^{o} 8 is addressed. As quantitative data are available for the quality of delivery (a moderating factor) and the adherence to therapy content, these two variables (the so-called quality score and fidelity score) were analysed further to examine the influence of the moderating factor of 'quality' on 'adherence'. Table 24 and Figure 14 illustrate the link between the quality score and the fidelity score. Carroll et al. (2007) suggest that a competent therapy delivery might enhance fidelity, i.e. the higher the quality score, the higher the fidelity score. Table 24 shows that the findings indicate a relationship between a high quality score and a high fidelity score (dyads 1, 2, 3 and 6), whereas for dyad 7, a relatively low quality score corresponds to the relatively low fidelity score. This confirms the suggestion as reported in Carroll et al. (2007).

Table 24

Relationship between quality and fidelity scores for the seven dyads

		Fidelity Score	
		> 90%	**≤ 90%**
Quality Score	**> 90%**	1, 2, 3, 6	4, 5
	≤ 90%		7

To represent the findings without the subjectively set cut-off values, Figure 16, a scatterplot, was created, in order to illustrate these data more objectively. The reader should keep in mind that only a few data points are represented in the figure, so the correlation should be interpreted with care.

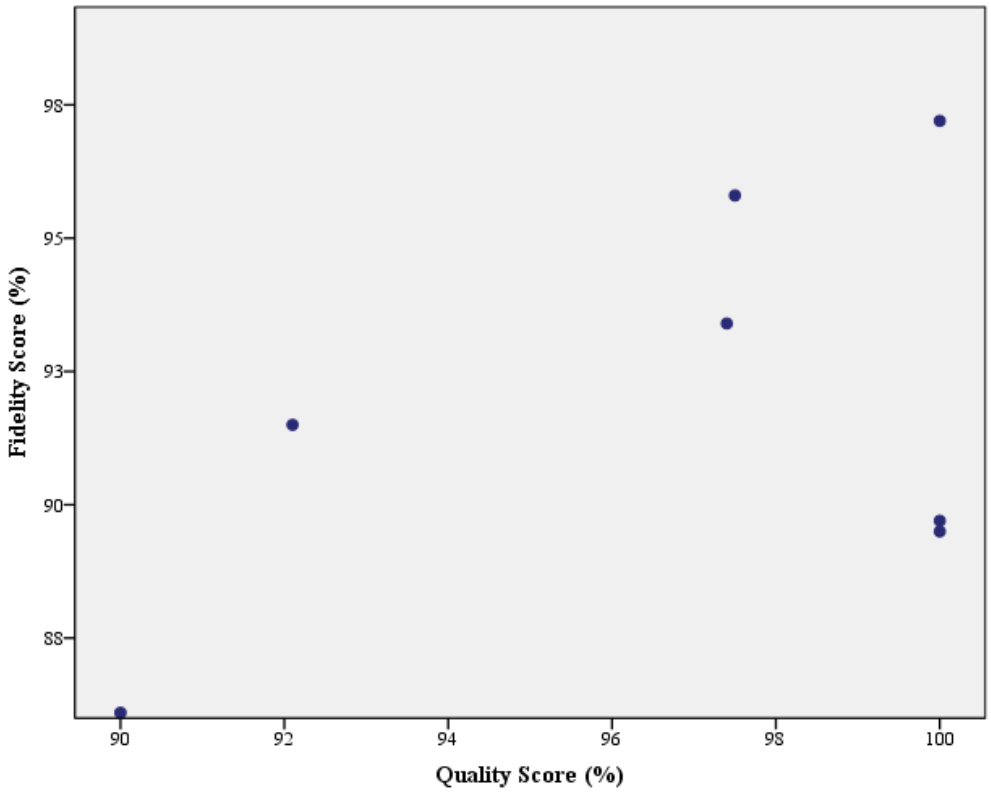

Figure 16: Correlation between the quality and fidelity scores for the seven dyads

6) Discussion

The discussion of the results has the same structure as the Results chapter, i.e. the findings for research questions 1-8 will be discussed in a chronological order.

Adherence

(1) To what degree have the planned components of the BCA therapy programme been delivered to the participants of the case series?

Across the observed therapy sessions, fidelity to the session plans (score: 91.9%) can be regarded as high, according to the suggestions found in the literature review. This indicates that the therapy delivery was consistent with the prototype therapy as designed by the main research team. It is therefore likely that so-called *active ingredients* have been delivered with high fidelity, although the exact core ingredients are not known yet.

Averaged across all observed sessions, the percentages of items that were given a rating of 1 (88.5%), 0.5 (6.2%) and 0 (5.3%) are similar to the results as reported in Lewinsohn et al. (1990), and it seems that the present investigation even reached better results: Lewinsohn and colleagues (ibid.) stated that in their study, 78% of the items were given a rating of 2 (corresponding to a rating of 1 in the present thesis), 17% a rating of 1 (corresponding to 0.5) and 5% of the ratings indicated no compliance. However, it is important to keep in mind that the design of the study by Lewinsohn et al. (ibid.), the nature of the intervention and the number of items of the fidelity tool (only 11 items) differs from the current investigation.

Dyad N^{o} 7 showed a lower individual fidelity score (86.1%) compared to the other six dyads (89.5% and above). This score can be explained by the relatively high proportion of 0- and 0.5 ratings that have been given for the items observed for this dyad. This shows, that even when only one experienced therapist is delivering an intervention within a research context (which can be described as an “ideal situation”, according to Hennessey & Rumrill, 2003: p. 124), there appears to be a certain amount of variety in therapy delivery. Moreover, it shows that a fidelity evaluation can serve as a tool to uncover certain participants or dyads for which the therapy was delivered in a different way compared to the majority.

One issue worth noting in this thesis refers to the sample selected: Interpretations have to be handled with caution because the final sample (23% of all the sessions) might not be representative for the whole therapeutic process, although procedures from the TF literature concerning the amount of

therapy sessions to check were followed. Also, each dyad-specific fidelity score is based on a different amount of different observations, depending on the individual sessions checked.

This kind of therapy can be described as highly interactive, which is why some constituents are worded in a rather vague way (e.g. "*The therapist had a discussion with the dyad on how aphasia affects conversations*", or "*The therapist discussed the video clip with positive strategy use with the dyad, referring to chosen topic strategies*"). It became remarkable, that a relatively high percentage of the 0.5-ratings given by rater 1 (corresponding to '*partly delivered'*) consisted of items belonging to the major domain of *having a discussion*. This could be a sign for problems of the rater with the definition of these items (the issue of specificity of treatment components is also discussed in Whyte & Hart, 2003). The aspect of vaguely described constituents of the BCA therapy could be further examined in the future, for example by assessing the degree of complexity of the BCA therapy (e.g. with the help of a survey for experts, see also Carroll et al., 2007) or by rewording or concretising these items.

Furthermore, the fidelity scores calculated from a session-specific perspective must be interpreted with caution because of the small sample size (i.e. few observations). For example, for session 8 only 5 observations were rated. This is why this score is unlikely to be representative compared to the other sessions, as the base of it relies on such a small sample of observations. Sessions 1-7 reflect high fidelity scores of 89% and above, and are based on 14 or more observations each.

A general issue in the context of the procedural section of the fidelity tool is the influence which each of the procedural items has on the overall fidelity score. As each single element from the generic session plans has been included in the procedural section of the fidelity tool, there is no variation in their weight related to the overall fidelity score (i.e. each item is equally weighted). By including an estimate of the therapeutic potency of each item, hypothesised active ingredients could influence fidelity more than such elements which are regarded as less important. At this point, the major domains which the author created could reflect a possibility to implement such a weighting process. Similar to the procedure as reported in Lichstein et al. (1994: p. 16, see also Appendix 2), weighting certain parts or domains of the BCA therapy programme could allow for a more accurate quantification of therapy delivery. However, one could reason that including such a weighting system might introduce an additional bias towards items that are subjectively regarded as more important than others.

(2) Was the therapy delivered as often and for as long as planned?

In terms of the dose (duration of therapy sessions and frequency of the therapy provided), the BCA therapy was administered heterogeneously across the dyads. Only three of the seven dyads received therapy over a period of eight to nine weeks. Moreover, the average length of therapy sessions varied from 59 minutes to 85 minutes. This, however, might rather reflect the interactive nature of this kind of therapy. It appears to be hard to pre-plan the session length, since each individual dyad might react in a slightly different way to certain video clips or activities (e.g. discussions, role-play), or might sometimes need a longer time to identify certain conversation behaviour in a video clip shown during therapy. Furthermore, according to the author's knowledge, there is no concrete recommendation to date in terms of an optimum dose of conversation-based therapy for aphasia. Hence, the present fidelity check represents the first report of differences in the length and frequency of BCA therapy provision across dyads. It might serve as a base in order to build hypotheses in terms of the ideal dose of this specific therapy. For instance, the optimum dose could in theory be a minimum of 60 minutes of BCA therapy each week over a period of 8 to 10 weeks, but eight BCA sessions over a period of more than 10 weeks could be too less. It is also questionable whether certain elements of the BCA therapy programme need to be delivered more frequently or for longer than others, in order to achieve the best outcomes. These questions could be considered in future investigations, for example by comparing different participant groups which receive a different dose of BCA therapy.

Each dyad received the planned amount of eight sessions. Across the dyads, it seems that session N^{o} 6 is the only session that took as long as it was estimated to do by the main project team (Beeke et al., 2011). Again, this might reflect the content of the therapy (there are more interactive activities in session 6 compared to sessions 1 and 2, for example). In terms of the planning of future studies using this therapy programme (e.g. a replication of the main research project), it might be helpful for researchers to know about this potential variety of session length across the eight individual sessions. However, the reported length of therapy sessions reflects flexibility in therapy delivery, and this may be desirable.

Moderating factors

(3) To what degree does the behaviour of the therapist reflect desired BCA intervention principles?

As mentioned earlier, the quality items in the fidelity tool are an attempt to describe desired therapist behaviour associated with the delivery of the BCA therapy; however, the author appreciates the complexity of this aspect of TF. High percentages (ranging from 90% to 100%) of quality scores were found for the seven dyads. This ceiling effect could theoretically reflect rater bias. Consequently, the

rating scale (3-point Likert scale) could be amended, for example by changing it into a 5-point Likert scale. This may lead to a higher degree of differentiation in the rating of desired therapist behaviour. Another possibility to mitigate rater bias would be to create exact definitions and examples that correspond to the 0, 0.5 or 1-ratings of each qualitative item to make it clear to the rater of how to use the items. The video data used in the present thesis and Table 8 (see chapter 4, section 4.1.3.2) could serve as a foundation to create such rating guidelines. Furthermore, the challenge for future investigations in this context is to identify behaviour besides the listed items that a SLT has to show in order to deliver the BCA therapy in a competent way. One possible additional therapist skill relates to the ability to select appropriate, individual positive and negative sequences of the conversations provided by a dyad before the start of the therapy, which is related to the identification of conversation behaviour that facilitates or hinders successful conversations. This might also have an impact in future studies where more than one therapist is delivering the BCA therapy, with the content of SLT training when preparing for a reliable delivery of the BCA therapy being the main issue. Possible answers to this can be found on https://extend.ucl.ac.uk, where BCA is available as an e-learning resource to help clinically working SLTs to plan, carry out and evaluate conversation therapy.

The qualitative item which was most frequently rated with a score of 0.5 was "*The therapist avoided making judgments about what conversation patterns the dyad should retain or change*". In terms of the wording, this item was the only one for which negative evidence was needed to achieve a score of 1 (i.e. a behaviour was not present, rather than present). When having a closer look at the raw data it becomes apparent that, for each dyad, this item was rated twice (i.e., in two sessions) - there was always one occasion on which the rater coded it with 0.5. This pattern suggests that this particular item might either be described too vaguely to rate, or that the therapist in fact showed the desired behaviour only '*occasionally'*. On the other hand, the coding of this item might reflect the suitability of the clients for the intervention, since it is expected that the therapist reacts to client behaviour, i.e. if a client is not able to choose what to work on, as a consequence the therapist is more likely to judge which patterns or strategies should be changed or retained.

(4) What can be found out about the participants' satisfaction and motivation for the BCA therapy programme during the sessions?

Session 6 was strikingly related to an increased number of negative client statements. Two different videos were checked for session 6 (dyad 1 and 4), and in both videos, there was evidence that the content of that particular session was either too overwhelming (dyad 4) or that certain parts of it felt redundant or too vague (dyad 1). This finding might help to adjust the new therapy programme for further investigations (see research question 6). When determining participant responsiveness,

however, it might be better to interview the participants after therapy, to get a structured and sufficient representation of their satisfaction with it. Within a fidelity check, one can only summarise different comments that participants make during a session, but one cannot investigate their satisfaction or opinion in a structured way. On the other hand, it is important to cover the aspect of participant responsiveness within a fidelity evaluation in order to get a multifaceted picture of the therapy process, i.e. if the therapy that was delivered by the therapist was understood and accepted by the recipients.

In terms of the participants' motivation during therapy, the home activities were defined as an indicator for their motivation. Results suggest that almost all dyads were motivated to participate in the BCA therapy programme. However, the question is whether doing home activity is a valid assessment of client motivation. It is possible, for example, that clients are motivated but that they are not able to do their home activity due to time constraints. Again, structured interviews or other measures might be necessary in order to refine future investigations that aim to capture this aspect of participant responsiveness.

(5) What strategies have been used to support the accurate delivery of the BCA therapy programme?

Although there was no plan to assess TF at the beginning of the wider research project in 2007, the identified strategies to support the accurate delivery of the therapy programme seem to be sufficient for the case series. One facilitator of the wider research project was having only one research SLT to deliver the therapy (Hennessey & Rumrill, 2003: p. 124), and she was supported by the principal investigator of the wider project in terms of important elements (e.g. showing appropriate video clips) of the BCA therapy programme. The main facilitating strategy consisted of the creation of session plans, which can be regarded as a sort of therapy manual. For future investigations, however, techniques such as supervising a certain amount of therapy sessions or the creation of a more detailed therapy manual could be considered. Another possibility would be to use the videos already existing from the main research project as a foundation for potential tutorials to train SLTs.

