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People with non-fluent aphasia initiating actions in everyday conversation with familiar conversation partners: resources for participation

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ABSTRACT

Background: Conversation is central to building and maintaining relationships. Thus, it is unsurprising that people with aphasia and their familiar conversation partners often desire improved conversational ability. However, to facilitate real-world communication, focusing on improving aphasic language difficulties is not enough. We also need a comprehensive understanding of how social actions are accomplished in everyday aphasic conversation, including the means of participation people with aphasia possess.

Aims: To investigate the in-situ participation of people with non-fluent aphasia by analysing how they bring up, i.e., initiate, issues of importance to them in home-based authentic conversations with their familiar conversation partners.

Methodology: Using conversation analysis, we examined 6 hours of video-recorded everyday conversations of two dyads, each consisting of a person with severe/moderate Broca's aphasia and their spouse. We analysed 89 instances of the persons with aphasia initiating talk and how these initiations were produced, where in the conversation such initiations appeared, and what the initiations accomplished socially.

Outcomes & Results: We identified two descriptive groupings of initiations by the persons with aphasia: formulaic initiations, and initiations striving for propositional content. Formulaic initiations were used in unproblematic ways to accomplish social actions like offerings, or to assess or summarize a topic after it has lapsed. Such initiations are considered important in building social cohesion. Most initiations strived for propositional content, i.e., entailed a content word, or an attempt to produce one. Such initiations were regularly intertwined with multimodal and material resources usually resulting in recognizable social actions like topic initiation irrespective of whether they included an identifiable content word or not. However, the achievement of topic initiation was crucially dependent on interactional work by the spouse. Finally, we discovered a difference in the sequential environment of propositional initiations between the dyads as only one of the spouses regularly provided slots for the person with aphasia to initiate talk.

Conclusions: Our analysis revealed persons with Broca's aphasia participated in conversation through initiations relying on formulaic language and initiations striving for propositional content. The latter demonstrated the pronounced multimodality and interactivity of aphasic conversation. Our findings highlight the significance of the conversation partner's skills to facilitate the person with aphasia to initiate talk. Thus, our results imply the importance of providing conversation partner training to promote participation in aphasia.

Introduction

People spend a considerable amount of their daily lives talking to each other. We build ourselves, our relationships, and our society through conversation (e.g., Clift, 2016). Aphasia, an acquired language disorder, does not change this pivotal role of conversation; it is still the most frequent communication activity in the everyday lives of people with aphasia (PWA) (Davidson et al., 2003). As such, being able to have a conversation beyond establishing basic need is one of the internationally prioritised outcomes of speech and language therapy for PWA and their familiar conversation partners (FCP) (Wallace et al., 2017).

In order to facilitate the participation of PWA in everyday conversations, we need knowledge not only of PWA's individual language abilities, but also of how communicative interactions are accomplished in real-world and real-time conversations with different conversational partners (Barnes & Bloch, 2019; Doedens & Meteyard, 2020; Goodwin et al., 2002). To this end, the methodology of conversation analysis (CA) (see Sidnell & Stivers, 2013) provides a solid point of departure as it elucidates the mechanics of ordinary interaction (Clift, 2016). It has been applied to research involving people with aphasia (e.g., Archer et al., 2018; Barnes et al., 2013; Beeke et al., 2003, 2007; Goodwin, 1995, 2003, 2010; Helasvuo et al., 2001, 2004; Klippi, 2015; Wilkinson et al., 2010), and other communicative impairments caused by conditions like traumatic brain injury (e.g., Azios & Archer, 2018; Mann et al., 2015), and dementia (e.g., Hall et al., 2018; for a review of atypical interaction, see Wilkinson, 2019).

Aphasic symptoms are highly variable depending on type and severity. Therefore, it is considered most productive to conduct CA research on a sub-set of PWA (Antaki & Wilkinson, 2013). The present study focuses on persons with Broca's aphasia (PwBA), which is one of the non-fluent aphasia types, commonly linked with articulatory laborious and linguistically sparse speech production despite fairly intact comprehension (Kertesz, 2005). In conversational speech, Broca's aphasia translates into problems with the production of timely utterances, or turns-at-talk, and often results in the omission of grammatical elements, which is described as telegraphic style (Heeschen & Schegloff, 2003). We aim to investigate how PwBA bring up, i.e., initiate, issues of importance to them in authentic everyday conversations with their FCP. We regard such initiations to represent the PwBA's in-situ participation, and we aim to elucidate its circumstances and resources. Below, we briefly discuss how typical (i.e., non-language disordered) everyday conversations are built and how Broca's aphasia, and non-fluent aphasia more generally, impacts on this.

Building conversational sequences – turns and the adjacency pair

According to CA, people accomplish their interactional business co-operatively in sequences built of turns-at-talk (Sidnell & Stivers, 2013). As everyday conversation is unscripted, the achievement of it relies on speakers taking turns to produce coherent and self-contained utterances, called turn-constructional units, such as individual words, phrases, or sentences (Clayman, 2013). People across different languages and cultures have been shown to orient to basic principles of turn-taking, ensuring, for example, minimal overlap or gap between questions and answers (Stivers et al., 2009).

One of the factors in smooth turn-taking is the way a speaker designs a turn. For example, completed syntax or cohesive prosody foreshadow that a turn may be coming to an end, thus providing projectability for the recipient to prepare for speaking next (Clayman, 2013). A core feature structuring everyday interaction is the notion of "next-ness", meaning that for a spate of talk to be understandable it should be organized of consecutive turns, which have a reflexive relationship to each other (Schegloff, 2007). This means that an initiation such as a greeting or an offer should be followed by a response such as a return greeting or an acceptance/decline, respectively. Such paired utterances produced by different speakers, consisting of an initiating first pair part (FPP) and a -responsive second pair part (SPP), are referred to as adjacency pairs (Schegloff, 2007). They are the fundamental unit in the organization of conversations, and utilized for numerous social actions such as announcements, assessments, offers, and requests to mention a few (Clift, 2016; Sidnell & Stivers, 2013).

