Preliminary analysis from a novel treatment targeting the exchange of new information within storytelling for people with nonfluent aphasia and their partners

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Background: Therapy for people with aphasia (PWA) can encompass a wide range of aims and methodologies from targeting the linguistic impairment to strategic compensation to optimise communication, interaction, and vocational rehabilitation. Aphasia rehabilitation ultimately has a social goal of optimising the communication of PWA within their typical environment. Therefore, across treatment type, one unifying area of interest relates to the generalisation of behaviours targeted in therapy to untrained tasks and contexts, particularly those related to everyday communication. Two important aspects of everyday communication relate to conveying new information and telling anecdotes/stories. Measures of transactional success in storytelling have previously demonstrated reliability and validity as an analytical method.

Aims: The study aimed to extend previous work on transactional success in storytelling to a programme of therapy targeting both the PWA and the communication partner (CP). The effects of therapy were measured in untrained novel storytelling tasks.

Methods & Procedures: Four participants with chronic nonfluent aphasia and their CPs were recruited and a novel dual-focus treatment was administered. For the PWA, therapy targeted storytelling using the principles of “thinking for speaking” and story grammar. For the CP, therapy drew on the principles of conversation coaching to increase facilitative behaviours within storytelling to aid coconstruction of the story.

Outcomes & Results: Outcomes were influenced by the complexity of the target stimuli: following therapy, three PWA demonstrated increased transfer of new information within untrained simple storytelling. For the untrained complex storytelling stimuli, improvements were limited to two PWA. There were also changes in how PWA produced stories (i.e., the order of events within the story), with simple stories becoming more inline with the sequence used by control participants. Regarding the CPs, again there was an effect of complexity: for the untrained simple story, three CPs improved the accuracy of their understanding while for the untrained complex story, two CPs improved. Interestingly, one CP consistently demonstrated a decrease in the amount of information successfully understood following therapy, despite improved information exchange by her partner with aphasia.

Conclusions: The preliminary findings of this dual-focused therapy offer promise in terms of targeting a range of skills relating to both the PWA and CP, whilst the context of information exchange and storytelling promotes likelihood of generalisation of targeted behaviours to untrained tasks.

Keywords: nonfluent aphasia; generalisation; interactive storytelling; information exchange

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1. Introduction

Therapy for people with aphasia (PWA) encompasses a wide range of aims and methodologies from targeting the linguistic impairment (e.g., Carragher, Sage, & Conroy, 2013), communication compensation (e.g., Hopper, Holland, & Rewega, 2002), interaction (e.g., Beeke, Maxim, Best, & Cooper, 2011), and vocational rehabilitation (e.g., Morris, Franklin, Menger, & GD, 2011). Across all treatment approaches, one unifying area of interest relates to the generalisation of behaviours targeted in therapy to untrained tasks and contexts, particularly those related to everyday communication. However, capturing evidence of change within everyday communication has proved difficult. Researchers within the field continue to explore various methodologies in an attempt to reach consensus on the type of data we should collect as well as optimal outcome measures and elicitation contexts in which to measure the effects of therapy.

With regard to the question of which elicitation type and which data should we use to measure the effects of treatment on everyday communication, one option relates to the collection and analysis of naturally occurring conversation data. Certainly, conversation has been observed to be the most common type of daily communication for PWA and matched healthy control participants (Davidson, Worrall, & Hickson, 2003). Yet capturing evidence of quantitative change in conversation has proved difficult, not least because no standardised, quantitative measure of conversation exists (Beeke et al., 2011). Moreover, the high demands of time and skill needed to carry out qualitative analysis of conversation present challenges for service delivery in busy clinical settings (Bradley & Douglas, 2008).

Everyday communication is multifaceted, encompassing not only interaction but also transaction (Davidson et al., 2003). One solution might be to use the naturally occurring transactional opportunities in everyday communication to target treatment and to capture evidence of change. Transactional communication encompasses various types of discourse genre—conversation, expository, procedural (Armstrong, 2000). Central to transactional communication is the conveying of new information, an aspect that is often responsible for conversational failure for PWA (Ramsberger & Rende, 2002). Conversation data do not lend itself to the measurement of transactional success for a number of reasons: lack of external criteria on which to judge transactional success (Ramsberger & Rende, 2002); potential lack of clarity regarding a speaker’s target word or meaning (Armstrong, 2000); potential for a dissociation between the information expressed by the speaker and how this is understood by the communication partner (CP) (Ramsberger & Rende, 2002); as well as the opportunity for speakers to draw on shared knowledge, which may not be expressed explicitly. Thus, in order to measure transactional success, it is necessary to use a context that shares similarities to conversation but, crucially, offers potential for externally set criteria and standardisation. One such context is storytelling, which offers a broad platform on which to base outcome measurement and treatment. There are several advantages to using storytelling data within therapeutic studies:

- **Social perspective**: storytelling is a means of self-expression (McAdams, 2001), displaying and experiencing an evolving identity (Bierren, Kenyon, Ruth, Shroots, & Svendson, 1996), engaging with others and passing on life experience (Randall, 2001). Storytelling is a way in which we make sense of the world particularly during challenging life transitions and traumatic events (Riessman, 1993), both of which are relevant for individuals and their families living with the chronic effects of stroke.
- **Validity**: like everyday conversation, interactive storytelling captures evidence of speakers’ turn-taking and negotiating the “point” of the story (Norrick, 2000).
Furthermore, narrative stimuli are rich with options as to what will be communicated and the perspective adopted by the speaker. This presents choices to the PWA regarding expression of story events through verbal and/or nonverbal means, compared to more traditional language assessment that places constraints on possible linguistic responses and syntactic constructions (Hernandez-Sacristan & Rosell-Clari, 2009).

- Clinical validity: PWA engage in significantly less storytelling in daily life compared to healthy controls (Davidson et al., 2003). Thus, the powerful benefits of storytelling (as a way of engaging with others and as a means of coping) are beyond the reach of a population who could benefit from this social activity. This suggests that storytelling is a clinically valid context for treatment and outcome measurement.

- Linguistic perspective: production of narrative/storytelling encompasses a wealth of linguistic skills. This includes macrolinguistic skills (e.g., the planning and sequencing of information within a structured framework and tailored towards the listener’s perspective) and microlinguistic skills (i.e., semantic and syntactic aspects of production), which resonate throughout many language production activities in daily life (Whitworth, 2010).

- Methodological rigour: as an outcome measure, storytelling offers several advantages including replicability, the potential for standardisation across participants, and an opportunity for comparison of performances across individuals and to nonlanguage-impaired control participants (Ramsberger & Menn, 2003; Ramsberger & Rende, 2002).

The current study stems from observations across the literature of mixed or underwhelming findings of generalisation following impairment-focused therapy. There is growing evidence from therapy literature of the need to explicitly support PWA to generalise the skills developed within therapy sessions to everyday communication (e.g., Carragher et al., 2013; Whitworth, 2010). We hypothesised that targeting the combination of several key ingredients might facilitate generalisation of behaviours targeted in therapy to an untrained everyday communication task. These ingredients included the following:

1. targeting microlinguistic and macrolinguistic skills and shaping nonverbal output and compensatory strategies (e.g., reduced syntax and direct reported speech) to optimise the communication of new information;
2. using principles of thinking for speaking to improve narrative planning and production for PWA;
3. including the CP within the therapeutic focus to prime them to be receptive to the PWA’s compensated storytelling and to shape their own behaviours to optimise “uptake” of the PWA’s improved skills; and
4. targeting information exchange within the everyday activity of storytelling. We hypothesised that positioning therapy within the everyday activity of information exchange and storytelling would close the gap and present less of a challenge for PWA to generalise their improved skills to everyday use.

The current study builds on work by Ramsberger and colleagues (Ramsberger & Menn, 2003; Ramsberger & Rende, 2002) by extending interactive storytelling to a therapy task. The paper outlines the novel approach of “Interactive Storytelling Therapy”, a
standardised approach to shaping and enhancing the exchange of new information between PWA and their CPs within a storytelling context.