(6) Can the findings of the fidelity evaluation be used to refine the new therapy programme?

In terms of optimising the BCA therapy with the help of the findings of the current thesis, the content of session 6 and its role within the whole therapeutic process should be reviewed, since relatively many client statements (those by dyad 1 and dyad 4) indicated rather negative attitudes towards this specific session. Moreover, the sometimes brief first session of the BCA therapy could be amended in terms of including more activities for the PWA and the CP. In this context, the significant difference

in terms of session length across the eight sessions should be considered. Furthermore, the client-focused section of the fidelity tool represents a possibility to get ideas for BCA therapy refinement, e.g. client comments that reflect their satisfaction with certain parts of therapy (e.g. the comment by CP 1 in session 6: "*They're just sort of like very vague vague questions*", Transcript 9, chapter 5, section 5.2).

(7) Does the fidelity tool have an acceptable level of IRR?

Apart from percentage agreement, intra-class correlations were calculated to get a sufficient representation of IRR. However, it must be kept in mind that the rating scale used in this investigation would also allow for Kappa values to be calculated. The parts of the fidelity tool that have been observed by both raters (qualified SLTs) indicate high reliability for the procedural section, and compared to this, lower reliability for the qualitative section including process-related aspects. This pattern is in accordance with the TF literature (e.g. McIntosh et al., 2005; Mowbray et al., 2003: pp. 329-330). As a consequence, especially qualitative, but also some of the procedural items might need refinement in terms of a more specific wording (see also research question 3). Another consequence might be the amendment of the training for raters. In terms of the training session for the second rater, it would be useful to provide a table like Table 8 within such a tutorial to make each of the qualitative items clearer. Unfortunately, this table had not been created yet when rater 2 received the training session. IRR values would probably become higher with including such a table in the training.

Another issues is the small sample of observations (N=50 for the procedural section and N=29 for the qualitative section) included in the IRR investigation. For future research, it is desirable to include more raters in the fidelity check and to rate a larger sample of videotaped therapy sessions in order to get a more trustworthy result of the reliability of such a tool. Furthermore, due to the subjectivity of most ratings, it would be necessary to enlarge the rater sample.

Another limitation of the current study was the fact that both the first and the second rater were inexperienced in administering the intervention (which is a fact that cannot be avoided when evaluating a new therapy approach). Optimum conditions would exist when the raters are familiar with the administration of the therapy programme, but at the same time are independent members of the research team.

Moreover, the psychometric properties of this fidelity tool could be investigated in more detail in future investigations (e.g. using a larger sample to investigate inter-rater reliability or assessing intra-rater reliability).

(8) Do the findings of the current fidelity evaluation indicate an influence of moderating factors on adherence?

Since quantitative results were available for the quality and the fidelity scores for the dyads, a correlation was done with these two variables. The reader should note, however, that a larger data sample with more numerical data would be necessary in order to empirically test the suggestions as stated in Carroll et al. (2007), for example the influence of different moderating factors on adherence.

After performing the correlation with the present data, it appears that higher quality scores are linked to higher fidelity scores, a finding, which seems to undermine an influence of the moderating factor 'quality' on adherence. As already discussed, due to the small sample size with only seven dyads, further research should replicate and enlarge the current investigation to test the relationship between potential moderating factors and adherence.

7) Conclusion and future directions

This thesis provided a first attempt to apply methods from the TF literature to a conversation-based therapy for PWA and their CPs. The focus was thereby to quantify therapy delivery and to provide a multifaceted evaluation of the therapeutic process. Based on generic BCA session plans, suggestions identified from the TF literature, and a conceptual model by Carroll et al. (2007), a fidelity tool has been developed. This was used to observe videotaped therapy sessions to investigate aspects of TF. Moreover, descriptive data have been collected in order to get a broad representation of TF for BCA.

The fidelity tool developed in this thesis covers adherence to therapy content (procedural section), competence of therapy delivery (qualitative section) and client behaviour (client-focused section). It is an observational tool that might be used by an external rater during a session (supervision or direct observation) or retrospectively (indirect observation). It consists of therapist as well as client behaviour and includes both quantitative and qualitative aspects. The procedural section, the main part of the fidelity tool, comprises a microanalytic approach with 133 items or components of the BCA therapy. The qualitative section includes a selection of therapist behaviour associated with BCA therapy delivery, but is only a first attempt to cover the complex aspect of therapeutic alliance. The client-focused section aims to assess client in-session behaviour (e.g. client complaints).

With a fidelity score of 91.9% related to adherence, it appears that the BCA components have been adhered to satisfactorily, according to identified benchmarks from TF literature. This finding might help to report outcomes of the wider research project on a group level by providing evidence that each of the seven dyads received a high degree of the BCA therapy as originally planned. However, a certain amount of variability in treatment delivery across the dyads could be found. In this context, it should be noted that there is literature which suggests that strict fidelity to therapy procedures indeed hinders successful therapy delivery (see Craig et al., 2008). Consequently, an intervention may work better if adaptation to specific settings or situations is allowed. This is crucial when defining fidelity levels for a specific therapy as high or acceptable. A challenge for future investigations could therefore be to set a fidelity benchmark for the BCA therapy. In general, it seems that the achieved fidelity and quality levels of the BCA therapy can be regarded as high, at the same time reflecting a certain amount of flexibility in therapy delivery, which might be desirable for such an interactive therapy approach.

There are certain limitations of the thesis which should be considered. Firstly, a macroanalytic level of the procedural section with fewer items should be aimed for in future research, in order to solely include essential BCA elements. However, a microanalytic approach (as used in the present investigation) may be appropriate for small-scale studies or single-subject case design, or if the active

ingredients of a therapy programme are not known yet. Nevertheless, the active ingredients of the BCA therapy should be tried to be identified in a next step. To achieve this, further empirical research using the BCA therapy is needed in order to compare therapy outcomes and fidelity data of the BCA therapy approach. Once the active ingredients are known, the current fidelity tool can be amended and changed into a more specific instrument (e.g. by including a weighing process as discussed in chapter 6). Secondly, in terms of the quality of therapy delivery, one should keep in mind that, as pointed out by Egan (1998), "effective helpers use a mix of styles, skills and techniques tailored to the kind of relationship that is right for each client" (p. 50). This suggestion needs to be taken into account when trying to refine the criteria that define a skilful therapy delivery. Furthermore, in case a future BCA therapy study involves an experimental as well as a control group, i.e. comparing two different therapy approaches, the fidelity tool needs to be refined in terms of defining unique and prescribed therapist behaviour associated with BCA (see also Waltz et al., 1993). A fidelity evaluation, to discuss the third limitation of the current thesis, should include a variety of measures: apart from observation, researchers should make use of interviews, patient surveys and document analyses. Especially with regard to capturing client attitudes towards BCA, interview data might be a useful enhancement for a fidelity evaluation.

The examination of adherence as a main part of TF is useful to interpret the outcomes of therapy (i.e. having more confidence to relate therapy outcomes to the therapy as planned). However, as therapeutic methods and techniques contribute to the success of therapy only with a small percentage (see chapter 2, section 2.2.2), it is probably too imprecise to directly relate fidelity scores (i.e., adherence) to the BCA outcomes. This aspect provides the rationale to include process-related aspects in a fidelity evaluation.

In summary, the present thesis showed the multifaceted nature of TF and its importance and value for a complex speech and language therapy for aphasia. The findings from this thesis contribute to the growing prominence of TF in the field of speech and language therapy, especially with regard to the methodological quality of research reports. There is a strong need for creating further fidelity tools for conversation-based therapy approaches. Moreover, the TF terminology needs to be unified across different research fields and concrete recommendations (for 'what to analyse' and 'what to measure') need to be developed. To put it in one sentence: there needs to be more 'fidelity' for the concept of TF.

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Appendix

Appendix 1

List of all handouts used in the BCA therapy programme

	Name of the handout	Synopsis
Better Conversations with Aphasia – therapy programme	*1.1 So what is agrammatism?*	Outlines the characteristics of agrammatic language output
	1.2 Conversations of people with agrammatic aphasia	Highlights the characteristics of conversations between non-impaired speakers and how agrammatism affects this
	1.3 About your conversations – Home activity 1	2 things that go well / do not go well in conversation
	2.1 The aim of turns	Lists common aims of turns, e.g. asking or answering a question, making a comment etc.
	2.2 Building turns	Explains how turns are normally built (e.g. with the help of facial expression) and how turns are built in people with agrammatism
	2.3 Strategies to help turn building	Lists strategies (e.g. gesture, intonation) that can help to build turns. PWA to tick what they already use.
	2.4 Talking pen challenge – Home activity 2 (An activity to increase your awareness of turns)	PWA and CP to hold a pen whenever somebody takes a turn. When not holding the pen, the person must only listen.
	3.1 Your conversation troubles and repairs – Home activity 3	What are the main things that go wrong in your conversations, who notices when there is a problem and how are problems solved?
	4.1 Common problems with turn-taking in agrammatism (Additional material used with SPPARC Handout C36a)	Outlines potential problems in conversation (with examples). PWA and CP to tick if a problem happens to them.
	4.2 Turn building strategies for the person with aphasia	Lists turn building strategies for the PWA. PWA to tick three strategies to work on.
	4.3 Building turns in conversation – Home activity 4 (A chance to practice some strategies)	Three strategies that will be practiced during the week (by the PWA): Note down examples of practising and how they felt afterwards.
	5.1 Are you leaving pauses? (Additional material used with SPPARC Handout C37a/b)	Strategies for the PWA and the CP if there are very long pauses in their conversations.
	5.2 Good turn-taking strategies to use with your conversation partner (Additional material used with SPPARC Handout C42a/b)	Lists possible trouble spots (e.g. not understood the PWA's turn) and strategies to keep conversation going. CP to tick which of them he/she would like to work on.
	5.3 Turn-taking in conversation – Home activity 5	Three strategies that will be practiced during the week (by the CP): Note down examples of

	(A chance to practice some strategies)	practising and how they felt afterwards.
	6.1 Common problems with topic in agrammatism	Lists common problems with topic (e.g. not sure whether the turn of the PWA indicates a new topic) with examples. Dyad to tick which of these happen to them.
	6.2 Joining forces – Home activity 6 (Conversational strategy practice for both of you)	Dyad to note down examples of practicing their chosen strategies during the week. (Which strategy used, did it work etc.)
	7.1 PWA strategy prompt card template	Lists PWA strategies
	7.2 CP strategy prompt card template	Lists CP strategies
	7.3 Putting your strategies into use – Practice Activity	Dyad to note down examples of practicing their chosen strategies during the week. (Which strategy used, did it work etc.)
	7.4 Putting you strategies into use – Conversation video	Explanation of preparation of home activity in order to present it in the last session.
	8.1 Conversation tips	Summarises the strategies used by the PWA and the CP.
SPPARC conversation training programme	*C4 Why is Conversation Important?*	Highlights the connection between conversation and friendships, relationships and the life roles people have.
	C5 What Do We use Conversation For?	Lists potential purposes of conversation (e.g. *What may be; What we'd like to do*) with some examples.
	C6 What Do You Talk About?	Lists 20 topics of conversation talked about in 1.5 hours by Jack, who has mild aphasia, and Judith. Encourages a couple to consider topics they talk about.
	C7 So What Is Conversation?	Provides a definition of 'conversation' (sequence of turns, collaboration) and gives an overview of the roles each person can have: message sender or receiver.
	C8 'Yes', 'No' & 'And': A Case of Hidden Ability!	Shows that these three words are sufficient for a person with aphasia to take part in a conversation, if a conversation partner knows how to help.
	C9 Conversation and Aphasia	Highlights that having conversations is difficult with aphasia, and may lead to social isolation if friends find it embarrassing that they can't understand.
	C10 Keeping Conversation Going: A Joint Effort	Highlights how keeping conversation going requires teamwork. Shows how a listener gives clues to a talker to keep going (e.g., uh huh, eye contact, nodding).
	C11a/b Problems with Conversation	Gives an example of a 'good' conversation where the turns between sender and receiver are orderly. Then of a problem with turn taking caused by aphasia. Introduces the idea that dealing with a problem is *repair*.
	C12 What Happens when Things Go Wrong in Conversation?	Shows three steps (of repair) that usually occur when there is a problem: 1) a problem happens, 2) somebody notices it, and 3) somebody solves it.
	C13a-e Dealing with Problems: Step One	Gives information about the most common difficulties that might cause a problem in aphasic conversation such as word-finding difficulties, telegraphic speech etc.
	C14a/b Dealing with Problems: Step Two	Gives detailed information about possible patterns when somebody notices a problem in

		conversation: e.g., the partner notices a problem with the PWA's turn.
	C15a/b Dealing with Problems: Step Three	Gives detailed information about possible patterns when somebody solves a problem in conversation: e.g., the PWA solves a problem first noticed by the partner.
	C27 About Turns: The rules of turn-taking	Outlines the characteristics of balanced conversations (e.g., turns are taken in an orderly way) and how aphasia can lead to turn-taking rules being broken.
	C31a Why Are You Overlapping Your Partner with Aphasia's Turn?	Encourages the partner to think about possible reasons why he or she might speak before the PWA's turn is finished. Alternative strategies are introduced.
	C34: Balancing Turns	Encourages reflection on the balance of turns (currently and prior to aphasia) and about what each is doing when taking a turn (e.g., asking lots of questions; correcting).
	C35a/b Turn-Taking Patterns of Partners	The partner is asked to tick turn-taking patterns they recognise that they use (e.g., pattern of asking questions; asking test questions; using passing turns). Each pattern is illustrated with an example.
	C36a-c Turn-Taking Patterns of People with Aphasia	The couple are asked to tick turn-taking patterns they recognise in the speaker with aphasia (e.g., pattern of minimal turns, gaps, stopping the conversation).
	C37a/b Identifying Turn-Taking Patterns and Strategies of Partners	Encourages the partner to reflect on why they use certain turn-taking patterns (e.g., asking test questions). He or she is asked to think about other strategies (e.g., "*Try to cut [test questions] out when you are chatting*") or is referred to handouts for strategies to try instead.
	C42a/b Strategies for Turn-Taking	Strategies such as make a comment, use a passing turn etc. are listed and illustrated with examples, to give the partner ideas to help the PWA take more turns.
	C45 Topics of Conversation	Illustrates the influence on conversation of an interesting topic, and outlines difficulties with topic due to aphasia.
	C46b-e 'On Top of Topic' Activity	A flow chart helps the couple to reflect on their topics of conversation. Encourages reflection on how they start topics and how they keep topics going.
	C47a/b 'Follow the Conversation Leader' Activity	Gives written examples from real conversations with aphasia. The partner is asked to think of what to say next to help the PWA develop a topic of conversation.