Adjacency pairs are also involved in repairing trouble that arises in interaction (Schegloff, 2007). For example, if a recipient has difficulties hearing or understanding what they have been told, they can initiate repair. This is called other-initiated repair. By the format of the repair the recipient can display what they have grasped so far (compare, e.g., "Huh?" with "Ya mean the dog?") (Kitzinger, 2013; Schegloff et al., 1977). In response, the original speaker typically provides a solution to the problem by repeating what they said, for example. In such cases, the adjacency pair of repair initiation and repair solution form a short backward-looking sequence within the ongoing talk. Hence, repair-action temporarily interrupts the progressivity of the conversation, but critically permits the participants to reach mutual understanding (Kitzinger, 2013).

Although adjacency pairs, by definition, involve two utterances, an initiation can mobilize a response to different degrees. That is, when a speaker initiates a turn-at-talk to perform a particular social action, they can with certain response-mobilizing features adjust how accountable the recipient is for responding (Stivers & Rossano, 2010). First, certain initiating social actions put more pressure on the recipient to respond than others. For example, requests, invitations or offers make a response relevant, while initiations doing assessments or noticings are not uniformly treated as normatively requiring a response. Second, deployment of interrogative morphology and/or syntax, interrogative prosody, the speaker gazing at the recipient, or the speaker addressing an issue in the recipient's field of knowledge are all factors that increase response relevance (Stivers, 2013).

To summarize, everyday conversation is built of turns, which are designed to accomplish smooth turn-taking. Turns have a reflexive relationship to each other; the prior turn influences the next turn. This enables speakers to recognize, interpret, and project social

actions in real-time, and crucially, makes these actions visible also for a researcher examining the interaction in retrospect (Clift, 2016; Stivers, 2013).

Persons with non-fluent aphasia building turns and initiating actions in conversation

The linguistic problems connected to types of non-fluent aphasia make it difficult to build a timely and grammatical turn in conversation. This can result in frequent self-initiation of repair, such as re-starts or hesitations, as well as problems of understandability, leading to other-initiation of repair (Helasvuo et al., 2004; Laakso & Godt, 2016). CA-informed aphasiology research has documented that aphasia in general re-distributes the division of labour between participants in everyday conversation— what in ordinary conversations typically is produced by one person in a single turn, is often in aphasic conversation achieved by multiple parties over several turns (Bloch & Beeke, 2008; Goodwin et al., 2002). As PWA encounter trouble, FCP may contribute by providing candidates for missing words or for whole turns (Laakso & Godt, 2016; Tuomenoksa et al., 2016), or aid by providing a turn completion (Oelschlaeger & Damico, 2003). Such co-construction of turns is essentially made possible by the sequential nature of interaction and the projectability it provides (Bloch & Beeke, 2008; Goodwin, 1995).

Co-construction can be regarded as an adaptation, meaning that speakers mutually adapt their conduct in order to deal with the problems aphasia causes in mundane interaction (Wilkinson, 2019). Persons with non-fluent aphasia have been noted to adapt to the demands of everyday talk by using distinctive turn-constructional strategies to circumvent their linguistic difficulties. One strategy to overcome difficulties with complex grammatical utterances is enactment. It involves PWA depicting the bodily actions, facial expression, and voice of a speaker combined with direct reported speech, represented by simple lexical forms such as "oh no", in order to recount complex events (Klippi & Helasvuo, 2011; Wilkinson et al., 2010). Generally, non-verbal, or embodied, resources are essential for turn construction in non-fluent aphasia. Prosody may be used to compensate for impaired grammatical ability to signal turn continuation or completion, and consequently regulate turn-taking (Beeke et al., 2009; Goodwin, 2010). Furthermore, pointing may be used not simply to indicate a referent, but to invite the conversation partner to produce a missing word or to present a request, for instance (Goodwin, 2003; Klippi, 2015). Importantly, however, for PWA's gestures to be meaningful in interaction, mutual background knowledge and the conversation partner's active co-construction is needed (Auer & Bauer, 2011; Goodwin, 2003).

Lexical turn-constructional resources typically available to persons with non-fluent aphasia include particles such as "yes", "no", and "but". Although lacking propositional content, they have been found to be interactionally essential as combined with embodied resources they can function as response devices that "steer" the conversation partner to produce talk that a PWA then can incorporate into their own actions (Goodwin, 1995, 2003, 2010; Laakso & Klippi, 1999). A further resource is formulaic expressions, i.e., single or multi-word idiomatic expressions such as "I don't know", which are reasonably fixed in form (Bruns et al., 2019; Helasvuo et al., 2001; Stahl & Van Lancker Sidtis, 2015). Formulaic utterances in aphasia have been found to function as vehicles for restoring mutual

understanding, expressing opinions and aiding otherwise laborious turn construction, or for yielding the conversational floor (Barnes, 2012; Beeke, 2003; Bruns et al., 2019).

Nevertheless, initiating social actions is known to be problematic for persons with non-fluent aphasia (e.g., Barnes et al., 2013; Goodwin et al., 2002; Laakso & Klippi, 1999). To achieve an initiation, the spectrum of the above-mentioned turn-constructional resources comes into play. A person with severe aphasia may use prosodically marked non-lexical vocalization to gain the conversation partner's attention and then produce a gesture, the meaning of which is further negotiated (Goodwin et al., 2002). Topic initiation, i.e., the action used to launch talk on a certain topic, can in typical interaction be accomplished in several ways; for example, by posing a question, which may be taken up by the recipients (or not) (Button & Casey, 1985; see also Schegloff, 2007, pp. 169–180). People with non-fluent aphasia have been found to initiate a topic by fronting a referent to the beginning of a turn without having to produce a grammatically well-formed utterance (Beeke et al., 2003, 2007). A turn-initial particle such as "and" has also been discovered to be advantageous for topic initiation or expansion in aphasia, as it links the turn with previous activity while also moving the talk forward (Barnes et al., 2013). Moreover, research on aphasia conversation groups has documented that artefacts are material resources for PWA to initiate topics. Archer et al. (2018) discuss how a person with aphasia's pointing to a photo in a newspaper was treated by the recipients as a topic nomination, which generated further talk.

Goodwin's (1995, 2003, 2010) seminal description of Chil neatly sums up the importance of co-construction as well as multimodal and material resources in non-fluent aphasia. After his stroke, Chil was left with only three words ("yes", "no", "and"). However, his use of these residual linguistic resources coupled with prosody and gestures embedded in the sequential context of conversation and the material environment, together with co-construction by his FCP, resulted in active participation in everyday life.