2. Aims of the study
The current study will present a preliminary analysis from a pilot study of the effects of Interactive Storytelling Therapy on untrained tasks. Specifically, the study aimed to answer the following questions:

- Following therapy, do participants with a range of severities of nonfluent aphasia successfully convey more information in response to untrained narrative stimuli?
- Following therapy, are CPs more successful in interpreting new information within untrained narrative tasks?
- Following therapy, are there changes in the narrative structure used by the PWA?

3. Method
3.1. Participants
Following ethical approval via standard UK protocols (NHS IRAS system), four PWA were recruited. This study formed the third in a series of therapy studies targeting incremental levels of language output in individuals with nonfluent aphasia. As part of a larger group of participants ($N = 9$), these four participants had taken part in previous therapy studies targeting verb retrieval (Carragher et al., 2013) and syntactic construction (Carragher, Sage, & Conroy, in press). All participants presented with stroke-induced chronic nonfluent aphasia. Presentation of nonfluent aphasia was confirmed on the basis of converging evidence from clinical consensus, the results of standardised lexical retrieval assessment (as indicated by a clinical score on the Boston Naming Test) and impaired use of grammatical markers and syntactic structures in picture description (Goodglass, Kaplan, & Barresi, 2001). Participants were at least 6 months postonset, reducing the likelihood of further spontaneous recovery. As apraxia of speech often co-occurs with nonfluent aphasia (McNeil, Robin, & Schmidt, 2008), presence of apraxic errors did not form part of the exclusion criteria. Interparticipant variation existed for time postonset, ranging from 26 to 80 months (mean: 51.5, $SD$: 27.5). The participants ranged in age from 38 to 70 years (mean: 59.5, $SD$: 14.5); Table 1 provides background information on the four participants with aphasia. In the current study, CPs participated

| Participants | Gender | Age of leaving education (years) | Handedness | Occupation          | Age at time of stroke (years) | TPO (months) |
|--------------|--------|---------------------------------|------------|---------------------|------------------------------|--------------|
| BL           | Male   | 16                              | Right      | Pub manager         | 60                           | 80           |
| JH           | Female | 23                              | Right      | Teacher             | 36                           | 26           |
| AT           | Female | 16                              | Right      | Secretary           | 62                           | 30           |
| PM           | Male   | 16                              | Right      | Businessman         | 64                           | 70           |

Note: TPO: time postonset.
within the treatment. In each case, the CP was the PWA’s husband or wife, had known the PWA prior to the stroke, and had no history of neurological impairment. Written informed consent was obtained for each PWA and his/her CP prior to commencement of the study.

3.2. Background assessment

Interparticipant variation existed for severity: noun naming (Boston Naming Test, Goodglass et al., 2001) ranged from 16 to 36 from a maximum score of 60 (mean: 26.3, SD: 10.0); verb naming (The Object Action Naming Battery, Druks & Masterson, 2000) ranged from 30.5 to 59 from a maximum score of 100 (mean: 44.3, SD: 11.7). Further details of the PWA and their performance on a battery of linguistic and cognitive assessments are provided in Carragher et al. (2013).

3.3. Assessment stimuli

Pretherapy and posttherapy assessment consisted of interactive storytelling in response to video stimuli. At each time point, the PWA watched a video clip in the absence of the CP; the CP then returned to the room and the PWA recounted the story. No instructions or limitations were placed on the participants during their discussion of the video clip, i.e., they were not directed to, nor restricted from, using gesture, pointing, drawing, or writing. The only instruction issued to the CP was that the PWA had viewed a video clip, they were asked to find out what happened in the clip, and that they would later report their interpretation of it to the researcher. Assessment stimuli included a simple video narrative and a complex video narrative. Drawing on Weinrich, McCall, Boser, and Virata’s criteria (2002), simple narratives were defined as video clips that involved only one to two actors, one to two complicating actions and a resolution; complex narratives were defined as video clips that involved more than two actors, four complicating actions, and a resolution. Data collected from control participants (N = 8) were used to distinguish simple narrative video material from complex narrative material (see Outcome measures section for more details on the collection and analysis of control data).

Assessment stimuli at both time points consisted of “Mr. Bean” DVD footage. These video clips were chosen for their minimal spoken language content, thereby minimising the linguistic scaffolding available to the PWA in constructing the story. Cultural familiarity was a further factor in the selection of assessment stimuli—“Mr. Bean” clips contain highly familiar/imageable concepts and humorous content which is watched by adults as well as children. Similar to real-life communication, once the referent of Mr. Bean had been established, the CP would have access to some shared knowledge about the protagonist (e.g., Whitworth, 2010). In order to minimise the effects of memory or practice, novel stimuli were used across pretherapy and posttherapy assessment although they were based on the same comic character. CPs were not told in advance the subject or nature of the narrative topics in the assessment video stimuli.

3.4. Therapy stimuli

For the therapy sessions, video clips were sourced from YouTube and viewed by PWA using an iPad. The Mr. Bean video footage was not used within therapy sessions; they were reserved for pretherapy and posttherapy assessment only. Therefore, outcome measurement reflects participants’ ability to generalise behaviours targeted within therapy to untrained, novel narrative stimuli. Video clips were selected for their interesting and
newsworthy nature; they were often funny and therefore motivating for the couple to discuss. The therapy video clips involved minimal or no use of language. As the PWA presented across a range of aphasic severity, it was important that the video clips used within the therapy sessions were capable of challenging the higher-level participants whilst not alienating those PWA with fewer linguistic and communicative abilities. Therefore, selection of the therapy stimuli erred on the side of complex narratives. Within the therapy sessions, the higher-level participants were encouraged to include details within their story construction whilst the participants with a more severe aphasic impairment were encouraged to construct a more stripped-back story structure. See Appendix 1 for an example of the video stimuli used during therapy. Outlined in the following are the YouTube clips selected for the therapy sessions, the length of each clip, and their current web address:

Seaplane fishing (00:54), http://www.youtube.com/watch?v=iY6AWs2QMbM
Pixar: Geri’s game (03:50), http://www.youtube.com/watch?v=9IYRC7g2ICg
Pixar: Pigeons (02:40), http://www.youtube.com/watch?v=0IIVFBBbNw
Pixar: For the birds (03:00), http://www.youtube.com/watch?v=VkuBIrdi6eE
French clip (01:52), http://www.youtube.com/watch?v=3xAE6gjvQ7Q

3.5. Overview of Interactive Storytelling Therapy sessions

Therapy was delivered by the first author who is an experienced speech and language therapist. In line with routine clinical intervention within the UK, participants received six therapy sessions administered once a week. Each session lasted for approximately 1.5 hr. Within each session, up to 45 min was dedicated to working with the PWA, up to 30 min to working with the CP, and the remainder of the session used for video feedback and discussion with the couple. The first therapy session focused on reflecting on current storytelling behaviours before targeting these behaviours in subsequent practical sessions (sessions 2–6). Figure 1 outlines the focus of therapy across sessions.

3.5.1. Session 1: reflection and goal-setting

The first treatment session focused on encouraging the PWA and their CP to reflect on the baseline video-recording of their storytelling and to begin to increase their awareness of various strategies and choices evident within their interactions. Video feedback was used to facilitate discussion of the consequences of specific behaviours seen in the data. These included strategies used by the PWA to convey events; strategies used by the CP to clarify information or elicit further explanation; displays of negative emotion such as frustration; alternatives to strategies seen in the video data; and, more broadly, sharing of the communicative burden and the overall effectiveness/success of the interaction. Couples were encouraged to extend their reflections beyond the recorded interactive storytelling to consider their everyday conversations. During this initial session, therapy goals specific to each couple were suggested, based on analysis of baseline interactive storytelling (see Appendix 2). The goals were given brief descriptive, mnemonic labels (e.g., Drip drip and Pinpoint—see Appendix 2 for definitions) to facilitate participants to remember their individual goals and also to aid discussion of specific strategies within the therapy sessions. For the PWA, therapy goals related to components of story grammar (Ramsberger & Menn, 2003; Ramsberger & Rende,
such as introducing key referents, while for the CP, therapy goals related to repairing breakdowns in understanding.