Appendix 2

Example of a treatment delivery assessment form for a multimethod treatment (source: Lichstein, Riedel & Grieve, 1994, employed by Lewinsohn et al., 1990)

Treatment Delivery Assessment

Procedure	Delivered: None	Part	Full	Weighted %	Score
Positive Behaviors					
Review past week	0	.5	1	15	
Relaxation:					
relaxed attitude	0	.5	1	20	
breath meditation	0	.5	1	15	
passive relaxation	0	.5	1	15	
autogenic phrases	0	.5	1	15	
Emphasize home practice	0	.5	1	20	
				Sum Positive Behaviors	
Negative Behaviors					
Stimulus Control Treatment	0	.5	1	20	
Social and Recreational Activity	0	.5	1	15	
Depression Treatment	0	.5	1	15	
				Sum Negative Behaviors	
				Total Assessment Score	

Note: The authors listed desired, positive behaviours, and added negative behaviours that have not been intended to be delivered (differentiation). Furthermore, they weighted the items for their estimated therapeutic potency.

Example of a TF checklist (source: Johnson et al., 2007)

General Instructions: The clinician should complete a Treatment Fidelity Checklist for each session immediately after the session to indicate the degree to which the session Goals and Parent Objectives were accomplished. The Goals pertain to clinician behavior while the objectives relate to parent response. If a goal was not introduced or covered the clinician should provide an explanation of what occurred. A place is provided for this at the end of the checklist. **This form should be used for any visit which covers this material. Enter the date for which the rating is applicable in the space provided. This will allow for documentation of all topics covered.** ***Only circle 0, at the last session, if the session material was not covered at any session in the study.***

The following scale should be used to rate the degree to which session goals were attained.
0 = Goal was not introduced or covered by the clinician
1 = Goal was partially achieved
2 = Goal was fully achieved

Goals:	**Rating:**	**Date:**
1. Review concepts from previous session & home data collection.	0 1 2 N/A	___/___/___
2. Introduce concept of functional equivalence training.	0 1 2 N/A	___/___/___
. Introduce procedural steps of functional equivalence training.	0 1 2 N/A	___/___/___
4. Provide examples of functional equivalence training.	0 1 2 N/A	___/___/___
5. Discuss relevance of functional equivalence training relative to this child.	0 1 2 N/A	___/___/___
A total score of 8 (80%) and higher reflects adequate treatment fidelity.	**Total Score:** ___	

The following scale should be used to rate the degree to which the parent participated, responded correctly, and completed activities.
0 = Parent did not demonstrate skill or understanding
1 = Parent understood or responded correctly to a few of the queries
2 = Parent understood and responded correctly to nearly all queries (incorrect response of less than 2)

Parent Objectives:	**Rating:**	**Date:**
1. Parents will have complete home data collections.	0 1 2 N/A	___/___/___
2. Parents will demonstrate with their child the skill introduced from last session (optional).	0 1 2 N/A	___/___/___
3. Parents will give an example of a functional communication / equivalence behavior in response to FCT activity sheet.	0 1 2 N/A	___/___/___
4. Parents will generate a functional equivalence behavior for their child.	0 1 2 N/A	___/___/___
A total score of 5 (80%) and higher reflects adequate treatment fidelity (excluding optional 2.)	**Total Score:** ___	

This document completed by (initials): ☐ ☐ ☐

Appendix 3

Ethics proforma

Pro-forma for ethical issues

If you yourself prepared an application for ethical approval, you should include the **main application form**, **consent form** and **information sheet** as an Appendix to your project report. Otherwise, complete the appropriate sections of this form and include it as an Appendix to the project report.

1/ Did your project involve:

a) the use of medical or educational records collected as part of normal medical treatment or educational practice? **No**

b) the use of research data (any data excluding that covered by a) above) previously collected by other researchers? **Yes**

c) you and/or colleagues collecting new research data (any data not covered by a) above) from participants? **No**

If the answer to a) is yes, complete questions 2, 4, 5, 6 &11

If the answer to b) is yes, complete sections 3, 4, 5, 6 & 11

If the answer to c) is yes, complete sections 4 to 11

The answers to a) b) and c) cannot all be "no" unless your report was based purely data that were already in the public domain.

If the answer to more than one of a) to c) above is yes, complete all the relevant sections.

All students should consider the questions in section 11 and answer appropriately.

2/ Projects using routine medical or educational records (e.g. clinical audit)

Summarise the process by which permission was given for the data to be used in your project (no more than 100 words)
N/A

3/ Projects using research data collected by others

Summarise the ethical approval process that governed data collection

(no more than 100 words)

The current project is linked to the main research project "A new conversation-based therapy for people with agrammatic aphasia and their conversation partners". Ethical approval was obtained by the team of the main project. It was approved by Cambridgeshire 1 NHS Research Ethics Committee. The reference number of the ethical approval is 08/H0304/40.

Questions for ALL projects

4/ Management and storage of personal data

Was any personal data stored? **Yes**

If so please describe the precautions taken to ensure that data was kept confidential.

The following section is a description as stated in the ethics application form of the main project (p. 16):

"If people consent to take part in the project, personal data will be stored in a word document on the Research SLT's password−protected personal drive allocation on the Chandler House network server until the end of the project. Only members of the research team will have access to this information, via a password. If people identified as potential participants decide not to take part, any information already passed to the Research SLT by an SLT collaborator will be destroyed. Regardless of participation status, all emails used to communicate contact and personal details will be deleted from the Research SLT's machine once the data therein has been processed. Participant names will never be used in the subject line of any email correspondence. UCL stores its research data in strict compliance with the Data Protection Act 1998, and the project is registered with the Data Protection Officer (number: Z6364106/2008/2/40, Section 19, Health Research). Each participant will be assigned a pseudonym on joining the project that will be used in all future references to that participant − the participant's real name will NEVER appear in/on videotape or CD/DVD labels, file names, data transcripts, assessment forms or the video archive, nor will it ever be used for identification during either written or verbal dissemination of results. No other personal details that could lead to identification of the participant will appear on transcripts, tapes or in the video archive. Video tapes will be stored in a locked filing cabinet in the Research SLT's office until the data have been uploaded to the UCL Archive of Human Communication, which is secure and has restricted access (see A44 for further details). Video clips stored on the Research SLT's laptop computer, to replay to participants during therapy, will be protected by password−protecting the laptop. With respect to video recordings, we can assure confidentiality but not anonymity. While it is possible to protect identities by using pseudonyms, it is not possible to prevent a situation in which a person might identify a participant by sight (e.g. during the presentation of results) from a video clip, as unlikely as this may be. In our 11 years' experience of presenting this type of research, it has happened only once, when another SLT researcher recognised a participant because he had also been a volunteer for that researcher's own work. We mitigate for this situation by reminding all people who come into contact with our data of the need to protect the identity of research participants, and we refer allied health professionals to their own professional codes of ethics which stipulate such requirements. It is not appropriate to obscure the faces of participants in video recordings because the analysis of conversation (and the

therapy process itself) requires access to non−verbal communication such as facial expression and eye gaze. Past research, our own and that of others, has highlighted the vital role that non−verbal communication plays in the interactions of people with aphasia, where facial expressions, eyebrow flashes and gaze are often used as compensatory strategies when aphasic language fails to adequately convey a message."

5/ Dissemination of data and results

a) Have the results been or will the results be disseminated apart from standard academic outlets? **No**

If yes specify and explain why.

b) Has personal data been passed to other individuals or authorities? **No**

If yes specify and explain why.

6/ Size of participant group(s);

Number in group:	**The group in the main research project consisted of 20 participants. The current project consisted of 14 participants (7 people with aphasia and their conversation partners)**
Upper age limit:	**None**
Lower age limit:	**18 years of age**

Duplicate Table for any additional groups

Justify the choice of the group size(s)

In this study, aspects of treatment fidelity are investigated. Therefore, a subset of the videoed therapy sessions of 14 participants (7 dyads, whereas one dyad consists of a person with agrammatic aphasia and their conversation partner) is analysed further as part of the main research project.

Questions for data collection projects

7/ Informed consent

Insert the project information sheet and consent form after this proforma as evidence that informed consent was obtained. **N/A**

8/ Incentives to take part

Was payment or any other incentive, such as a gift or service offered to any research participant? **No**

If yes please specify,

9/ Recruitment

How were participants recruited?

N/A

10/ Deception and debriefing

a) Was any form of deception used? **N/A**

If yes, please explain why and how this was handled

b) Was a full debriefing provided to the participants? (for example to explain deception or to give details that were withheld before data collection) **N/A**

If 'No', please explain why not.

11/ For all projects

a) Outline any anticipated ethical issues arising from the study and how they were addressed.

The following section is a description as stated in the ethics application form of the main project (p. 25):

From our considerable experience of conducting speech and language therapy research, particularly projects involving conversation data, we know that (i) video recording, and (ii) storage of data are the main ethical issues from the participant's point of view. We propose to address these issues in the following ways, based on our prior knowledge and experience:

1. the information sheet and consent form will clearly state the purpose of video recording, and how data will be stored;

2. the Research SLT will discuss video recording and data storage issues with potential participants prior to their decision about involvement, and they will have the opportunity to ask questions;

3. written consent will be explicitly gained for the video recording of conversations in the home, and for data to be stored in the ways explained;

4. all digital video data will be stored securely and curated by UCL Library Services via the UCL digital Archive of Human Communication;

5. original video tapes of data will be stored securely in a locked filing cabinet in the Research SLT's office until they have been uploaded to the digital archive.

6. access to video data via the archive will be restricted to responsible academics and SLT researchers who have signed a 'terms of use' agreement that explicitly states the need to respect participant confidentiality and identity;

7. personal information and assessment results will be anonymised via the allocation to each participant of a false name, to be used at all times, and stored on a password protected computer;

8. we make it clear to participants that there is a possibility that they may be recognised when we play video clips during dissemination of research findings to other professionals, because the nature of the data analysis precludes the blanking out of their faces, but we assure them that this risk is minimal (it has only occured once in 11 years of previous research conducted by the team);

9. the presentation of short video clips for illustrative purposes during the reporting of project findings will be to responsible healthcare professionals, students and academics, who will be reminded of the need to respect participant confidentiality and identity;

10. the project stores and handles its data with reference to the Data Protection Act 1998, and is registered with the UCL Data Protection Officer (Z6364106/2008/2/40 Section 19, Health Research). It is worthy of note that we have never had a potential participant decline to take part in our research as a result of such data collection or storage policies. Participants commonly report a strong desire to help others in their situation by donating their conversations and assessment data for future research, and not just for the duration of the project to which they are recruited.

b) Were there any unanticipated ethical issues?	**No**
Please specify and indicate how any such issue was addressed	

Appendix 4

Description of the participants (extension of Table 3; source: main project data base)

Dyad N^{O}: PWA pseudonym	***Age at time of recruitment (in years)***	***Sex***	***Aetiology***	***Previous intervention***
1: Kate	49	F	Left middle cerebral artery (MCA) infarct and damage of insula	3.5 months inpatient on a stroke unit, 3 months inpatient rehabilitation centre, 18 months community speech and language therapy
2: Simon	39	M	Large left middle cerebral artery infarct	11 days as an acute in-patient, 3 months inpatient-rehabilitation unit, community speech and language therapy
3: Giles	55	M	Large left middle cerebral artery infarct and damage of thalamus	6 months in-patient, 2-3 years outpatient speech and language therapy
4: Graham	63	M	Left middle cerebral artery infarct with the fronto-temporal cortex taking the brunt	1 month in an intensive care unit, 12 weeks inpatient rehabilitation, 6 weeks community speech and language therapy, 2004-2007 private speech and language therapy sessions
5: Jill	57	F	Left middle cerebral artery infarct	4 months acute rehabilitation, 6 months weekly private speech and language therapy, 8 sessions NHS speech and language therapy, gesture project at City University London for 8 months
6: Barry	60	M	Left middle cerebral artery infarct	5-6 weeks in an acute ward (daily speech and language therapy), 1 year outpatient
7: Maggie	71	F	Left frontotemporoparietal infarct with extension to the basal ganglia; large CVA	Acute inpatient for five months, 6 months community speech and language therapy

Note: F=female; M=male.

Appendix 5

Raw data of selected language assessments of the participants pre therapy (source: main project database) including norms (norms taken from Beckley et al., 2013)

	Object and Naming Battery (each out of 10)						**PALPA 53 - written single words (out of 30)**			**PALPA 47 - spoken word picture matching (out of 40)**	**PALPA 4 - minimal pair discrimination (out of 40)**	**CAT Comprehension of written sentences (out of 32)**			**Pyramids and Palm Trees Test (out of 52)**
	PTA 1		**PTA 2**		**PTA 3**		**PTA 1**	**PTA 2**	**PTA 3**	**PTA**	**PTA**	**PTA 1**	**PTA 2**	**PTA 3**	**PTA**
	Objects	**Verbs**	**Objects**	**Verbs**	**Objects**	**Verbs**									
	No norms available						*No norms available*			*Norm: **39.29***	*Norm: **39***	*Norm mean: **29.78**; Norm post-acute aphasic: **17.02***			*Norm: **98-99%** (50.9-51.5)*
PWA 1	8	3	8	3	9	2	13	17	16	38	40	18	16	18	50
PWA 2	9	8	8	4	8	5	23	22	23	36	40	14	20	20	52
PWA 3	9	2	10	2	8	3	1	5	7	39	40	19	20	20	51
PWA 4	3	2	4	3	3	1	10	14	15	35	29	9	13	13	48
PWA 5	6	2	6	2	4	2	16	17	19	24	30	12	9	11	51
PWA 6	5	5	4	6	3	4	13	15	14	39	38	18	20	18	50
PWA 7	4	4	3	4	5	3	0	0	0	35	34	7	7	14	49

Note: PALPA=Psycholinguistic Assessments of Language Processing in Aphasia; CAT= Comprehensive Aphasia Test; PWA=person with aphasia; PTA=Pre therapy assessment.