Aim of study

To investigate PwBA's in-situ participation we explore the following questions: (1) How do PwBA initiate social actions in everyday conversations with FCP? (2) What is the sequential environment of such initiations? And (3) What social actions do such initiations accomplish? Answering these questions has the potential to reveal regular patterns of communicative behaviours, and thus deepen our understanding of the capabilities PwBA possess as well as the obstacles or restrictions they may encounter in everyday conversation. The knowledge gained may be translated into the growing clinical expertise addressing enhanced real-life participation for PWA. Hence, this study represents what Antaki (2011) describes as applied conversation analysis, which in general aims to provide a complementary or alternative view of disordered talk compared to the traditional medical approach.

Methodology

Data collection and participants

The data for this study were collected during a research project investigating the separate and combined effects of transcranial magnetic brain stimulation (TMS) and

Intensive Language-Action Therapy (ILAT) (see Heikkinen et al., 2019). The latter is an established aphasia therapy method implemented in a small group with the aim of encouraging PWA to use spoken language for requesting an object or proposing an activity (Difrancesco et al., 2012). The study was conducted in accordance with the Declaration of Helsinki, and the protocol and its amendments were approved by the Local Ethics Committee for Clinical trials (the HUS University Hospitals). Written informed consent was obtained from each participant together with their significant others.

The study recruited 17 persons with various types of aphasia in the chronic phase (i.e., ≥12 months post-stroke) resulting from a single clinically documented stroke. Exclusion criteria included neglect, agnosia, severe visual impairment or hearing loss, severe depression, severe attention or memory deficits, and additional neurological diagnoses. Aphasia was documented using the Western Aphasia Battery Aphasia Quotient (WAB AQ) (Kertesz, 2005). To obtain authentic communication data, we asked participants to video-record approximately 20 minutes of everyday conversation at home with a familiar conversation partner in a situation where they would normally talk about everyday matters. Participants were instructed in the use of a video camera after which they conducted the recordings independently. Conversation data were collected at four points: baseline, after each two-week intervention (TMS and ILAT, respectively), and after a 3-month follow-up period.

The participants produced variable amounts of conversation data. Approximately 24 hours of everyday conversation data were recorded in total. For the present study, we chose monolingual Finnish participants who according to the WAB (Kertesz, 2005) had Broca's aphasia. This resulted in two participants (see Table 1) (data from a bilingual Swedish-Finnish PWA were excluded).

Our participants video-recorded approximately 6 hours of everyday conversations (see Table 2). The recordings typically presented the dyads in their kitchens having breakfast or supper. One of the dyads has missing data at the third testing point due to illness, which did not otherwise affect the person with aphasia's participation in the study. Both participants' FCP were their spouses, with whom they lived. The video-data revealed the spouses to be of the same age as the participants, and that the couples had a shared history of several decades. Otherwise, we collected no information about FCP.

Table 1. Characteristics of participants with aphasia.

Pseudonym (sex)	Age	Language	Aetiology	Months post-onset	Handedness	Co-morbidities	WAB AQ (Aphasia type, severity)	Education (years)
Jari (male)	52	Monolingual Finnish	Left hemisphere ischemic stroke	24	Right	Right-sided hemiplegia; Apraxia of speech	37.0 (Broca, severe)	14
Veikko (male)	72	Monolingual Finnish	Left hemisphere ischemic stroke	48	Right	Right-sided hemiplegia; Apraxia of speech	52.5 (Broca, moderate)	7.5

Table 2. Participants' video data.

Dyad	Baseline	Post-TMS	Post-ILAT	Follow-up 3 months
Jari and Tuula	0:12:55	0:42:21	0:30:10	0:12:31
	0:17:50	0:06:44	0:12:53	
	0:25:51	0:09:52	0:17:06	
	0:11:00		0:29:31	
TOTAL	**1:07:36**	**0:58:57**	**1:29:40**	**0:12:31**
Veikko and Anja	0:28:33	0:25:49	missing	0:03:04
	0:13:33			0:55:04
TOTAL	**0:42:06**	**0:25:49**		**0:58:08**
All data				5:54:47

Data analysis

The conversation data were transcribed according to standard CA conventions (Jefferson, 2004; for a transcript key see the Appendix). A simplified version of the conventions presented by Mondada (2007) was used to transcribe embodied actions. As the data are in Finnish, an approximate translation into English is provided in bold in the extracts. To protect the participants' anonymity, all person and place names were replaced with pseudonyms. In line with recent CA-informed aphasiology research (e.g., Archer et al., 2018; Barnes & Ferguson, 2015; Barnes et al., 2019), the objective of our analyses was to discover potential regular communicative patterns across the dyads by creating collections of interactional instances that share common features (see Schegloff, 1996). In practice, this entails identifying an interesting interactional phenomenon, and providing an initial characterization of it by describing how the phenomenon is constructed, where in the conversation it is employed, and the social action it accomplishes from the viewpoint of the conversationalists. The data is then examined for similar instances and the analysis is recursively refined, excluding some instances and including others. This results in a collection that describes the communicative features meaningfully present in each of the instances.

Original interest in the accomplishment of first pair parts was spurred by an observation that the PWA in the current data made much fewer initiations compared to PWA with milder aphasia in previous work of the authors (Tuomenoksa et al., 2016). Initially, the first author viewed the data repeatedly in conjunction with the transcripts to identify initiating actions, i.e., FPPs, produced by the PwBA. A turn with verbal/vocal content appearing in a sequence-initial position, i.e., a place in conversation where it was not linked to the structure of immediately prior talk (cf. Goodwin et al., 2002), was considered a candidate initiation. The turns produced by the PwBA were typically impoverished of syntax, morphology, and content words, which we defined as nouns, proper nouns, verbs, adjectives, and numerals (cf. Herbert et al., 2012). Hence, in addition to their verbal/vocal construction, candidate initiations were identified based on a combination of several possible response-mobilizing features: speaker's gaze, prosody (e.g., Goodwin et al., 2002), gestures intertwined with the verbal/vocal content (e.g., Goodwin, 2010), and concurrent manipulation of material resources (e.g., Heath & Luff, 2013). The candidate initiations were then examined in their local sequential contexts to establish the interactional work they accomplished.

Table 3. PwBA's initiating actions in the data corpus.