3.5.2. Practical sessions 2–6: PWA

This part of the treatment drew upon the principles of thinking for speaking (Marshall, 2009) and story grammar (Rumelhart, 1975). The practical sessions began with the PWA viewing a video clip in the absence of their partner (see Figure 1). The video clip was repeated as often as requested (participants usually requested a maximum of three repeated viewings). The therapist facilitated the PWA to segment the narrative into main events, broadly conceptualised as the beginning, middle, and end sections of the story. Where relevant, the PWA was prompted to begin by introducing the story (Set the scene goal) by stating the main referent as well as other contextual information such as location or tone of the story (e.g., funny or sad). Throughout this process, the PWA was supported in his/her conceptualisation of the story through a visual record; the researcher used this to record the ongoing construction of the story by writing down words/phrases
produced by the PWA and using drawing to depict gesture. The visual record served as a useful anchor by which the PWA could monitor their progression as they constructed the story.

Having established the main referent of the story, the PWA was prompted to think about what happened next in segments (corresponding to the Chunk it up and Drip drip goals). This involved describing key information and actions relating to the main referent. The PWA was encouraged to produce an agent–verb construction, with the verb produced verbally or through gesture, writing or drawing. The aim was to optimise (rather than correct) participants’ output; therefore, any prompts or modelling provided by the therapist were carefully built on the participant’s original output. For example, if the PWA gestured “running”, the researcher prompted “Who?” followed by the gesture, with the aim of prompting the PWA to produce a more contentful construction incorporating both verbal and nonverbal output (related to the Show and Tell goal). If the PWA produced a content word in isolation (e.g., hungry), the researcher used wh-questions (e.g., who is hungry?) and modelling (e.g., bird hungry) to facilitate the PWA’s production of argument structure. In line with a previous therapy study (Carragher et al., in press), all modelling of syntactic constructions involved morphologically reduced structures to maintain focus on communicative value rather than grammatical correctness. The PWA was also facilitated to use direct reported speech (Hengst, Frame, Neuman-Stritzel, & Gannaway, 2005) to depict characters’ reactions within the story and to produce evaluative comments in grammatically simplified ways. When the opportunity arose whilst constructing the story, the therapist modelled how the participant could make use of direct reported speech to convey tone and emotion and to carry some of the lexical and grammatical load of narrative production. Furthermore, written feedback was used to demonstrate how direct reported speech eliminates the need for numerous function words and morphology (e.g., girl—cup of tea please rather than the girl said that she wanted a cup of tea).

As the PWA progressed through the telling of each episode within the story, the segmentation of the story was reinforced visually through the use of the visual record, i.e., clearly marking the first, second, third, fourth, etc. episodes of the story. This process was repeated until the complete story had been discussed and sketched out in the visual record. Throughout the story construction, the PWA was prompted to think selectively in terms of what details to include or omit from the story to ultimately facilitate their partner’s comprehension of the story. In particular, the PWA was encouraged to consider whether a particular event or detail was key to understanding the story or more peripheral (issue of selectivity raised by Marshall & Cairns, 2005).

By the end of this part of the session, the participant had produced the story three times in total, with incremental withdrawal of support from the researcher:

1. During the first telling, the PWA was maximally supported by the therapist to segment the story into events, to prioritise establishing key referents, and to combine verbal output with gesture, drawing, and writing. The therapist kept a visual record of the story, which included key words, phrases, and drawings.

2. In the second telling, the PWA was prompted to use the visual record to construct the story. Moderate support was given to remind the PWA about the strategies discussed and developed during the first story telling. Also at this stage, participants were facilitated to link together the various events within the story either verbally (e.g., using connective devices such as and then) or nonverbally (e.g., using gestures or fingers to indicate first, second, third, etc.).
During the third telling of the story, the visual record was removed and PWA were encouraged to construct the story independently, with the therapist providing feedback or requesting clarification where necessary.

The aim here was not to foster rote-learning of a particular story. Rather, the approach was to gradually withdraw support and to encourage independent use of key strategies to support the PWA in constructing the story in an optimal, coherent manner with regard to the sequencing of ideas and relevant information.

3.5.3. Practical sessions 2–6: CPs

The CP then rejoined the therapy session in order to discuss the video clip with their partner with aphasia. At this point, the CP became the focus of therapy intervention (see Figure 1). Therapy sessions were video recorded with the participants’ consent in order to facilitate later reflection. The therapist prompted the CP to recall the therapy goals agreed at the start of the intervention; as therapy progressed over a number of weeks, this discussion expanded to include topics that had arisen in earlier sessions. As the couple began to discuss the story, the therapist intervened on a needs-basis when a trouble source arose that the CP struggled to resolve. For example, the therapist offered a diagnosis of the problem (i.e., relating to a lexical search, confusion regarding a referent, or a broader issue regarding which part of the story was currently being discussed) and facilitated the CP to select one of the targeted goal behaviours to employ, e.g., Move along or Stop and check (see Appendix 2). If the CP struggled to select a strategy, the therapist suggested an appropriate strategy and modelled this behaviour as needed. The therapist did not intervene if the PWA omitted important details of the story or confirmed details about the story that were incorrect; the goal of therapy related to the exchange and negotiation of information between the couples rather than conveying specific details.

3.5.4. Practical sessions 2–6: the couple

Once the couple had finished discussing the story, the CP watched the target YouTube video clip and then together the couple viewed the video recording of them discussing the story (Figure 1). This enabled both the PWA and CP to engage in offline evaluation of the strategies employed within the task. Discussion focused on the agreed goals for each individual; where relevant, discussion included any novel issues that had arisen during the session and goals were agreed for each couple to focus on in the homework task and in the subsequent therapy session. The homework task consisted of each couple setting aside time to each practice using goal behaviour in an everyday conversation and reflecting on whether the strategy had been useful. The types of conversations in which participants were encouraged to use the goals behaviours included catching up on what the PWA did at the stroke group, relaying a conversation with a neighbour, etc. Stimuli were not provided for the homework task; rather, the focus was placed on each couple developing an awareness of opportunities for changed interactive behaviours and selecting strategies as needed.

3.6. Outcome measures

Outcome measurement focused on transactional success (i.e., exchange of new information) in comparison to control data. Control participants (N = 8) viewed the Mr. Bean
video clips (used in pretherapy and posttherapy assessment) and were asked to describe what happened. The control participants were nonlanguage-impaired, native English speakers. They were not matched to the PWA in the current study but represented a varied sample with respect to age (mean: 42 years; range: 17–64), years of full-time education (mean: 16 years; range: 11–21) and gender (four males and four females). The control participants’ descriptions of the Mr. Bean video clips varied regarding quantity of description as well as the details provided (e.g., one control participant described Mr. Bean driving a yellow car, another described Mr. Bean driving a yellow Mini, while another simply reported Mr. Bean drove into a car park and omitted any details relating to the car). In order to condense the control participants’ descriptions to the core story components, written transcripts of the control participants’ descriptions were analysed for the most commonly reported content words. Those content words that were reported by at least 50% of control participants were interpreted as forming essential components or ideas of the target story. Thus, content words that were produced by at least 50% of the control participants were labelled “salient content words”. In this way, the control data provided a maximum score for each Mr. Bean video clip. These “salient” content words were used to develop model narratives for each clip consisting of the crucial parts of story structure, i.e., setting, complicating actions, and resolution (Labov, 1972). The target components for each assessment video clip are shown in the shaded columns in Appendix 3. A similar measure of transactional success in storytelling had demonstrated high validity and reliability as a method of analysis (Ramsberger & Menn, 2003; Ramsberger & Rende, 2002).

3.7. Data analysis

Using data from control participants, it was possible to segment each assessment narrative into distinct story segments, with a core group of target content words within each segment. In the baseline storytelling data, differences in main ideas reported reflect difference in the complexity of the narrative stimuli and are in line with data from the control participants, i.e., control participants, PWA, and CPs produced more narrative output for complex stimuli.

For each assessment point, storytelling data for each couple (i.e., Mr. Bean stimuli) were transcribed by individuals who were blind to the aim of the treatment and the sampling point; the first author verified accuracy of all transcripts. For the PWA, the written transcripts were analysed to identify instances when they produced (either verbally or nonverbally) a main idea that corresponded to those content words most frequently produced across control participants (see Appendix 3 for the maximum score achievable for each stimulus). For the CPs, written transcripts of their reporting of the story were subjected to the same analysis (see Appendix 3). In this way, PWA and the CPs were credited only for the information that was deemed essential across control participants.