Rater: _____

Appendix 6

Procedural section of the fidelity tool

Session 1- Introduction to conversation and agrammatism					
Procedural section: Essential content of the therapy programme					
Item	*Rating*	*Classification*		*Notes (timing is important)*	*Domain*
The therapist gave an overview of the therapy structure.	0 / 0.5 / 1	E1	adh/com		Providing a structure of the therapy
The therapist explored the dyad's understanding of conversation.	0 / 0.5 / 1	E2	adh/com		Having a discussion to raise awareness of conversation behaviours in general
The therapist introduced SPPARC-handout C7 (So What Is Conversation?).	0 / 0.5 / 1	E3	adh		Talking through handouts to raise awareness of conversation behaviours in general
The therapist introduced SPPARC-handout C5 (What Do We Use Conversation For?).	0 / 0.5 / 1	E4	adh		Talking through handouts to raise awareness of conversation behaviours in general
The therapist introduced SPPARC-handout C4 (Why Is Conversation Important?).	0 / 0.5 / 1	E5	adh		Talking through handouts to raise awareness of conversation behaviours in general
The therapist introduced SPPARC-handout C6 (What Do You Talk About?).	0 / 0.5 / 1	E6	adh		Talking through handouts to raise awareness of conversation behaviours in general

Rater: _____

The therapist had a discussion with the dyad on how aphasia affects conversations.	0 / 0.5 / 1	E7	adh/com		Having a discussion to raise awareness of conversations with aphasia in general
The therapist did the SPPARC-activity C8 'Yes, No & and'-activity with the conversation partner to give the CP greater insight into the PWA's feelings. (Note: if relevant)	0 / 0.5 / 1	E8	adh/com		Doing role play to raise awareness of conversations with aphasia
The therapist introduced SPPARC-handout C9 (Conversation and Aphasia).	0 / 0.5 / 1	E9	adh		Talking through handouts to raise awareness of conversations with aphasia in general
The therapist introduced SPPARC-handout C10 (Keeping Conversation Going).	0 / 0.5 / 1	E10	adh		Talking through handouts to raise awareness of conversations with aphasia in general
The therapist showed video examples of agrammatism.	0 / 0.5 / 1	E11	adh		Showing videos (own and other PWA) to raise awareness of conversations with aphasia in general
The therapist introduced BCA-handout 1.1 (So what is agrammatism?).	0 / 0.5 / 1	E12	adh		Talking through handouts to raise awareness of conversations with aphasia in general
The therapist introduced BCA-handout 1.2 (Conversations of people with agrammatic aphasia).	0 / 0.5 / 1	E13	adh		Talking through handouts to raise awareness of conversations with aphasia in general
The therapist showed another video example.	0 / 0.5 / 1	E14	adh		Showing videos (own and other PWA) to raise awareness of conversations with aphasia in general

Rater: _____

The therapist assigned the home activity and explained the BCA-handout 1.3. (About your conversations).	0 / 0.5 / 1	E15	adh		Assigning/ Reviewing home activity to raise awareness of conversations with aphasia in general
Total raw score					

Qualitative Section: Fundamental principles of the therapy programme and counselling-related skills				
Item	*Rating*	*Classification*		*Notes*
The **overall aim** of the session, to raise the dyad's overall awareness of conversation, was reached.	0 / 0.5 / 1*	P	com	
The therapist supplied individualised advice (based on analyses of conversation between the PWA and the CP).	0 / 0.5 / 1**	P	com	
The therapist avoided making judgments about what conversation patterns the dyad should retain or change.	N/A	P	com	
The therapist focused both on the PWA and on the CP, so that the PWA and CP had equal roles during the session.	0 / 0.5 / 1**	P	com	
The therapist guided the dyad to make their own choices.	N/A	P	com	
The therapist affirmed and encouraged the dyad.	0 / 0.5 / 1**	C	com	
The therapist expressed warmth and empathy towards the dyad.	0 / 0.5 / 1**	C	com	
The therapist gave skilful summaries of what has been said.	0 / 0.5 / 1**	C	com	
The therapist used active listening skills.	0 / 0.5 / 1**	C	com	

Client-focused section, e.g. discussions (extemporised by the dyad):		
Type of item (additional discussion, significant reaction by PWA/CP, etc.)	*In relation to… (e.g., E2+timing)*	*Notes:*

0=not delivered, 0.5=partly delivered, 1=fully delivered; *0= I don't agree; 0.5= I partly agree; 1=I fully agree ** 0=not at all; 0.5=occasionally; 1=most of the time

Rater: _____

Session 2 – turns, sequences and actions 1 - introduction					
Procedural section: Essential content of the therapy programme					
Item	*Rating*	*Classification*		*Notes (timing is important)*	*Domain*
The therapist reviewed the home activity.	0 / 0.5 / 1	E16	adh		Assigning/ Reviewing home activity to raise awareness of conversations with aphasia in general
The therapist asked the dyad to remember 2 things from session 1 about agrammatism and conversation.	0 / 0.5 / 1	E17	adh		Reviewing the last session(s)
The therapist had a discussion with the dyad on turns and sequences.	0 / 0.5 / 1	E18	adh/com		Having a discussion to support identification of own conversation behaviour
The therapist introduced SPPARC-handout C27 (About Turns).	0 / 0.5 / 1	E19	adh		Talking through handouts to raise awareness of conversation behaviours in general
NOTE: In the session this SPPARC-handout was originally split into 2 separate aphasia-friendly handouts, so the therapist introduced 2 handouts.	0 / 0.5 / 1	E20	adh		Talking through handouts to raise awareness of conversation behaviours in general
The therapist had a discussion with dyad on functions of talk.	0 / 0.5 / 1	E21	adh/com		Having a discussion to support identification of own conversation behaviour
The therapist introduced BCA-handout 2.1 (The aim of turns).	0 / 0.5 / 1	E22	adh		Talking through handouts to raise awareness of conversations with aphasia in general
The therapist showed video examples from conversations (2 out of three) and asked what type of turn people in these conversations are taking.	0 / 0.5 / 1	E23	adh		Showing videos (own and other PWA) to raise

Rater: _____

					awareness of conversations with aphasia in general
The therapist introduced BCA-handout 2.2 (Building turns)	0 / 0.5 / 1	E24	adh		Talking through handouts to raise awareness of conversations with aphasia in general
The therapist supported the PWA to explore turn building strategies the PWA uses.	0 / 0.5 / 1	E25	adh/com		Talking through handouts to raise awareness of conversations with aphasia in general
The therapist introduced BCA-handout 2.3 (Strategies to help turn building).	0 / 0.5 / 1	E26	adh		Talking through handouts to support identification of own conversation behaviour
The therapist showed a video example of the dyad.	0 / 0.5 / 1	E27	adh		Showing videos (own) to support identification of own conversation behaviour
The therapist asked the dyad to identify the strategies the PWA uses.	0 / 0.5 / 1	E28	adh		Having a discussion to support identification of own conversation behaviour
The therapist showed own video example again and asked the CP what he/she is doing in response to PWA turns.	0 / 0.5 / 1	E29	adh		Showing videos (own) to support identification of own conversation behaviour
The therapist reinforced CP's effective turns in response to PWA turns.	0 / 0.5 / 1	E30	adh/com		Having a discussion to support identification of own conversation behaviour
The therapist introduced the idea that both PWA and CP will develop new strategies to use when building/responding to turns in therapy.	0 / 0.5 / 1	E31	adh		Providing a structure of the therapy
The therapist asked whether PWA and CP use a communication book or use	0 / 0.5 / 1	E32	adh		-

Rater: _____

any other external strategies for helping conversation.					
The therapist assigned the home activity and introduced the BCA-handout 2.4 (Talking Pen Challenge).	0 / 0.5 / 1	E33	adh		Assigning / Reviewing home activity to support identification of own conversation behaviour
Total raw score					

Qualitative Section: Fundamental principles of the therapy programme and counselling-related skills				
Item	*Rating*	*Classification*		*Notes*
The **overall aim** of the session, to raise the dyad's awareness of different aims of turns, was achieved.	0 / 0.5 / 1*	P	com	
The therapist supplied individualised advice (based on analyses of conversation between the PWA and the CP).	0 / 0.5 / 1**	P	com	
The therapist avoided making judgments about what conversation patterns the dyad should retain or change.	0 / 0.5 / 1**	P	com	
The therapist focused both on the PWA and on the CP, so that the PWA and CP had equal roles during the session.	0 / 0.5 / 1**	P	com	
The therapist guided the dyad to make their own choices.	0 / 0.5 / 1**	P	com	
The therapist affirmed and encouraged the dyad.	0 / 0.5 / 1**	C	com	
The therapist expressed warmth and empathy towards the dyad.	0 / 0.5 / 1**	C	com	
The therapist gave skilful summaries of what has been said.	0 / 0.5 / 1**	C	com	
The therapist used active listening skills.	0 / 0.5 / 1**	C	com	

Client-focused items, e.g. discussions (extemporised by the dyad) and home activity:		
Type of item (additional discussion, significant reaction by PwA/CP, etc.)	*In relation to… (e.g., E2 + timing)*	*Notes*
Did the dyad do their home activity?	Yes / partly / no	

0=not delivered, 0.5=partly delivered, 1=fully delivered; *0= I don't agree; 0.5= I partly agree; 1=I fully agree ** 0=not at all; 0.5=occasionally; 1=most of the time

Rater: _____

Session 3 – trouble and repair					
Procedural section: Essential content of the therapy programme					
Item	*Rating*	*Classification*		*Notes (timing is important)*	*Domain*
The therapist asked the dyad to remember 2 things from session 2 about how turn taking **and reviewed the home activity**.	0 / 0.5 / 1	E34	adh		Reviewing the last session(s).
The therapist asked the dyad to tell her what happens when things go wrong in conversation.	0 / 0.5 / 1	E35	adh/com		Having a discussion to support identification of own conversation behaviour
The therapist asked the dyad to tell her who they think sorts it out.	0 / 0.5 / 1	E36	adh/com		Having a discussion to support identification of own conversation behaviour
The therapist thereby made a link to home activity from session 1 (Things that go well in conversation and things that are often difficult when having conversations).	0 / 0.5 / 1	E37	adh/com		-
The therapist introduced SPPARC-handout C11a+b (Problems with Conversation) and introduced the concept of repair.	0 / 0.5 / 1	E38	adh		Talking through handouts to support identification of own conversation behaviour
The therapist introduced SPPARC-handout C12 (What Happens When Things Go Wrong in Conversation?).	0 / 0.5 / 1	E39	adh		Talking through handouts to support identification of own conversation behaviour
The therapist showed a video example of a successful conversation repair.	0 / 0.5 / 1	E40	adh		Showing videos (own) to support identification of own conversation behaviour
The therapist introduced SPPARC-handout 13a-e (Dealing with Problems: Step One).	0 / 0.5 / 1	E41	adh		Talking through handouts to support identification of own conversation behaviour
The therapist asked dyad to pick trouble sources from the handout.	0 / 0.5 / 1	E42	adh		Talking through handouts to support identification of own conversation behaviour
The therapist introduced SPPARC-handout C14a+b (Dealing with Problems: Step Two).	0 / 0.5 / 1	E43	adh		Talking through handouts to support identification of own conversation behaviour

Rater: _____

The therapist introduced SPPARC-handout C15a+b (Dealing with Problems: Step Three)	0 / 0.5 / 1	E44	adh		Talking through handouts to support identification of own conversation behaviour
The therapist showed own video example.	0 / 0.5 / 1	E45	adh		Showing videos (own) to support identification of own conversation behaviour
The therapist asked the dyad to tell her what goes wrong in that conversation.	0 / 0.5 / 1	E46	adh		Having a discussion to support identification of own conversation behaviour
The therapist asked the dyad to tell her who notices the problem.	0 / 0.5 / 1	E47	adh		Having a discussion to support identification of own conversation behaviour
The therapist asked the dyad who solves the problem.	0 / 0.5 / 1	E48	adh		Having a discussion to support identification of own conversation behaviour
The therapist showed another own video example.	0 / 0.5 / 1	E49	adh		Showing videos (own) to support identification of own conversation behaviour
The therapist asked the dyad to tell her what goes wrong in that conversation.	0 / 0.5 / 1	E50	adh		Having a discussion to support identification of own conversation behaviour
The therapist asked the dyad to tell her who notices the problem.	0 / 0.5 / 1	E51	adh		Having a discussion to support identification of own conversation behaviour
The therapist asked the dyad who solves the problem.	0 / 0.5 / 1	E52	adh		Having a discussion to support identification of own conversation behaviour
The therapist assigned home activity and introduced the BCA-handout 3.1 (Your conversation troubles and repairs). (Which main things go wrong in your conversations? Who notices when there is a problem? How are problems solved?)	0 / 0.5 / 1	E53	adh		Assigning / Reviewing home activity to support identification of own conversation behaviour
Total raw score					