Initiation	Exemplars	Count	%
Excluded initiations			
Addressing the camera	PwBA: jo (tota) (1.0) too ((gazing and pointing at the camera)) **jo (well) (1.0) that** FCP: on se päällä jo **yes it's already on**	20	12
Other-initiation of repair	FCP: (paahdoiksä) leipää **(did ya make) toast** PwBA: mitä **what** FCP: (paahdoitko) leipää **(did you make) toast**	41	26
Unclear	PwBA: (- e ja:) ((glancing at FCP and pointing at the window)) FCP: ((gaze at newspaper, does not notice nor respond to PWA's initiation)) PwBA: ((continues eating))	11	7
Analysed initiations			
Formulaic	Extracts 1 and 2	19	12
Striving for propositional content			
Without content words	Extracts 3 and 4	42	26
With content words	Extracts 5 and 6	28	17
	TOTAL	161	100

Next, we chose to focus on forward projecting initiations by the PwBA, meaning turns that were designed to create a slot for uptake by the CP. Thus, we excluded backward-looking initiations, i.e., repair actions that targeted the FCP's previous turn, displaying that the PwBA had some trouble hearing or understanding the FCP (Haakana et al., 2016), or that the PwBA were correcting the conversation partner(Haakana & Kurhila, 2009; Haakana & Visapää, 2014). We also excluded instances where the initiation was unclear to the degree that it yielded no recognition nor uptake by the FCP and was subsequently abandoned by the PwBA. Finally, we omitted PwBA's initiations that concerned the topic of video-recording, as these are not considered to have high ecological validity for the study of natural talk in aphasia, having been prompted by the act of video recording. This resulted in 89 instances of initiation, which were iteratively checked by the first and third authors and discussed in multidisciplinary data sessions to create consensus (Peräkylä, 2011). The amount of included and excluded initiations is presented in Table 3.

Results

The analysis uncovered two broad descriptive groupings of initiations with distinctive interactional patterns: initiations constructed using formulaic expressions, and initiations striving for propositional content. In the following, we will introduce features meaningfully present in each grouping and demonstrate these with representative data extracts.

Group 1: formulaic initiations

Only 12% of the PwBA's initiations were formulaic (see Table 3). These initiations formed one prosodic unit and were articulated fluently and rapidly compared to the otherwise hesitant and laborious speech typical of non-fluent aphasia. Further, these initiations

incorporated virtually no gestures. Sequentially these initiations were found in two environments, each will be presented with an example.

First, formulaic initiations most often initiated short sequences, which did not get further topicalised. An essential component of this first environment was the concurrent manipulation of an artefact. Such sequences were typically composed of a canonical adjacency pair such as an offer–acceptance/decline. Extract 1 from Jari and Tuula presents an exemplar. Jari and Tuula are eating tortillas at their kitchen table accompanied by their cat. Tuula is apparently feeding the cat (not entirely visible).

Extract 1 (3.3. 00:09:25 – 00:09:31)
Jari= person with Broca's aphasia, Tuula= familiar conversation partner, Jg= Jari's gaze

```
 1            ((Jari halts his actions, gaze switches btw Tuula and the cat))

   Jg:        tortilla_____up_____

 2 Jari: →    [tuossa. (0.5) [tossa. >tossa. <        ]

              [here.    (0.5) [here.  >here you go.<   ]

              [((Jari holds out his tortilla))

 3 Tuula:                  [>mä: annan.< mä ANnan.   ]

                           [>I:'ll give.< I'll GIve.]
```

Jari observes Tuula's actions, sitting still yet switching his gaze between Tuula and the cat (line 1). Next, he lowers his gaze to his tortilla and while holding it out, he fluently produces *tuossa*, which can be regarded as a mundane equivalent of "here you go", and its colloquial form *tossa*. For Tuula, the embodiment of Jari's turn—the physical presentation of the tortilla to her while gazing at it, thus identifying it as an offering— serves as an additional resource for comprehending the formulaic turn as an offer. In her response, Tuula does, however, decline the offer in overlap with Jari, by stating that she will feed the cat with her own food (line 3). This closes the sequence. This sequence shows Jari anticipating his spouse's needs and offering his assistance. These are actions observed in typical interaction, when people resolve troubles arising while preforming practical activities, and as such, are fundamental for maintaining social cohesion (Kendrick & Drew, 2016).

The second, less frequent, environment for formulaic initiations was in positions where a topic was coming to an end and the PwBA's initiation summarized or assessed the preceding talk (cf. Drew & Holt, 1998). These initiations were verbal with no accompanying physical activity, i.e., no gesture or manipulation of artefacts. Additionally, the PwBA did not gaze at the FCP during these initiations, i.e., the response relevance to these turns appeared lower compared to initiations such as presented in Extract 1. However, the FCP did regularly respond to these types of initiations, at least with an acknowledgement token. Extract 2 from Veikko and Anja presents an exemplar. Sitting at opposite sides of their kitchen table, both are reading a section of the newspaper. After a lapse in the conversation, Anja initiates a new topic about something she is reading.

Extract 2. (1.1. 0:16:16 – 0:16:34)
Veikko= person with Broca's aphasia, Anja= FCP, Vg= Veikko's gaze, NP= newspaper

```
  Vg:         NP_____up_____Anja_____
 1 Anja:     mitä täs (ku) sen Huuskosen kans (miä,) (.) SE, (0.8) laulaja
             what's this (as) with Huuskonen (wh,) (.)  THE, (0.8) singer

  Vg:         _____
 2           se Huuskonen (ketä) yläkou- tos lukios oli o-
             that Huuskonen (who) in secondary sch- there in high school was

  Vg:         _____NP_____
 3           musiikki(opettajana)=
             t- music (teacher)=

  Vg:         _____
 4 Veikko:   =£joo.£ (kyllä.)  >juu: juu:<
             =£yeah.£ (yes.)   >ye:ah ye:ah<

  Vg:         _____Anja__NP_____
 5 Anja:     (pääsis)  sen  kans ris[teilylle   ]
             (you could) go on a cru[ise with him]

  Vg:         _____
 6 Veikko:                      [JOO ↑JUU.  ]
                                [YEAH ↑YEAH. ]

  Vg:         _____
 7           yllä.
             (y)es.

 8           (2.0)

  Vg:         _____
 9 Veikko:→  voi HYvä ihme.
             oh for CRYing out loud.

 10 Anja:    £e↑hoh£
             £e↑hoh£

Vg:     NP_____up_____Anja_____
```