4. Results

4.1. Number of salient ideas communicated by the PWA

It was not possible to carry out statistical analysis given (1) the inherent variability in sampling phenomena such as information exchange within narrative production, (2) lack of data on stability of information exchange over sampling periods, and (3) the lack of rigidly defined accurate/inaccurate responses, i.e., CPs’ retelling of the narratives were
compared to the salient content words produced by the control participants; close synonyms were accepted as correct. Raw and percentage data are presented for each PWA and CP.

For the PWA, Table 2 outlines the raw and percentage data for the changes in number of main ideas reported. Data are presented separately for the simple and complex narrative stimuli. Following therapy, the simple narrative condition demonstrated numeric improvements across the board: three participants improved their communication of salient ideas (AT, BL, and JH) whilst the remaining participant (PM) demonstrated a slight drop of 0.5%. The complex narrative condition proved more challenging with only two participants (AT and PM) demonstrating increases in the number of salient ideas they expressed, whilst two participants demonstrated numeric decreases (BL and JH).

### 4.2. Number of salient ideas communicated by the CPs

Following therapy, for the simple narrative stimuli, three CPs demonstrated numeric increases in the number of main ideas they had successfully understood (partners of AT, BL, and JH) whilst the remaining CP (partner of PM) demonstrated a drop of 12.8% (see Table 3). For the complex narrative stimuli, two CPs (partners of AT and BL) demonstrated numeric increases in the number of main ideas they understood, whilst two CPs demonstrated numeric decreases (partners of PM and JH).

The pre/posttherapy data for simple and complex narrative stimuli were collapsed together for each time point in order to compare mean change for each PWA and his/her

| Stimuli | PWA | Pretherapy | Posttherapy | Difference (%) |
|---------|-----|------------|-------------|----------------|
| Simple  | AT  | 9 (60.0%)  | 11 (84.6%)  | +24.6          |
|         | PM  | 7 (46.7%)  | 6 (46.2%)   | −0.5           |
|         | BL  | 6 (40.0%)  | 6 (46.2%)   | +6.2           |
|         | JH  | 6 (40.0%)  | 8 (61.6%)   | +21.6          |
| Complex | AT  | 12 (44.4%) | 21 (67.7%)  | +23.3          |
|         | PM  | 13 (48.2%) | 18 (58.1%)  | +9.9           |
|         | BL  | 8 (29.6%)  | 8 (25.8%)   | −3.8           |
|         | JH  | 13 (48.2%) | 14 (45.2%)  | −3.0           |

| Stimuli | CPs | Pretherapy | Posttherapy | Difference (%) |
|---------|-----|------------|-------------|----------------|
| Simple  | AT  | 9 (60.0%)  | 9 (69.2%)   | +9.2           |
|         | PM  | 10 (66.7%) | 7 (53.9%)   | −12.8          |
|         | BL  | 4 (26.7%)  | 7 (53.9%)   | +27.2          |
|         | JH  | 10 (66.7%) | 12 (92.3%)  | +25.6          |
| Complex | AT  | 4 (14.8%)  | 16 (51.6%)  | +36.8          |
|         | PM  | 13 (48.2%) | 13 (41.9%)  | −6.2           |
|         | BL  | 3 (11.1%)  | 8 (25.8%)   | +14.7          |
|         | JH  | 16 (59.3%) | 18 (58.1%)  | −1.2           |
Interestingly, the changes in the number of salient ideas observed in the performance of the PWA do not appear to reliably predict changes in how many ideas will be understood by their CPs (see Table 4 and Figure 2):

- Following therapy, for the simple narrative AT improved her communication of salient ideas by 24.6% whilst her CP improved by a smaller margin (9.2%). For complex narrative, the reverse is true: AT produced 23.3% more salient ideas but her CP was correct in interpreting her expression by 36.8%.
- For PM, he communicated slightly less salient ideas for simple narrative after therapy (−0.5%); his partner also demonstrated a decrease in the number of ideas she successfully understood (−12.8%). For complex narrative, PM produced more salient ideas following therapy (9.9%), but this did not result in his partner successfully interpreting these (−6.2%).
- Following therapy, BL increased his communication of salient ideas for simple narrative (6.2%), which his partner responded to by successfully understanding 27.2% more of these salient ideas. For complex narrative, BL produced less salient ideas (−3.8%), but his partner was able to compensate for this and understood 14.7% more salient ideas compared to pretherapy levels.
- JH communicated 21.6% more salient ideas for simple narrative following therapy and this was also reflected in her partner’s understanding (which increased by 25.6%). However, for complex stimuli, her communication of salient ideas reduced by 3% and her partner’s understanding of these salient ideas also reduced by 1.2%.

### 4.3. Narrative sequence

For each PWA, therapy had emphasised and provided opportunities to practice narrative planning skills (e.g., beginning by introducing the main referent, building up the story event-by-event) and expanding content of output using verbal and nonverbal means (e.g., pairing a spoken agent with a gestured action to fill the verb slot within the construction). Given the emphasis on narrative planning and structure, we analysed the output of the PWA to investigate whether the order in which they delivered each narrative changed following therapy. The control data provided a guide for the order in which the control participants described each event within the story. Storytelling data from the PWA were coded to identify each content word produced and to which scene it corresponded within the target template (which represented an amalgamation of the control participants’ production).

For the simple narrative, pretherapy data suggest that some participants (most notably AT and JH) reported narrative events out of sequence (see Table 5). This may have

| Participant | Mean difference: PWA (%) | Mean difference: CP (%) |
|-------------|--------------------------|-------------------------|
| AT          | +24.0                    | +23.0                   |
| PM          | +4.7                     | −9.5                    |
| BL          | +1.2                     | +20.9                   |
| JH          | +9.3                     | +12.2                   |

Table 4. Comparison of mean change in number of salient content words reported by the participants with aphasia and their CPs in pretherapy and posttherapy storytelling.
Figure 2. Percentage of mean change following therapy for each PWA and CP within untrained simple and complex narratives.
contributed to breakdowns in understanding between the PWA and his/her CP. Following therapy, all participants improved in their narrative sequencing, i.e., sequencing more closely followed the structure used by control participants and less needed to revise their narrative production.

The complex narrative stimuli proved to be more challenging in terms of participants’ planning and sequencing (see Table 6). Participants AT and JH produced narrative that was more closely aligned to the sequence produced by the control participants and less needed to revise their narrative production.

Table 5. Simple narrative: how the participants with aphasia organised and relayed the narrative events in pretherapy and posttherapy storytelling compared to the structure used by control participants.

| Time point | Scene | Controls | AT | PM | BL | JH |
|------------|-------|----------|----|----|----|----|
| Pretherapy | Scene 1 | ✓ | ✓ | ✓ | ✓ | ✓ |
| Scene 2    | ✓ | 3 | ✓ | ✓ | 3 |
| Scene 3    | ✓ | 2 | ✓ | ✓ | 1 |
| Scene 4    | ✓ | 4 | ✓ | ✓ | ✓ |
|            |      |     |    |    | 1 | 2 | 2 |
|            |      |     |    |    | 2 | 3 | |

Table 6. Complex narrative: how the participants with aphasia organised and relayed the narrative events in pretherapy and posttherapy storytelling compared to the structure used by control participants.

| Time point | Scene | Controls | AT | PM | BL | JH |
|------------|-------|----------|----|----|----|----|
| Pretherapy | Scene 1 | ✓ | ✓ | ✓ | ✓ | ✓ |
| Scene 2    | ✓ | ✓ | ✓ | ✓ | ✓ |
| Scene 3    | ✓ | ✓ | 5 | ✓ | ✓ |
| Scene 4    | ✓ | 5 | 3 | 5 | 6 |
| Scene 5    | ✓ | 6 | 4 | 6 | 5 |
| Scene 6    | ✓ | 2 | ✓ | ✓ | 6 |
|            |      |     |    |    |    | 4 |

Table 6. Complex narrative: how the participants with aphasia organised and relayed the narrative events in pretherapy and posttherapy storytelling compared to the structure used by control participants.

| Time point | Scene | Controls | AT | PM | BL | JH |
|------------|-------|----------|----|----|----|----|
| Pretherapy | Scene 1 | ✓ | ✓ | ✓ | ✓ | ✓ |
| Scene 2    | ✓ | ✓ | 3 | ✓ | ✓ |
| Scene 3    | ✓ | ✓ | 1 | 1 | ✓ |
| Scene 4    | ✓ | 5 | 2 | 2 | ✓ |
| Scene 5    | ✓ | 4 | 3 | 6 | 6 |
| Scene 6    | ✓ | ✓ | 5 | 4 | ✓ |
|            |      |     |    |    | 5 | 3 |
|            |      |     |    |    | 4 | |
|            |      |     |    |    | 3 | |
|            |      |     |    |    | 4 | |
|            |      |     |    |    | 6 | |
fourth, etc. However, participants PM and BL produced complex narratives that were less aligned to control narrative sequence compared to their pretherapy level.