Rater: _____

Qualitative Section: Fundamental principles of the therapy programme and counselling-related skills				
Item	*Rating*	*Classification*		*Notes*
The **overall aim** of the session, to raise the dyad's awareness of repair in general, was achieved.	0 / 0.5 / 1*	P	com	
The **overall aim** of the session, to help the dyad to identify own patterns of repair, was achieved.	0 / 0.5 / 1*	P	com	
The therapist supplied individualised advice (based on analyses of conversation between the PWA and the CP).	0 / 0.5 / 1**	P	com	
The therapist avoided making judgments about what conversation patterns the dyad should retain or change.	0 / 0.5 / 1**	P	com	
The therapist focused both on the PWA and on the CP, so that the PWA and CP had equal roles during the session.	0 / 0.5 / 1**	P	com	
The therapist guided the dyad to make their own choices.	0 / 0.5 / 1**	P	com	
The therapist affirmed and encouraged the dyad.	0 / 0.5 / 1**	C	com	
The therapist expressed warmth and empathy towards the dyad.	0 / 0.5 / 1**	C	com	
The therapist gave skilful summaries of what has been said.	0 / 0.5 / 1**	C	com	
The therapist used active listening skills.	0 / 0.5 / 1**	C	com	
Client-focused section, e.g. discussions (extemporised by the dyad) and home activity:				
Type of item (additional discussion, significant reaction by PwA/CP, etc.)	*In relation to… (e.g., E2 + timing)*	*Notes*		
Did the dyad do their home activity?	Yes / partly / no			

0=not delivered, 0.5=partly delivered, 1=fully delivered; *0= I don't agree; 0.5= I partly agree; 1=I fully agree ** 0=not at all; 0.5=occasionally; 1=most of the time

Rater: _____

Session 4 – turns, sequences and actions 2 – Strategies for the person with aphasia					
Procedural section: Essential content of the therapy programme					
Item	*Rating*	*Classification*		*Notes (timing is important)*	*Domain*
The therapist reviewed the home activity (for dyads 1+2: This was talking pen challenge!).	0 / 0.5 / 1	E54	adh		Assigning / Reviewing home activity to support identification of own conversation
The therapist asked the dyad to remember 2 key things about turn taking and building turns.	0 / 0.5 / 1	E55	adh		Reviewing the last session(s)
The therapist had a discussion with the dyad on issues with turn taking in general.	0 / 0.5 / 1	E56	adh/com		Having a discussion to support identification of own conversation behaviour
The therapist introduced SPPARC-handout C34 (Balancing Turns).	0 / 0.5 / 1	E57	adh		Talking through handouts to support identification of own conversation behaviour
The therapist introduced BCA-handout 4.1 (Common problems with turn-taking in agrammatism).	0 / 0.5 / 1	E58	adh		Talking through handouts to support identification of own conversation behaviour
The therapist discussed strategies for PWA new and more of the same.	0 / 0.5 / 1	E59	adh/com		Having a discussion to facilitate the identification of strategies for change
The therapist showed 2 video clips.	0 / 0.5 / 1	E60	adh		Showing videos (own) to support identification of strategies for change
The therapist asked the PWA to identify what the problem with turn-taking is.	0 / 0.5 / 1	E61	adh		Having a discussion to facilitate the identification of strategies for change
The therapist introduced BCA-handout 4.2 (Turn building strategies for the person with aphasia) and asked what else they could have done.	0 / 0.5 / 1	E62	adh		Talking through handouts to facilitate the identification of strategies for change
The therapist asked the PWA to pick three strategies to practice.	0 / 0.5 / 1	E63	adh		Selecting strategies for change
The therapist had a practice conversation with the PWA (or CP and PWA if appropriate) which was videoed separately.	0 / 0.5 / 1	E64	adh/com		Doing role play, videoing and watching back to facilitate the implementation of strategies for change

Rater: _____

Therefore, the therapist offered a choice of 3 pictures, PWA to choose one.	0 / 0.5 / 1	E65	adh		Doing role play, videoing and watching back to facilitate the implementation of strategies for change
The therapist explained to the PWA that he/she has to describe the picture to the therapist (or CP).	0 / 0.5 / 1	E66	adh		Doing role play, videoing and watching back to facilitate the implementation of strategies for change
The therapist asked the PWA to put a strategy into practice (and coaches as necessary).	0 / 0.5 / 1	E67	adh		Doing role play, videoing and watching back to facilitate the implementation of strategies for change
The therapist discussed the ease of strategy use with the dyad after the practice conversation.	0 / 0.5 / 1	E68	adh/com		Having a discussion to facilitate the implementation of strategies for change
The therapist assigned the home activity and introduced BCA-handout 4.3 (Building turns in conversation). *[Please note down: Was a contract to what the PWA will practice signed?]*	0 / 0.5 / 1	E69	adh		Assigning/Reviewing home activity to support identification of strategies for change
Total raw score					

Qualitative Section: Fundamental principles of the therapy programme and counselling-related skills				
Item	*Rating*	*Classification*		*Notes*
The **overall aim** of the session, to identify patterns of turn building in the PWA's own conversation, was achieved.	0 / 0.5 / 1*	P	com	
The **overall aim** of the session, for the PWA to select strategies for change and to experience them within a structured task, was achieved.	0 / 0.5 / 1*	P	com	
The therapist supplied individualised advice (based on analyses of conversation between the PWA and the CP).	0 / 0.5 / 1**	P	com	
The therapist avoided making judgments about what conversation patterns the dyad should retain or change.	0 / 0.5 / 1**	P	com	
The therapist focused both on the PWA and on the CP, so that the PWA and CP had equal roles during the session.	0 / 0.5 / 1**	P	com	
The therapist guided the dyad to make their own choices.	0 / 0.5 / 1**	P	com	
The therapist affirmed and encouraged the dyad.	0 / 0.5 / 1**	C	com	
The therapist expressed warmth and empathy towards the dyad.	0 / 0.5 / 1**	C	com	

Rater: _____

The therapist gave skilful summaries of what has been said.	0 / 0.5 / 1**	C	com	
The therapist used active listening skills.	0 / 0.5 / 1**	C	com	
Client-focused section, e.g. discussions (extemporised by the dyad) and home activity:				
Type of item (additional discussion, significant reaction by PwA/CP, etc.)	*In relation to… (e.g., E2 + timing)*			*Notes*
Did the dyad do their home activity?	Yes / partly / no			

0=not delivered, 0.5=partly delivered, 1=fully delivered; *0= I don't agree; 0.5= I partly agree; 1=I fully agree ** 0=not at all; 0.5=occasionally; 1=most of the time

Rater: _____

Session 5 – turns, sequences and actions 3 – strategies for the partner					
Procedural section: Essential content of the therapy programme					
Item	*Rating*	*Classification*		*Notes (timing is important)*	*Domain*
The therapist reviewed the home activity.	0 / 0.5 / 1	E70	adh/com		Assigning/Reviewing home activity to support identification of strategies for change
The therapist asked the CP to tell her two key things he/she remembers about strategies for PWA to build turns.	0 / 0.5 / 1	E71	adh/com		Reviewing the last session(s)
The therapist discussed and explored CP's responses to PWA's turn constructions.	0 / 0.5 / 1	E72	adh/com		Having a discussion to support identification of own conversation behaviour
The therapist introduced SPPARC-handout C35a (Turn-Taking Patterns of Partners).	0 / 0.5 / 1	E73	adh		Talking through handouts to facilitate the identification of strategies for change
The therapist showed video example 1.	0 / 0.5 / 1	E74	adh		Showing videos (own) to support identification of strategies for change
The therapist asked CP what he or she is doing in response to PWA in clip 1.	0 / 0.5 / 1	E75	adh		Having a discussion to facilitate the identification of strategies for change
The therapist showed video example 2.	0 / 0.5 / 1	E76	adh		Showing videos (own) to support identification of strategies for change
The therapist asked CP what he or she is doing in response to PWA in clip 2.	0 / 0.5 / 1	E77	adh		Having a discussion to facilitate the identification of strategies for change
The therapist introduced… …SPPARC-handout C37b/C31a, e.g. “Why Using Passing Turns?”/”Asking Test Questions”; …BCA-handout 5.1. (Are you leaving pauses? – Additional material for SPPARC handout C42a/b).	0 / 0.5 / 1	E78	adh		Talking through handouts to facilitate the identification of strategies for change
The therapist showed video example 3.	0 / 0.5 / 1	E79	adh		Showing videos (own) to support identification of strategies for change
The therapist asked CP what strategy he or she is using in response to PWA turn in clip 3.	0 / 0.5 / 1	E80	adh		Having a discussion to facilitate the identification of strategies for change

Rater: _____

The therapist showed video example 4. (Note: if relevant)	0 / 0.5 / 1	E81	adh		Showing videos (own) to support identification of strategies for change
The therapist asked CP what he or she is doing in his or her turn. (Note: if relevant)	0 / 0.5 / 1	E82	adh		Having a discussion to facilitate the identification of strategies for change
The therapist introduced… …SPPARC-handout C37b/C31a, e.g. "Why Using Passing Turns?"/"Asking Test Questions"; …BCA-handout 5.1. (Are you leaving pauses? – Additional material for SPPARC handout C42a/b).	0 / 0.5 / 1	E83	adh		Talking through handouts to facilitate the identification of strategies for change
The therapist introduced BCA-handout 5.2 (Good turn-taking strategies to use with your conversation partner – additional material for SPPARC handout C42a/b)	0 / 0.5 / 1	E84	adh		Talking through handouts to facilitate the identification of strategies for change
The therapist asked the CP to pick three strategies to practice from list.	0 / 0.5 / 1	E85	adh		Selecting strategies for change
The therapist asked the CP to do a practice conversation with the PWA.	0 / 0.5 / 1	E86	adh		Doing role play, videoing and watching back to facilitate the implementation of strategies for change
The therapist asked the CP to put strategies into practice and coached as necessary.	0 / 0.5 / 1	E87	adh/com		Doing role play, videoing and watching back to facilitate the implementation of strategies for change
The therapist videoed the practice conversation (if possible) and discussed it.	0 / 0.5 / 1	E88	adh/com		Having a discussion to facilitate the implementation of strategies for change
The therapist assigned the home activity and introduced the BCA-handout 5.3 (Turn-taking in conversation).	0 / 0.5 / 1	E89	adh		Assigning/Reviewing home activity to support identification of strategies for change
Total raw score					

Qualitative Section: Fundamental principles of the therapy programme and counselling-related skills				
Item	*Rating*	*Classification*		*Notes*
The **overall aim** of the session, to identify patterns of turn building in the CP's own conversation, was achieved.	0 / 0.5 / 1*	P	com	
The **overall aim** of the session, for the CP to select and practice	0 / 0.5 / 1*	P	com	

Rater: _____

strategies for change, was achieved.				
The therapist supplied individualised advice (based on analyses of conversation between the PWA and the CP).	0 / 0.5 / 1**	P	com	
The therapist avoided making judgments about what conversation patterns the dyad should retain or change.	0 / 0.5 / 1**	P	com	
The therapist focused both on the PWA and on the CP, so that the PWA and CP had equal roles during the session.	0 / 0.5 / 1**	P	com	
The therapist guided the dyad to make their own choices.	0 / 0.5 / 1**	P	com	
The therapist affirmed and encouraged the dyad.	0 / 0.5 / 1**	C	com	
The therapist expressed warmth and empathy towards the dyad.	0 / 0.5 / 1**	C	com	
The therapist gave skilful summaries of what has been said.	0 / 0.5 / 1**	C	com	
The therapist used active listening skills.	0 / 0.5 / 1**	C	com	

Client-focused section, e.g. discussions (extemporised by the dyad) and home activity:		
Type of item (additional discussion, significant reaction by PwA/CP, etc.)	*In relation to… (e.g., E2 + timing)*	*Notes*
Did the dyad do their home activity?	Yes / partly / no	

0=not delivered, 0.5=partly delivered, 1=fully delivered; *0= I don't agree; 0.5= I partly agree; 1=I fully agree ** 0=not at all; 0.5=occasionally; 1=most of the time

Rater: _____

Session 6 – topic and overall conversation					
Procedural section: Essential content of the therapy programme					
Item	*Rating*	*Classification*		*Notes (timing is important)*	*Domain*
The therapist reviewed the home activity.	0 / 0.5 / 1	E90	adh		Assigning/Reviewing home activity to support identification of strategies for change
The therapist asked the dyad to tell her two key things they remember about strategies for the CP.	0 / 0.5 / 1	E91	adh		Reviewing the last session(s)
The therapist introduced topic, balance of contributions and emotions in conversation in general.	0 / 0.5 / 1	E92	adh/com		-
The therapist introduced SPPARC-handout C45 (Topics of Conversation).	0 / 0.5 / 1	E93	adh		Talking through handouts to raise awareness of conversations with aphasia in general
The therapist supported the dyad to further explore their own patterns of topic and overall conversation.	0 / 0.5 / 1	E94	adh/com		Having a discussion to support identification of own conversation behaviour
The therapist introduced SPPARC-handout 46b ('On Top of Topic'-Activity).	0 / 0.5 / 1	E95	adh		Talking through handouts to support identification of own conversation behaviour
The therapist filled in the handout with PWA and CP filled the handout in independently at the same time. OR If this is not working, the therapist tried a 2-way-conversation. [*Please note down which alternative the therapist chose*]	0 / 0.5 / 1	E96	adh		Talking through handouts to support identification of own conversation behaviour
The therapist reinforced effective topic initiation by CP/PWA and balance of contributions.	0 / 0.5 / 1	E97	adh/com		Having a discussion to support identification of own conversation behaviour
The therapist showed a video example.	0 / 0.5 / 1	E98	adh		Showing videos (own) to support identification of own conversation behaviour
The therapist asked the dyad to tell her who starts this conversation.	0 / 0.5 / 1	E99	adh/com		Having a discussion to support identification of own conversation behaviour
The therapist asked the dyad to tell her if the dyad thinks the	0 / 0.5 / 1	E100	adh/com		Having a discussion to