In her initiation (lines 1–3), Anja has some difficulties formulating a referent linked to her topic, but she eventually identifies it as the music teacher from high school. Veikko's enthusiastic response (line 4) indicates that he has recognized who she is talking about. After this establishment of a mutual referent (Auer, 1984), Anja continues to tell the piece of news regarding the

teacher, namely, that you can go on a cruise with him (line 5). This seems to be familiar knowledge to Veikko, displayed by his repeated affirmative and prosodically upgraded response (lines 6–7), which is produced partly in overlap with Anja's turn. With his response, Veikko does not invite Anja to elaborate on the topic and she does not do so, probably because we do not tend to tell people news they already know (Schegloff, 2007). However, after a pause, during which both have continued reading their newspapers, Veikko resumes the topic by fluently producing a formulaic utterance with emphasized prosody and without lifting his gaze from his newspaper (line 9). The lack of embodied response mobilizing features, such as gazing at the recipient or using gestures (which would be visible to Anja), makes it relevant for Anja to interpret Veikko's initiation within the same conversational framework as the previous turns (Goodwin, 2003), i.e., talk about the music teacher. This is instantiated in Anja's response as she immediately produces a laugh token (line 10), which displays affiliation with the humorous stance Veikko has taken towards the topic, both in his formulaic initiation and in his initial smiling response, when the referent was first mentioned (line 4). Thus, Veikko's formulaic initiation functions as a stance-taking assessment, which creates a slot for shared display of emotion (Ruusuvuori, 2013).

Group 2: initiations striving for propositional content

In the majority of initiations (43%; see Table 3), the PwBA strived for propositional content. However, the propositional import of the initiation was in most instances (26%; Table 3) achieved without content words, with PwBA using multimodal resources to build their initiation instead. In addition, these initiations were often reliant on artefacts found in the environment such as a newspaper. Nevertheless, in 17% of the cases the PwBA built initiations containing content words.

Our PwBA produced these initiations when requesting, recounting events, posing questions, and initiating new topics. Sequentially these initiations regularly demanded co-construction, negotiation, or repair-action to establish meaning. If mutual understanding was achieved, the FCP responded, and in the case of topic initiations, also launched further talk and thus acted on the initiation. Next, we will focus on the two sub-collections in turn: initiations without content words, and initiations with content words.

Sub-collection A: initiations without content words

PwBA's initiations without content words were typically intertwined with the use of gestures (cf. Auer & Bauer, 2011; Goodwin, 2010; Klippi, 2015). Verbally these initiations were replete with failed word searches. These were displayed by hesitations, re-starts, and long intra-turn pauses, and in some cases onomatopoetic expressions or distorted speech. Nouns were frequently substituted by pronominal premodifiers of a noun phrase (e.g., *"toi"*, "that") (Helasvuo et al., 2004). Verbs were often lacking, but the PwBA conveyed something happening with reference to time by using adverbs (e.g., *nyt* "now", *sitten* "then") (Helasvuo et al., 2001).

Extract 3 demonstrates an exemplar from this sub-collection. Jari's initiation on line 7 does not contain content words but does nevertheless deliver new information to Tuula using other resources. As the extract begins, Tuula starts a new topic after a lapse in the conversation by asking a "yes/no" question about Andersson's plans to revisit them in the coming days. Other conversations of this dyad indicate that Andersson is a person connected to the maintenance of Jari's vehicle, which is an Erkkola (the make).

Extract 3. (1.3., 0:16:07-0:16:28)
Jari= person with Broca's aphasia, Tuula= FCP

```
1 Tuula:    eikä Andersson sitte, (0.9) viime viikol

           and Andersson didn't (0.9) last week

2          sanonu että mh(.) että tulisko uudestaan

           mention that mh (.) that he would come around

3          tässä käymään tällä viikolla

           again this week

4 Jari:    en  tiä  sit     [nii. ]

           don't know then [yeah.]

5 Tuula:                     [nii. ]

                             [yeah.]

6          (1.2)

7 Jari: →  ka:i sitte toi,     (1.0) [zzy::n zyn  (1.4)    [sinne sitte

           probably then that, (1.0) [zzy::n zyn  (1.4)    [there then

                                      [((revving the engine[swipes hand fwd))

8 Tuula:   että toi? (.) Erkkola täytys viedä jonneki,

           so the?  (.) Erkkola should be taken somewhere,

9 Jari:    nii.

           yeah.

10 Tuula:  PAjalle.

           to a WORKshop.

11 Jari:   nii.

           yeah.
```

Jari responds to Tuula's question with a formulaic turn claiming he doesn't know (line 4), which Tuula treats as an adequate response indicated by the confirming dialogue particle ("yeah") with falling intonation (line 5). However, after a pause, Jari launches talk on what seems to be a related topic (line 7). The initiation is prefaced with the modal particle *ka:i* ("probably"), which marks the subsequent talk to be his assumption about the issue. Jari's turn is lacking a verb, but the use of the adverb *sitten* ("then") adds a time reference, that is, he alludes to the fact that something is going to happen in the future. As he proceeds, he has word-finding difficulties indicated by the pronominal premodifier of a noun phrase *toi* ("that") and a subsequent 1 second pause. Instead of a noun phrase, he then produces the onomatopoetic expression *zzy::n zyn*, while precisely matching his production with a gesture illustrating revving the engine with his left hand. He then adds an adverb referring to a place *sinne* ("there"), which is accompanied with a forward swiping hand gesture, and he repeats the time-reference adverb *sitte* ("then"). Jari's multimodal turn-design becomes a resource for Tuula to gloss the initiation (Goodwin et al., 2002), and on line 8 she presents a clause formatted candidate understanding for Jari to be confirmed (Haakana

et al., 2016; Koivisto et al., 2011). She introduces the proper noun *Erkkola* as a candidate for the noun phrase and she also offers a candidate action that the vehicle is "taken" somewhere but does not provide a candidate place. Jari immediately confirms Tuula's understanding with an affirmation token (line 9) after which Tuula continues with a candidate for *sinne* ("to a workshop") (line 10). Jari also confirms this. Consequently, they have smoothly co-constructed the idea that Jari's Erkkola must be taken for repairs, a topic they continue talking about (outside the extract).