5. Discussion

The current study aimed to extend previous work on transactional communication in storytelling (Ramsberger & Menn, 2003; Ramsberger & Rende, 2002) by conducting preliminary analyses of the effect of a novel intervention targeting transactional success within storytelling for people with nonfluent aphasia and their CPs. Interactive Storytelling Therapy targets and optimises the coconstruction of stories by two people (Bronken, Kirkevold, Martinsen, & Kvigne, 2012), a feature that may be especially important when one speaker has aphasia. Therapy consists of a dual-focus targeting both the PWA and the CP in order to optimise the exchange of new information. By using video clips to stimulate storytelling, the therapy approach offers a method of standardising treatment sessions whilst maintaining features of everyday interaction, e.g., the CP is blind to the video content thus simulating a real-life communicative situation in which the PWA is imparting new information. Interactive Storytelling Therapy establishes storytelling as a shared communicative activity between speakers. In this way, it differs from narrative therapy (e.g., Whitworth, 2010), which focuses solely on the production of the PWA, thereby omitting features of storytelling such as to whom the story is addressed and how the teller and the recipient interact to achieve mutual understanding (Goodwin, 1995).

Drawing on the principles of thinking for speaking, PWA were facilitated to segment video narrative into distinct events, to selectively highlight specific details of the story and to use a combination of verbal (e.g., syntactically reduced utterances and direct reported speech) and nonverbal resources (e.g., gesture, writing, and drawing) in order to convey new information to their partner. Components of story grammar (e.g., setting the scene by introducing main characters) were used to facilitate narrative planning and production. For the CPs, therapy drew on the principles of conversation coaching to educate partners on their role within the interaction and ultimately increase facilitative behaviours within storytelling. It was hypothesised that the sum of these strands of therapy would be improved negotiation and construction of shared understanding within storytelling. Therapy was administered once a week (each session lasting approximately 1.5 hr) for 6 weeks. This decision was based on typical clinical intervention within the UK. However, optimal intensity/dosages for this specific treatment are as yet unknown.

Effects of therapy were analysed within untrained narrative tasks by measuring changes in the number of main ideas, which were (1) successfully communicated by the PWA and (2) successfully understood by the CP. Video stimuli used within baseline and posttherapy assessment were novel stimuli not previously seen by the participants. Therefore, any changes would represent generalisation of behaviours targeted in therapy to untrained tasks. For the PWA, three participants demonstrated increased communication of salient ideas within posttherapy simple narrative, and two participants demonstrated increases in complex narrative. For the CPs, numeric increases in simple narrative were seen for three participants, and for the complex narrative, two participants demonstrated numeric gains. PM’s partner was unique in that she demonstrated a decrease in the amount of information she successfully interpreted across both simple and complex posttherapy storytelling. This is intriguing given that her partner with aphasia PM improved in his conveying of main ideas. However, as Fergadiotis and Harris Wright (2011, p. 1414) argue “discourse is successfully produced when the listener is able to reconstruct the message sent and interpret its intended meaning” (p. 1414). Therefore, PM’s increased ability to communicate salient ideas from the target story.
was not sufficient in its own right to increase his partner’s understanding of the story. This highlights the need for further work to uncover the reasons behind the discrepancy between PM and his partner’s response to therapy. Furthermore, this finding underlines the importance of explicitly supporting PWA to generalise the behaviours targeted within therapy for use in everyday communication. PM’s partner highlights the need to work with CPs to create space within the interaction for the PWA to make use of their improved linguistic and communicative resources and to shape CPs’ behaviours to accommodate a speaker with an impaired language system.

Whilst the participant numbers within the current study are small and the therapy dose relatively low, preliminary results appear to be promising, suggesting that the combination of targeting both the PWA and CP within an everyday communicative activity assists in the negotiation and transfer of new information relative to comparable narratives obtained at baseline. The approach of evaluating CPs’ retelling of a narrative to which they were blind appeared to be a promising outcome measure that was both engaging and of interest to all of these participants and represented a middle ground between experimentally controlled tasks for eliciting monologic aphasic data and the more ecological but unconstrained sampling of conversation data. Further related research would be aided by establishing more precise measures relating to narrative complexity through closer matching of related narratives (e.g., ensuring that simple narratives are matched for identical numbers of complications and key words). This could allow for use of nonparametric analyses of apparent differences between pretherapy and posttherapy narrative samples in order to more formally evaluate whether differences are statistically significant.

The current study represents an attempt to develop some degree of standardisation within an interactive therapy protocol to promote generalisation to untrained tasks. Given the tradition of interactive and conversation analysis therapy methods of having been highly data driven and individualised in terms of therapy focus, the method described here represents an attempt to develop a standardised template for intervention delivery and measurement. Storytelling plays a vital role in making sense of the world, particularly in the wake of a traumatic life experience (Kellas & Trees, 2006). Evidence suggests PWA engage significantly less in storytelling than their healthy counterparts (Davidson et al., 2003); thus, storytelling presents a psychosocially and clinically valid context for therapeutic focus. The method evaluated within the current study has been characterised as a template consisting of (1) working with the PWA to deliver new information in the context of storytelling and (2) working with the CP to collaborate in the construction of the story. While the precise advice and recommended strategies for a particular couple are tailored and individualised, this will be within the limits of the central task of information exchange. This move towards some flexible standardisation may support clinical application of this method, given that it is a defined protocol that can be applied in a time-efficient manner without preplanning. Similarly, use of first session information exchange measures can serve as baseline measures for posttherapy evaluation that has ease of use and real-world clinical plausibility. Further research is warranted in order to identify the exact mechanisms of change (or lack of change in the case of PM’s partner). This could include analysis of the specific goal behaviours that participants made use of following therapy.

“The ultimate goal of aphasia rehabilitation is a social one: to optimize the communication between the person with aphasia and his or her environment” (Van De Sandt-Koenderman, Van Der Meulen, & Ribbers, 2012, p. S1). The range of aphasia therapies has been conceptualised as deficit-focused, functional/disability-focused or participant-focused (World Health Organisation [WHO], 2001). This study represents an attempt to combine elements from impairment-focused therapy (i.e., thinking for speaking and story
grammar) and a disability-focused therapy (i.e., conversation coaching targeting the CP) in order to target the exchange of new information within storytelling. The inclusion of the CP within therapy acknowledges the important roles played by both the PWA and the CP in constructing shared understanding. Employing therapy techniques from various approaches reflects clinical practice where therapists combine all approaches at their disposal in supporting a PWA and their family through aphasia rehabilitation. Therapy stimuli were sourced from YouTube and viewed using an iPad, thus utilising widely available technology to create interesting, age-appropriate materials. Whilst further research is required to expand this model of treatment delivery and outcome measurement to a larger group of participants, the current study offers a novel approach whereby an important aspect of everyday communication—conveying new information—is targeted through the production patterns of the PWA and shaping facilitative behaviours of the CP. Such intervention may have implications for establishing and maintaining relationships, a sense of achievement for the PWA and CP, and, more broadly, quality of life.