Rater: _____

conversation is balanced.					support identification of own conversation behaviour
The therapist talked about possible trouble spots with the dyad.	0 / 0.5 / 1	E101	adh/com		Having a discussion to support identification of own conversation behaviour
The therapist introduced BCA-handout 6.1 (Common problems with topic in agrammatism).	0 / 0.5 / 1	E102	adh		Talking through handouts to support identification of own conversation behaviour
The therapist discussed points on the handout and asked the dyad if they recognise any of these difficulties.	0 / 0.5 / 1	E103	adh/com		Having a discussion to support identification of own conversation behaviour
The therapist showed a video clip.	0 / 0.5 / 1	E104	adh		Showing videos (own) to support identification of strategies for change
The therapist asked the dyad to tell her what happens in this clip and referred to BCA-handout 6.1.	0 / 0.5 / 1	E105	adh		Having a discussion to facilitate the identification of strategies for change
The therapist asked the dyad to tell her what they both could have done differently.	0 / 0.5 / 1	E106	adh		Having a discussion to facilitate the identification of strategies for change
The therapist supported the dyad to explore strategies for change.	0 / 0.5 / 1	E107	adh/com		Having a discussion to facilitate the identification of strategies for change
The therapist introduced SPPARC-handout C46c ('On Top of Topic activity').	0 / 0.5 / 1	E108	adh		Talking through handouts to support identification of own conversation behaviour
The therapist showed two video clips (of which the first is one with positive strategy use).	0 / 0.5 / 1	E109	adh		Showing videos (own) to support identification of strategies for change
The therapist discussed the video clip with positive strategy use with the dyad, referring to chosen topic strategies.	0 / 0.5 / 1	E110	adh/com		Having a discussion to facilitate the identification of strategies for change
The therapist introduced SPPARC-handout C47a+b (Follow the Conversation Leader).	0 / 0.5 / 1	E111	adh		Talking through handouts to facilitate the identification of strategies for change

Rater: _____

The therapist asked the dyad to do a practice conversation with each other – each to put strategy into practice.	0 / 0.5 / 1	E112	adh		Doing role play, videoing and watching back to facilitate the implementation of strategies for change
The therapist videoed this conversation and discussed it with reference to topic strategy sheet (SPPARC-handout C46c).	0 / 0.5 / 1	E113	adh/com		Having a discussion to facilitate the implementation of strategies for change
The therapist assigned the home activity and introduced BCA-handout 6.2 (Joining forces).	0 / 0.5 / 1	E114	adh		Assigning/Reviewing home activity to facilitate the implementation of strategies for change
Total raw score					

Qualitative Section: Fundamental principles of the therapy programme and counselling-related skills				
Item	*Rating*	*Classification*		*Notes*
The **overall aim** of the session, to facilitate the identification and implementation of strategies for change in relation to topic, was achieved.	0 / 0.5 / 1*	P	com	
The therapist supplied individualised advice (based on analyses of conversation between the PWA and the CP).	0 / 0.5 / 1**	P	com	
The therapist avoided making judgments about what conversation patterns the dyad should retain or change.	0 / 0.5 / 1**	P	com	
The therapist focused both on the PWA and on the CP, so that the PWA and CP had equal roles during the session.	0 / 0.5 / 1**	P	com	
The therapist guided the dyad to make their own choices.	0 / 0.5 / 1**	P	com	
The therapist affirmed and encouraged the dyad.	0 / 0.5 / 1**	C	com	
The therapist expressed warmth and empathy towards the dyad.	0 / 0.5 / 1**	C	com	
The therapist gave skilful summaries of what has been said.	0 / 0.5 / 1**	C	com	
The therapist used active listening skills.	0 / 0.5 / 1**	C	com	

Client-focused section, e.g. discussions (extemporised by the dyad) and home activity:		
Type of item (additional discussion, significant reaction by PwA/CP, etc.)	*In relation to… (e.g., E2 + timing)*	*Notes*

Rater: _____

Did the dyad do their home activity?	Yes / partly / no	

0=not delivered, 0.5=partly delivered, 1=fully delivered; *0= I don't agree; 0.5= I partly agree; 1=I fully agree ** 0=not at all; 0.5=occasionally; 1=most of the time

Rater: _____

Session 7 – practising conversation: putting your strategies to use					
Procedural section: Essential content of the therapy programme					
Item	*Rating*	*Classification*		*Notes (timing is important)*	*Domain*
The therapist reviewed the home activity.	0 / 0.5 / 1	E115	adh		Assigning/Reviewing home activity to facilitate the implementation of strategies for change
The therapist asked the dyad to tell her two key things they remember about topic and overall conversation.	0 / 0.5 / 1	E116	adh		Reviewing the last session(s)
The therapist asked the dyad what each remembers about strategies.	0 / 0.5 / 1	E117	adh		Reviewing the last session(s)
The therapist reviewed sessions 4 (PWA strategies) and 5 (CP strategies).	0 / 0.5 / 1	E118	adh/com		Reviewing the last session(s)
The therapist asked the PWA what he or she remembers about building a turn and referred to BCA-handout4.2 (Turn building strategies for the person with aphasia) from session 4.	0 / 0.5 / 1	E119	adh		Reviewing the last session(s)
The therapist asked the CP what he or she remembers about responding to PWA's turn and referred to BCA-handout 5.2 (Good turn taking strategies to use with your conversation partner) from session 5.	0 / 0.5 / 1	E120	adh		Reviewing the last session(s)
The therapist asked the dyad if they think they have been using these over the last few weeks in their daily conversations (and if not, why not).	0 / 0.5 / 1	E121	adh		Having a discussion to facilitate the implementation of strategies for change
The therapist gave A5 laminated prompt sheet (BCA-handout 7.1) of 3 (or 4) strategies to the PWA. *[Please tick how many strategies]*	0 / 0.5 / 1	E122	adh		Providing material to facilitate the implementation of strategies for change
The therapist gave A5 laminated prompt sheet (BCA-handout 7.2) of 3 (or 4) strategies to the CP. *[Please tick how many strategies]*	0 / 0.5 / 1	E123	adh		Providing material to facilitate the implementation of strategies for change
The therapist played video clips (3 clips: ideally from pre-therapy conversations that have already been used in previous therapy sessions).	0 / 0.5 / 1	E124	adh		Showing videos (own) to support identification of strategies for change
The therapist discussed what each could have done differently, relating it to strategies.	0 / 0.5 / 1	E125	adh/com		Having a discussion to facilitate the identification of strategies for change
The therapist asked the dyad to do a practice conversation together – each to put strategies into practice and the therapist coached as necessary.	0 / 0.5 / 1	E126	adh/com		Doing role play, videoing and watching back to facilitate the

Rater: _____

					implementation of strategies for change
The therapist videoed the conversation and discussed it.	0 / 0.5 / 1	E127	adh/com		Having a discussion to facilitate the implementation of strategies for change
The therapist assigned the home activity to reinforce ideas before last session and therefore introduced BCA-handouts 7.3 and 7.4 (Putting your strategies to use).	0 / 0.5 / 1	E128	adh		Assigning/Reviewing home activity to facilitate the implementation of strategies for change
Total raw score					

Qualitative Section: Fundamental principles of the therapy programme and counselling-related skills				
Item	*Rating*	*Classification*		*Notes*
The **overall goal** of the session, to facilitate the implementation of strategies for change, was achieved.	0 / 0.5 / 1*	P	com	
The therapist supplied individualised advice (based on analyses of conversation between the PWA and the CP).	0 / 0.5 / 1**	P	com	
The therapist avoided making judgments about what conversation patterns the dyad should retain or change.	0 / 0.5 / 1**	P	com	
The therapist focused both on the PWA and on the CP, so that the PWA and CP had equal roles during the session.	0 / 0.5 / 1**	P	com	
The therapist guided the dyad to make their own choices.	0 / 0.5 / 1**	P	com	
The therapist affirmed and encouraged the dyad.	0 / 0.5 / 1**	C	com	
The therapist expressed warmth and empathy towards the dyad.	0 / 0.5 / 1**	C	com	
The therapist gave skilful summaries of what has been said.	0 / 0.5 / 1**	C	com	
The therapist used active listening skills.	0 / 0.5 / 1**	C	com	

Client-focused section, e.g. discussions (extemporised by the dyad) and home activity:		
Type of item (additional discussion, significant reaction by PwA/CP, etc.)	*In relation to… (e.g., E2)*	*Notes*
Did the dyad do their home activity?	Yes / partly / no	

0=not delivered, 0.5=partly delivered, 1=fully delivered; *0= I don't agree; 0.5= I partly agree; 1=I fully agree ** 0=not at all; 0.5=occasionally; 1=most of the time

Session 8 – Reviewing and moving forward					
Procedural section: Essential content of the therapy programme					
Item	*Rating*	*Classification*		*Notes (timing is important)*	*Domain*
The therapist asked the dyad to tell her two key things they remember about last session.	0 / 0.5 / 1	E129	adh		Reviewing the last session(s)
The therapist asked the dyad to talk her through their video they made as home activity for session 7.	0 / 0.5 / 1	E130	adh		Having a discussion to facilitate the implementation of strategies for change
The therapist used this exercise to review key points of therapy with help of handouts (not specified which handouts).	0 / 0.5 / 1	E131	adh		Reviewing the last session(s)
The therapist made sure that the dyad's therapy folder is complete and that key strategy laminated sheets are easily accessible.	0 / 0.5 / 1	E132	adh		Providing material to facilitate the implementation of strategies for change
The therapist facilitated the dyad making an advice sheet for use by others they converse with.	0 / 0.5 / 1	E133	adh/com		Providing material to facilitate the implementation of strategies for change
Total raw score					
Qualitative Section: Fundamental principles of the therapy programme and counselling-related skills					
Item	*Rating*	*Classification*		*Notes*	
The **overall goal** of this session, to support the dyad to implement the strategies for change, was achieved.	0 / 0.5 / 1*	P	com		
The therapist supplied individualised advice (based on analyses of conversation between the PWA and the CP).	0 / 0.5 / 1**	P	com		
The therapist avoided making judgments about what conversation patterns the dyad should retain or change.	N/A	P	com		
The therapist focused both on the PWA and on the CP, so that the PWA and CP had equal roles during the session.	0 / 0.5 / 1**	P	com		
The therapist guided the dyad to make their own choices.	N/A	P	com		
The therapist affirmed and encouraged the dyad.	0 / 0.5 / 1**	C	com		
The therapist expressed warmth and empathy towards the dyad.	0 / 0.5 / 1**	C	com		

The therapist gave skilful summaries of what has been said.	0 / 0.5 / 1**	C	com	
The therapist used active listening skills.	0 / 0.5 / 1**	C	com	
Client-focused section, e.g. discussions (extemporised by the dyad) and home activity:				
Type of item (additional discussion, significant reaction by PWA/CP, etc.)	*In relation to… (e.g., E2)*		*Notes*	
Did the dyad do their home activity?	Yes / partly / no			

0=not delivered, 0.5=partly delivered, 1=fully delivered; *0= I don't agree; 0.5= I partly agree; 1=I fully agree ** 0=not at all; 0.5=occasionally; 1=most of the time

E = essential content of the therapy programme (either an activity or a material specific to the therapy which can be observed and/or verified)

P = fundamental principle of the therapy programme

C = counselling-related skills of the therapist

Appendix 7

Observations (procedural section of the fidelity tool) rated as not or partly delivered by rater 1, including qualitative notes

Session N^{o}	**Dyad N^{o}**	**Item**	***Partly***	***Not***	***Notes by rater***
1	4	E10 "The therapist introduced SPPARC-handout C10 (Keeping Conversation Going)"	☐	☒	*Was not shown*
2	2	E30 "The therapist reinforced CP's effective turns in response to PWA turns"	☐	☒	*Not really*
3	2	E34 "The therapist asked the dyad to remember 2 things from session 2 about how turn taking."	☒	☐	*Short summary of home activity, then: speaking about PWA's feelings after last session*
3	2	E37 "The therapist thereby made a link to home activity from session 1 (Things that go well in conversation and things that are difficult when having conversations)"	☐	☒	*Not explicitely*
3	6	E37 "The therapist thereby made a link to home activity from session 1 (Things that go well in conversation and things that are difficult when having conversations)"	☒	☐	*Not directly, but: SLT "I guess leading on from what we were talking about. What kinds of things happen when things go wrong in conversation?"*
3	7	E35 "The therapist asked the dyad to tell her what happens when things go wrong in conversation"	☒	☐	*Not really, SLT asks "What causes trouble?"*
3	7	E36 "The therapist asked the dyad to tell her who they think sorts it out"	☐	☒	*This question has not been asked*
3	7	E37 "The therapist thereby made a link to home activity from session 1 (Things that go well in conversation and things that are difficult when having conversations)"	☐	☒	*Not done*
4	1	E55 "The therapist asked the dyad to remember 2 key things about turn taking and building turns"	☒	☐	*Reviewing last session with the help of the folder, mainly reviewed by the SLT*

4	1	E68 “The therapist discussed the ease of strategy use with the dyad after the practice conversation”	☒	☐	*Only in the beginning, not really discussed*
4	6	E64 “The therapist had a practice conversation with the PWA (or CP) which was videoed separately”	☒	☐	-
4	6	E68 “The therapist discussed the ease of strategy use with the dyad after the practice conversation”	☒	☐	*It is more a general discussion of strategy use, not directly how easy it was for the PWA to use them*
4	7	E55 “The therapist asked the dyad to remember 2 key things about turn taking and building turns”	☐	☒	*Not done*
4	7	E64 “The therapist had a practice conversation with the PWA (or CP) which was videoed separately”	☒	☐	*Not videoed separately (maybe would have been too much)*
4	7	E68 “The therapist discussed the ease of strategy use with the dyad after the practice conversation”	☐	☒	*Not done, probably because of emotional reaction by PWA?*
5	3	E88 “The therapist videoed the practice conversation (if possible) and discussed it.”	☒	☐	*Not videoed, but discussed it*
6	1	E92 “The therapist introduced topic, balance of contributions and emotions in conversation in general”	☒	☐	*Only very short*
6	1	E106 “The therapist asked the dyad to tell her what they both could have done differently”	☒	☐	*Clip has been misunderstood by SLT, so she now tells the dyad to ‘imagine’ that the situation in the clip would have been different.*
6	1	E110 “The therapist discussed the video clip with positive strategy use with the dyad, referring to chosen topic strategies”	☒	☐	*Not really referring to strategies*
6	1	E111 “The therapist introduced SPPARC-handout C47a+b (Follow the Conversation Leader)”	☐	☒	*Not done*
6	4	E91 “The therapist asked the dyad to tell her two key things they remember about strategies for the CP”	☐	☒	*The review of the home activity was detailed, maybe that’s why SLT didn’t ask*