To summarize, Jari has expanded the topic by producing a turn with no content words yet communicating proposition through a combination of a particle and adverbs, an onomatopoetic expression, and pantomime, i.e., the gesture depicting revving the engine representing the referent and the swiping gesture referring to place. For pantomime to be successful it relies on the recipient's skillful cooperation as well as the conversationalists' shared knowledge (Auer & Bauer, 2011). In this case, the shared background is represented by both knowing Andersson and his engagement with Jari's vehicle.

Extract 4 presents a second exemplar of an initiation without content words, this time from Veikko. This extract demonstrates how an initiation composed of incomprehensible words combined with pointing to a material resource can launch a conversational sequence. Previous to this extract Anja has put some food items in the fridge.

Extract 4. (1.1., 0:20:33 – 0:20:46)
Veikko= person with Broca's aphasia, Anja= FCP, NP= newspaper, Vg = Veikko's gaze, A= Anja's embodied actions during Veikko's turn

```
1  Veikko:     ((turns the page of the NP, gaze at the NP))

2  Anja:       ((sits down at the table))



   Vg:         NP_____

3 Veikko: ->  (ö:) [lol ol (0.2) (˚k:- [kalˊ](0.3) kal- mei.

             (ö:) [lol ol (0.2) (˚k:- [kalˊ](0.3) kal- mei.

             [points at the NP

   A:                          [((leans fwd))

4            (0.6)

5 Anja:      (˚herranen˚) MISsä. (.) Moskovas[sa]

             (˚oh my˚  ) WHere. (.) in Moscow

   Vg:       _____

6 Veikko:                              [Mos]kov(a)

                                       [Mos]cow

7            (1.4) ((Veikko lifts gaze, starts folding NP away))

8 Anja:      ai onkse niinku joku RYHmä joka (-) (vai miten se on)

             oh is it like a GROup which has (-) (or what)

9 Veikko:    emmät

             I dunno

10 Anja:     ((resumes drinking))
```

As Anja sits down at the kitchen table opposite Veikko, he initiates a new topic (line 3). While pointing at the newspaper he is reading (the exact location of his point is not visible), he produces a verbally incomprehensible turn with turn final falling intonation. Here, the pointing gesture can be regarded as a resource for indicating the topic, but also it adds to the response relevancy of Veikko's initiation (cf. Goodwin et al., 2002). Anja orients to this initiation while it is still in the making by leaning forward and looking at the newspaper, which for her is upside down. This indicates that Anja treats the newspaper as meaningful in comprehending Veikko's initiation. In response, Anja first produces a quiet exclamation (line 5), which evaluates the initiation as both newsworthy and shocking, and displays that Veikko's initiation is comprehensible in context. She immediately continues with a topicalizing interrogative ("where") referring to the location of the newsworthy event. Interestingly, Anja answers the question herself by continuing with "in Moscow". Nevertheless, Veikko also responds to the question, but comes in late, partly in overlap with Anja's response, and his turn is agrammatic as it lacks the required case marking (Helasvuo et al., 2001). After a lengthy pause, Anja continues by producing a turn that seeks more information on the topic (line 8). However, at this point, Veikko is engaged in closing the topic (concretely) by folding the newspaper and putting it away. He replies minimally to Anja's question, thus declining further talk on the topic (Schegloff, 2007).

Extracts 3 and 4 demonstrate PwBA's multimodal initiations without content words. In extract 3, mutual understanding was verbally co-constructed turn by turn while in Extract 4 shared understanding was crucially tied to a material resource, the newspaper, which was accessible to both speakers. Both initiations resulted in the FCP launching further topic talk. However, it is noteworthy that sequentially, these initiations appear in different conversational environments. Jari's initiation in extract 3 follows a short sequence launched by Tuula's question, which proffers a topic thus creating a slot for Jari to expand on the subject, which he does (for a discussion on topic-proffering sequences, see Schegloff, 2007, pp. 169–180). In contrast, in extract 4 it is the person with Broca's aphasia, Veikko, who initiates the topic after a lapse in the conversation creating a slot for Anja to take it up. This contrast in providing conversational slots represented a systematic difference between the dyads, which we will return to in the discussion.

Sub-collection B: initiations with content words

The verbal construction of initiations with content words varied. As in sub-collection A, word searches were common. However, the PwBA recurrently constructed their initiations with a turn-initial referent or a turn-initial referent followed by a comment. This was the case especially when the PwBA introduced new topics (e.g., Beeke et al., 2007). Extract 5 demonstrates one such exemplar.

Extract 5. (4.2., 0:14:06 - 0:14:40)
Veikko= person with Broca's aphasia, Anja= FCP, NP= newspaper, Vg= Veikko's gaze, A= Anja's embodied actions during Veikko's turn

```
   Vg:        NP_____
 1 Veikko: →noh[e:m,  (0.[8)(puhe:) >tota< puh(3.[2) mt toi,(1.2)

           wel[lhe:m,(0.[8)(puhe:) >well< puh(3.[2) mt the,(1.2)

   V:         [((points at NP))

   A:                     [((lifts gaze twd Veikko[leans fwd, gaze on NP, scans

   Vg:        _____
 2          joubuu: mikkii.[

           joubuu: mike.  [

   A:                     [((halts))

 3          (1.6) ((Veikko quickly gazes at the other page of the newspaper))

 4 Anja:    [mm?]

           [mm?]

   Vg:        NP_____
 5 Veikko:  [tuossa on] (0.7) e- tota: (0.3) e- o:n: (2.2) olni (.)

           [there's  ] (0.7) e- we:ll (0.3) e- i:s: (2.2) olni (.)

   Vg:        _____Anja___
 6          >nonni[monni.<

           >nonni[monni.<

   A:             [((relaxes))

 7          (0.4)

   Vg:        _____
 8 Anja:    tartu mikkii[n.

           grab the  mi[ke.

   Vg:        _____sandwich
 9 Veikko:             [£nii.£ =

                       [£yeah.£=

   Vg:        _____NP_
10 Anja:    = >ni KEtä,< (0.[4) ketäs sanoit

           = >so WHo,<  (0.[4) who did you say

                            [((leans fwd))

11          (3.2) ((Veikko gazes at the NP and leans fwd to it))
```

```
        Vg:            _____

12 Anja:      eiku [tuolla

              no   [there

                   [((points at NP))

        Vg:          ___

13 Veikko:   nii.

             yeah.

14           (0.8)

       Vg:              _____Anja_____NP_____

15 Veikko:   nyt tuota: o:nga y:nströmi. (0.3) eiku,

             now we:ll  o:nga y:nströmi. (0.3) no (but),

16           (1.0)

       Vg:             _____

17 Anja:      ai se kauhee

              oh the terrible one

       Vg:          ___Anja

18 Veikko:   £nii.£

             £yeah.£

19 Anja:      juu >ei ei ei< SE.

              yea >no no no< THAT (one).
```