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Note
1. Mr. Bean is a socially inept character who gets himself into embarrassing, comic scenarios, such as becoming frightened in front of others on a high diving board in a swimming pool.

References
Armstrong, E. (2000). Aphasic discourse analysis: The story so far. Aphasiology, 14, 875–892. doi:10.1080/026870303005172685
Beeke, S., Maxim, J., Best, W., & Cooper, F. (2011). Redesigning therapy for agrammatism: Initial findings from the ongoing evaluation of a conversation-based intervention study. Journal of Neurolinguistics, 24, 222–236. doi:10.1016/j.jneuroling.2010.03.002
Bierren, J., Kenyon, G., Ruth, J., Shroots, J., & Svendson, J. (1996). Aging and biography: Explorations in adult development. New York, NY: Springer.
Bradley, M., & Douglas, J. (2008). Conversation partner training – Its role in aphasia. Acquiring Knowledge in Speech, Language and Hearing, 10, 18–21.
Bronken, B., Kirkevold, M., Martinsen, R., & Kvigne, K. (2012). The aphasic storyteller: Co-constructing stories to promote psychosocial well-being after stroke. Qualitative Health Research, 22, 1303–1316. doi:10.1177/1049732312450366
Carragher, M., Sage, K., & Conroy, P. (2013). The effects of verb retrieval therapy for people with non-fluent aphasia: Evidence from assessment tasks and conversation. Neuropsychological Rehabilitation, 23, 846–887. doi:10.1080/09602011.2013.832335
Carragher, M., Sage, K., & Conroy, P. (in press). Outcomes of treatment targeting syntax production in people with Broca’s-type aphasia: Evidence from psycholinguistic assessment tasks and everyday conversation. International Journal of Language & Communication Disorders.
Davidson, B., Worrall, L., & Hickson, L. (2003). Identifying the communication activities of older people with aphasia: Evidence from naturalistic observation. Aphasiology, 17, 243–264. doi:10.1080/729255457
Druks, J., & Masterson, J. (2000). The Object Action Naming Battery. Hove: Psychology Press.
Fergadiotis, G., & Harris Wright, H. (2011). Lexical diversity for adults with and without aphasia across discourse elicitation tasks. *Aphasiology, 25*(11), 1414–1430. doi:10.1080/02687038.2011.603898

Goodglass, H., Kaplan, E., & Barresi, B. (2001). *The Boston Diagnostic Aphasia Examination (BDAE).* Baltimore, MD: Lippincott.

Goodwin, C. (1995). Co-constructing meaning in conversations with an aphasic man. *Research on Language and Social Interactions, 28*, 233–260. doi:10.1207/s15327973rlsi2803_4

Hengst, J., Frame, S., Neuman-Stritzel, T., & Gannaway, R. (2005). Using others’ words: Conversational use of reported speech by individuals with aphasia and their communication partners. *Journal of Speech, Language and Hearing Research, 48*, 137–156. doi:10.1044/1092-4388(2005/011)

Hernandez-Sacristan, C., & Rosell-Clari, V. (2009). Syntax and conversation in aphasia. A strategic restrictive use of Spanish and Catalan connector QUE by aphasic speakers. *Clinical Linguistics & Phonetics, 23*, 717–741. doi:10.3109/02699200903063053

Hopper, T., Holland, A., & Rewega, M. (2002). Conversational coaching: Treatment outcomes and future directions. *Aphasiology, 16*, 745–761. doi:10.1080/02687030244000059

Kellas, J., & Trees, A. (2006). Finding meaning in difficult family experiences: Sense-making and interaction processes during joint family storytelling. *Journal of Family Communication, 6*, 49–76. doi:10.1207/s15327698jfc0601_4

Labov, W. (1972). The transformation of experience in narrative syntax. In W. Labov (Ed.), *Language and the inner city.* Philadelphia: University of Pennsylvania.

Marshall, J. (2009). Framing ideas in aphasia: The need for thinking therapy. *International Journal of Language & Communication Disorders, 44*, 1–14. doi:10.1382/208202683507

Marshall, J., & Cairns, D. (2005). Therapy for sentence processing problems in aphasia: Working on thinking for speaking. *Aphasiology, 19*, 1009–1020. doi:10.1080/02687030544000218

McAdams, D. (2001). The psychology of life stories. *Review of General Psychology, 5*, 100–122. doi:10.1037/1089-2680.5.2.100

McNeil, M., Robin, D., & Schmidt, R. (2008). Apraxia of speech: Definition and differential diagnosis. In M. McNeil (Ed.), *Clinical management of sensorimotor speech disorders* (2nd ed.). New York, NY: Thieme Medical.

Morris, J., Franklin, S., Menger, F., & GD. (2011). Returning to work with aphasia: A case study. *Aphasiology, 25*, 890–907. doi:10.1080/02687038.2010.549568

Norrick, N. R. (2000). *Conversational narrative: Storytelling in everyday talk.* Amsterdam: John Benjamins.

Ramsberger, G., & Menn, M. (2003). Co-constructing Lucy: Adding a social perspective to the assessment of communicative success in aphasia. In G. Goodwin (Ed.), *Conversation and brain damage.* New York, NY: Oxford University Press.

Ramsberger, G., & Rende, B. (2002). Measuring transactional success in the conversation of people with aphasia. *Aphasiology, 16*, 337–353. doi:10.1080/02687040143000636

Randall, W. (2001). Acquiring a narrative perspective on aging, identity and everyday life. In G. Kenyon, P. Clark, & B. De Vries (Eds.), *Narrative gerontology: Theory, research and practice.* New York, NY: Springer.

Riessman, C. (1993). *Narrative analysis.* Thousand Oaks, CA: Sage.

Rumelhart, D. (1975). Notes on a schema for stories. In D. Bobrow & A. Collins (Eds.), *Representation and Understanding: Studies in Cognitive Science.* New York, NY: Academic Press.

Van De Sandt-Koenderman, M., Van Der Meulen, I., & Ribbers, G. (2012). Aphasia rehabilitation: More than treating the language disorder. *Archives of Physical Medicine and Rehabilitation, 93*, S1–S3. doi:10.1016/j.apmr.2011.08.037

Weinrich, M., McCall, D., Boser, K. I., & Virata, T. (2002). Narrative and procedural discourse production by severely aphasic patients. *Neurorehabilitation and Neural Repair, 16*, 249–274. doi:10.1177/15496802401105199

Whitworth, A. (2010). Using narrative as a bridge: Linking language processing models with real-life communication. *Seminars in Speech and Language, 31*, 64–75. doi:10.1055/s-0029-1244954

World Health Organisation (WHO). (2001). *International classification of functioning, disability and health (ICF).* Geneva: Author.
Appendix 1. Example of video stimuli used during therapy

Geri’s game (Pixar short film) is a 3:50 minute video clip, http://www.youtube.com/watch?v=91YRC7g2ICg

Summary: It’s autumn and an elderly man is in the park alone setting up a game of chess. He proceeds to play with his own alias as an opponent. As he moves to each side of the chessboard, he plays as a different “character”—on one side of the board he wears his glasses and is a timid character; on the other side of the board he takes off his glasses and is a competitive and somewhat aggressive character. As the game progresses, the competitive character (without the glasses) is winning. The timid character (with glasses) pretends to have a heart attack and, while his “opponent” is distracted, switches the chessboard so that he is winning. Once the game resumes, the competitive character realises he is no longer winning the game and he resigns. As the prize, he hands over a set of false teeth. As the camera pans over from the park, the man is seen sitting alone at the chessboard.