6	4	E112 “The therapist asked the dyad to do a practice conversation with each other – each to put strategy into practice.”	☐ ☒	*Not done*
6	4	E113 “The therapist videoed this conversation and discussed it with reference to topic strategy sheet (SPPARC-handout C46c).”	☐ ☒	*Not done*
7	5	E121 “The therapist asked the dyad if they think they have been using these over the last few weeks in their daily conversations (and if not, why not).”	☒ ☐	*Not directly*
8	5	E129 “The therapist asked the dyad to tell her two key things they remember about last session.”	☐ ☒	*Not done*
8	5	E132 “The therapist made sure that the dyad’s therapy folder is complete and that key strategy laminated sheets are easily accessible.”	☒ ☐	*When looking through the folder maybe, but not done in particular*

Appendix 8

All ratings (by rater 1 and rater 2) for all the observed sessions (procedural section)

Session Number	Dyad Number	Item Number: E	Rater 1	Rater 2
1	4	1	1	N/A
1	4	2	1	N/A
1	4	3	1	N/A
1	4	4	1	N/A
1	4	5	1	N/A
1	4	6	1	N/A
1	4	7	1	N/A
1	4	8	1	N/A
1	4	9	1	N/A
1	4	10	0	N/A
1	4	11	1	N/A
1	4	12	1	N/A
1	4	13	1	N/A
1	4	14	1	N/A
1	4	15	1	N/A
2	2	16	1	N/A
2	2	17	1	N/A
2	2	18	1	N/A
2	2	19	1	N/A
2	2	20	1	N/A
2	2	21	1	N/A
2	2	22	1	N/A
2	2	23	1	N/A
2	2	24	1	N/A
2	2	25	1	N/A
2	2	26	1	N/A
2	2	27	1	N/A
2	2	28	1	N/A
2	2	29	1	N/A
2	2	30	0	N/A
2	2	31	1	N/A
2	2	32	1	N/A
2	2	33	1	N/A
3	2	34	0.5	N/A
3	2	35	1	N/A
3	2	36	1	N/A
3	2	37	0	N/A
3	2	38	1	N/A
3	2	39	1	N/A
3	2	40	1	N/A
3	2	41	1	N/A
3	2	42	1	N/A
3	2	43	1	N/A
3	2	44	1	N/A
3	2	45	1	N/A
3	2	46	1	N/A
3	2	47	1	N/A
3	2	48	1	N/A
3	2	49	1	N/A
3	2	50	1	N/A
3	2	51	1	N/A
3	2	52	1	N/A
3	2	53	1	N/A
3	6	34	1	N/A
3	6	35	1	N/A

3	6	36	1	N/A	3	7	46	1	N/A
3	6	37	0.5	N/A	3	7	47	1	N/A
3	6	38	1	N/A	3	7	48	1	N/A
3	6	39	1	N/A	3	7	49	1	N/A
3	6	40	1	N/A	3	7	50	1	N/A
3	6	41	1	N/A	3	7	51	1	N/A
3	6	42	1	N/A	3	7	52	1	N/A
3	6	43	1	N/A	3	7	53	1	N/A
3	6	44	1	N/A	4	1	54	1	N/A
3	6	45	1	N/A	4	1	55	0.5	N/A
3	6	46	1	N/A	4	1	56	1	N/A
3	6	47	1	N/A	4	1	57	1	N/A
3	6	48	1	N/A	4	1	58	1	N/A
3	6	49	1	N/A	4	1	59	1	N/A
3	6	50	1	N/A	4	1	60	1	N/A
3	6	51	1	N/A	4	1	61	1	N/A
3	6	52	1	N/A	4	1	62	1	N/A
3	6	53	1	N/A	4	1	63	1	N/A
3	7	34	1	N/A	4	1	64	1	N/A
3	7	35	0.5	N/A	4	1	65	1	N/A
3	7	36	0	N/A	4	1	66	1	N/A
3	7	37	0	N/A	4	1	67	1	N/A
3	7	38	1	N/A	4	1	68	0.5	N/A
3	7	39	1	N/A	4	1	69	1	N/A
3	7	40	1	N/A	4	6	54	1	N/A
3	7	41	1	N/A	4	6	55	1	N/A
3	7	42	1	N/A	4	6	56	1	N/A
3	7	43	1	N/A	4	6	57	1	N/A
3	7	44	1	N/A	4	6	58	1	N/A
3	7	45	1	N/A	4	6	59	1	N/A

4	6	60	1	N/A
4	6	61	1	N/A
4	6	62	1	N/A
4	6	63	1	N/A
4	6	64	0.5	N/A
4	6	65	1	N/A
4	6	66	1	N/A
4	6	67	1	N/A
4	6	68	0.5	N/A
4	6	69	1	N/A
4	7	54	1	1
4	7	55	0	0
4	7	56	1	0
4	7	57	1	1
4	7	58	1	1
4	7	59	1	1
4	7	60	1	1
4	7	61	1	1
4	7	62	1	1
4	7	63	1	1
4	7	64	0.5	0
4	7	65	1	1
4	7	66	1	1
4	7	67	1	1
4	7	68	0	0
4	7	69	1	1
5	3	70	1	1
5	3	71	1	0
5	3	72	1	1
5	3	73	1	1
5	3	74	1	1
5	3	75	1	1
5	3	76	1	1
5	3	77	1	0
5	3	78	1	1
5	3	79	1	1
5	3	80	1	1
5	3	81	0	0
5	3	82	0	0
5	3	83	1	0
5	3	84	1	1
5	3	85	1	1
5	3	86	1	1
5	3	87	1	1
5	3	88	0.5	0
5	3	89	1	1
6	1	90	1	N/A
6	1	91	1	N/A
6	1	92	0.5	N/A
6	1	93	1	N/A
6	1	94	1	N/A
6	1	95	1	N/A
6	1	96	1	N/A
6	1	97	1	N/A
6	1	98	1	N/A
6	1	99	1	N/A
6	1	100	1	N/A
6	1	101	1	N/A
6	1	102	1	N/A
6	1	103	1	N/A

6	1	104	1	N/A
6	1	105	1	N/A
6	1	106	0.5	N/A
6	1	107	1	N/A
6	1	108	1	N/A
6	1	109	1	N/A
6	1	110	0.5	N/A
6	1	111	0	N/A
6	1	112	1	N/A
6	1	113	1	N/A
6	1	114	1	N/A
6	4	90	1	N/A
6	4	91	0	N/A
6	4	92	1	N/A
6	4	93	1	N/A
6	4	94	1	N/A
6	4	95	1	N/A
6	4	96	1	N/A
6	4	97	1	N/A
6	4	98	1	N/A
6	4	99	1	N/A
6	4	100	1	N/A
6	4	101	1	N/A
6	4	102	1	N/A
6	4	103	1	N/A
6	4	104	1	N/A
6	4	105	1	N/A
6	4	106	1	N/A
6	4	107	1	N/A
6	4	108	1	N/A
6	4	109	1	N/A
6	4	110	1	N/A
6	4	111	1	N/A
6	4	112	0	N/A
6	4	113	0	N/A
6	4	114	1	N/A
7	5	115	1	1
7	5	116	1	1
7	5	117	1	1
7	5	118	1	1
7	5	119	1	1
7	5	120	1	1
7	5	121	0.5	0
7	5	122	1	1
7	5	123	1	1
7	5	124	1	1
7	5	125	1	1
7	5	126	1	1
7	5	127	1	1
7	5	128	1	1
8	5	129	0	N/A
8	5	130	1	N/A
8	5	131	1	N/A
8	5	132	0.5	N/A
8	5	133	1	N/A

Appendix 9

Transcript Dyad 4, session 1

Alex: ( ) yeah I really thought we will get some **therapy** today

SLT: mmh

Alex: because it

SLT: it's a **very** [different type of
therapy]

Alex: [yeah yeah]

SLT: it's what we're doing is ( ) it's not gonna **be**: (.) the therapy that it's (.) **traditional** sense in terms of looking at pictures and (.) practising describing things and getting (in language) the=the **way** that it's **wor**king is it's much more (.) **showing** you how (.) **conversation** works and **showing** you both the language that you **are** using in conversation and trying to think (.) sort of more on**line** in that particular **setting**

Alex: right

SLT: what you're both **doing**

Alex: yeah

SLT: so that then things can (.) see if there's any ways that we want to change things and **bear** with it.

Alex: oh yeah

SLT: I know it feels a bit odd

Graham: yeah

SLT: but erm (.) it has (.) it's=it's quite an interesting way of **doing** things.

Alex: mmh

SLT: and (.) like I said most of=of the people we've worked with **so** far all of them found it beneficial

Alex: mmh. [that's] good

Appendix 10

Transcript Dyad 7, session 4

SLT: so. (1.0) now that you've looked at (.) the way you did it (.) then. can you think (.) in a different way.

Maggie: right

SLT: that you could have (.) **told** Christina that.

(1.5)

SLT: do you think there's a **dif**ferent way.

Maggie: no ((shakes her head)) no er er

SLT: because that didn't (.) it didn't what=when you (.) you did your 'hip hip trauma'. It didn't quite work. did it cause Christina didn't understand.

Maggie: yes! yes!

SLT: she did in the **end**. but in **this.** ((shaking her head)) Christina didn't understand. [so]

Maggie: [trauma] trauma

SLT: yeah

Maggie: yes? ((looks as if feeling outraged))

SLT: yeah. so what I'm asking you. is can you think of the (2.5) ((writes something down)) can you think of a **new** way. (1.0) to get that message across.

((Maggie looks at Christina, shrugs her shoulders))

Maggie: hip replacement. yes!

Christina: you thought it went well.

Maggie: yes yes! (1.5) yes!

((SLT shows strategy handout))

SLT: what do you think.

Maggie: ((sighs))

SLT: 'bloody strategies' ((laughing))
((Maggie shakes her head))

SLT: but. if you watch this. okay. we'll look on this again.

((SLT shows video clip again, stops after a few seconds))

SLT: so you've said (1.0) 'hip replaced crush crush' ((writes this down)) yeah? that's what you said.

Maggie: [yeah]

Christina: [( )]

((SLT continues showing the clip))

SLT: and then Christina so that's you Maggie. And then Christina says (1.0) 'was it more than a hip replacement'.

Maggie: yes.

SLT: yeah? and you're saying 'yes it was'.

Maggie: yes.

SLT: but. what could you have at this stage here. (1.0) ((points at handout)) what could you have **said**. or **done**. in a different way so that Christina didn't even had to ask that question. (1.0) do you see what I mean? there's a **bit** of information **mis**sing. the **key** thing you wanted to tell her. was that it was **more**. that there was more than a hip replacement.

Maggie: yeah.

SLT: cause-

Maggie: trauma. trauma.

SLT: but that=you. yeah. you said trauma but Christina is=that didn't (.) make sense to Christina.

((Maggie is looking at Christina))

SLT: it's not=it's not anyone's fault. it's just it didn't make sense. what was the **key** (1.0) the key word that would have helped. (1.0) in that situation.

((Maggie shakes her head))

(4.0)

Maggie: no. hip replacement. trauma. fall. trauma.

SLT: but it wasn't it=that was what happened wasn't it but what was the thing that you were trying to explain.

Maggie: yes.

SLT: the thing you were trying to explain was ((gestures)) it was a complicated (.) or it was a special (.) hip replacement wasn't it or it [was more]

Maggie: [yes] yes more. yes

SLT: so maybe what=what I'm trying to say is. if (.) if say for example if you thought about (.) a key word. (1.0) it might have been if you'd said 'hip replacement. more' or 'hip replacement (1.0) er:m. special' something like that. it might have made it easier for Christina to understand. does that make sense?

((Maggie is looking to the floor))

Maggie: yeah. ((nodding, looking quite sad))

SLT: am I annoying you?

Maggie: ((shakes her head)) ((smirks))

SLT: a little bit.

Maggie: no.

Christina: and I think even if mum had said that I still would have asked that.

SLT: okay. (1.0) okay

Maggie: yeah

SLT: okay.

Christina: I think I you know I still would have

SLT: yeah.

Christina: erm. I think what (.) what was confusing is later on.

SLT: mhm.

Christina: erm.

SLT: so here ((shows part of the clip))

Christina: [(the:)]

SLT: [that bit] there?

Christina: yeah. because (.) I stupidly said it in another way. and maybe I **shoul**dn't have but it was so important I felt like I needed to (.) [ask mum]

SLT: [but that's fine]

Christina: in a different way.

SLT: yeah.

Christina: but she said no.

SLT: yeah

Christina: and I wanted to hear yes.

SLT: yeah

Christina: to confirm that it was more than

SLT: so that may be something we can think about **next** week in terms of how you (.) **deal** with that because we **know** that sometimes (1.5) you think you have understood. and you haven't. because sometimes you say 'yes'. (1.0) and then when you think about it it's like 'oh=no **no**'. and that can get a little bit confusing.

Maggie: yeah.

SLT: but I guess it's trying to before we even **get** to that stage. Trying to think about (.) how can you cons**truct** (.) your turn differently (.) so that it doesn't **get** there.

Maggie: yeah.

SLT: does that make sense?

((Maggie is nodding))

SLT: yeah. do you see what I mean? and (.) and I think you're both right. because sometimes, Maggie you get quite anxious about it. it can make it harder (.) to listen to Christina and give yourself that time. it's like 'Ah! I've got to get it out now!' and that's when those things can (.) creep in. and I guess it's (.) trying to give you the **tools**. to think '**okay**, I've said it. (1.0) this hasn't worked (1.0) I need to say it in a **diff**erent way (1.0) to see if: Christina can **then** understand me.' or 'I need to **ges**ture this.' or 'I need to draw something' or (.) so that you **can** get your message across.

((Maggie is nodding))

SLT: does that make sense?

Maggie: yeah.

SLT: cause. so we've said that there might I=**I**'ve said ( ) ((laughing))

Maggie: yeah.