As the extract begins, Veikko and Anja are seated at opposite sides of their kitchen table. Each has a section of the newspaper in front of them, and Veikko is looking at the TV-guide. On line 1, Veikko initiates a new topic by starting with hesitations and pointing at his newspaper (the exact location of his point is not visible). Anja orients to the initiation by gazing at Veikko. With his gaze fixed on his newspaper, Veikko continues his turn with word search behaviours. In response, Anja leans towards him and looks at his newspaper, which is upside down to her. She moves her head, indicating that she is scanning for information in Veikko's newspaper. What she is looking at is not clear as she sits with her back to the camera. After long pauses, Veikko produces a distorted, incomprehensible word *joubuu:* combined with the colloquial noun *mikkii* ("mike", meaning microphone) (line 2). As Veikko finishes the noun, Anja's head movements stop. A pause follows, after which Anja, still holding her forward-leaning body position, responds with a dialogue particle *mm?* (line 4). This acts as a continuer encouraging Veikko to elaborate his initiation (Auer, 1984). Veikko is, however, already engaged in this activity and his talk overlaps with Anja's continuer. He constructs his subsequent turn as a declarative clause ("there's") commenting on the previously mentioned referent. He has considerable word-finding problems, but after a long pause he utters two distorted words, *olni (.)*

>*nonnimonni.*<, with turn-final falling intonation (line 6). During the second word, he starts to raise his gaze towards Anja, who at the same time relaxes and leans backwards. These orchestrated actions display that they both orient to a completed turn by Veikko.

At this point then, Veikko has produced a partly intelligible referent (*joubuu: mikkii*), and a comment on it, which lacks comprehensible propositional content. After a pause, Anja repeats the intelligible part of Veikko's initiation, but in the correct form *tartu mikkiin* ("grab the mike") (line 8). Veikko enthusiastically confirms this, partly in overlap (line 9). Hence, they have at this instant explicitly manifested that they are talking about "Grab the mike", a popular TV-show at the time. The rest of Veikko's initiation, however, remains unclear to Anja indicated by her repair initiation on line 10. That Anja uses the interrogative pronoun "who" (*ketä*, which in this context is a regional variant) can be seen to rely on her common knowledge about the programme in question, i.e., artists are invited to sing, as well as the fact that Veikko's comment (lines 5–6) can be heard as introducing the artist ("there is") and the two distorted elements could be interpreted as a first name and a surname.

Just prior to Anja's interrogative repair initiation, Veikko has shifted his attention to his sandwich and is preparing to grab it (line 9). Hence, there is a delay in his response indicated by the long pause that ensues (line 11). As a part of her repair initiation, Anja has earlier leant towards Veikko's newspaper, and now she directs Veikko towards the relevant information both verbally and by pointing (line 12), which substantiates that she has access to the location of the information about this TV programme, but does not display that she has access to the information per se.

Anja's interrogative repair initiation (line 10) pinpoints the person as being the source of her comprehension problems; thus, a repetition of the person referent would be enough to resolve the trouble (Kitzinger, 2013). On line 15 Veikko does more than that: he produces a clause-like turn with a turn-initial adverb "now" displaying a time aspect followed by *o:nga y:nströmi*, where *strömi* is a colloquial pronunciation of a common ending in Swedish surnames ("ström"), which renders his production audible as a proper name. However, this attempt at a person referent differs from the one on line 4, although both attempts begin with the vowel/o/and present two elements as in a first name and a surname. He then initiates self-repair: he utters the repair particle *eiku*, which indicates the previous speech element to be erroneous and in need of repair (Haakana & Visapää, 2014). Yet, Veikko does not embark on a further attempt at the referent, and after a pause, Anja presents a candidate understanding, which characterizes the referent as "the terrible one" (line 17). Veikko smilingly confirms (line 18) and Anja asserts that she knows who Veikko is talking about (line 19). However, she does not mention a proper name. They continue to talk about the artist (outside the extract) and come to the mutual conclusion that they will not watch the show. The artist is never named.

The last extract presents a second exemplar of an initiation with content words: a verbal request. All requests in our dataset concerned immediate actions or actions to be done in the near future, and the majority of content words used in requests were verbs, as this extract demonstrates.

Extract 6. (0:07:39 – 0:0:07:53)
Jari= person with Broca'a aphasia, Tuula= FCP

```
 1 Tuula:    tu-lis nys se sähköskootteriki TÄnää sitte

           (I) wish the e-scooter would arrive today

 2 Jari: →  so:ita sinne (sinne)

           ca:ll there/the place (there)

 3         (0.9)

 4 Tuula:   n:iin muttaku mä oon nytten, mä oon iltavuorossa mä oon

           y:eah but I'm now, I am on the evening shift I'm on until

 5         kuuteen saakka sielä ni mä en tiedä tuleeko se vai eikö se tule

           six there so I don't know if it will come nor not
```

The extract starts with Tuula expressing her wish that a vehicle they have ordered would arrive that day. Jari does not align with Tuula's course of action, i.e., he does not express a similar wish, for example, but initiates another action. He requests Tuula to call the deliverer (line 2). Tuula, however, rejects Jari's request by giving an account of why fulfilling it would be difficult for her (lines 4–6).

Discussion

This study investigated the initiations of two persons with severe/moderate Broca's aphasia in everyday conversations with their FCP. As such, it presents an overview of the PwBA's real-time and self-initiated participation in a communication situation of importance—at home with their spouses. The analysis of 89 instances revealed initiations to be built in two different ways, which each appears in different conversational environments and accomplish different social actions.