Appendix 2. Individual goals for PWA and their conversation partners

| Initials | PWA | CP | Goals for therapy |
|----------|-----|----|-------------------|
| AT       | ✓   |     | *Chunk it up:* think about the story in smaller, more manageable chunks |
|          |     |     | *Set the scene:* detail the initial contextual information about the story or give a general impression of the tone of the story |
|          |     |     | *Drip drip:* tell the story bit by bit, leaving time for partner to ask questions |
| AT-CP    | ✓   |     | *Stop and check:* check your understanding as you go along by asking questions and summarising what you’ve understood |
|          |     |     | *Move along:* during an unproductive lexical search for PWA, keep the conversation moving by briefly summarising the story so far and prompting PWA to tell you the next part |
|          |     |     | *Who does what:* establish how many people are involved in the story and their role within the story |
|          |     |     | *Pinpoint:* be specific about what you understand and what you don’t understand |
| PM       | ✓   |     | *Set the scene:* detail the initial contextual information about the story or give a general impression of the tone of the story |
|          |     |     | *Drip drip:* tell the story bit by bit, leaving time for partner to ask questions |
|          |     |     | *Show and tell:* use gesture or acting in combination with speech to convey parts of the story |
| PM-CP    | ✓   |     | *Move on:* if you know the word the PWA is trying to say, keep the conversation going. If you don’t know the word, ask questions such as “Do you mean…?” |
|          |     |     | *Who does what:* establish how many people are involved in the story and their role within the story |
|          |     |     | *Pinpoint:* be specific about what you understand and what you don’t understand |

(continued)
Appendix 2. *(Continued).*

| Initials | PWA | CP | Goals for therapy |
|----------|-----|----|-------------------|
| BL       | ✓   |     | *Set the scene:* detail the initial contextual information about the story or give a general impression of the tone of the story  
*Chunk it up:* think about the story in smaller, more manageable chunks  
*Drip drip:* tell the story bit by bit, leaving time for partner to ask questions  
*Show and tell:* use gesture or acting in combination with speech to convey parts of the story |
| BL-CP    |     | ✓  | *Stop and check:* check your understanding as you go along by asking questions and summarising what you’ve understood  
*Who does what:* establish how many people are involved in the story and their role within the story  
*Pinpoint:* be specific about what you understand and what you don’t understand |
| JH       |     | ✓  | *Stop and listen:* use conversation partner’s questions to clarify details of the story with yes/no responses  
*Set the scene:* detail the initial contextual information about the story or give a general impression of the tone of the story  
*Chunk it up:* think about the story in smaller, more manageable chunks  
*Drip drip:* tell the story bit by bit, leaving time for partner to ask questions |
| JH-CP    |     | ✓  | *Go for the jugular:* establish the basic details/events first and then enquire specifically about background information or more fine-grained detail |
### Appendix 3. CPs’ retelling of stories, scored in comparison to the most frequently occurring content words produced by control participants

| Pretherapy simple narrative target | AT’s CP | PM’s CP | BL’s CP | JH’s CP |
|-----------------------------------|---------|---------|---------|---------|
| Mr. Bean drives into a car park in a mini Mr. Bean (1) drives (1) car park/parking lot (1) mini (1) | Well Mr. Bean (1)… with Rowan Atkinson in it was a TV programme … and I assuming that this … this part of a TV programme … which shows Atkinson as Mr. Bean … driving (1) into a car park (1) with his usual incompetence … | He saw a car (1) going into a car park (1) … the bloke who turned out to be Rowan Atkinson (1) | Rowan Atkinson (1) driving (1) a car (1) … | Right I think Ron Atkinson was driving (1) a mini (1) into a car park (1) … |
| He parks too far from the ticket machine and can’t reach his ticket parks/pulls up (1) too far/not close enough (1) ticket machine (1) can’t reach (1) ticket (1) | not being able to reach (1) the ticket machine (1) | couldn’t reach (1) the ticket (1) the ticket machine (1) | I don’t know … was he going somewhere to pay for something and using his plastic card … | but it didn’t show him going into the car park it showed him reaching (1) for a ticket (1) to press the button and he couldn’t press it |
| He uses a grabber to get the ticket grabber/stick/litter picker (1) get/grab/pull out (1) ticket (1) | so he has some sort of extended arm (1) … and then gets (1) the ticket (1) … out of the machine … and drives off (1) I don’t know whether he’s coming in or going out … | so he got something I presume out of the car … like a grabber thing a pick-me-up thing (1) to pull out (1) the ticket (1) and then he went to park (1) the car somewhere … and it’s was a black and … yellow and black car | and he used his stick (1) to either push the plastic card in or … type out something or other I don’t know I don’t really know | so then he went inside the car and he found a litter-picking stick (1), reached out of the car to press the ticket, got (1) his ticket (1) and then drove (1) … into the car park (1) and then it ended … and the car was either yellow or cream |
| He drives recklessly into the car park drives (1) recklessly/quickly (1) car park (1) | Total: 15 | 9 | 10 | 4 | 10 |

(continued)
Appendix 3. (Continued).

| Posttherapy simple narrative target | AT’s CP | PM’s CP | BL’s CP | JH’s CP |
|-------------------------------------|---------|---------|---------|---------|
| Mr. Bean is in the pool, looking around Mr. Bean/ he (1) arrives (1) pool (1) looking/ had a look around (1) | Mr. Bean (1) eh Mr. Bean … the scene appears to be Mr. Bean walks into a swimming pool (1) Right so back to the swimming pool (1) … Mr. Bean (1) again … so I assume from that it was going to be funny … he’s standing on the side of the pool wearing his trunks … Right what I got … Rowan Atkinson (1) … and he said slide at first … well he said there were two slides at first didn’t he … but I- I never carried on with two slides … and then I found out it were in swimming baths and the slides were in the swimming baths (1) | | | |
| He spots an elephant slide in the children’s pool and decides to go on it spots/ sees (1) elephant (1) slide (1) go on it/ have a go/ drawn to (1) | and sees (1) a couple of kids with toy elephants (1) or real elephants I suppose toy elephants playing about … and he wants to get involved (1) … and there were two lads … coming from down the slide (1) … I presume young lads … and he thought he’d go up (1) Mr. Bean thought he’d go up, (see reference to “slides” above) (1) | and he spots (1) … that there’s two elephant (1) slides (1) with trunk—there’s trunks with slides and he sees … them and he thinks I’ll go on there (1) | | |
| As he’s about to slide into the water, the lifeguard blows the whistle sat on/ got on/ go on have a play/ slide down (1) lifeguard (1) blows whistle/ whistles/ stop/ get off (1) | so in his clumsy way he clambers (1) onto the slide and then …. where they’re all possibly jumbled together he’s about to join into this and the attendant (1) comes along and says “oi we’re not having this (1) … you’re … it’s dangerous or whatever it is” started going up (1) but he got stopped (1) by the instructor (1) who said he couldn’t … and for children only … | Anyway … it sounded like he were coming down (1) and he shouldn’t have been … he were doing something wrong … and lifeguard (1) or something like life guard whatever … at swimming baths … were complaining to him … telling him he hadn’t to do it (1) no no no … and then he got sent off (1) did he | so he goes over there and he’s like going up (1) the steps and then he gets to the top sort of thing … and the life guard (1) whistles (1) and says you’re not allowed on there (1) it’s only for … young children or whatever … | |
| Mr. Bean climbs back up the slide climbs back/ gets off/pulls himself up (1) slide (1) | and that’s it and he doesn’t (1) … that’s it | and that was the end of it | and then he got sent off (1) did he and then he’s sort of a bit stunned … and sort of starts to get back down but he’s losing his footing in sort of stumbling … and then but then he just gets down (1) … while the life guard watching and doesn’t go on the slide | |
| Total: 13 | 9 | 7 | 7 | 12 |

(continued)
Appendix 3. (Continued).