SLT: that it **might** have been that if you'd said a different word. up here. so 'hip replacement (.) **more**' or 'bigger' or something=or 'operation' that it might have made things a bit easier. (2.0) erm. do you think there's any **o**ther way that you could have **descri**bed for Christina. [(What you were trying to say)]

Maggie: [no!] ((shakes her head, looks to Christina)) no.

SLT: no?

Christina: that really wasn't about. you know description.

Maggie: yeah

Christina: because **she** did a really **long** (.) ((gestures)) line to 'cause a hip replacement is quite a small line. and she **does** have a big (.) a big sort of ( ) area. a long ( ). an:d (1.0) I think for **me** more. with this ((points at computer screen)) it's (.) that I doubt okay. I **got** that it was a (.) it=that it was more than a hip replacement. and then there was the bit where (.) I asked again and you said 'no' (1.5) the=that (.) left it confusing for **me**. this conversation.

SLT: mmh.

Christina: and I think what left it confusing for **mum** was that I said I told her that (.) they knew (about the medical) stuff

Maggie: yeah.

Christina: and because you only just mentioned this special (.) [(hip)thing]

Maggie: [yeah yes]

Christina: that of course I couldn't have (.) couldn't have told them already (so) that=that's why **mum** had (.) sort of (.)

SLT: mmh

((Maggie is nodding))

SLT: but it's=it's a (.) it's a (.) I (.) I'm not gonna (.) it's a 50:50 thi=it's a equal responsibility in these conversations.
Christina: mmh

SLT: with getting your message across. okay? and **yes**. you used a lot of words. and you **do** get (.) **most** of your message across. but it's not **enough** (.) for this confusion

Christina: yeah yeah

SLT: to have not occurred.

Christina: yeah [yeah]

SLT: [do you] see what I mean you **both** end up a **bit** confused. And you have to shut it **down**. and try to come back to it later. and what I'm saying is (.) **yes** there's some bits that maybe **you** want to think about ((points at Christina)) but there's also some bits that maybe **you** want to think about Maggie and that's what we're talking about to**day**.

Maggie: mmh.

SLT: and it's just **how** (.) could **you** have taken control. (1.0) and=and **changed** what happened there. [what would **you]** have done.

Maggie: [yeah] okay

SLT: rather than (.) having to just **wait** for somebody else to come back at you. you're an in**tell**igent lady! ((laughing)) you can **do** it!

Maggie: yes

SLT: It's thinking it through. okay? so. and I know you're not liking **these** ((points at handout)) but it's thinking. when you get stuck (.) and you're on **one** road. saying one thing. (you're like) 'oh! I just want to be saying (.) something else.' **how** do you **do** that **what** do you **need** to do. to be able to switch. into a different (.) turn. (1.0) yeah?

((Maggie is nodding))

SLT: so. and for example so with (.) erm. (1.5) er: with=with something like this (top)=I don't know it might be that (.) erm (1.5) ((points at handout)) drawing. I'm not saying that you **have** to (do this) but it might be that you had drawn a hip and drawn a bit more or something. and pointed to (it) and said 'more'. then there is something written **down**. that you can try and talk about 'cause then ( ) so you're pointing at the hip replacement here do you **mean.** you know.

Christina: (we could have) got back gone back to it an hour later.

SLT: but it's just it's=it's

Christina: [( )]

SLT: it's just different ways of thinking about (.) tackling.

((Maggie is nodding))

SLT: what it is you're doing here. yeah? okay then. ((sighs)) so (1.5) I'm gonna stop ((laughing))

Christina: you **do** use a lot of these of these [( )]

SLT: [yeah?]

Christina: these kinds of things. ca=can be helpful for you.

Maggie: yeah.

SLT: mmh. and it's just thinking about **how** you use them. and **what**'s the **fo**cus. when you're coming [out with] something.

Maggie: [yes]

SLT: what's the **fo**cus what's the **key**? that's gonna **help** Christina understand. (1.0) and I know. I appreciate sometimes it's **diff**icult. you **know** the focus. but getting it **out** (1.0) so you can't say it. can you **draw** it? can you: (.) **mime** it? you know but thinking it's- these are things to sort of have a think about.

Maggie: yeah.

SLT: so. i:f (1.5) looking at **these**. (1.0) can you think of if there are different strategies to **help**. you. when you're (.) talking. do you think there are three things here that you **might** like to try.

((Maggie looks at handout, Christina as well))

SLT: so either practising. trying (.) **when** you're trying to take a turn using more **ge**sture. to get your meaning across. whether intonation is a thing that you like to work on. (1.0) headshake? using mime so ((gestures)) describing events. using mime. eye gaze? (1.0) facial expression. using automatic phrases. trying to maybe **write** (well you don't like writing) but drawing (.) what it **is** (.) to help you. (1.0) there's these ones here which is (.) really trying to think of the **key** word. so (trying to come out with the first word) is a key word and adding (.) (all after) that. describing word. or maybe using more objects and prompts to help you. (2.0)

Maggie: ((points at one strategy))

SLT: gesture. ((nodding)) okay. so that's **one**.

Christina: you use that quite a lot mum.

SLT: yeah, [no that's fine].

Christina: [it doesn't matter.]
SLT: no. it doesn't matter at all. it's all about (.) being more conscious. [(what you're)] doing

Christina: [(okay)]

SLT: and (.) trying to (1.5) develop. [what] you've got.

Maggie: [yeah]

Christina: okay.

SLT: so yes so gesture is (.) fine. can you think of (.) are there **two** others that you might like to **try**. (1.0) that might be useful to you.

((Maggie points at a strategy))

SLT: mime. (1.0) okay?

Maggie: yeah

((Maggie looks at Christina))

SLT: and how about on **this** sheet. is there anything here in terms of (.) I don't know writing or drawing key word. so this one's a describing word this is when you make a comment to something. you might start with a 'interesting' or 'lovely'. (1.0) there's the key word one and there is using an object (or prompt).

((3.5))

Maggie: ((pointing at something)) no.

SLT: (what do you think) is most useful to you. (2.5)

((Maggie points at a strategy))

SLT: facial expression.

Maggie: yes

SLT: okay. how could you use your (.) what do you think you could do differently with your facial expression. (2.5)

Maggie: oh gosh. (2.0) ((shakes her head)) no. (not sure)

SLT: is this difficult to think [about]

Maggie: [yeah] yeah.

SLT: yeah? (1.0) what does (.) can I just (try that out) to Christina.

Maggie: [yes. yes.]

SLT: [(for both of you to have a think) about] so what do you think would be: useful [( )]

Christina: [I think] the key word would be really helpful.

SLT: yeah?

Maggie: key word.

SLT: key word.

Maggie: oh yes.

SLT: would you like to try **that**?

Maggie: yeah.

SLT: s: so what we mean by that. ((ticks strategy)) it's like (.) you know when you were talking about the diary. (with your) orthopaedic

Maggie: yeah. yes

SLT: so actually 'diary' in a way was quite **good** word.

Maggie: right.

SLT: and it **got** you the diary. For you to find [(that and the other thing)]

Christina: [(it's a good link)]

SLT: yeah.

Christina: yeah

SLT: and the other thing might be that the key word might be trying to think of 'appointment' ((laughing)) or: (I don't know) 'orthopaedic' but (.) you know something ( ). and then the hip replacement one it might 'hip replacement' was great. but it might also being the comment. (1.0) 'more'. or something like that.

Christina: 'big' or

SLT: yeah. do you see what I mean?

Maggie: yeah. trauma.

SLT: yeah ((laughing)) I know. I know. okay. so what I wanted to try (to) **do** then. was I've got (.) to try and practice some of these now. not in conversation so ((looks at the computer))

((Christina leaves the room))

SLT: ((looks at Maggie)) are you feeling alright?

((Maggie nodds))

SLT: can you tell me what you're thinking?

((Maggie shakes head)

Maggie: ((points at handout, shakes head, sighs))

SLT: (is that) too much?

Maggie: ((points at handout)) key word

SLT: yeah?

((Maggie points at strategy))

SLT: gesture.

Maggie: gesture.

SLT: (was it) eye gaze?

Maggie: eye gaze. eye gaze. ((mimes)

SLT: ((smirks)) some of these aren't (.) brilliant.

Maggie: yeah.

SLT: some of these there's not much (.) to work with.

Maggie: yeah.

SLT: but. I guess (3.0) what (.) what we picked out. is ((writes something down))

Appendix 11

Transcript Dyad 4, session 6

SLT: (...) to keep the topic going.

Alex: yeah.

SLT: changing your strategy.

Alex: comment Mr ( )?

Graham: yes.

Alex: yeah. (1.5) well this is what it's all about it's actually looking at it in different ways and ( ) how we

Graham: mmh.

Alex: talk communicate (and that lot)

Graham: mmh

Alex: to be honest this session (I have to say) is quite overwhelming today [(whether) I'm tired]

SLT: [oh I'm sorry]

Alex: no [no I'm not] I'm being honest.

SLT: [that's alright] that's fine

Alex: it's=it's=it's=it's (.) it's a lot of information overload. [to **me**.]

SLT: [yeah] yeah

Alex: what do **you** feel. ((looks at Graham))

Graham: yes ye:s

SLT: yeah.

Alex: I'll be honest with you.

SLT: that's alright it's fine.

Alex: so maybe that's why we're (.)

SLT: well we leave it there for today.
Alex: yeah

Graham: mmh

SLT: [you guys]

Alex: [it's alright] yeah

SLT: [yeah absolutely] fine. take it away

Alex: mmh

SLT: have a look through it again. I would suggest.

Alex: but have we completed this bit.

SLT: yes

Alex: or not.

SLT: yes

Alex: oh we **ha**ve alright [right]

SLT: [yes] absolutely

Alex: I don't wanna [leave] the session half

SLT: [no] we're at the end

Alex: alright.

SLT: and then (.) the next **two** sessions are **all** just about going back over **all** [the information I've given you consolidated]

Alex: [yeah yeah yeah]

SLT: so there's **no** more new stuff. I am **out** of new stuff.

Alex: oh yeah ((laughing))

SLT: ((laughing))

Graham: ((laughing))

SLT: so it's (.)

Alex: yeah

SLT: but it's like you said. it's a **lot** of

information [( )]

Alex: [it **is**] yeah

Graham: mmh

SLT: it is a **lot** [and]

Alex: [I'll be] honest

SLT: and that's (.) you know I=I appreciate that? and (.) you've got **ti**me this week to (.) think about=I mean a lot of these are things (.) that are already in your strategies we've given you.

Alex: yeah.

SLT: It's just thinking about it from a topic perspective rather than from a (.) when things break down.

Alex: mmh. (1.5) I think what (.) what **I** need to do. (and anyway you). is actually to go back (and) from beginning to (.) to date.

Graham: yeah

Alex: because there is a lot of stuff erm. (1.5) I think it **has** made some improvement I'll be honest with but it's that work **on** it and being more aware.

Appendix 12

Transcripts on home activities, dyad 1

Transcript session 4:

SLT: ((laughs, takes a deep breath)) so (1) you didn't really have a proper chance to have a go with this homework=

Kate: =yeah

SLT: but just thinking about it now

Kate: yeah

SLT: when you=what do you think about when you're (.) when you're having that conversation. (2.0) who did ei=did either of you hold the pen more? Or was it about equal.

Kate: yes!

Shelley: I think it was (about) equal? cause I'll=I've said of asking questions [really so] ( ) to get the answer I suppose

((three minutes later))

SLT: do you guys get a chance to look through these. did you have a chance to look through them: since we last met. Or is that all just been a bit too busy.

Shelley: I=we haven't looked at it if I'm honest with you
SLT: okay no that's fine

Transcript session 6:

SLT: how did you get on (.) how did you get on with your (.) practice conversations erm

((Kate looking at Shelly)

Shelley: yeah alright I think we (.) managed a few?

SLT: great. did you get erm=a (.) filling:er ho=homework thing yeah.

((Kate points on sheet))

Kate: ((shakes her head))

Shelley: we just videoed.

Kate: yeah [yeah]

SLT: [o:kay] so how did you get on with you:r (.) practicing with your strategies we were concentrating on [last week] wasn't it

Kate: [yeah]

Shelley: alright I (.) tried to do them. I was trying (not) to do any guessing so. yeah, hopefully you'll see when you (.)

SLT: okay

Shelly: play that back.

Appendix 13

Raw data of the ratings (by raters 1 and 2) of the qualitative section

Session N°	Dyad N°	Item	Rater 1	Rater 2
4	7	*Overall goal 1*	0.5	0.5
4	7	*Overall goal 2*	0.5	0.5
4	7	*Individualised advice*	1	1
4	7	*Avoid judgements*	0.5	1
4	7	*Equal roles*	1	0.5
4	7	*Guide to make own choices*	0.5	1
4	7	*Affirming encouraging*	1	99
4	7	*Warmth and empathy*	1	1
4	7	*Skilful summaries*	1	99
4	7	*Active listening*	1	1
5	3	*Overall goal 1*	1	1
5	3	*Overall goal 2*	1	1
5	3	*Individualised advice*	1	1
5	3	*Avoid judgements*	1	1
5	3	*Equal roles*	1	1
5	3	*Guide to make own choices*	1	1
5	3	*Affirming encouraging*	1	1
5	3	*Warmth and empathy*	1	1
5	3	*Skilful summaries*	1	1
5	3	*Active listening*	1	1
7	5	*Overall goal 1*	1	1
7	5	*Individualised advice*	1	1
7	5	*Avoid judgements*	1	1
7	5	*Equal roles*	1	1
7	5	*Guide to make own choices*	1	99
7	5	*Affirming encouraging*	1	1
7	5	*Warmth and empathy*	1	1
7	5	*Skilful summaries*	1	1
7	5	*Active listening*	1	1

Note: 99=missing data point.

Versicherung der Selbständigkeit:

Hiermit versichere ich, dass ich die vorgelegte Masterarbeit des Studienganges Sprachtherapie (M.A.) an der Ludwig-Maximilians-Universität München eigenständig verfasst, keine anderen als die angegebenen Quellen und Hilfsmittel verwendet und die den benutzten Quellen entnommenen Passagen als solche kenntlich gemacht habe.

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Claudia Heilemann

München, den 13.08.2013