First, the PwBA used formulaic utterances when producing FPPs of canonical adjacency pairs such as an offer-accept/decline (e.g., Schegloff, 2007). Such initiations were crucially tied to the PwBA manipulating an artefact, which provided the FPC with an additional resource to comprehend the initiation. Formulaic initiations were also found to appear in places of possible topic transition, where the initiation summarized or assessed preceding talk thus displaying the PwBA's stance towards it. Previously, formulaic utterances have been shown to be an important turn-constructional resource for people with non-fluent aphasia especially in responses (Barnes, 2012; Beeke, 2003; Bruns et al., 2019). Our findings extend this knowledge by highlighting that formulaic utterances are a significant resource for PwBA to initiate social actions. It is important to recognize that although the formulaic initiations analysed here do not carry propositional content, they launch sequences that unfold in typical and unproblematic ways, which essentially provide the dyads with opportunities to create social cohesion and display affiliation. Moments like these may be regarded as assets for improving and

maintaining well-being for PWA and their FCP (cf. Shiggins et al., 2020), thus vital for speech and language therapists to be aware of.

Second, when requesting or initiating a new topic, for example, the PwBA strived for propositional content in their initiations. The phenomena discovered in these initiations conform with prior CA-informed aphasiology research, and underscore the importance of multimodality and the material environment (e.g., Archer et al., 2018; Auer & Bauer, 2011; Beeke et al., 2009; Klippi, 2015), co-construction (e.g., Goodwin, 1995; Goodwin et al., 2002; Laakso & Godt, 2016), and the use of non-propositional language (Barnes et al., 2013; Helasvuo et al., 2004) as central resources for attaining mutual understanding in non-fluent aphasic conversation. Concerning verbal strategies, our results replicate for Finnish the finding of Beeke et al. (2007) for English, namely that people with non-fluent aphasia use the format of a turn-initial referent followed by a comment to initiate a topic. Importantly, our findings illustrate that initiations striving for propositional content generally resulted in comprehensible social actions irrespective of whether they included a content word or not.

Our findings demonstrate that as a rule, the FCP orient to the PwBA's initiations. However, we observed a clear difference in communicative strategies across the two dyads. While material resources such as a newspaper were central to building conversations for both dyads, Jari's conversation partner, Tuula, regularly launched talk on issues that had no concrete reference in the environment, and resulting sequences relied on her being able to comprehend, and if necessary, to co-construct Jari's response (see Extract 3). As we saw, such topic-proffering talk by Tuula created slots for Jari to initiate issues of his own. In contrast, Veikko and Anja seemed to have adapted their talk to make visual material a central resource, and they did not deviate from this. All their conversations were centered around either a newspaper, photographs, or advertising leaflets, and all Veikko's initiations striving for propositional content were linked to, and hence restricted by, these resources. Furthermore, Anja did not proffer topics outside these materials. In a short-lived attempt to have a conversation without any visual resources (see Table 2, follow-up), Anja suggested they should try to have a conversation the following morning, when they have the newspaper, as that would be easier. This observation emphasizes the need for routinely including individually tailored conversation partner training (e.g., Best et al., 2016) in aphasia therapy, to ensure that a familiar conversation partner has skills and confidence to provide slots for a PwBA to initiate talk beyond the here-and-now, and thus facilitate wider participation. This notion is also supported by research stating that FCP want speech and language therapy to provide them with tools enabling them to promote meaningful conversations outside the range of basic needs (Wallace et al., 2017).

Our conversation data were collected across an intervention study involving ILAT. Although the aim of this study was not to compare data gathered pre- and post-intervention, we analyzed all PwBA's initiations including requests. These are regarded as focal speech acts in ILAT and are argued to be behaviourally highly relevant in everyday life, for example, at the dinner table (Pulvermüller & Berthier, 2008). In ILAT sessions, requests are implemented as verbal requests for objects, mobilizing a noun (Difrancesco et al., 2012). However, we did not find any instances in the pre- or post-ILAT data, where the PwBA verbally requested an object in the way they rehearsed during ILAT. Instead, we observed a couple of requests for objects successfully accomplished with initiations without

propositional content, combined with embodied means within the material environment where the requested object was visible to both conversationalists. This converges with findings of CA-informed research on PWA requesting products in service encounters (Anglade et al., 2019, 2020). In our data, requests involving a content word were not anchored in the situated environment, but typically referred to the future, the content word being a verb in the majority of cases (see extract 6). Consequently, our findings exemplify that it is problematic to assume a language task to be ecologically valid without underpinning interactional evidence.

As our findings illustrate, aphasic conversation is, like typical interaction, inherently a multimodal, co-constructed achievement in a real-time, situated context (e.g., Barnes & Bloch, 2019), and thus every encounter is unique. This adds to the complexities of demonstrating generalization of language targeted in aphasia therapy into everyday communication (cf. Webster et al., 2015). To create therapy methods with the potential to produce meaningful outcomes for PWA and their communication partners, we need further research elucidating the mechanics of real-life aphasic interaction. It provides a window on how participation is achieved, and therefore potentially facilitated, at the level of everyday conversational sequences.

Clinical implications

This study adds to our knowledge about how PwBA participate in everyday conversations with their FCP. The results revealed that PwBA successfully initiate social actions not only by using propositional language, but through initiations relying on formulaic utterances, multimodality, material resources, and co-construction by the FCP. In general, this knowledge can be applied to conversation partner training of health-care personnel and aphasia conversation group facilitators to create opportunities for PWA to initiate topics by providing material resources, for example. More specifically, the differences discovered between the two dyads in terms of FCP's communication strategies stress the importance of individually tailored conversation partner training to promote PWA's self-initiated participation beyond the here-and-now in intimate relationships.

Study limitations and future research

To decrease researcher intrusion into participants' everyday conversations, the participants made their own recordings at their homes and only one video camera was used (cf. observer's paradox, Labov, 1972). Consequently, the camera angle was not always optimal for capturing all embodied behaviours or the precise use of artefacts, the location of a point to a newspaper, for instance. Future research should consider using multiple video cameras to overcome these issues (e.g., Barnes et al., 2019). We acknowledge that excluding initiations about making the video recordings themselves may have obscured issues such as how the PwBA expressed agency towards the recordings. Such issues merit studies of their own. Also, future research on initiations that did not receive uptake from the FCP as well as non-verbal initiations would supplement our knowledge of PWA's capabilities, and the obstacles they encounter in everyday conversation.

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