| Pretherapy complex narrative target | AT’s CP | PM’s CP | BL’s CP | JH’s CP |
|-------------------------------------|---------|---------|---------|---------|
| Mr. Bean notices the diving board and climbs to the highest level | Another Mr. Bean (1) story ... he’s at the swimming pool ... decided to show off ... finds himself on the top deck (1) ... | Rowan Atkinson’s (1) gone to a swimming pool ... he’s runs up to the either diving board (1) or the view I didn’t get that out of it properly ... he went up some steps ... | I haven’t a clue something about Rowan Atkinson (1) on a diving board (1) | Right I think Ron Atkinson’s in the swimming baths and he’s ... he goes up some steps to get up to the high diving board (1) which is there’s two diving boards and he goes on the highest one (1) ... |
| He peers over the edge and becomes afraid as he realises the height and holds on to the rail | too high (1) for him ... and he got to the I presume the edge (1) of the diving board ... didn’t like it (1), flapped his arms ... then he turned round as if he was going to perhaps dive backwards ... | and then (1) two (1) lads (1) two children appeared (1) ... not quite sure where they came from ... and he had mates ... that’s it I don’t know what he was doing with his hand up there like that ((mimics BL’s raised hand)) he were he said he were frightened (1) or nervous or ... | and then there’s two (1) lads (1) who come up (1) ... oh and he’s wearing trunks that have got blue and orange and maybe some other colours on ... but then he ... because he’s so scared they’re sort of ... sort of ... taking the mick out of him a bit and saying you know ... tapping their arms as if they’re waiting for him(1) to get off and he’s sort of ... he’s really scared so eventually he ends up ... hanging (1) off the edge of the diving board (1) |
| He imagines the lads (1) are showing off and ... Winding him up and diving off the board I’m not quite sure if they were spring board or at the top | and then (1) two (1) lads (1) two children appeared (1) ... not quite sure where they came from ... | | |
| The boys look impatient so Mr. Bean pretends not to be afraid and has to dive in impatient/check watches (1) pretends (1) dive in/jump off (1) | and he bent down (1) to put his hands down | | |
| Mr. Bean eases down onto his front and hangs off the board by his hands | | | |
| and he bent down (1) to put his hands down | | | |
### Appendix 3. (Continued).

| Pretherapy complex narrative target | AT’s CP | PM’s CP | BL’s CP | JH’s CP |
|-------------------------------------|---------|---------|---------|---------|
| One of the boys stamps on Mr. Bean’s hand and he falls into the pool one (1) boys/lads (1) stamps (1) hand/finger (1) falls (1) pool (1) | and one (1) of the children (1) stamped (1) on his hands (1) but he still went in the water (1) in a fashion ... | and he were on about his feet I don’t know what he was talking about with his feet ... can’t think of owt else ... he didn’t tell me much did he and then they stand on (1) ... one of his hands (1) on his fingers and then he drops (1) into the water (1) and ... sort of dives | Total: 27 |

| Posttherapy complex narrative target | AT’s CP | PM’s CP | BL’s CP | JH’s CP |
|-------------------------------------|---------|---------|---------|---------|
| Mr. Bean is in the pool and realises his trunks have come off and are floating in the water Mr. Bean (1) realises/notices (1) trunks (1) come off/lost (1) floating (1) | Mr. Bean’s (1) in the pool ... swimming or trying to swim in his usual probably incompetent way ... til he discovers a pair of trunks (1) floating (1) about ... and he thought well I’m struggling now cos I’m in the altogether ... (1) | Back at the pool again ... Mr. Bean’s (1) in the water ... without any trunks (1) on ... they’ve fallen off (1) ... not quite sure why they would have ... but he wouldn’t have probably know that ... | Well Rowan Atkinson (1) jumped in pool, lost (1) his trunks (1) ... It was Mr. Bean (1) or Rowan Atkinson ... not Ron Atkinson ... and he was ... it was like a like a follow-on of the diving into the pool one which we did ages ago ... so he’s in the pool and his trunk- and he realises (1) he’s swimming about and he realises that he hasn’t got his trunks (1) on and they’re on the side ... and then ... there’s a couple with a young (1) child (1) who pick (1) up his trunks (1) and take them away so he’s obviously panicking a bit ... | |
| He swims over to get his trunks but a little girl picks them out of the water swims (1) get (1) trunks (1) little/little/young (1) girl/child (1) picks out/grabs (1) | before he could do anything a little (1) girl (1) who he was probably swimming next to picks up (1) the trunks (1) so he’s left then without ... the ... without his trunks (1), a little (1) girl (1) who had got (1) them was walking off with them ... a child (1) picked (1) them (1) up ... run off (1) with them | | | |

Total: 27
Posttherapy complex narrative target | AT’s CP | PM’s CP | BL’s CP | JH’s CP
--- | --- | --- | --- | ---
The lifeguard blows the whistle to tell everyone to get out of the pool so Mr. Bean hides underwater lifeguard (1) blows whistle (1) everybody out/get out (1) pool (1) hides/ducks down (1) underwater (1) by this time … for some reason and I should have asked because that’s my fault the pool cleared … and Mr. Bean was left in there … whether it’s closing time or whatever I’m not sure … and the only people there are two pool attendants (1) … so he’s … and one of them is a female … so Mr. Bean is struggling to … keep out of sight if you will … he’s swimming about in the altogether because he … keeping under the water (1) presumably to keep out of sight (1) but having to surface keeps surfacing … the instructor (1) and an assistant were on the pool side … the pool- they got more people in and they called time (1) it must have been time to go … or whatever to get out … so they get called out … Mr. Bean didn’t want to get out he was embarrassed cos he hadn’t got his trunks on … he looked very sheepish … but he just stays in the water and then but then it’s the end of the … day so the whistle gets blown (1) to … get out of the pool (1) … so … he doesn’t, he tries to hide (1) under the water (1) about three times and they keep blowing the whistle (1) and nobody knows he’s hid
When everyone has left the pool, Mr. Bean tries to sneak out of the pool tries (1) sneak out (1) pool (1) and for some reason I should have asked again the two pool attendants left … but one of them so he tries (1) to get out (1) eventually everybody had got out of the pool … he got out (1) … and then everyone seems to have gone away so he sort of … comes out (1) of the pool and then tries (1) to make his way to the changing rooms
### Appendix 3. (Continued).

| Posttherapy complex narrative target | AT’s CP | PM’s CP | BL’s CP | JH’s CP |
|-------------------------------------|---------|---------|---------|---------|
| He hides from the female lifeguard who has come back into the pool hides (1) female (1) lifeguard (1) comes back (1) pool (1) | and one of them’s a woman (1) … so … that’s my fault I should have asked for more detail shouldn’t I … the I can’t … I cannot rem- Mr. Bean then … gets out of the pool … thinking he’s safe but by this time … well he’ll have got out of the pool won’t he but then the woman that’s right the woman would see him and he he starts running around trying to escape her … and by this time there are more kids (1) have appeared (1) into the pool area so he then he dives back in again so he’s back in the same position he was in before … and that appears to be the story [great, anything else?] … well I can’t remember I think it’s cos I didn’t ask properly what actually happened between Mr. Bean, the girl picking Mr. Bean’s trunks up and … these two attendants appearing and disappearing … whether Mr. Bean was out of the pool by that stage … and when the kids arrive it’s all a bit of a bit of a sort of intermix if you will | the instructor walked away but the assistant (1) was still around … but hadn’t noticed that he hadn’t got any trunks on … | Mr. Bean walked towards the changing room as some girls-young girls (1) came out (1) … and he got all embarrassed and they laughed a bit … and that was the end of it | and then … then Atkinson got out naked … and he were in front of all people (1) that were watching or on side of baths … and they were in costumes they were all people … waiting to go into baths or been in baths … and that’s it [asked to explain BL’s drawing] well that was Rowan Atkinson but he scrubbed him out … and that was little boy on side and they were trunks there … little boy got his trunks out of baths run off and then he went up here … this is supposed to be Rowan Atkinson and I presume this is audience and they were all in swimming gear … so I presume they were waiting to go in or they had just got out or something [and what happened at the end?] I don’t know |
| A group of girls come out of the changing room, see Mr. Bean and scream so he runs off group (1) girls/schoolgirls (1) come out/come in (1) see (1) scream (1) runs off/runs away (1) | and then … then Atkinson got out naked … and he were in front of all people (1) that were watching or on side of baths … and they were in costumes they were all people … waiting to go into baths or been in baths … and that’s it [asked to explain BL’s drawing] well that was Rowan Atkinson but he scrubbed him out … and that was little boy on side and they were trunks there … little boy got his trunks out of baths run off and then he went up here … this is supposed to be Rowan Atkinson and I presume this is audience and they were all in swimming gear … so I presume they were waiting to go in or they had just got out or something [and what happened at the end?] I don’t know | but then there’s a big group (1) of school girls (1) outside who see (1) him… naked and start screaming (1) and he’s about a bit ((gestures startled)) and then that’s it |

Total: 31 16 13 8 18